

INSTITUTE OF AGRICULTURAL RESEARCH STATISTICS

NATIONAL INDEX

OF

AGRICULTURAL

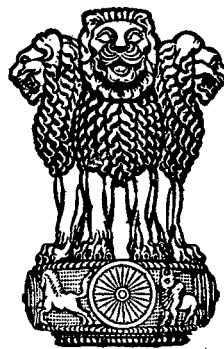
FIELD

EXPERIMENTS

VOL. 9 PART 1

MYSORE

1948-53



सत्यमेव जयते

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FOREWORD

It is a well recognized fact that the level of agricultural production in India is one of the lowest in the world and it is only by the exploitation of scientific methods of agriculture that we can hope to increase our agricultural production to the level necessary for providing a reasonable standard of living to the country's population. Properly planned and conducted field experiments provide a reliable basis for propagating improved agricultural techniques among farmers. A number of research institutes and other experimental centres are functioning under the Central Ministry of Agriculture, the Commodity Committees and the State Governments, in which research on agricultural problems is going on. The need for an integrated account of the researches done in these organisations and institutions in the country has been felt for a long time, particularly in the context of planning. The absence of such a unified account has often led to duplication of work and delay in the utilisation of the results for practical farming. The Institute of Agricultural Research Statistics of the Indian Council of Agricultural Research has, therefore, rendered a most timely service by preparing a compendium of all agricultural field experiments conducted in India upto 1953 and similar compendia are under preparation by the Institute for subsequent years.

The present compendium contains critical summaries of results of experiments bearing on important agronomic factors such as the responses of crops to fertilizers and manures, inter-relationship of fertilizers, varieties and cultivation practices and other information of value for giving sound advice to farmers in different regions. I am sure that these results will be fully utilised by agricultural institutions, research workers, planners and extension organisations. The chief merit of the present publication is that it brings together in one place the results of experimentation carried out under diverse soil, climatic and agricultural conditions obtaining in India. Workers in one State can thus supplement data for their own area by results from other regions where conditions may be similar and thereby re-inforce their own conclusions. For the same reason I hope that this publication will be of use to workers in other countries also.

A Standing Committee consisting of the Agricultural Commissioner with the Government of India, the Director, Indian Agricultural Research Institute and the Statistical Adviser, Indian Council of Agricultural Research, has been set up to provide general guidance to the work under this scheme. I congratulate the members of this Committee and in particular the Statistical Adviser and his associates at the Institute of Agricultural Research Statistics for bringing out this compendium. The preparation of this compendium has been made possible only by the whole hearted co-operation of the States and other organisations in making available the results of their experimental researches for this purpose. My thanks are due to the officers of the State Departments of Agriculture and other institutions for participating in this work. I hope that the present series will be followed by periodical publication of similar compendia for later years, in order that the availability, in a consolidated form, of results of scientific experiments in agriculture in India may be maintained up-to date.

NEW DELHI,
August 20, 1962.

A.D. PANDIT
Vice-President,
Indian Council of Agricultural Research.

PREFACE

A large number of agricultural field experiments on different problems is being conducted in the country by Central and State Governments, Research Institutes, Commodity Committees and other organisations engaged in agricultural research. In addition, a number of schemes involving field experimentation is sponsored by the Indian Council of Agricultural Research in different States. The absence of a unified record of the results of these various experiments has considerably handicapped planning of further research and development and has often led to duplication of efforts.

Vaidyanathan brought out in 1933 a useful catalogue of manurial experiments conducted in India till then. Considering that Vaidyanathan's work was confined to manurial experiments and the fact that an enormous increase has taken place in the number and scope of agronomic experiments in recent years in India, the Indian Council of Agricultural Research launched the scheme of National Index of Field Experiments in 1954. The object of the scheme was two-fold :

(i) the preparation of compendium of all the field experiments for the period 1935-53 and

(ii) the preparation of index cards for individual experiments from 1954 onwards.

Under the scheme, results of all agricultural field experiments other than purely varietal trials were to be consolidated. Subsequently at the time of the extension of the scheme in 1959 it was decided that the compendium would be prepared in the first instance for the period 1948-53 and a similar compendium would be prepared for the period 1954-59. The present series for the period 1948-53 has been prepared in pursuance of this decision.

The compendium is divided into 15 volumes one each for (1) Andhra Pradesh (2) Assam, Manipur and Tripura (3) Bihar (4) Gujarat (5) Kerala (6) Madhya Pradesh (7) Madras (8) Maharashtra (9) Mysore (10) Orissa (11) Punjab, Jammu & Kashmir and Himachal Pradesh (12) Rajasthan (13) Uttar Pradesh (14) West Bengal and (15) all Central Institutes. In each volume back-ground information of the respective State regarding its physical features, soils, rainfall and climate, agricultural production and area under different crops is given. A map showing different regions of the State, soils and agricultural research farms is also included. The experiments reported in each volume have been arranged cropwise for each State. All the experiments belonging to a particular crop at various research stations are grouped together. For a particular crop, experiments are arranged according to the following classification :

Manurial (M), Cultural (C), Irrigational (I), Diseases, Pests and Chemicals other than fertilisers (D), Rotational (R), Mixed Cropping (X) and combinations of these wherever they occur (e.g., CM as Cultural-cum-Manurial). Experiments in which crop varieties also form a factor are denoted by adding V to their symbol and are given together (e.g., MV as Manurial-cum-Varietal). The results of an experiment are given along with other basic information such as rotation of crops followed, cultural practices adopted, etc.

For making maximum use of the experimental data all the important tables giving the average yields of various treatments along with the appropriate standard errors have been presented. No attempt has, however, been made to summarise the data of groups of experiments on any particular item and to draw any general conclusions. This will be done for the period 1948-59 while publishing the compendium for the period 1954-59.

This publication is the result of the co-operative endeavour of a large number of persons both at the Centre and in the States. I should particularly mention in this connection, guidance and help rendered in the formulation of the scheme by Dr. D.J. Finney F.R.S. of Aberdeen University, Scotland, during his stay at the Institute of Agricultural Research Statistics as an F.A.O. Statistical Expert in 1952-53.

At the Institute of Agricultural Research Statistics, the work under the scheme was carried out under the supervision and guidance of Shri T.P. Abraham, Assistant Statistical Adviser. Shri G.A. Kulkarni, Statistician, looked after the detailed working of the scheme. These officers have been largely responsible for the preparation of the manuscript of the compendium and it is a pleasure to thank them for the hard work they have put in for getting this compendium ready. Messrs O.P. Kathuria, B.V. Srikantiah, M.L. Sahni, B.P. Dyundi, S.D. Bal and P.K. Jain of the statistical staff of the Institute deserve special mention for their careful scrutiny of the data and preparation of the material for the compendium. Thanks are also due to Dr. Uttam Chand, Professor of Statistics, now with the Central Statistical Organisation, Shri K.S. Avadhany, Assistant Statistician, also now with the Central Statistical Organisation, and Shri K.C. Raut, Statistician in this office who were associated with the scheme in its initial stages.

The burden of collecting data from original records by visiting different research stations and the analysis of a large number of experiments, only the primary data for which had been recorded in the files, fell on the regional staff appointed by the Indian Council of Agricultural Research in different States. They deserve to be congratulated for the patient work they have put in. The State Departments of Agriculture, Central Institutes and Commodity Committees made data for the experiments conducted within their jurisdiction readily available. The Indian Council of Agricultural Research acknowledges this willing co-operation without which the consolidation of the results would not have been possible. Various State officers who helped the project by making the data accessible to the statistical staff of the project and worked as the regional supervisors for the scheme also deserve thanks by the Council for their active help. The list of names of the regional supervisors is given on the following page.

NEW DELHI,
August 16, 1962.

V.G. PANSE
Statistical Adviser
Institute of Agricultural Research Statistics
(I.C.A.R.)

**REGIONAL SUPERVISORS FOR THE NATIONAL INDEX
OF FIELD EXPERIMENTS**

Region and headquarters	Regional Supervisors :
1. ANDHRA PRADESH. (HYDERABAD)	SHRI D.V.G. KRISHNAMOORTHY, Deputy Director of Food Production, Andhra Pradesh. SHRI JAGANNATH RAO, Joint Director of Agriculture (Research), Andhra Pradesh. DR. KHADRUDDIN KHAN, Joint Director of Agriculture (Research), Andhra Pradesh. DR. WAHUDDIN, Headquarters Deputy Director of Agriculture (Research), Andhra Pradesh.
2. ASSAM, MANIPUR AND TRIPURA (SHILLONG)	SHRI L.K. HANDIQUE, Director of Agriculture, Assam. SHRI S. MAJID, Director of Agriculture, Assam. DR. S.R. BAROHA, Director of Agriculture, Assam.
3. BIHAR (SABOUR)	DR. R. RICHARIA, Principal, Agriculture College, Sabour. SHRI R.S. ROY, Principal, Agriculture College, Sabour.
4. KERALA (TRIVANDRUM)	SHRI N. SHANKARA MENON, Director of Agriculture, Kerala. SHRI P.D. NAIR, Director of Agriculture, Kerala.
5. MADHYA PRADESH (GWALIOR)	DR. T.R. MEHTA, Principal, Agriculture College, Gwalior.
6. MADRAS (COIMBATORE)	SHRI C.R. SHESHADRI, Vice-Principal & Secretary, Research Council, Agriculture College, Coimbatore. SHRI P.A. VENKATESWARAN, Vice-Principal & Secretary, Research Council, Agriculture College, Coimbatore. LATE SHRI M. BHAVANI SANKARA RAO, Vice-Principal & Secretary, Research Council, Agriculture College, Coimbatore. SHRI T. NATARAJAN, Agronomist & Secretary, Research Council, Agriculture College, Coimbatore. SHRI A.H. SARMA, Extension Specialist & Secretary, Research Council, Agriculture College, Coimbatore.
7. MAHARASHTRA & GUJARAT (FORMER BOMBAY STATE) (POONA)	SHRI D.S. RANGA RAO, Statistician, Department of Agriculture, Poona.

*Owing to transfers and other changes more than one Regional Supervisor have been shown against several states as these officers have acted as Regional Supervisors during different periods from 1955 to 1962.

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|---|--|
| 8. MYSORE
(BANGALORE) | SHRI A. ANANT PADMANABHA RAU,
State Statistician, Mysore State. |
| 9. ORISSA
(BHUBANESHWAR) | DR. U.N. MOHANTY,
Dy. Director of Agriculture (H.Q.), Orissa. |
| 10. PUNJAB, JAMMU &
KASHMIR AND HIMACHAL
PRADESH (CHANDIGARH) | SHRI P.S. SAHOTA,
Statistician, Department of Agriculture, Punjab. |
| 11. RAJASTHAN
(JAIPUR) | SHRI H.C. KOTHARI,
Statistician, Department of Agriculture, Rajasthan. |
| 12. UTTAR PRADESH
(LUCKNOW) | DR. K. KISHEN,
Chief Statistician to Govt. of U.P.
Department of Agriculture, U.P. |
| 13. WEST BENGAL
(CALCUTTA) | SHRI S.N. MUKHERJEE,
Statistical Officer,
Directorate of Agriculture,
West Bengal.
DR. S. BASU,
Statistical Officer,
Directorate of Agriculture,
West Bengal. |
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**ABBREVIATIONS COMMON TO EXPERIMENTS ON ANNUAL AND
PERENNIAL CROPS AND EXPERIMENTS ON CULTIVATORS'
FIELDS**

Crop :- In the top left corner is given the name of the crop on which the experiment is conducted. Within brackets along side the crop is mentioned the season wherever the information is available.

Ref :- Against the sub-title 'reference' is mentioned the name of the State, the year in which the experiment is conducted and the serial number of the experiment for that year given in brackets.

Abbreviations adopted for States are as follows :-

A.P.	Andhra Pradesh	Mn.	Manipur
As.	Assam	Mh.	Maharashtra
Bh.	Bihar	Ms.	Mysore
Di.	Delhi	M.P.	Madhya Pradesh
Gj.	Gujarat	Or.	Orissa
H.P.	Himachal Pradesh	Pb.	Punjab
J.K.	Jammu & Kashmir	Rj.	Rajasthan
K.	Kerala	Tr.	Tripura
M.	Madras	U.P.	Uttar Pradesh
		W.B.	West Bengal

Repetition of the experiment in other years is indicated in the same line against 'reference' by stating the year and serial number for each repetition side by side *e.g.* U.P. 53(19)/52(42)/51(20) etc.

Site :- Name of the Research Station is mentioned along with the place where it is located, *e.g.* Agri. Res. Stn. for Agricultural Research Station.

For Central Institutes, the corresponding standard abbreviations have been adopted *e.g.* I.A.R.I. for Indian Agricultural Research Institute.

Type :- Abbreviations used against this item are one or more than one of the following :-

C—Cultural ; D—Control of Diseases and Pests ; I—Irrigational ; M—Manurial ; R—Rotational ; V—Varietal and X—Mixed cropping. *e.g.* CM. is to be read as Cultural-cum-Manurial.

Results :- Information under this heading should be read against the following items :-

(i) General mean. (ii) S.E. per plot. (iii) Result of test of significance. (iv) Summary table (s) with S.E. of comparison (s).

Abbreviations used in the text of the experiments :-

ac.—acre.	C.L.—Cart load.
Ammo. Phos.—Ammonium Phosphate.	C.M.—Cattle Manure.
A/N—Ammonium Nitrate.	C/N—Chilean Nitrate.
A/S—Ammonium Sulphate.	C/S—Copper Sulphate.
B.D.—Basal Dressing.	F.M.—Fish Meal or Fish Manure.
B.M.—Bone Meal.	F.W.C.—Farm Waste Compost.

F.Y.M.—Farm Yard Manure.	N.—Nitrogen.
G.M.—Green Manure.	Nitro phos—Nitro phosphate.
G.N.C.—Groundnut cake.	P.—Phosphate.
K.—Potash.	Pot. Sul.—Potassium Sulphate.
lb.—Pounds.	Super—Super Phosphate.
M.C.—Municipal Compost.	T.C.—Town compost.
Mur. Pot.—Muriate of Potash.	Zn. Sul.—Zinc Sulphate.

BASAL CONDITIONS

Information under the above heading to be read against the following items :

A. For annual crops :

(i) (a) Crop rotation if any. (b) Previous crop. (c) Manuring of previous crops. (State amount and kind). (ii) (a) Soil type. (b) Soil analysis. (iii) Date of sowing/planting. (iv) Cultural practices. (a) Preparatory cultivation. (b) Method of sowing/planting. (c) Seed-rate. (d) Spacing. (e) No. of seedlings per hole. (v) Basal manuring with time and method of application. (vi) Variety. (vii) Irrigated or Unirrigated. (viii) Post-sowing/planting cultural operations. (ix) Rainfall during crop season (State name of the season along with the month). (x) Date of harvest.

B. For perennial crops :

(i) History of site including manuring and other operations. (ii) (a) Soil type. (b) Soil analysis. (iii) Method of propagation of plants. (iv) Variety. (v) Date and method of sowing/planting. (vi) Age of seedling at the time of planting. (vii) Basal dressing with time and method of application. (viii) Cultural operations during the year. (ix) Inter cropping if any. (x) Irrigated or Unirrigated. (xi) Rainfall during crop season. (xii) Date of harvest.

C. For experiments on cultivators' fields :

(i) (a) Crop rotation, if any. (b) Previous crop. (c) Manuring of previous crop. (ii) Soil type in general. (iii) Basal manuring with time and method of application. (iv) Variety. (v) Cultural practices. (a) Preparatory cultivation. (b) Method of sowing. (c) Seed-rate. (d) Spacing. (e) No. of seedlings per hole. (vi) Period of sowing/planting per hold. (vii) Irrigated or Unirrigated. (viii) Post-sowing/planting cultural operations. (ix) Rainfall during crop season. (x) Period of harvesting.

DESIGN

Information under this heading to be read against the following items :

A. For annual crops :

(i) Abbreviations for designs : C.R.D.—Completely Randomised Design. R.B.D.—Randomised Block Design ; L. Sq.—Latin Square ; Confd.—Confounded ; Fact.—Factorial. (other designs and modifications of the above to be indicated in full). (ii) (a) No. of plots per block. (b) Block dimensions (iii) No. of replications. (iv) Plot size. (a) Gross. (b) Net. (v) Border or guard rows kept. (vi) Whether treatments are randomised (separately in each block).

B. For perennial crops :

(i) Abbreviations for designs : C.R.D.—Completely Randomised Design ; R.B.D.—Randomised Block Design ; L. Sq.—Latin Square ; Confd.—Confounded. (other designs and modifications of the above indicated in full). (ii) (a) No. of plots per block. (b) Block dimensions. (iii) No. of replications. (iv) No. of trees/plot. (v) Border or guard rows kept. (vi) Are treatments randomised.

C. For experiments on cultivators' fields :

(i) Method of selection of experimental sites. (ii) No. and distribution of experiments. (iii) Plot size. (a) Gross. (b) Net. (iv) Whether treatments are randomised.

GENERAL

Information under this heading to be read against the following items :—

A. For annual crops :

(i) Crop conditions during growth with date of lodging, if any. (ii) Incidence of pests and diseases with control measures taken. (iii) Quantitative observations taken (iv) In case of repetition in successive years—(a) from what year to what year, (b) whether treatments were assigned to the same plots in the same manner every year, (c) reference to combined analysis, if any. (v) In case of repetition in other places, (a) names of the places along with reference. (b) reference to combined analysis, if any. (vi) Abnormal occurrences like heavy rains, frost, storm etc., if any. (vii) Any other important information.

B. For perennial crops :

(i) Crop condition during the year. (ii) Incidence of pests and diseases with control measures taken. (iii) Quantitative observations taken. (iv) In case of repetition in successive years—(a) from what year to what year, (b) reference to combined analysis, if any. (v) Abnormal occurrences like heavy rains, frost, storm etc., if any. (vi) Any other important information.

C. For experiments on cultivators' fields :

(i) Crop condition during growth. (ii) Incidence of pests and diseases with control measures taken. (iii) Quantitative observations taken. (iv) In case of repetition in successive years (a) from what year to what year, (b) whether treatments were assigned to the same plots in the same manner every year, (c) reference to combined analysis, if any. (v) In case of repetition in other places names of places along with reference. (vi) Abnormal occurrences, like heavy rains, frost, storm etc., if any. (vii) Any other important information.

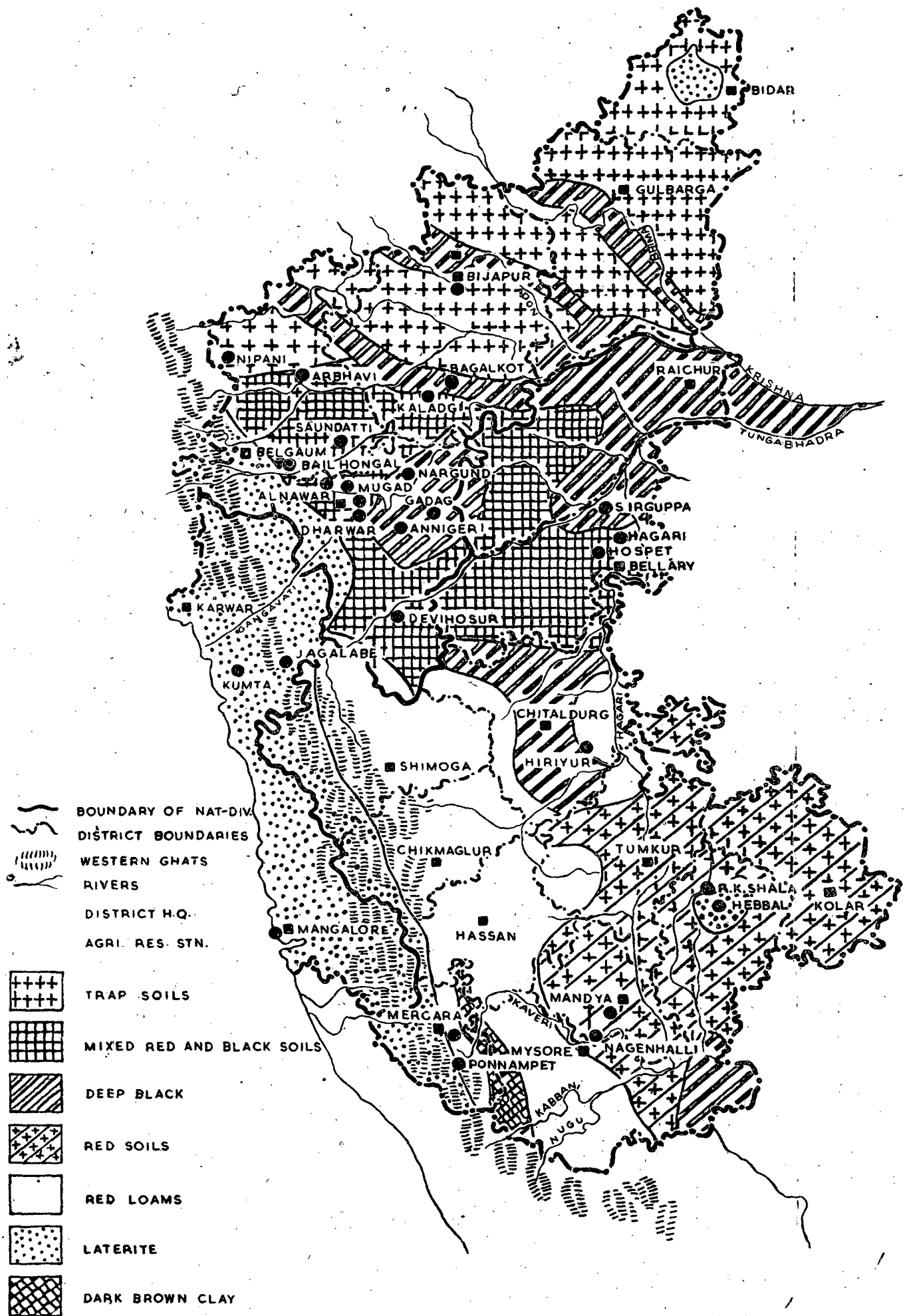
GLOSSARY OF VERNACULAR NAMES OF CROPS

Sl. No.	Name of Crop	Botanical name	Assamese	Bengali	Oriya	Telugu	Tamil	Malayalam	Kannada	Marathi	Gujarati	Hindi	Punjabi
1.	Paddy	<i>Oryza sativa L.</i>	Dhan	Dhan	Dhano	Vadlu, Biyyamu	Nel	Nellu	Bhatta	Bhat	Dangar	Dhan ; Chawal	Chaul ; Dhan
2.	Wheat	<i>Triticum Sativum</i> Lank <i>Triticum aestivum L.</i>	Gaum ; Ghehu	Gam	Gaham	Godumalu	Kothumai	Gothambu	Godhi	Gahu	Ghahu	Gehon	Kanak
3.	Jowar	<i>Andropogon sorghum</i> Brot ; <i>Sorghum vulgare</i> Pers.	—	Jowar	Juara	Jonna	Cholam	Cholam	Jola	Jowari ; Jondhla	Jowari ; Juar	Jowar ; Jaur	Jowar
4.	Ragi	<i>Eleusine coracana</i> Gaertn.	—	Marwa	Mandia	Ragi, chodi	Keppai ; Ragi	Muthari ; Ragi	Ragi	Nagli ; Nachni	Nagli ; Bavto	Ragi ; Mandika ; Marwah	Mandhuka ; Mandhal
5.	Maize	<i>Zea mays L.</i>	Gom dhan	Bhutta	Macca	Mokka jonna	Makka cholam	Cholam	Musukina jola	Makka	Makkai	Makka	Makki ; Makayee
6.	Cotton	<i>Gossypium spp.</i>	Kapah	Karpas ; Tula	Kapa	Pratti	Paruthi	Paruthi	Hatti	Kapus	Kapas	Kapas	Kapah
7.	Sugarcane	<i>Saccharum officinarum L.</i>	Kuhiar	Akh	—	Cheruku	Karumbu	Karimbu	Kabbu	Oos	Sherdi	Ganna ; Kamad ; Naishakar	Kamad ; Ganna ; Eakh
8.	Tobacco	<i>Nicotiana tabacum L.</i>	Dhopat	Tamak	Uanpatra	Pogaku	Pugayilai	Pukayila	Hoge soppa	Tambaku	Tamaku	Tambaku	Tambaku
9.	Chillies	<i>Capsicum frutescens L.</i>	Jalakiya	Lanka ; Marich	Lanka	Mirapak-aya	Milakai	Mulaku	Menasina kayi	Mirchi	Marcha	Lalmirch	Lalmirch
10.	Groundnut	<i>Arachis hypogaea L.</i>	China badam	Cheena badam	China badam	Nelash-anga	Nilak-adalai	Nilakk-adla	Kadale kayi	Bhui-mug	Magafali	Mung-phali	Mungfali
11.	Safflower	<i>Carthamus tinctorius L.</i>	Kusum	Kusum	Kusum	Kusuma	Kusumba	Chandrukam	Kusube	Kardi	Kosambi	Kussum	Kasumba
12.	Gram	<i>Cicer arietinum L.</i>	Butmah	Chola	Boot	Sanagalu	Kadalai ; Sundal	Kadala	Kadale	Harbara	Chana	Chana	Chhole Chana
13.	Udid	<i>Phaseolus mungo var. radiatus</i> Linn	Matimah	Mashkalai	Biri	Minumulu	Uzhundu	Uzhunnu	Uddu	Udid	Adad ; Udad	Urd	Mash ; Urd
14.	Sweet potato	<i>Ipomoea batatas</i> Lam.	Mitha Aloo	Mishti Alu	Kanda-mula	Chilaga-dadumpa	Seeni kilangu	Cheeni kizangu	Genasu	Ratalu	Shakaria	Shakar-kandi	Shakarkandi
15.	Lucerne	<i>Medicago sativa L.</i>	Lucerne ghah	Lusern	Lusarna	Garam Masal	Kuthirai-masal	Lucerne	Kudure masale	Lasun ghas ; Vilaiti ghasvat	Gadab Rajko	—	Lucan
16.	Korra	<i>Setaria italica</i> Beauv.	—	Kaon	Kanghu, Kora	Korra	Tenai	Thena	Navane	Kang ; Rala	Kang	Kakum	Kangni
17.	Coffee	<i>Coffea arabica L.</i>	Coffee	Kafi	Kofi	Coffee	Kappi	Cofee	Kafi	Kafi	Kafi	Coffee	Kofi

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MAP OF MYSORE STATE SHOWING AGRO-CLIMATIC REGIONS, SOILS, AGRICULTURAL RESEARCH STATIONS ETC.



MYSORE STATE

1. GENERAL

The area of new Mysore State is 74,293 sq. miles. For purposes of administration, the state is divided into 19 districts. The total area under important food and non-food crops in state during 1956-57 is estimated to be 25,699 thousand acres. The food crops occupy an area of 18,237 thousand acres (or 71%) and the non-food crops 7,462 thousand acres.

2. PHYSICAL FEATURES

The state consists of undulating table land much broken up by chains of rocky hills and scored by deep ravines. The country is naturally divided into three regions of distinct character.

These are (i) Coastal Mysore (ii) North Mysore and (iii) South Mysore. The Coastal Mysore division consists of North Kanara and South Kanara districts the North Mysore of Belgaum, Bidar, Bijapur, Dharwar, Gulbarga and Raichur & South Mysore of Coorg, Bangalore, Kolar, Tumkur, Mysore, Mandya, Chitaldrug, Hassan, Chikamagalur, Shimoga & Bellary districts. The Coastal Mysore division along with Shimoga, Hassan & Western part of Chickmagalur is called the *Malnad*, where the country is hilly and the other part is called the *Maidan* land where numerous valleys and towns are found.

3. SOILS

The soils of Mysore State can be broadly classified into seven main groups as follows. 1. Trap soils 2. Mixed red and black soils. 3. Deep Black soils. 4. Red soils 5. Red loams. 6. Laterite soils. 7. Dark brown clayey soils.

1. Trap soils

These are derived from Deccan Trap and occupy large areas in the districts of Belgaum, Bijapur, Gulbarga and Bidar. On the uplands, the soils are light coloured, thin and poor. On the low-lands and valleys, clayey soils are found which can grow good crops of jowar, pulses, cotton etc.

2. Mixed red and black soils

These soils are found alternating with each other in the districts of Belgaum, Dharwar, Raichur & Bellary. They are derived from the gneisses and schists or mixed geological parent material. Like the trap soil on dry uplands, they are thin, light coloured and stoney and on the low-lands they tend to be darker in colour, clayey and yield good crops.

3. Deep black soils

These are characterised by their great depth, highly clayey nature, presence of lime deposits in lower layers and show deep cracking in the summer months. They may be derived from a variety of rocks such as trap, gneisses, schists etc. They are usually of transported origin and are found to occur in river valley basins or in depressions in the districts of Bijapur, Dharwar, Bellary, Raichur and Chitaldrug. The black soils are fertile and can grow good crops of cotton, jowar, wheat etc.

4. Red soils

The red soils are derived from acidic granite rocks and occur in Kolar, Bangalore, Tumkur, Mandya and Mysore districts. These soils are light textured and generally poor in plant nutrients but respond well to irrigation and manuring. Ragi is mainly grown as rainfed crop, paddy sugarcane and other crops being grown under irrigation.

5. Red loams

These occur in a long strip in the districts of Shimoga, Chikmagalur, Hassan, Mysore and the valley portion of Coorg. They lie between the Western Ghats and the red soils of the Maidan districts. They are loamy in texture and comparatively richer than red soils and support coffee, and other plantation crops such as areca, cardamom etc.

6. Laterite soils

These soils occupy the heavy rainfall districts of North and South Kanara, Western portion of Coorg, Hassan, Chikmagalur and Shimoga districts. They are acidic in nature and are deficient in lime and other nutrients. Paddy is the main crop but plantation crops like coffee, tea, coconut are also grown.

7. Dark brown clayey soil

These occur in a small area in the eastern parts of Coorg and is contiguous with similar dark coloured soil in south western parts of Mysore district which is a rich forest belt.

4. CLIMATE AND RAINFALL

The climate of the state is essentially monsoon tropical. The year may be broadly divided into three seasons as follows :—(1) The cold weather season from about middle of November to the end of February. (2) The hot weather season from beginning of March to about the end of May (3) The rainy season from June to November.

The state receives majority of rainfall from the south-west monsoon. The south west monsoon usually sets in about the end of May or early in June. It continues with same intervals till the end of September whence north-west monsoon usually ceases by November. Then the cold season follows and lasts till end of February.

The annual average rainfall in Mysore state ranges from about 300" on the Western ghats to about 15" in the eastern and north-eastern parts of the state. The average annual rainfall in the state is about 47". The zone of heavy rainfall (60" & over) extends from Coorg district to North Kanara district over a belt of 30—50 miles along the Western Ghats. This belt of land constitutes the Malnad. Practically the whole of North Kanara, South Kanara and Coorg districts and western parts of Shimoga & Chikmagalur districts are in the heavy rainfall zone.

5. IRRIGATION.

The total irrigated area in the state is about 1.7 million acres. The table below shows the % area irrigated by various sources in the state (figures 1956—1957).

TABLE—1

Source wise distribution of irrigated area

Source	Area under irrigation (000 acres)	% total irrigated area
1) Govt. Canals.	396.4	21.7
2) Private canals.	11.6	0.6
3) Tanks.	809.4	44.2
4) Wells	319.7	17.5
5) Others	292.3	16.0
Total	1829.4	100.0

More than 50% of the total irrigated area by Government canals is spread over in Mysore and Mandya districts, and 34% of the total area irrigated by tanks are found in Shimoga and Darwar districts. In Bijapur district about 53 thousand acres are being irrigated by wells.

TABLE 2
Seasonwise Normal Rainfall in inches for regions of Mysore State

Regions.	Mon soon (June to Sept.)	Post Monsoon. (Oct. to Dec.)	Winter (Jan. to Feb.)	Pre-monsoon (March to May)	Total for the year.
(1) Coastal Mysore (N. Kanara & S. Kanara.)	113.05	10.68	0.16	5.73	129.62
(2) North Mysore (Belgaum Bidar, Bijapur, Dharwar, Gulbarga & Raichur)	19.59	4.76	0.31	2.94	27.60
(3) South Mysore (Rest except Coorg).	22.27	80.40	0.29	5.45	36.05
(4) Coorg.	106.50	12.00	0.20	7.56	126.26
State (Simple average)	65.35	8.87	0.24	5.42	79.88

1" = 2.54 cms.

6. AGRICULTURAL PRODUCTION & CROPPING PATTERN

The table below shows the area under production and average yield per acre. of different crops in the state. (figures for the year 1957-58).

TABLE 3

Crop	Area (000 acres)	Production (000 tons)	Average yield (lb./ac)
1. Jowar	6,359	1,031	363
2. Rice.	2,257	1,118	1,110
2. Ragi.	2,181	654	672
4. Bajra.	1,174	74	141
5. Pulses.	2,985	294	221
6. Sugarcane. (gur)	133	321	5,406
7. Groundnut.	2,154	635	660
8. Castor.	106	8	169
9. Cotton.	2684	512 (000 bales of 392 lb. each)	75

Jowar is the most extensively grown cereal crop in the state. The area under jowar in 1957-58 was of the order of 64 lakh acres. Nearly 45.5% of the total area under jowar is in Bijapur and Gulburga districts. Rice is the next important cereal crop. In 1956-57 the total area under rice was about 11.3% of the total area under the food crops. Nearly 30% of the area under rice is in Shimoga & South Kanara districts. The cereal crop Ragi is the third important, occupying an area of nearly 22 lakh acres. Nearly 74% of the total area under ragi is distributed in Bangalore, Kolar, Tumkur & Hassan districts. More than 80% of the area under Bajra is in Belgaum, Raichur and Gulburga districts. The important pulses grown are Bengalgram, Tur, Horsegram, Greengram, Black-gram and India beans (Avaré). These occupy an area of about 29.85 lakh acres. Tur is extensively grown in almost all districts of the state except in South Kanara, North Kanara and Coorg. Tur is usually subordinate to or mixed with other crops, Bengalgram is next important pulse occupying an area of 4.17 lakh acres. This is found in northern parts of state. Sugarcane is important commercial crop in Mysore state. The total area under this crop in 1957-58 was little more than 1 lakh acres. Nearly 25% of the area under this crop was in Belgaum district. Next comes Mandya district where 12% of the area was under this crop. Groundnut is another important commercial crop. The major portion of the area is distributed in Dharwar, Belgaum and Bijapur districts which accounts for 41% of the total area. Nearly 32% of the area is distributed in Bidar Raichur, Gulburga districts. Among the oil crops castor occupies an important place. The total area under this crop in 1957-58 was nearly 1 lakh acres. Nearly 60% of the area is in Tumkur, Mysore, Chitaldrug and Raichur districts. The crop is grown in all districts except South Kanara, North Kanara and Coorg districts. During 1957-58 the area under cotton was nearly 27 lakh acres. Nearly 74% of the total area under cotton was in Dharwar, Bijapur and Raichur districts.

7. IMPORTANT CROP ROTATIONS & CROP MIXTURES

In the coastal and Malnad regions *val* (*Dolichos lab lab*), horsegram, blackgram and a spreading variety of groundnut are usually grown after rice. In swampy areas long duration rice grows best. In *maidan* region leguminous crop viz. green or black gram or cowpeas are substituted in the place of millet crops in rotation. In hill region rice can be followed by *val* or horsegram or by vegetables like potato and sweet potato. In the lower slopes green and black gram or sesamum or groundnut or even sugarcane can be taken after rice.

In North Mysore region wheat has 3-4 rotations usually as given below :-

- (i) Jowar or Bajra or Groundnut mixed with Arhar (red gram)—Fallow—Wheat.
- (ii) Groundnut (early) or early Bajri—Wheat (under irrigation and manuring).
- (iii) Moong (early) or green manuring—Wheat.
- (iv) Jowar—Gram, or Fallow—Wheat.

In South Mysore region:

- (i) Cotton alone or mixed with Groundnut--Fallow--Wheat.
- (ii) Jowar & Arhar mixed-Fallow--Wheat.
- (iii) Ragi--Gram, or Fallow--Wheat.

In Malnad region the Sugarcane is taken in rotation as

- (i) Rice or irrigated vegetables--Sugarcane.
- (ii) Cotton or Jowar (as dry crops)--Sugarcane.
- (iii) Rice--Sugarcane--Rice or Garlic (rice or garlic may be taken).
- (iv) Early legumes or green manure--Wheat, Arhar (Tur) and Groundnut (sown in between the lines), Sugarcane sown in between lines of arhar after groundnut is harvested. S. ratoon.

The important crop mixtures adopted in this state are Ragi and Jowar; Jowar, Castor and Tur; Tur and sesamum; Cotton and minor millets; and Bajra & Tur.

8. AGRICULTURAL RESEARCH AND AGRICULTURAL RESEARCH STATIONS.

Research on plant breeding and agronomy in paddy and sugarcane is concentrated in Hiriyur, Mandya, Nagenhalli, Alnawar, Hospet and Mercara. Similarly work on cotton is found mostly in the farms situated in cotton belt. i.e. Raichur, Dharwar, Babbur, & Mandya. Research on Ragi which is an important staple food in the southern districts of the state is concentrated at Mandya and Hebbal. Agricultural Research station at Bijapur, Kaladgi, Bailhongal, Soundatti and others have specialised work on Jowar.

Coffee at Balehonnur & Chetahally Areca at Tirthahally, Tobacco at Nippani are other important crops on which research is being carried out since a number of years.

List of experimental stations with other details covered for the period 1948-53 is appended.

9. EXPERIMENTS.

There were 565 experiments reported for the period 1948-53. The distribution of these experiments according to crops and types of treatments tried is given below in the table.

TABLE 4

	Cropwise and typewise distributions of Experiments											Total
	M	C	CM	MV	CV	CMV	D	MI	DI	R	X	
Paddy-	110	8	8	6	1	1	20	...	...	...	...	154
Wheat,	20	5	...	...	6	...	4	...	...	...	...	35
Jowar.	47	22	...	...	...	...	5	1	...	...	...	75
Ragi.	21	...	...	...	...	...	16	...	...	...	...	37
Maize.	9	3	...	...	...	...	...	...	...	...	...	12
Korra	4	...	...	...	...	...	...	...	...	...	...	4
Cotton.	36	11	4	...	10	2	9	...	...	...	...	72
Sugar case	31	1	...	...	...	...	...	...	1	...	...	33
Tobacco.	...	21	3	...	...	...	...	...	...	...	...	24
Oil seed.	23	13	...	...	...	...	1	...	...	...	...	37
Pulses.	2	...	...	...	...	...	...	...	...	...	...	2
Chilies.	5	4	...	...	...	...	...	...	...	...	...	9
Sweet potato.	10	16	...	...	...	...	...	...	...	...	...	26
Lucerenc.	1	...	...	...	...	...	...	...	...	...	...	1
Coffee.	9	...	1	...	...	...	...	...	...	...	...	10
Rotational.	...	...	...	...	...	...	...	...	...	11	...	11
Mixed.	...	...	...	...	...	...	...	...	...	...	8	8
T.C.M. Trials(Paddy)	12	...	...	3	...	...	...	...	...	...	...	15
Total.	340	104	16	9	17	3	55	1	1	11	8	565

From the table above it is seen that nearly 27% of the experiments were on paddy and 13% of the experiments were on Jowar. Among the cash crop the concentration is on cotton crop accounting for nearly 12%. Out of the 154 experiments on paddy manurial experiments account for nearly 70%. The manurial experiments on all crops are nearly 50% of the total.

There were 4 experiments at Hagari with Cotton - Jowar rotation and with manurial treatments. The other rotational experiments (11 in all) at Siruguppa, Dharwar, Saundatti, Nippani & Arbhavi accounted for 69 experiments.

Paddy :- The treatments tried varied widely in nature from experiment to experiment and from station to station. In cases where artificial fertilizers were tried the levels of nitrogen and phosphoric acid varied from 0 to 100 lb./ac. The sources for nitrogen were usually ammonium sulphate and sometimes amm sulphate mixed with groundnut cake and that for phosphoric acid, bonemeal, super Phosphate and in few cases fused phosphate. In most of the experiments treatments comprised of organic manures as well as inorganic manures to study simultaneously their effects alone or in combination. The organic manures were usually greenleaf, cattle manure, town compost and farm yard manure. The quantity of such manures varied from 2500 lb. to 400/ac. Agricultural Research station at Mangalore had maximum number of experiments on paddy.

Jowar:- Here again the experiments had the treatments involving both the organic and inorganic manures singly or in combination. The levels of nitrogen and phosphoric acid varied from 0 to 60 lb/ac. The source of nitrogen was either A/S or G.N.C. and for phosphoric acid the source was superphosphate. The bulky manures were either farm yard manure, or town compost the quantities varying from 2 cart-loads to 10 cartloads per acre. At Dharwar, Bijapur, Saundatti there were a few experiments to study the residual effect of application of phosphoric acid to the leguminous crop on the succeeding Jowar crop.

Wheat :- Same as Jowar.

Cotton :- The levels of nitrogen and phosphoric acid as in Jowar & Wheat varied from 30 lb/ac. to 60 lb/ac. Source of nitrogen was A/S alone, G.N.C. alone or their mixture. At Dharwar the residual effects of nitrogen & phosphoric acid, alone or in combination to previous jowar crop were studied on cotton. Cotton was applied usually rotated with Jowar.

Sugarcane :- For this crop 100 to 200 lb./ac. of nitrogen in the form of A/S or groundnut cake or their mixture was usually given. Phosphoric acid was given in low doses varying from 25 lb/ac. to 50 lb/ac. In few experiments where F.Y.M. was used its quantity was nearly 20 to 40 cart loads per acre. Experiments on this crop were conducted at Alnawar, Hebbal and Mandya experimental farms.

Tobacco:- Nippani is the only experimental station where experiments are conducted on this crop, most of the experiments were cultural ones. The treatments comprised of topping, spacing, dates of transplanted, nipping the leaves, etc. Two rotational experiments were also carried out to find out best rotation for Tobacco. Tobacco is usually rotated with Jowar, Groundnut, Gram and Chillies.

In nearly 70% of the experiments design adopted was that of Randomised Block. The number of plots per block varied from 3 to 9 and in a few cases even upto 16 or 27. The net plot size in most of the experiments varied from 1/30. of an acre to 1/50th of an acre for paddy, 1 cent to 2 cents for cotton, & wheat. There were as many as 108 experiments with split-plot design. These were mostly on Jowar, Wheat, Cotton & Tobacco. This design was adopted in all the cultural experiments with spacing, seed-rates, dates of sowing etc. There were few manurial experiments at Mangalore in split-plot design on paddy with bulky manures in main-plot, the number of main plots per replication varied from 2 to 6 and subplots per main plot varied from 4 to 9. The number of replications usually varied from 2 to 6.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS.

Sl. No	Name of the Experimental Station.	District in which Located	Tract it represents	Year of establishment	Major crops	Soil Type	Normal Rainfall (in inches)	Irrigation facilities	No. of Experiments	General description of the experimental area
1	2	3	4	5	6	7	8	9	10	11
(1)	Alnawar, Agri. Res. Station.	Dharwar. 1 mile from Alnawar Rly. Station.	Represents Mainland tract of Bombay—Karnatak.	1949.	Paddy & Sugarcane.	(1) <i>Type</i> :— Medium black with a slight mixture of laterite. (2) <i>Depth</i> . 12"—48" (3) <i>Colour</i> . Dark brown to light red. (4) <i>Structure</i> :— Coarse on top lands and finer as we come down to low lying lands. 5. <i>Soil analysis</i> . Refer soil analysis page 9.	June. 7.66 July. 16.92 Aug. 8.73 Sept. 4.33 Oct. 6.59 Nov. 1.50 Dec. 0.90 Jan. 0.44 Feb. — March. 0.15 April. 1.42 May. 3.15 <hr/> Total. 50.66	There is a well as well as small tank but the water will not be sufficient for irrigating land. The soils are well drained except some low lying area.	12-Sugarcane.	The fields are situated on a slope with a gradient of about 10' in 100' and terraces are constructed. The lands selected for sugarcane experiments are low lying and representative to a fair extent.
(2)	Annigeri, Agri. Res. Station.	Dharwar.	Heavy deep black soils in the northern part of Mysore.	1947	Jowar, Tur, Wheat Gram & Safflower.	(1) <i>Type</i> :— Black clay. (2) <i>Depth</i> . 3"—12". (3) <i>Colour</i> . Black. (4) <i>Structure</i> . Fine clay. (5) <i>Soil Analysis</i> .	Av. for 14 years. June. 1.79 July. 2.00 Aug. 2.95 Sep. 5.23 Oct. 7.97 Nov. 3.97 Dec. — Jan. — Feb. 0.02 March. 0.61 April. 2.07 May. 4.32 <hr/> Total. 30.93	No irrigation facilities.	2-Ground nut. 3-Mixed-cropping. <hr/> 5-Total.	Fairly levelled.
(i)	<i>Chemical Analysis</i>									
	Depth	pH	Total insoluble salts. (mill-mhos)	Organic Carbon (%)	Avl. P ₂ O ₅ (lb./ac.)	Avl. K ₂ O (lb./ac.)				
	1"—6"	7.85	0.27	0.267	5.9	447.7				
	6"—12"	7.87	0.277	0.205	6.2	422.25				
(ii)	<i>Mech. Analysis</i> :—		Not Available.							

5. Chemical Analysis of soil of the Agricultural Research Station Alnawar.

Profile	Horizon	Depth	Texture		Free lime	pH in water	Exchangeable		Soluble Salts.	Humus
			Clay	Silt			Ca	Hg		
1	2	3	4	5	6	7	8	9	10	11
I	1.	0-9"	54	18.50	1.3	7.54	25.5	—	0.17	—
	2.	9"-16"	57.50	16.50	—	8.01	—	—	0.21	—
	3.	16"-22"	55.0	17.5	—	7.63	—	—	0.21	—
	4.	22"-33"	47.50	20.0	—	8.00	—	—	0.21	—
	5.	33"-48"	53.75	20.50	—	8.23	—	—	0.17	—
II	1.	0-9"	50.6	17.50	1.15	7.92	25.0	8.0	0.15	0.31
	2.	9"-22"	45.25	22.50	1.45	8.23	23.0	7.5	0.17	0.21
	3.	22"-34"	45.0	20.0	0.90	8.26	18.0	6.5	0.21	0.26
	4.	34"-41"	36.25	26.25	0.85	8.20	15.0	7.5	0.17	0.23
III	1.	0-12"	46.25	11.75	0.12	7.71	23.5	6.5	0.16	0.38
	2.	12"-24"	46.5	17.5	0.57	7.89	20.5	7.0	0.13	0.39
	3.	24"-38"	47.20	20.0	0.67	8.02	22.5	8.5	0.25	0.32
	4.	38"-51"	46.25	26.25	1.37	8.02	22.5	9.0	0.25	0.29
IV	1.	0-6"	35.0	22.50	—	7.54	—	—	0.90	—
	2.	6"-13"	32.50	20.0	—	7.54	—	—	0.90	—
	3.	13"-21"	42.75	22.25	—	7.54	—	—	0.13	—
	4.	21"-35"	41.25	23.75	—	7.42	—	—	0.12	—
	5.	35"-48"	46.25	21.25	—	7.28	—	—	0.12	—

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
(3)	Arabhavi, Agri. Res. Station.	Belgaum 4½ miles from Ghata prabha Rly. Stn.	Arid part of Mysore State.	1948	Maize & Tur.	N.A.	N.A.	N.A.	1-Jowar. 3-Wheat. 6-Sugarcane. 1-Groundnut. 12-Maize. <hr/> 22-Total 1-Rotational (1944-50) experiment, (Sugarcane, Maize, Sann & Gram).	N.A.
(4)	Bagalkot, Kumta Cotton improvement Scheme	Bijapur	Dry Medium to deep black and slightly Karlish soils of the tract.	1951	Kharif Jowar or Rabi Jowar & cotton rotation.	(1) <i>Types</i> :- i) Soil derived from granite black & deep black) ii) Red soil derived from quartite & sandstone. (2) <i>Depth</i> :-3'-4' (where cotton is grown), Red soil-2' (3) <i>Colour</i> -Medium black to deep black. In some portions it is reddish (4) <i>Structure</i> -N.A. (5) <i>Soil Analysis</i> . Not available.	June 2.19 July 4.88 Aug. 3.00 Sep. 3.66 Oct. 6.03 Nov. 0.74 Dec. 0.07 Jan. — Feb. -0.05 March 0.08 April 1.10 May 2.76	No irrigation facilities & no drainage system.	1-Cotton	The soils where the experiments are being carried out vary from medium black to Karlish type, with sloping from west to east.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
(5)	Bailhongal. Agri. Res. Station.	Belgaum 27 miles from Belgaum Rly. Stn.	Transitional tract	1948	Jowar, Wheat, Groundnut & Urid etc.	(1) Type Medium black Light red Mixture (2) Depth 18" - 24" 6" - 9" Structure. Not available (3) Soil Analysis :- Not Available	June 4.30 July 6.00 Aug. 4.15 Sept. 2.81 Oct. 7.80 Nov. 1.91 Dec. ... Jan. ... Feb. 0.10 Mar. 0.12 April 1.74 May 4.34	No irrigation facilities.	4—Jowar 2—Wheat. 4—Groundnut ————— 10—Total	The farm is situated on an elevated area and sloping on eastern sides. There is a Nulla running on the northern and normally flows during May to Feb- ruary months.
							Total 33.27 Av. of 6 years data 1953-54 to 1958-1959.			
(6)	Bijapur, Agri. Res. Station.	Bijapur 6 miles from Bijapur Rly. Station.	Arid part of Mysore State.	1933	Rabi, Jowar, Wheat, Gram, Bajri, Mug & Oilseeds.	(1) Type :- Black soil. (2) Depth—0'—4' (3) Colour—Black, (4) Structure :- Deep black & clayey to poor lime soil.	June 3.09 July 2.59 Aug. 3.33 Sept. 5.33 Oct. 3.49 Nov. 0.87 Dec. 0.13 Jan. 0.10 Feb. 0.13 March 0.35 April 0.71 May 1.45	No irrigation facilities. No drainage system.	7—Jowar. 7—Wheat. 6—Groundnut 2—Mixed cropping ————— 22—Total	All the area of the farm is protected by contour bunds. Slopy from S.W. to N.E. with a fall of 3' to every 100.'
(5)	Soil Analysis.									
	(i) Chemical Analysis,									
	N	Avl. (M gm/100 gm)	Exchangeable	Avl	(N gm/100 gm)					
		P ₂ O ₆	(Nca gm/100 gm)	K ₂ O	PH					
	0.05	1.48	34.65	50.09	5.86					
	(ii) Mech. Analysis. (in %)									
	Moisture	Silt	Clay	Lime reserved.						
	6.70	19.00	46.25	8.21						
							Total 21.57			The uniform plots with less soil varia- tion and level lands have been used for experimental purposes.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS.

8	2	3	4	5	6	7	8	9	10	11
(7)	Devihosur. Chillies Breeding Station.	Dharwar 6 miles from Hageri Railway Station.	Transitional tract.	1947	Chillies	Light red to medium black.	N.A.	N.A.	9-Chillies	N.A.
(8)	Dharwar, Agri. Res. Station & Cotton Breeding Station.	Dharwar, 6 miles from Dharwar Rail- way Station,	Transitional tract.	1904	Jowar, Cotton, Wheat, Oil- seeds & pulses.	(1) Light red to medium black.	June. 3.32 July. 5.44 Aug. 3.97 Sept. 3.93 Oct. 4.89 Nov. 1.70 Dec. — Jan. — Feb. — March. 0.48 April. 1.74 May. 2.67 <hr/> Total 28.24	No irrigation facilities.	27-Jowar. 9-Wheat. 13-Cotton. 3-Groundnut. 1-Safflower. 1-Gram. 1-Udid. 3-Mixed cropping. 1-Rotational. <hr/> 59--Total	The area of this station is about 72 acres. The whole area of the farm is almost level.

2. Soil analysis.

(i) Chemical Analysis.

pH	N(%)		Avl. P ₂ O ₅		Avl. K ₂ O
6.60 to 7.85	0.0129 to 0.0714	very low	Low 7.2 to 20.0	Medium 20.8 to 24.0	Medium 175 to 244
		1.6 to 7.2			High 251 to 395

(ii) Mech. Analysis. Not available.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
(9)	Dharwar, College of Agriculture.	Dharwar 6 miles from Dharwar Railway Station.	Transition tract of North Karnatak and part of the area represents Malnad tract.	1947	Kharif Jowar, Cotton, Chillies, Wheat & Paddy.	As below	June 3.74 July 6.51 Aug. 4.43 Sept. 3.49 Oct. 7.80 Nov. 1.18 Dec. 0.11 Jan. — Feb. — Mar. — April 2.02 May 3.25	10 acres are irrigated from tanks & wells. The farm has net-work of open drains.	3—Wheat. 3—Cotton. 7—Groundnut. <hr/> 13—Total.	600 acres. On western side land is undulating with terraced fields along the Nala (Malnad tract). On Eastern side the farm is fairly level. In fact, the range of hills dividing Malnad & transition belt passes through the farm.
							Total. 32.53 Av. of the figures from 1949—50 to 1957—1958			

1. Broad soil types :

Type	Depth	Colour	Structure
(i) Red	Shallow	Red	—
(ii) Black	Deep	Black	—
(iii) Medium black	Deep	Greyish brown	—
(iv) Alluvial.	Deep	Brownish red.	—

(2) Soil Analysis :—

(i) *Chemical analysis*

	<i>Red</i>	<i>Black</i>	<i>Greyish brown.</i>
N%	0.10	0.17	0.12
Ca (M gm/100 gm)	14.52	41.45	27.57

(ii) *Mechanical Analysis.*

	<i>Red</i>	<i>Black</i>	<i>Greyish brown</i>
Moisture	2.59	6.02	5.20
Silt.	14.50	18.62	23.75
Clay.	37.75	61.00	56.75

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
(10)	Gadag Cotton Improvement Scheme	Dharwar.	Dry area of North Karnatak	1942	Cotton	(1) Type. Sandy loam. (2) Depth-4'-8'. (3) Colour-Black & brown. (4) Structure-Friable. (5) Soil Analysis-N.A.	N.A.	No irrigation facilities.	11-Cotton.	Fairly level.
11)	Hagari Agri. Res. Station.	Bellary. 2 miles from Hagari Railway Station.	Black Cotton soil	1906	Cotton & Millets.	(1) Type:-Black cotton soil. (2) Depth:- 3'-4'. (3) Colour:- Black. (4) Structure:- N.A. (5) Soil Analysis (i) pH-8.40 to 9. (ii) Mech. Analysis. Moisture — 8.25 Coarse sand — 11.65 Fine sand. — 12.25 Silt. — 15.50 Clay. — 44.05 Ca CO ₃ — 4.05	June. 0.84 July. 2.43 Aug. 3.16 Sept. 4.70 Oct. 5.89 Nov. 1.35 Dec. 0.09 Jan. 0.03 Feb. — March. 0.03 April. 1.12 May. 2.45 Total. 22.16 Av. of 10 years 1947 to 1957.	Two wells filled with pump sets.	13—Jowar 12—Cotton. 25—Total. 1—Rotational (1940 to 1960) 1—(Jowar-Cotton-Manurial) 1—(Cotton-Jowar ") 1—(Jowar-Cotton ") 1—(Cotton-Jowar ")	The tract is plain & lands are fairly level.
(12)	Hebbal Central Farm.	Hebbal Bangalore P.O. 3 miles from Yellianka Rly. Stn.	N.A.	1914	Paddy, Ragi, jowar, Sugar-cane. & Ground nut.	(1) Type:- Clay mixed with sand. Other information N.A.	No information	Tank irrigation	17—Paddy. 2—Jowar. 29—Ragi. 6—Sugarcane 5—Groundnut 59—Total.	N.A.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
(13)	Hiriyur, Govt. Exptl. Farm (Babbur)	Babbur, Hiriyur Taluka Dist. Chitaldrug 27 miles from Chital- drug. Rly. Station	Black Cotton soil mixed with gravely and silt.	1915	Sugarcane, Cotton Paddy, Green- Manures.	As below	June 2.23 July 1.73 Aug. 2.02 Sept. 4.11 Oct. 7.14 Nov. 1.09 Dec. — Jan. — Feb. — Mar. 0.17 April 1.28 May 4.75	Vanivilas sagar lake, perfect drainage system is adopted.	11—Paddy. 3—Ragi. 5—Cotton. 5—Sugarcane. <hr/> 24—Total.	
(1)	<i>Depth,</i>	<i>Colour & Structure,</i>								
	(i) 0—12"	Dark grey and close packed.								
	(ii) 12"—24"	Black silty clay open fairly loose black clay								
	(iii) 24"—36"	Lime stone.								
				(2) <i>Soil Analysis</i>	(i) <i>Chem. Analysis.</i>					
				pH kel extrt.	pH water extrt.	C%	Total P ₂ O ₅	K ₂ O		
				8.3	8.2	0.363	0.028	0.026		
				(ii) <i>Mech Analysis (%)</i>						
				<i>Coarse sand</i>	<i>Fine sand</i>	<i>Silt</i>	<i>Clay</i>			
				24.96	40.25	19.15	12.10			
							Total.	24.54		
(14)	Hospet Res. Farm.	Bellary 1½ miles from Bellary Rly. Stn.	N.A.	1949	Sugarcane & Paddy.	Type :— Clayey loam.	N.A.	From Raya Channel Tungabhadra dam.	3—Sugar- cane.	N.A.
(15)	Jagalbet (Siri) Agri. Res. Station.	North Kanara 10 miles from Gonda Rly. Stn.	N.A.	1947	Paddy & fibre crops.	Low land Clayey loam, upland —Loam.	95"	N.A.	12—Paddy	N.A.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
16)	Kaladgi. Agri. Research Station.	Bijapur 15 miles from Bagalkot Rly. Stn.	Dry region of North Karnatak.	1951	Wheat, Cotton, Gram	Clayey loam, deep black.	20"	No irrigation facilities.	7—Jowar. 4—Cotton.	N.A.
									11—Total	
17)	Kumta Agri. Res. Stn.	North Kanara 10 miles from Hubli Rly. Station.	Coastal region of Mysore State.	1943	Paddy.	Laterite.	150"	No irrigation facilities.	8—Paddy	N.A.
18)	Mandya, Agri. Res. Stn.	Mandya, 7½ miles from Mandya Railway Station.	Plain with under white.	1931	Cotton, Sugarcane & Pulses.	Depth. 4"—9". Colour. Red, White & Black. Soil-Analysis. N.A.	June. 2.66 July. 1.68 Aug. 0.71 Sept. 5.84 Oct. 15.11 Nov. 3.32 Dec. — Jan. — Feb. 0.06 March. — April. 0.73 May. 0.28	Channel irrigation from 1932 ; proper drainage system.	7—Paddy. 2—Ragi 10—Cotton 1—Sugar—cane.	High level in the middle and slopy on both sides (650 acres).
									20—Total.	
							Total. 30.89			
							Figures for 1956—1957.			

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
19)	Mangalore Paddy Breeding Station.	South Kanara. 2½ miles from Mangalore Railway station.	Coastal, high rainfall region.	1944	Paddy.	(1) Type :- Laterite with texture ranging from sandy loam to clayey loam. (2) Depth :- 6"—1'. (3) Colour :- Red brown & yellow & mixtures. (4) Structure :- Generally high porous. (5) Soil Analysis.	June. 40.54 July. 43.95 Aug. 20.15 Sept. 11.41 Oct. 7.42 Nov. 1.38 Dec. 0.10 Jan. 0.05 Feb. ... Mar. 0.06 April. 1.48 May. 10.8 Total. 136.83	No irrigation facilities. There is proper drainage system.	48 - Paddy. 25 - Sweet potato.	Paddy land consists of level field in the bed of valleys and terraced fields on the sides of hills.
<i>Soil analysis.</i>										
<i>(1) Chemical Analysis (%)</i>										
Loss on ignition	Insolubles	Fe ₂ O ₃	Al ₂ O ₃	Ca O	Mg O	Total K ₂ O	Na ₂ O	Total P ₂ O ₅	So ₃	
7.88	72.14	7.37	81.75	0.064	0.055	0.198	0.122	0.129	0.118	
Moisture	N	Avl K ₂ O	Avl P ₂ O ₅	pH						
1.5	0.10	0.019	0.006	5.6						
<i>(ii) Mechanical analysis. (%)</i>										
Clay	Silt	Fine Sand	Coarse sand	Acid solubles						
24.5	19.7	7.4	47.8	0.6						
20)	Mercara Govt. Agri. Farm.	Coorg. 7½ miles from Mysore Rly. Stn.	N.A.	N.A.	Paddy	Clayey loam.	125''	Nii.	1 Paddy	N.A.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
(21)	Mugad. Agri. Res. Stn.	Dharwar, 1½ miles from Mugad Rly. Stn.	Malnad tract.	1953	Paddy	(1) Type :— Clayey mixed with red, black & brown soils (2) Depth-6"-12". (3) Colour-Brown. (4) Soil Analysis. (i) Chem. Anal. N.A. (ii) Mech. Anal. Clay & finest silt 25.06 (%) Fine silt 24.00 " Silt. 17.00 " Coarse sand. 14.95 " Sandy loam.	June 5.70 July 11.22 Aug. 7.61 Sept. 4.41 Oct. 7.52 Nov. 1.34 Dec. 0.01 Jan. — Feb. 0.01 Mar. 0.10 April 1.63 May 8.18 Total. 47.73.	Nil	11-Paddy	Undulating topography.
(22)	Nagenhalli, Agri. Res. Stn.	Nagenhalli, Shri K.R. Mills post 1½ miles from Nagenhalli Rly. Station.	N.A.	1917	Paddy		N.A.	N.A.	31-Paddy.	N.A.
(23)	Nargund, Agri. Res. Stn.	Dharwar, 25 miles from Annigiri Railway Station.	N.A.	1946	Cotton, Jowar, Wheat.	Alkali soils.	22"	N A.	4—Jowar. 9—Wheat. 8—Cotton. <hr/> 21—Total.	N.A.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11	
(26)	Ramkrishna Shala. Agri. School Farm.	Anekal Taluk, Bangalore. 20 miles from Bangalore Rly. Stn.	Myoan,	1928	Paddy, Ragi & Groundnut.	(1) Depth. ½' to 4' (2) Colour. Red soil, red sandy loam & sandy soils. (3) Structure :—Good (4) Soil Analysis :— N.A.	June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. April. May. Total. Av. of 4 years to 1953.	1.57 3.00 3.49 5.10 6.47 1.11 0.66 — 0.23 0.24 2.56 4.21 28.84	10 acres irrigated by tank.	3-Ragi. 1-Groundnut. 4-Total.	N.A.
(27)	Siruguppa. Agri. Res. Station.	Bellary 1½ miles from Siruguppa town.	Black cotton soil of Bellary, Kurnool & Cuddappa districts	1937	Gram, Groundnut, Ragi. & Paddy.	(1) Depth-2'—8' (2) Colour-Black. (3) Structure. Clayey. (4) Soil Analysis. Refer soil analysis pages 20, 21, & 22	N.A.	N.A.	1 (Rotational-3 year shallow soil) 1 (Rotational-3 year deep soil). 1 (Rotational-4 year shallow soil). 1 (Rotational-4 year deep soil). 5—Paddy 4—Jowar 2—Wheat 5—Cotton 4—Korra 1—Sweet Potato 1—Luerene	N.A.	

Soil Analysis for Siruguppa Agricultural Research Station
Nature of Salts in A. Zone concentration of Non-Gypsum pits.

Pit No.	Depth in inches.	Total soluble salts.	Na HCO ₃ + Na ₂ CO ₃	Sodium sulphate	Sodium chloride.	Other soluble salts.	Percentage of salts on the total soluble salts.			other salts.
							Na HCO ₃ + Na ₂ CO ₃	Na ₂ SO ₄	NaCl	
1	2	3	4	5	6	7	8	9	10	11
20	53—72	0·375	—	0·2983	0·0267	0·0500	—	79·54	7·12	13·34
285	36—48	0·424	0·0761	0·1406	0·2227	—	17·95	33·15	52·53	—
	48—60	0·548	0·0037	0·1905	4·2621	0·0917	0·67	34·76	47·83	16·74
	60—72	0·934	—	0·5805	0·2258	0·1277	—	62·16	24·17	13·67
	72—90	0·704	—	0·4817	0·1270	0·0953	—	68·41	18·04	13·55

Soil Analysis for Siruguppa Agri. Res. Station.
The Nature of Salts in Zone concentration of Gypsum pits.

Pit No.	Depth in inches.	Total soluble salts	Percentage of sulphates.		Sodium Chloride.	Other salts.	Percentage of salts on total salts.			
			Ca + Mg	Sodium.			Sulphates		NaCl.	Others
							Ca SO ₄ +Mg SO ₄	Na ₂ SO ₄		Salts.
1	2	3	4	5	6	7	8	9	10	11
1	24 - 36	1.670	0.8776	0.6586	0.0506	0.0832	52.55	39.44	3.03	4.98
	36 - 48	1.160	0.4279	0.6113	0.0506	4.0702	36.88	52.66	4.36	6.10
	48 - 56	1.981	0.8401	0.8143	0.0491	0.0775	47.19	45.73	2.76	4.32
	56 - 72	1.305	0.3322	0.8668	0.0453	0.0607	25.46	66.43	3.47	4.64
125	36 - 52	0.899	0.3848	0.4302	0.0150	0.0690	42.80	47.85	1.67	7.68
	52 - 58	1.532	0.2470	1.1195	0.0142	0.1513	16.12	73.07	0.93	9.88

Soil Analysis for Siruguppa Agricultural Research Station.
Average Technical composition of Types. (Expressed as % on moisture free basis.)

Soil types.	1st Foot.		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	F.F.	C.F.	F.F.	C.F.	F.F.	C.F.	F.F.	C.F.	F.F.	C.F.	F.F.	C.F.	F.F.	C.F.	F.F.	C.F.
1. Deep black soil with Gypsum.	68.1	24.0	72.2	20.3	75.7	16.6	12.8	15.4	67.0	19.4	60.2	26.1	68.5	14.9	68.7	21.0
2. Deep black soil without gypsum.	69.6	20.8	73.7	18.3	75.1	18.7	78.7	14.9	78.1	16.3	76.0	17.8	67.9	17.4	81.0	14.7
3. Shallow black soil with gypsum.	62.1	30.9	70.9	23.1	75.3	13.5	49.9	23.4	32.4	47.0	—	—	—	—	—	—
4. Shallow black soil without gypsum.	67.7	22.4	68.2	21.0	67.1	19.8	44.0	42.6	28.3	63.1	—	—	—	—	—	—
5. Mixed soils.	52.7	43.8	51.6	44.6	54.9	52.3	39.4	60.5	31.4	68.5	45.3	53.2	33.6	59.7	25.4	60.3
6. Deep red soils.	39.1	60.9	53.2	46.8	53.1	46.9	46.5	53.5	—	—	—	—	—	—	—	—
7. Shallow red soils.	25.1	72.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Note :—

F.F.=Fine fraction (Clay+Silt).

C.F.=Coarse fraction (coarse+fine sand).

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STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
(27) Saundatti, Agri. Res. Station.	Belgaum, 24 miles from Dharwar Rly. Station.	Arid Zone of North Karnatak.	1951	Jowar, Groundnut, Cotton, Wheat etc.	Clayey loam.	26"	N.A.	1-Rotational expt. (1951 to 1956) 5 Jowar 7 Groundnut 12+Rotational.	N.A.	

Crop :- Paddy.

Ref :- Ms. 49(8).

Site :- Agri. Res. Stn. Hebbal.

Type :- 'M'.

Object :- To study the effect of minor elements on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Clay mixed with sand. (b) Refer soil analysis Hebbal. (iii) 3.8.1949/16.9.1949. (iv) (a) 3 ploughings. (b) Transplanted (c) 25 seers/ac. (d) N.A. (e) 3—4 (v) 2½ cwt. of G.N.C.+1. cwt. of 'A/S'+½ cwt of Super/ac. (vi) H—320 ; late. (vii) Irrigated. (viii) Weeding once, passing chippagunte once. (ix) About 20" (3.8.1949 to 31.10.1950) (x) 31.10.1950.

2. TREATMENTS :

1. Zn. Sul. @ 5 lb./ac.
 2. Borax. " 5 "
 3. Mn. Sul. " 1½ "
 4. C/S " 5 "
 5. Combination of the treatments 1,2,3,4 as above at the rates indicated.
 6. Control.
- Application of treatments on 5.11.49.
Method N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 4 (iv) (a), (b) 2 guntha i.e. 1/20th ac. (v) No (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) No (b) No (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1851 lb./ac.
- (ii) 253.3 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1915
2.	2035
3.	1660
4.	2010
5.	1870
6.	1615

S.E./mean = 126.6 lb./ac.

Crop :- Paddy

Ref :- Ms. 50(30)

Site :- Agri. Res. Stn. Hebbal.

Type :- 'M'.

Object :- To study the effect of Zinc, Boron and Copper on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay mixed with sand. (b) Refer soil analysis Hebbal (iii) 13.9.50 (iv) (a) 3 ploughings (b) Transplanted (c) 25 seers/ac. (d) N.A. (e) 3—4. (v) Nil. (vi) H-349 late. (vii) Irrigated. (viii) Weeding once, passing chippagunte once. (ix) 13.39" (13.9.50 to 7.3.1951). (x) 28.2.1951 and 5,7.3.1951.

2. TREATMENTS :

1. Zn Sul. @ 5 lb./ac.
 2. " " " 10 "
 3. Borax " 20 "
 4. C/S " 5 "
 5. " " 10 "
 6. Control.
- Time and method of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 4 (iv) (a), (b) 1½ guntha. (v) No (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950-1952. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1682 lb./ac.
 (ii) 327.6 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1710
2.	1740
3.	1627
4.	1973
5.	1500
6.	1545
S.E./mean.	= 163.8 lb./ac.

Crop :- Paddy.
 Site :- Agri. Res. Stn. Hebbal.

Ref :- Ms. 51(50)
 Type :- 'M'

Object:—To study the effect of trace elements on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (c) N.A. (ii) (a) Clay mixed with sand. (b) Refer soil analysis Hebbal. (iii) 20.8.51. (iv) (a) 3 ploughings (b) Transplanted (c) 25 seers/ac. (d) N.A. (e) 3—4. (v) 6½ mds. of G.N.C. was applied at planting+2 mds. of 'A/S' at planting. (vi) S-705, early. (vii) Irrigated. (viii) Weeding once. (ix) 19'64" (20.8.1951 to 1.12.1951). (x) 29,30.11.51 and 1.12.1951.

2. TREATMENTS :

1. Zn. Sul. @ 5 lb./ac.
 1. „ „ „ 10 „
 3. Borax „ 20 „
 4. C/S „ 5 „
 5. „ „ 10 „
 6. Control.
 Time and method of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a) , (b) 1/40th ac. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain Yield data. (iv) (a) 1950—1952. (b) No (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS

- (i) 2271 lb./ac.
 (ii) 263.6 lb./ac.
 (iii) Treatment differences are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield
1.	2307
2.	2400
3.	2233
4.	2207
5.	2047
6.	2433
S.E./mean.	= 107.6 lb./ac.

Crop :- Paddy.

Ref :- Ms. 52 (7).

Site :- Agri. Res. Stn. Hebbal.

Type :- 'M'.

Object :- To find the effect of trace elements on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) 10 C.L. of F.Y.M. (ii) (a) Clay mixed with sand. (b) Refer soil analysis Hebbal. (iii) 3.9.1952 (iv) (a) 3 ploughings (b) Transplanted (c) 25 seers/ac. (d) N.A. (e) 3 — 4 (v) 6½ mds. of G.N.C. + 2 mds. of Super at planting + 2 mds of A/S after 4 weeks + 2 mds. of A/S after transplanting. (all the doses/ac.) (vi) S. 317 (vii) Irrigated (viii) Weeding once, passing chippagunte once (ix) 10.99" (3.9.52 to 30.12.1952) (x) 30.12.1952.

2. TREATMENTS :

1. Zn. Sul. applied at 5 lb./ac.
2. " " " " 10 lb./ac.
3. Borax applied at 20 lb./ac.
4. C/S. applied at 4 lb./ac.
5. " " " " 10 lb./ac.
6. Control.

3. DESIGN :

(i) L.Sq. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a) , (b) .1/40th ac. (v) Nil (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1950—1952 (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1571 lb./ac.
- (ii) 207.6 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield
1.	1594
2.	1547
3.	1634
4.	1514
5.	1708
6.	1434

S.E./mean = 84.8 lb./ac.

Crop :- Paddy.

Ref :- Ms. 50 (29).

Site :- Agri. Res. Stn. Hebbal.

Type :- 'M'.

Object :- To study the effect of time of application of A/S on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Clay mixed with sand. (b) Refer soil analysis Hebbal. (iii) 13th and 14th Sept. 1950. (iv) (a) 3 ploughings (b) Transplanted (c) — (d) N.A. (e) 3-4 (v) Nil. (vi) H-349 ; late. (vii) Irrigated. (viii) weeding once, passing of chippagunte once. (ix) 24.85" (13.9.1950 to 8.3.1951). (x) 7th and 8th March 1951.

2. TREATMENTS :

2 mds./ac. of A/S applied

1. at planting.
2. at the end of 4 weeks
3. ½ at the end of 4 weeks + ½ at the end of 6 weeks.

6½ mds/ac. of G.N.C. applied at planting as basal dressing for all the treatments.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 5 (iv) (a) , (b) 1½ gunthas. (v) No. (vi) Yes.

4. GENERAL.:

(i) Satisfactory. (ii) Nil (iii) Grain yield data. (iv) (a) No (b) No (c) N.A. (v) (a) Not known (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1764 lb./ac.
- (ii) 228.2 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield.
1.	1644
2.	1800
3	1848
S.E./mean	=102.1 lb./ac.

Crop :- Paddy.

Ref :- Ms. 51 (47).

Site :- Agri. Res. Stn. Hebbal.

Type :- 'M'.

Object :- To study the combined effect of different doses of 'N' with time of application, to paddy.

BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay mixed with sand. (b) Refer soil analysis Hebbal. (iii) 18.8.51. (iv) (a) 3 ploughings (b) Transplanted (c) 25 seers/ac. (d) N.A. (e) 3-4 (v) Nil. (vi) S-317; late (vii) Irrigated. (viii) Weeding once, passing chippagunte once. (ix) 19.64" (18.8.51 to 15.12.1951) (x) 6,7, 15.12.1951.

2. TREATMENTS :

1. 20 lb. of N/ac.—(6½ mds. of G.N.C. at planting and 2 mds of 'A/S' at planting).
2. 20 lb. of N/ac.—(6½ mds. of G.N.C. at planting and 2 mds. 'A/S' at the end of 4 weeks).
3. 30 lb. of N/ac.—(6½ mds. of G.N.C. at planting and 2 mds. of 'A/S' at 4 weeks and 2 mds. of 'A/S' at 6 weeks after planting).
4. 30 lb. of N/ac.—(6½ mds. of G.N.C. at planting, and 4 mds. of 'A/S' at 6 weeks. after planting).
5. 40 lb. of N/ac.—(6½ mds. of G.N.C. at planting and 3 mds. of 'A/S' at 2 weeks, and 3 mds. of 'A/S' at 6 weeks after planting)
6. 40 lb. of N/ac.—(6½ mds. of G.N.C. at planting and 6 mds. of 'A/S' at 6 weeks after planting)
1st application of G.N.C. & 'A/S' on 18.8.1951.
2nd application of A/S on 20.9.1951.
3rd application of 'A/S' on 16.10.1951.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a), (b) 1/40th ac. (v) No. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1951-1952 (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2849 lb./ac.
- (ii) 193.8 lb /ac.
- (iii) The differences in yield due to treatments are significant.
- (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield.
1.	2673
2.	2827
3.	3013
4.	2693
5.	2953
6.	2933
S.E./mean	=79.1 lb./ac.

Crop :- Paddy.

Ref :- Ms. 52(5).

Site :- Agri. Res. Stn. Hebbal.

Type :- 'M'

Object :- To find the combined effect of different doses of N with the time of application.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy (c) N.A. (ii) (a) Clay mixed with sand. (b) Refer soil analysis Hebbal. (iii) 2.9.1952. (iv) (a) 3 ploughings (b) Transplanted (c) 25 seers/ac. (d) N.A. (e) 3-4. (v) 2 mds of Super/ac. at planting. (vi) S.705, early. (vii) Irrigated (viii) Weeding once, passing chippagunte once. (ix) 10.99" (2.9.1952 to 22.12.1952) (x) 22.12.1952.

2. TREATMENTS :

1. 20 lb. N/ac.—(6 $\frac{2}{3}$ mds. of G.N.C. at planting + 2 mds. of A/S at planting.)
2. 20 lb. N/ac. (6 $\frac{2}{3}$ mds. of G.N.C. at planting+2 mds. of A/S at the end of 4 weeks.)
3. 30 lb. N/ac. (6 $\frac{2}{3}$ mds. of G.N.C.+2 mds. of A/S at the end of 4 weeks+2 mds. of A/S at the end of 6 weeks.)
4. 30 lb. N/ac. (6 $\frac{2}{3}$ mds. of G.N.C.+4 mds. of A/S at the end of 6 weeks.)
5. 40 lb. N/ac. (6 $\frac{2}{3}$ mds. of G.N.C.+3 mds. at the end of A/S 4 weeks+3 mds. of A/S at the end of 6 weeks.)
6. 40 lb. N/ac. (6 $\frac{2}{3}$ mds. of G.N.C.+6 mds. of A/S at the end of 6 weeks.)

3. DESIGN :

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a) 1/40th ac. (b) 1/40th ac. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) N.A. (ii) N.A. (iii) Grain yield data. (iv) (a) 1951—1952 (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 593 lb./ac.
 (ii) 143.6 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. yield of grain in lb/ac.

Treatment	Av. yield
1.	767
2.	674
3.	687
4.	600
5.	474
6-	360
S.E./mean.	= 58.4 lb./ac.

Crop :- Paddy.

Site :- Agri. Res. Stn. Hebbal:

Ref:- Ms. 52(102).

Type :- 'M'

Object :- To compare the effect of Cane trash and C.M. as manures.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy (c) Nil. (ii) (a) Clay mixed loam. (b) Refer soil analysis Hebbal. (iii) 3.3.1952
 (iv) (a) ploughing, levelling, (b) Transplated (c) 25 seers/ac. (d) N.A. (e) 1 (v) Nil. (vi) S.317 ; late.
 (vii) Irrigated. (viii) Weeding. (ix) 4.40" (3.3-52 to 24.6.52) (x) 23, 24.6.52.

2. TREATMENTS :

1. Control.
 2. 1 C.L. cane trash/ac.
 3. $\frac{1}{2}$ " " " "
 4. " " " " " + $\frac{1}{2}$ C.L./ac. of C.M.
 5. $\frac{1}{2}$ C.L. of C.M./ac.
 6. 1 " "
- Time and method of application N.A.

3. DESIGN :

- (i) L. Sq. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a),(b) 2/3rd guntha (c) 1/3rd guntha (d) N.A. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil. (iii) Grain yield data. (iv) (a) No (b) No (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2743 lb./ac.
 (ii) 336.6 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av yield of grain in lb./ac.

Treatments	Av. yield
1.	2600
2.	2770
3.	2670
4.	2880
5.	2820
6.	2720

S.E./mean = 137.4 lb./ac.

Crop :- Paddy.
Site :- Agri.Res. Stn. Hebbal.

Ref :- Ms. 53(2).
Type :- 'M'

Object :- To find the influence of G.M. on P utilization of paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy (c) No. (ii) (a) Clay mixed with sand. (b) Refer soil analysis Hebbal. (iii) 28.53. (iv) (a) 3 ploughings (b) Transplanted (c) 25 srs/ac. (d) N.A. (e) 3 — 4 (v) F.Y.M. at 3 C.L./ac. (vi) S. 705 Bangarakaddi. (vii) Irrigated (viii) Weeding once and passing chippagunte once (ix) 26.21" (28.8.53 to 10.12.53) (x) 10.12.1953.

2. TREATMENTS :

- Control—G.M. grown and applied (3000 lb./ac.) without P application.
- G.M. grown (3000 lb./ac.) without P application + 112 lb./ac. of G.N.C. + 40 lb./ac. of A/S applied at turning up.
- G.M. grown + $\frac{1}{2}$ cwt/ac. of Super applied at the time of turning of the G.M.
- „ „ and turned under in the usual manner and puddled, $\frac{1}{2}$ cwt/ac. of Super applied at the time of transplantation.
- G.M. grown and $\frac{1}{2}$ cwt /ac. Super and 112 lb./ac. of G.N.C. +40 lb./ac. of A/S applied broadcast and all ploughed under with G.M., then puddled
- G.M. grown +112 lb./ac. of G.N.C. + 40 lb./ac. of A, S applied and ploughed up, puddled and then at the time of transplantation $\frac{1}{2}$ cwt of Super/ac.given.

For treatments 1, 3 and 4, 112 lb./ac. of G.N.C. +40 lb./ac. of A/S given at the time of transplantation then 75 lb./ac. of A/S given } 3 weeks after planting. For treatments 2,5, and 6, 75 lb./ac. of A/S given 4 weeks after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a) 1 guntha, 1/40th ac. (b) 1 guntha. (v) Nil (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of grain and straw (iv) (a) 1953-contd. (b) No, (c) N.A. (v) (a) Same experiment is reported to have been conducted in V.C. farm, Babbur farm and Nagenahally farm. (b) N.A. (vi) Nil. (vii) None.

5. RESULTS :

- 981 lb./ac.
- 211.5 lb./ac.
- The differences in yield due to treatments are not significant.
- Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	976
2.	936
3.	992
4.	1064
5.	1008
6.	912

S.E./mean. = 94.4 lb./ac.

Crop :- Paddy.

Ref : Ms.53(3)

Site :- Agri. Res. Stn. Hebbal

Type : 'M'

Object :- To find the effect of application of P mixed with F.Y.M. on paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) N.A. (ii) (a) Clay mixed with sand (b) Refer soil analysis Hebbal. (iii) 19.8.53.
 (iv) (a) 3 ploughings (b) Transplanted (c) 25 seers/ac. (d) N.A. (e) 3—4 (v) N at 30 lb./ac. supplied by 112 lb. of G.N.C. and 112 lb./ac. of A/S applied before puddling. (vi) S.547 chinthamani Sanna (vii) Irrigated. (viii) Weeding once and chippagunte once (ix) 26.26" (19.8.53 to 8.12.1953. (x) 8.12.1953.

2. TREATMENTS :

1. Super at $\frac{1}{2}$ cwt /ac. + F.Y.M. applied separately.
 2. " " " " " both mixed well at the time of application and applied.
 3. " " " mixed with F.Y.M. one month prior to application:
- The dose of F.Y.M. is 4000 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 5 (iv) (a) ; (b) 1' guntha, 1/40th ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil (iii) Yield of grain and straw (iv) (a) 1953-contd. (b) No. (c) N.A. (v) N.A. (vi) No. (vii) None.

5. RESULTS :

- (i) 1107 lb./ac.
- (ii) 91.2 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Average grain yield in lb./ac.

Treatment.	Av. yield.
1.	1088
2.	1176
3.	1056

S.E./mean. = 40.8 lb./ac.

Crop :- Paddy.

Ref :- Ms. 53 (4)

Site :- Agri. Res. Stn.. Hebbal.

Type :- 'M'

Object :- To find the effect of C/S and N on paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) N.A. (ii) (a) Clay mixed with sand (b) Refer soil analysis Hebbal. (iii) 21.8.53
 (iv) (a) 3 ploughings (b) Transplanted (c) 25 seers/ac. (d) N.A. (e) 3—4 (v) 56 lb./ac. of Super applied at planting. (vi) S. 199. Alur Sanna (vii) Irrigated (viii) Weeding once and passing chippagunte once.. (ix) 26.26" (21.8.53 to 20.12.1953) (x) 20.12.1953.

2. TREATMENTS :

1. Control, 30 lb. of N/ac. (i.e. 112 lb. of G.N.C. + 40 lb. of A/S given at planting and 75 lb. of A/S given 4 weeks later).
2. 30 lb. of N/ac. as above + 3 lb. of C/S/ac.
3. " " " + 5 lb. "
4. " " " + 10 lb. "

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5 (iv) (a) , (b) 1/40th ac. (v) Nil (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain and straw yield (iv) (a) Yes. but the dosages differ from year to year. (b) No. (c) N.A. (v) (a), (b) N. A. (vi) No. (vii) Nil

5. RESULTS :

- (i) 1582 lb./ac.
- (ii) 277.6 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Average grain yield in lb./ac.

Treatment	Av. yield.
1.	1496
2.	1840
3.	1416
4.	1576

S.E./mean = 124.0 lb./ac.

Crop :-Paddy.

Ref :- Ms 51(13)

Site :-Agri. Res. Stn., Hiriyyur.

Type :-'M'

Object :—To study the effect of minor elements on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (b) Refer soil analysis Hiriyyur (iii) 26.7.51/7.9.51 (iv) (a) 4 ploughings, levelling, puddling. (b) Transplanted (c) 14 srs./ac. (d) & (e) N.A. (v) 3000 lb. of G.M., 56 lb. of Super, 6½ mds of G.N.C./ac. at planting, 2 mds. of A/S four weeks after planting. (vi) Ratnachoodi Duration N.A. (vii) Irrigated (viii) Transplanting., 2 weedings (ix) N.A. (x) 5, 6.1.1952.

2. TREATMENTS -

- Zn. Sul at 5 lb./ac. on 7.9.1951.
- „ „ „ 10 lb./ac. on 7.9.1951.
- Borax „ 20 lb./ac. on 19.9.1951
- C/S „ 5 lb. ac. on 7.9.1951.
- „ „ 10 lb./ac. on 7.9.1951.
- Control.

3 DESIGN :

(i) L. Sq. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a), (b) 1/40th ac. (dimensions N.A.) (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield data. (iv) (a) 1951—1953 (b) No. (c) N.A. (v) (a) A₂, Res. Stn., Mandya. 51 (5). (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- 2211 lb./ac.
- 308.9 lb./ac.
- The differences in yield due to treatments are not significant.
- Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2226
2.	2161
3.	2203
4.	2180
5.	2387
6.	2116

S.E./mean = 125.7 lb./ac.

Crop :- Paddy.

Ref :-Ms. 52 (56)/51 (18)

Site :-Agri. Res. Stn. Hiriyyur.

Type :-'M'

Object :—To study the effect of minor elements on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (b) Refer soil analysis Hiriyyur (iii) 2.2.52/3, 4.3.52. (iv) (a) 4 ploughings, levelling, puddling, (b) Transplanted (c) 14 srs./ac. (d) & (e) N.A. (v) 6½ mds of G.N.C. and 2 mds of Super/ac. at planting and 2 mds. of A/S. at the first weeding. 300 lb. of G.M. and 5 C.L. of F.Y.M./ac. to be applied at planting. (vi) Halubbalu. Duration N.A. (vii) Irrigated (viii) Transplanting, weeding on 6.4.52; 13.5.52 and 22.5.52 (ix) 7'10" (2.2.52 to 28.8.52) (x) 28.8.52.

2. TREATMENTS :

1. Zn. Sul. at 5 lb./ac.
2. „ „ „ 10 lb./ac.
3. Borax „ „ 20 lb./ac.
4. C/S „ 5 lb./ac.
5. „ „ 10 lb./ac.
6. Control.

Date of manuring :—4.4.52 and 22.5.1952.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a), (b) 1/40th ac. (dimensions N.A.) (v) Nil (vi) Yes

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain yield data. (iv) (a) 1951—53. (b) No. (c) N.A. (v) (a) Conducted on the same station in Kharif season. 52 (59). (b) N.A. (vi) Due to havoc of heavy winds during July and August and that of birds, the crop was destroyed and yield very poor. (vii) Nil.

5. RESULTS :

- (i) 387 lb./ac.
(ii) 211.8 lb./ac.
(iii) The differences in yield due to treatments are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield.
1.	435
2.	384
3.	547
4.	464
5.	305
6.	190

S.E./mean = 94.7 lb./ac.

Crop :-Paddy.

Site :-Agri. Res. Stn. Hiriyur.

Ref :-MS. 52 (59)

Type :- 'M'

Object :-To study the effect of minor elements on paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (b) Refer soil analysis Hiriyur (iii) 26.7.52/6, 7.9.52. (iv) (a) 4 ploughings, levelling, puddling. (b) Transplanted (c) 12 srs/ac. (d) & (e) N.A. (v) 6½ mds. of G.N.C. and 2 mds. of Super/ac. at planting. 2 mds. of A/S at first weeding. 3000 lb. of G.M.+5. C.L. of F.Y.M./ac. to be applied at the time of puddling (vi) Halubbalu. Duration N.A. (vii) Irrigated (viii) Trtansplanting, weeding (ix) 16'71" (26.7.52 to 9.1.53) (x) 9.1.53.

2. TREATMENTS :

1. Zn. Sul. at 5 lb./ac.
2. „ „ „ 10 lb./ac.
3. Borax 20 lb./ac.
4. C/S at 5 lb./ac.
5. „ „ 10 lb./ac.
6. Control.

Manures applied on 11.10.52 Method N.A.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a), (b) 1/40th ac. (dimension N.A.) (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain yield data (iv) (a) 1951—1953 (b) No. (c) N.A. (v) (a) Conducted on the same station in rabi season 52 (56). (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 1357 lb./ac.
(ii) 206.4 lb./ac.
(iii) The differences in yield due to treatments are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1300
2.	1424
3.	1398
4.	1267
5.	1253
6.	1502

S.E./mean = 92.3 lb./ac.

Crop :-Paddy.
Site :-Agri. Res. Stn. Hiriyyur.

Ref :-Ms. 53. (123)
Type :-'M'

Object :—To study the effect of minor elements on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Gravel mixed with clay soil. (b) Refer soil analysis Hiriyyur (iii) 5.8.53/20.9.53. (iv) (a) 4 ploughings, levelling, puddling (b) Transplanted (c)—(d) & (e) N.A. (v) 4 mds. of G.N.C. and 40 lb/ac. of 'A/S' and 2 mds. of 'Super' at planting+75 lb' of 'A/S' at first weeding. 3000 lb. of G.M. and 5 C.L. of compost or F.Y.M. as usual at the time of puddling (vi) Halubbalu. Duration N.A. (vii) Irrigated (viii) Weeding (ix) 14.49" (5.8.53—date N.A.) (x) N.A.

2. TREATMENTS :

1. Zn. Sul. at 5 lb./ac.
2. " " " 10 " "
3. Borax at 20 lb/ac.
4. C/S at 5 lb./ac.
5. " at 10 lb./ac.
6. Control.

Applied on 27.9.53 as it was not available at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a), (b) 1/40th ac. (dimensions N.A.) (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain yield data. (iv) (a) 1951—1953. (b) No (c) N.A. (v) (a) Agri. Res. Stn. Nagenahally. 53 (38) (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 996 lb./ac.
- (ii) 237.2 lb/ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatments	Av. yield.
1.	966
2.	1032
3.	1015
4.	1090
5.	83†
6.	1036
S.E./mean	=106.0 lb./ac.

Crop :-Paddy.
Site :-Agri. Res. Stn. Hiriyyur.

Ref :-Ms. 51 (74)
Type :-'M'

Object :—To find out the effect of C/N and A/S on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy. (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (b) Refer soil analysis Hiriyyur (iii) 1951. The actual date n. a. (iv) (a) 4 ploughings, levelling, puddling, (b) transplanting. (c) 12 seers/ac. (d) & (e) N.A. (v) Nil (vi) N.A. (vii) Irrigated. (viii) weeding. (ix) N.A. (x) 1951.

2. TREATMENTS :—

All combinations of (1) & (2).

- (1) 3 levels of N : $N_0=0$,
 $N_1=30$ lb/ac. of N as A/S
 $N_1'=30$ lb/ac. of N as C/N.
- (2) 2 levels of gypsum : $G_0=0$
 $G_1=4$ cwt/ac.

1/2 N at weeding and 1/2 N 4 weeks later.

3. DESIGN :

(i) 3×2 Fact. in R.B.D. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a) (b) 1/40th ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) No (b) No. (c) N.A. (v) (a) Not known (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2047 lb./ac.
- (ii) 294.1 lb./ac.
- (iii) Main effects and interaction are not significant.
- (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₁ '	Mean
G ₀	2070	1988	2050	2036
G ₁	1950	2248	1974	2057
Mean	2010	2118	2012	2047

S.E. of gypsum means. =69.3 lb./ac.
 S.E. of 'N' means. =84.9 lb./ac.
 S.E. of body of table. =120.1 lb./ac.

Crop :-Paddy.

Site :-Agri. Res. Stn. Hiriyur.

Ref :-Ms. 52' (58).

Type :-M'

Object :-To study the effect of C/N and A/S on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy. (c) N.A. (ii) (a) Gravel mixed with clay loam soil (b) Refer soil analysis Hiriyur. (iii) 2.2.52/3.4.52. (iv) (a) 4 ploughings. levelling etc. (b) Transplanted (c)-(d) & (e) N.A. (v) F.Y.M. at 5 C.L./ac. with 3000 lb. of G.M. 6½ mds, of G.N.C. and 2 mds. of Super/ac. at planting (vi) Halubbalu. Duration N.A. (vii) Irrigated. (viii) Weeding (ix) 7.10". (2.2.52 to 29.8.52) (x) 29.8.52.

2. TREATMENTS :

All combinations of (1) & (2)

- (1) Three levels of N :
 N₀=0
 N₁=30 lb./ac. of N as A/S.
 N₁'=30 lb./ac. of N as C/N
- (2) Two levels of Gypsum :
 G₀= 0
 G₁= 4 cwt/ac.

½ N applied at 1st weeding and ½ N 4 weeks later.

3. DESIGN :

(i) 3×2 Fact. in R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a), (b) 1/40th ac. (v) Nil (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) No (b) No. (c) N.A. (v) (a) Conducted on the same station in Kharif season 52 (61). (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 268 lb./ac.
- (ii) 198.7 lb./ac.
- (iii) Main effects and interaction are not significant.
- (vi) Av. grain yield in lb./ac.

	N ₀	N ₁	N ₁ '	Mean
G ₀	196	245	305	249
G ₁	200	394	270	288
Mean	198	320	288	268

S.E. for the marginal means of N =62.6 lb./ac.
 " " " " Gypsum =51.1 lb./ac.
 S.E. for the body of the table =88.5 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a), (b) 1/40th ac. Dimensions N.A. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Yield data (iv) (a) 1952-1953 (b) No. (c) N.A. (v) (a) Agri. Res. Stn. Hiriyyur. 52 (6) (b) N.A. (vi) wind and birds caused severe damage to the crop (vii) Nil.

5. RESULTS :

- (i) 772 lb./ac.
 (ii) 400.4 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield.
1.	650
2.	695
3.	751
4.	780
5.	988
7.	768

S.E. mean = 178.5 lb/ac.

Crop :-Paddy

Site :-Agri. Res. Stn. Hiriyyur.

Ref :-Ms. 52(60)

Type :-'M'.

Object :-To study the effect of incremental doses of 'N' on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (b) Refer soil analysis Hiriyyur. (iii) 26.7.52/6,7.9.52 (iv) (a) 4 ploughings, levelling, puddling (b) Transplanting (c) 12 srs/ac. (d) & (e) N.A. (v) 5 C.L. of F.Y.M. and 3000 lb./ac of C.M. at planting, 6 $\frac{3}{8}$ mds of G.N.C. and 56 lb Super/ac. at planting ; 4 cwts of gypsum/ac at planting. (vi) Halubbalu ; Duration N.A. (vii) Irrigated (viii) weeding. on 12.15.10.52 (ix) 16.71" (26.7.52 to 10.1.53) (x) 10.1.53.

2. TREATMENTS :

- 15 lb/ac of 'N' as A/S at planting.
- 15 lb/ac of 'N' as A/S at 1st weeding.
- 20 lb/ac of 'N' as A/S (10 lb. at 1st weeding + 10 lb. 4 weeks later).
- 30 lb/ac. " " (15 lb. " " " + 15 lb. " ")
- 40 lb/ac. " " (20 lb. " " " + 20 lb. " ")
- 50 lb/ac. " " (10 lb. at planting + 20 lb. at 1st weeding + 20 lb. 4 weeks later).

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 4 (iv) (a) & (b) 1/40th ac. Dimensions N.A. (v) Nil (vi) Nil.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain Yield (iv) (a) 1952-1953 (b) No. (c) N.A. (v) (a) Agri. Res. Stn. Hiriyyur in summer season. 52(57) (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 1191 lb./ac.
 (ii) 614.6 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Average yield of grain in lb./ac.

Treatment	Av. yield.
1.	1154
2.	1217
3.	1154
4.	1576
5.	832
6.	1214

S.E. mean = 307.3 lb/ac.

Crop :- Paddy
Site :- Agri. Res. Stn. Hiriyyur.

Ref :- Ms. 53 (122)
Type :- 'M'

Object :—To study the effect of incremental doses of N on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Gravel mixed with clay [loam soil. (b) Refer soil analysis, Hiriyyur. (iii) 5.8.53./18.9.53 (iv) (a) 4 ploughings, levelling, puddling (b) transplanting (c)—(d) & (e) N.A. (v) Basal dose of 5 C.L. of Compost and 3000 lb. of G.M./ac. applied at puddling ; 4 mds of G.N.C. and 56 lb. of 'Super'/ac. applied at the time of planting. (vi) Halubbalu. Duration N.A. (vii) Irrigated. (viii) weeding. (ix) 14.49" (5.8.53-date N.A.) (x) N.A.

2. TREATMENTS :

1. 15 lb. of 'N'/ac. as 'A/S' at planting.
2. 15 lb. of 'N'/ac. as 'A/S' at first weeding.
3. 20 lb. of 'N'/ac. applied half at first weeding and half 4 weeks later.
4. 30 lb. „ „ „ „ „ „ „ „ „
5. 40 lb. „ „ „ „ „ „ „ „ „
6. 50 lb. „ „ as 10 lb. at planting+20 lb. at first weeding and 20 lb. 4 weeks later.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 4 (iv) (a), (b) 1/40th ac. Dimensions N.A. (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) grain yield (iv) (a) 1952-1953 (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 801 lb./ac.
- (ii) 162.4 lb-/ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	743
2.	836
3.	844
4.	745
5.	823
6.	814

S.E./means = 76.2 lb./ac.

Crop :- Paddy.
Site :- Agri. Res. Stn. Hiriyyur.

Ref :- MS. 53 (124).
Type :- 'M'

Object :—To find the influence of G.M. on the utilization of P for paddy.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (b) Refer soil analysis, Hiriyyur. (iii) 5.8.53/18,19.9.53. (iv) (a) 4 ploughings, levellings, puddling (b) transplanting (c)—(d) & (e) N.A. (v) F.Y.M. at 3 C.L./ac. (vi) Halubbalu. Duration N.A. (vii) Irrigated. (viii) Weeding one month after planting. (ix) 14.49" (x) N.A.

2. TREATMENTS :

1. Control :—Only G.M. grown at 3000 lb./ac. (G.M. applied without phosphate).
2. 3000 lb. of G.M. grown without 'P' and 112 lb. of G.N.C.+40 lb. of 'A/S' applied when G.M. was turned under.
3. G.M. grown (3000 lb./ac.) + $\frac{1}{2}$ cwt of 'Super' applied when G.M. was turned under.
4. G.M. grown and turned under in the usual manner and puddled + $\frac{1}{2}$ cwt 'Super' applied at the time of transplanting.
5. G.M. + $\frac{1}{2}$ cwt of 'Super' + 112 lb. of G.N.C. + 40 lb. of 'A/S' ; applied broadcast and all ploughed under with G.M. & puddled.
6. G.M. grown + 112 lb. of 'G.N.C.' + 40 lb. of 'A/S' applied and ploughed + 'Super' at 56 lb./ac. given at the time of transplanting.
'N' treatment :—For the treatments No. 1, 3 and 4, 112 lb. of 'G.N.C.' + 40 lb. of 'A/S' ; at planting + 75 lb. of 'A/S' per acre four weeks later. For treatments 2, 5 and 6, 75 lb. of 'A/S' per acre given weeks after transplanting. G.M. ploughed in on 6.8.53.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a), (b) 1/40th ac. (dimensions N.A.) (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield data. (iv) (a) 1953-still continued. (b) Yes. (c) N.A. (v) (a) Agri. Res. Stn. Mandya 53 (50) ; Agri Res. Stn. Hebbal 53 (2). (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 561.2 lb./ac.
 (ii) 199.6 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	587.4
2.	472.5
3.	586.0
4.	511.0
5.	605.5
6.	605.0
S.E./mean	=89.2 lb./ac.

Crop :- Paddy.

Site :- Agri. Res. Stn. Jagalbet.

Ref :- Ms. 52 (47).

Type :- 'M'

Object :- To see the effect of 'N' and 'P' fertilizers with and without F.Y.M., on the yield of paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) 5 C.L. of F.Y.M./ac. (ii) (a) Clayey loam (b) Refcr soil analysis Jagalbet (iii) 25.6.52/8.8.52 (iv) (a) 3 ploughings, 2 puddlings (b) Transplanted. (c) (d) 6" x 6". (e) 6 (v) Nil (vi) A-200 (vii) Rainfed. (viii) Weeding (ix) N.A. (x) Dec. 52.

2. TREATMENTS :

- 32 lb. N/ac. (G.N.C. + A/S in the ratio 1 : 1) + 64 lb./ac. P₂O₅ as B.M.
- F.Y.M. at 5 C.L./ac. + (1)
- F.Y.M. at 5 C.L./ac.
- Proper tillage only.
Time & method of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 18' x 15' (b) 14' x 11'. (v) 2' all round (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield data. (iv) (a) 1952-1953. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2390 lb./ac.
 (ii) 387.0 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2197
2.	2783
3.	2589
4.	1991
S.E./mean	=158.0 lb./ac.

Crop :- Paddy.
Site :- Agri. Res. Stn. Jagalbet.

Ref :- Ms. 53 (104).
Type :- 'M'

Object :—To compare the effects of 'N' and 'P' fertilizers with and without basal dose of F.Y.M.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) F.Y.M. at 5 C.L./ac. (ii) (a) Clayey loam (b) Refer soil analysis Jagalbet (iii) 15.6.53/30.7.53 (iv) (a) 3 ploughings and 2 puddlings (b) Transplanted (c)—(d) 6"×6" (e) 4 (v) Nil (vi) A-200 (vii) Unirrigated (viii) Weeding (ix) N.A. (x) 29.11.1953.

2. TREATMENTS :

1. 5 C.L./ac. of F.Y.M.+32 lb./ac. of N (G.N.C. and A/S in 1 : 1)+64 lb/ac. of P₂O₅ as B.M.
2. 32 lb/ac. of N.+64 lb/ac. of P₂O₅ as B.M.
3. 5 C.L./ac. of F.Y.M.
4. Control.
B.M. applied on 10.7.53 and 'A/S' & G.N.C. on 10.8.53 and 26.9.53.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 18'×15' (b) 15'×12' (v) 1½' all round (vi) Yes.

4. GENERAL :

(i) Lodged on account of heavy rains. There was water stagnation even at the harvesting time. (ii) Case worm was observed to a small extent. (iii) Grain yield data (iv) (a) 1952-1953 (b) No (c) N.A. (v) N.A. (vi) No. (vii) Nil.

5. RESULTS :

- (i) 2943 lb./ac.
- (ii) 285.3 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment.	Av. yield.
1.	2977
2.	3047
3.	2926
4.	2820
S.E./mean	=116.5 lb./ac.

Crop:-Paddy.
Site :-Agri. Res. Stn. Jagalbet.

Ref --Ms. 51 (82).
Type :-'M'

Object :—To see whether the practice of rabbing the seed-bed would reduce the incidence of blast disease.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 5 C.L. of F.Y.M./ac. (ii) (a) Clayey loam. (b) Refer soil analysis Jagalbet. (iii) 15.6.51/20.7.51. (iv) (a) 3 ploughings; 2 puddlings. (b) Transplanted (c)—(d) Between rows 12" ; between plants 6". (e) 1 (v) Nil. (vi) Bangarakaddi. (late). (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) Dec. 1951.

2. TREATMENTS :

1. Rabbing :
 2. 5 C.L./ac. of F.Y.M.
 3. " " " +G.N.C.
 4. " " " +manure mixture
 5. Control.
- Other details N.A.

3. DESIGN ;

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 6 (iv) (a) 16' × 10' (b) 14' × 8'. (v) 1' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a)& (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1564 lb. a/c.
- (ii) 320.9 lb. a/c.
- (iii) The differences in yield due to treatments are not significant.

(iv) Av. grain yield in lb/ac.

Treatments	Av. Yield
1.	1539
2.	1685
3.	1414
4.	1803
5.	1377
S.E. mean	= 131.0 lb./ac.

Crop :- Paddy

Ref :- Ms. 52(64).

Site :- Agri. Res. Stn. Kumta.

Type :- 'M'

Object :- To determine the N and P_2O_5 requirements of paddy (with basal manure).

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) As per treatments (ii) (a) Sandy soil. (b) Refer soil analysis Kumta. (iii) 21.5.52 (iv) (a) Ploughing in Nov. 51 and 2nd week of June 52. (b) Transplanted (c)—(d) 8"×8" (e) 8. (v) 5 C.L. of F.Y.M./ac. applied on 26.5.52 (vi) R.H. 244 ; late (vii) Rainfed. (viii) Transplanting on 20 & 21. 6.52 ; weeding in Aug. 52 ; rogued ; on Sept. 52. (ix) N.A. (x) 15. 11.1952.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N : $N_0=0$, $N_1=32$ lb/ac. $N_2=64$ lb/ac. $N_3=96$ lb/ac.(2) 4 levels of P_2O_5 : $P_0=0$, $P_1=32$ lb/ac. $P_2=64$ lb/ac. $P_3=96$ lb/ac.'N' as G.N.C. and P_2O_5 as B.M.

3. DESIGN :

(i) 4×4 Fact. in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 28'×20' (b) 28'×12' (v) 4' all round (vi) Yes.

4. GENERAL :

(i) Late rains caused lodging when the crop was in ripening stage. Plant height 4', No. of tillers 9 (ii) Attacked by 'Kane' pest. Control measures taken N.A. (iii) Grain yield data (iv)(a) No. (b) No(c) N.A. (v)(a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1890 lb./ac.

(ii) 492.6 lb./ac.

(iii) Main effects and interaction are not significant.

(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	Mean
P_0	1679	1656	1565	1905	1701
P_1	1656	1792	1973	2019	1860
P_2	1792	1633	2155	2178	1939
P_3	1883	1905	2132	2314	2059
Mean.	1753	1747	1956	2104	1890

S.E. for marginal means = 123.2 lb./ac.

S.E. for the body of the table = 246.3 lb./ac.

Crop : Paddy.

Ref : Ms.52(65).

Site : Agri. Res. Stn. Kumta.

Type : 'M'

Object : To determine the 'N' & ' P_2O_5 ' requirements of paddy (without basal manure).

BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) As per treatments (ii) (a) Sandy soil. (b) Refer soil analysis Kumta. (iii) 21.5.52/23 to 25.6.52 (iv) (a) Ploughed in Nov. 51 and 2nd week of June 52. Puddled during 3rd week of June (b) Transplanted (c)—(d) 8"×8" (e) 8 (v) Nil (vi) R.H. 244 ; late (vii) Rainfed (viii) Weeding, roguing (ix) N.A. (x) 17,18.11.52.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N : $N_0=0$, $N_1=32$ lb./ac., $N_2=64$ lb./ac., $N_3=96$ lb./ac.

(2) 4 levels of P_2O_5 : $P_0=0$, $P_1=32$ lb./ac., $P_2=64$ lb./ac., $P_3=96$ lb./ac.

'N' as G.N.C. and P_2O_5 as B.M.

3. DESIGN :

(i) 4×4 Fact. in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) $28' \times 20'$ (b) $20' \times 12'$. (v) 4' all round. (vi) Yes.

4. GENERAL ;

(i) Late rains caused lodging when the crop was in ripening stage. Plant height 3' - 4'. No of tillers 10. (ii) Attacked by Kane pests. Control measures taken. N.A. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1975 lb./ac.

(ii) 202.2 lb./ac.

(iii) Main effect of N is significant while that of P_2O_5 is highly significant. Interaction NP is not significant.

	N_0	N_1	N_2	N_3	Mean.
P_0	1747	1611	1701	1905	1741
P_1	1680	1883	1860	1996	1900
P_2	2064	2064	2064	2246	2109
P_3	2042	2200	2019	2314	2149
Mean.	1928	1939	1911	2115	1975

S.E. for the marginal means = 50.5 lb./ac.

S.E. for the body of the table = 101.6 lb./ac.

Crop :-Paddy.

Site :-Agri. Res. Stn. Kumta.

Ref :-Ms. 53(129).

Type :-'M'

Object :-To study the residual effect of the application of N&P and their combinations at different levels.

1. BASAL CONDITIONS .

(i) (a) No (b) Paddy (c) As per treatments (ii) (a) Sandy soil (b) Refer soil analysis Kumta. (iii) 21.5.53/9 to 12.7.53 (iv) (a) Ploughed once in Nov. 52 ; again in June 53 (b) Transplanted (c)-(d) $8'' \times 8''$ (e) 8 (v) No. (vi) R.H. 244 ; late (vii) Rainfed. (viii) Weeding in August 1953 ; rogued in September 1953 (ix) N.A. (x) 15 & 16. 11. 1953.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N : $N_0=0$, $N_1=32$ lb./ac., $N_2=64$ lb./ac., $N_3=96$ lb./ac.

(2) 4 levels of P_2O_5 : $P_0=0$; $P_1=32$ lb./ac., $P_2=64$ lb./ac. $P_3=96$ lb./ac.

'N' as G.N.C. and P_2O_5 as B.M.

3. DESIGN :

(i) 4×4 Fact. in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) $28' \times 20'$. (b) $20' \times 12'$ (v) 4' all round (vi) Yes.

4. GENERAL :

(i) Height 4'-1". No. of tillers 8 ; lodging, due to late rains, when the crop was in ripening stage. (ii) Attacked by 'Ereoga'. Control measures taken. N.A. (iii) Height and number of tillers etc. (iv) (a) No. (b) No (c) N.A. (v) (a) Not known (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2626 lb./ac.
(ii) 358.5 lb./ac.
(iii) Main effect of P is highly significant. N and interaction NP are not significant.
(iv) Average yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	2496	2370	2064	2336	2317
P ₁	2125	2880	2677	2723	2601
P ₂	2835	2744	2790	2802	2793
P ₃	2608	2744	3131	2699	2795
Mean	2516	2685	2663	2640	2626

S.E. of marginal means = 89.5 lb./ac.
S.E. of body of the table = 179.2 lb./ac.

Crop:-Paddy.

Ref:-Ms. 52 (66).

Site:-Agri. Res. Stn. Kumta.

Type:- 'M'.

Object :- To study the effect of liming regarding the loss of lime caused by the application of A/S.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) F.Y.M. at 5 C.L. /ac. and 324 lb. of B.M. (ii) (a) Sandy loam (b) Refer soil analysis Kumta. (iii) 21.5.52, 12.13.6.52. (iv) (a) ploughed in Nov. 51. Lime applied on 17.12.52. Ploughed again in June 22. Puddled on 22.6.52. (b) Transplanted (c) — (d) 8" × 8". (e) N.A. (v) 'A/S' at 40 lb./ac. given on 25.7.52 (vi) R.H. 244; late (vii) Rainfed (viii) Weeding. rogued in Sept. 52. (ix) N.A. (x) 20.11.1952.

2. TREATMENTS :

All the combinations of (1) & (2) + Control (no lime)
(1) 4 levels of lime in lb./ac viz. 300 (L₁) viz. 900 (L₂) 1800 (L₃), 3600 (L₄),
(2) 3 times of application every year, every 2 years, every 3 years,
The lime contains 100% of calcium carbonate.
Doses of lime are subject to change according to analysis of Lime.

3. DESIGN :

(i) R B.D. (ii) (a) 13 (b) N.A. (iii) 2 (iv) 38' × 18' (b) 32' × 12'. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Late rains caused lodging when the crop was in ripening stage. Plant height 4'. No. of tillers-8. (ii) Attacked by 'Kane' pest. Control measures taken N.A. (iii) Grain yield data. (iv) (a) Yes. 1950-1955. (b) Yes. (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2240 lb./ac.
(ii) 185. lb./ac.
(iii) Only the effect due to levels of lime is significant. Others are not significant.
(iv) Av. yield of grain in lb./ac.
Control = 2127 lb/ac.

levels of lime	Time			Mean
	Every year	Every 2 years	Every 3 years	
L ₁	2047	2354	2269	2223
L ₂	2155	2184	2269	2203
L ₃	2467	2099	2411	2326
L ₄	2354	2155	2240	2250
Mean	2255	2198	2297	2250

S.E. for Time means = 37.3 lb./ac.
S.E. for 'Lime' means = 43.1 lb./ac.
S.E. for the body of table = 74.4 lb./ac.

Crop :-Paddy.
Site :-Agri. Res. Stn. Kumta.

Ref :- Ms. 53 (128)/52 (66)
Type :-'M'

Object :-To study the effect of liming regarding the loss of lime caused by the application of 'A/S'.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) F.Y.M. at 5 C.L./ac.+224 lb./ac. of B.M. (ii) (a) Sandy soil (b) Refer soil analysis Kumta (iii) 21.5.53/13, 14.7.53 (iv) (a) Ploughed in Nov. 52, Lime was applied on 23.4.53 and 24.4.53; ploughed again in June 1953. Puddling on 13 & 14.7.53 (b) Transplanted (c)—(d) 8"×8" (e) 8 (v) 'A/S' at 4 lb./ac. given on 10.8.53 (vi) R.H. 244; late (vii) Rainfed (viii) Transplanting, weeding (ix) N.A. (x) 17.11.1953.

2. TREATMENTS :

All combinations of (1) & (2) + control (no lime)

(1) 4 levels of lime in lb./ac, viz 300 (L₁), 900 (L₂), 1800 (L₃), 3600 (L₄),

(2) 3 times of application viz every year every 2 years, every 3 years.

Calcium carbonate contains 56.24% lime. Doses of lime are subject to change according to the analysis of calcium carbonate.

3. DESIGN :

(i) R.B.D. (ii) (a) 13 (b) N.A. (iii) 2 (iv) (a) 38'×18' (b) 32'×12'. (v) 3' all round, (vi) Yes.

4. GENERAL :

(i) Late rains caused lodging when the crop was in ripening stage. Plant height 4'. No. of tillers 9. (ii) Attacked by Ererogo. Control measures taken N.A. (iii) Grain yield data. (iv) (a) Yes. 1950—1955. (b) Yes. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2122 lb./ac.

(ii) 198.5 lb./ac.

(iii) Control vs others and interaction are significant. Others are not significant.

(iv) Av. grain yield in lb./ac.

Control = 1730 lb./ac.

levels of lime	Time of application			Mean.
	Every year	Every 2 years	Every 3 years	
L ₁	2042	1957	2297	2099
L ₂	2382	2269	1872	2174
L ₃	2184	2411	1843	2146
L ₄	2042	2439	2127	2203
Mean	2163	2269	2035	2156

S.E. for "Time" means = 70.29 lb./ac.

S.E. for "Levels" means = 81.01 lb./ac.

S.E. for body of table = 140.76 lb./ac.

Crop :-Paddy
Site :-Agri. Res. Stn. Mandya.

Ref :-Ms. 50 (1)
Type :-'M'

Object :-To find-out the effect of minor elements on paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Mandya (iii) 6.9.1950 (iv) (a) 3 ploughings, levelling, harrowing; opening furrows etc., (b) Transplanted (c)—(d) & (e) N.A. (v) 6½ mds. of G.N.C. and 2 mds. of Super applied on 6.9.1950; 2 mds. of A/S applied on 24.10.1950. (vi) Ratnachoody. Duration N.A. (vii) Irrigated. (viii) Weeding twice. (ix) N.A. (x) 19.1.1951.

2. TREATMENTS :

1. Zinc Sulphate 5 lb./ac.

2. " " 10 lb./ac.

3. Borax 20 lb./ac.

4. C/S 5 lb./ac.

5. " 10 lb./ac.

6. Control.

Method of application N.A. Applied on 25.9.1950

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a) 1/40th ac. (b) 1/40th ac. (v) Nil (vi) Yes.

4 GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain yield data (iv) (a) No. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 2470 lb./ac.
 (ii) 696.8 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2195
2.	3074
3.	2433
4.	2539
5.	2569
6.	2007
S.E./mean	= 311.6 lb./ac.

Crop :- Paddy.

Site :- Agri. Res. Stn. Mandya.

Ref :- Ms. 51 (5)

Type :- 'M'

Object :- To find the effect of minor elements on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Mandya, (iii) 2.9.51/26.9.51.
 (iv) (a) 3 ploughings, levelling, harrowing, opening furrows etc., (b) Transplanting (c)---(d) & (e) N.A.
 (v) 6½ mds G.N.C.+2 mds A/S+2 mds Super at planting (vi) S. 317, Habibbalu paddy (vii) Irrigated.
 (viii) weeding twice (ix) N.A. (x) 18.1.1952.

2. TREATMENTS :

1. Zinc Sulphate at 5 lb./ac.
 2. " " " 10 lb./ac.
 3. Borax " 20 lb./ac.
 4. C/S " 5 lb./ac.
 5. " " 10 lb./ac.
 6. Control.
- Applied at planting.

3. DESIGN :

(i) L. Sq. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a) 1/40th ac. (b) 1/40th lb./ac. (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain yield data (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 305 lb./ac.
 (ii) 92.70 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	325
2.	297
3.	298
4.	326
3.	287
6.	298
S.E./mean	= 37.85 lb./ac.

Crop :- Paddy.
Site :- Agri. Res. Stn. Mandya.

Ref :- Ms. 52 (43)
Type :- 'M'

Object :- To find the effect of trace elements on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Mandya (iii) N.A. (iv) (a) Ploughing, levelling, harrowing etc. (b) Transplanting (c)—(d) & (e) N.A. (v) 6 $\frac{3}{4}$ mds G.N.C. and 2 mds of A/S/ac. 2 mds of Super at planting (vi) N.A. (vii) Irrigated. (viii) weeding (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Borax at 20 lb./ac.
 2. Zinc Sulphate at 5 lb./ac.
 3. „ „ „ 10 lb./ac.
 4. C/S „ 5 lb./ac.
 5. „ „ 10 lb./ac.
 6. Control.
- Broadcast at the time of transplanting

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a) & (b) 1/40th ac. (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Yield of grain and straw (iv) (a) No. (b) No (c) N.A. (v) (a) None (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 2505 lb./ac.
- (ii) 522.8 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2560
2.	2432
3.	2624
4.	2408
5.	2616
6.	2392
S.E./mean	= 233.6 lb./ac.

Crop :- Paddy.
Site :- Agri. Res. Stn. Mandya.

Ref :- Ms. 53 (48)
Type :- 'M'

Object :- To Study the effect of C/S and 'N' on the yield of paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Generally paddy after paddy. (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Mandya. (iii) 28.8.53/28.9.53 (iv) (a) 3 ploughings, levelling, harrowing, opening furrows etc. (b) transplanting (c)—(d) & (e) N.A. (v) 56 lb/ac. of super at the time of transplanting. (vi) S. 661 (vii) Irrigated (viii) weeding twice (ix) 23.39" (28.8.53 to 6.2.54) (x) 6.2.1954.

2. TREATMENTS :

1. Control-30 lb. N/ac. (112 lb. of G.N.C. and 40 lb. of A/S given at the time of planting; 75 lb. of A/S applied 4 weeks after planting.)
 2. 30 lb. N/ac. at the time of planting and 3 lb. of C/S/ac.
 3. 30 lb. N/ac. at the time of planting and 5 lb. of C/S/ac.
 4. 30 lb. N/ac. at the time of planting and 10 lb. of C/S/ac.
- 30 lb. N/ac. in treatments 2,3 & 4 (=112 lb. of G.N.C.+115 lb. of A/S.)

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 5 (iv) (a) & (b) 1/40th ac. (v) Nil (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Caseworm attack was noticed during the 2nd week of Nov. The attack was severe in spite of timely treatment of Kerosine emulsion. Paddy stem borer attack was noticed during the 2nd week of Jan. Dusting of gammaxene and removing of attacked ear heads was done. (iii) Grain yield (iv) (a) to (c) N.A. (v) (a) Agri. Res. Stn. Hebbal Ms. 53(4) (b) N.A. (vi) No. (vii) None.

5. RESULTS :

- (i) 876 lb./ac.
 (ii) 201.6 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Average grain yield in lb./ac.

Treatment	Av. yield.
1.	944
2.	888
3.	864
4.	808
S.E./mean	=90.0 lb./ac.

Crop :- Paddy.

Ref :- Ms. 53(50)

Site :- Agri. Res. Stn. Mandya.

Type :- 'M'.

Object :- To study the influence of G.M. on the utilization of P on paddy.

1. BASAL CONDITIONS :

- (i) (a) No (b) Generally paddy after paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Madya. (iii) 25.8.53/28.9.53 (iv) (a) 3 ploughings, levelling, harrowing, opening furrows etc. (b) Transplanting (c) — (d) & (e) N.A. (v) G.M. grown in situ and applied to all plots at the rate of 3000 lb/ac. (vi) S. 661 (vii) irrigated (viii) weeding twice (ix) 23.59" (25.8.53 to 6.2.54) (x) 6.2.1954.

2. TREATMENTS :

- Control :- Only G.M. grown and applied at 3000 lb./ac. without the application of super.
- G.M. grown without super and 112 lb. of G.N.C. and 40 lb. of A/S applied at the time of turning in of G.M.
- G.M. without super at the time of sowing. Applied 112 lb. of G.N.C.+40 lb. of A/S+56 lb. of Super/ac. at the time of turning in of G.M.
- G.M. grown and puddled. Applied 112 lb. of G.N.C. plus 40 lb. of A/S and 56 lb. of Super/ac. at the time of transplanting.
- G.M. grown. Applied 112 lb. of G.N.C.+40 lb. of A/S and 56 lb. of super/ac. all ploughed in.
- G.M. grown 112 lb. of G.N.C.+40 lb. of A/S applied and puddled. 56 lb. of super/ac. applied at the time of transplanting.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a), (b) 1/40th ac. (v) Nil (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Suffered from the attack of caseworm at tillering stage and stem borer at flowering stage. control measures taken. (iii) Grain yield (iv) (a), (b), (c) N. A. (v) (a) Agri. Res. Stn. Nagenahally Ms. 53(28). and Agri. Res. Stn. Hebbal Ms. 53 (2) (b) N.A. (vi) No (vii) None.

5. RESULTS :

- (i) 1742 lb./ac.
 (ii) 268.4 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Average grain yield in lb./ac.

Treatment	Av. yield:
1.	1512
2.	1768
3.	1688
4.	2064
5.	1624
6.	1800
S.E./mean	=120 lb./ac.

Crop :- Paddy. (1st crop)
Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 50 (23)
Type :- 'M'

Object :-To compare the relative merits of fused phosphate and super.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Mangalore. (iii) 27.5.50/28.6.50
 (iv) (a) 6 ploughings with country plough (b) transplanting. (c)—(d) 9" (e) 2 (v) Nil (vi) PTB. 9 (Medium)
 (vii) Unirrigated. (viii) Weeding one month after planting. (ix) 146.49" (27.5.50 to 18.10.1950). (x) 18.10.1950

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 Forms of phosphate :- P_0 =No. phosphate P_1 = Super at 30 lb. P_2O_5 /ac. and P' =Fused Phosphate at 30 lb P_2O_5 /ac.

(2) 3 Forms of N :- (a) N_0 =Leaf at 2500 lb./ac. (b) N_1 = A/S at 30 lb. N/ac. and (c) N_2 =(a)+(b)
 Leaf spread uniformly on 22.6.50 ; A/S on 29.7.50 by broadcast and P_2O_5 on 28.6.50 while planting.

3. DESIGN :

(i) 3×3 fact. in R.B.D (ii) (a) 9 (b) N.A. (iii) 4 (iv) (a) 41'×9' (b) 40'×8' (v) ½' border around. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain yield (iv) (a) 1950-1951. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2284 lb./ac.

(ii) 161.6 lb./ac.

(iii) Main effect of N alone is highly significant.

(iv) Av. grain yield (lb./ac).

'N' Form	'P' Form			Mean.
	P_0	P_1	P_1'	
N_0	2450	2433	2501	2461
N_1	2169	2290	2161	2207
N_2	2297	2178	2076	2184
Mean.	2305	2300	2246	2284

S.E. of marginal means =46.6 lb./ac.

S.E. of body of the table. =80.8 lb./ac.

Crop :- Paddy. (2nd crop)
Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 50 (24).
Type :- 'M'.

Object :-To compare the relative merits of phosphatic manures (super and fused phosphate).

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Mangalore (iii) 21.9.50/31.10.50.
 (iv) (a) 6 ploughings with country plough (b) transplanting. (c)—(d) 9" (e) 2 (v) Nil (vi) CO.3. Medium)
 (vii) Unirrigated. (viii) Weeding, one month after planting. (ix) 8.61" (21.9.50 to 2.2.1951) (x) 2.2.1951

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 Forms of Phosphate :- P_0 =No. Phosphate ; P_1 =Super at 30 lb P_2O_5 /ac. and P' =Fused Phosphate at 30 lb. P_2O_5 /ac.

(2) 3 Forms of N :- (a) N_0 =Leaf at 2500 lb/ac. (b) N_1 =A/S at 30 lb. N/ac. and (c) N_2 =(a)+(b)
 Leaf spread uniformly on 22.6.50 ; A/S on 29.7.50 by broadcast and P_2O_5 on 28.6.50 while planting.

3. DESIGN :

(i) 3×3 fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 4 (iv) (a) & (b) 40'×8' (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain yield (iv) (a) 1950-1951 (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2230 lb./ac.
- (ii) 142.3 lb./ac.
- (iii) None of the effects is significant.
- (iv) Av. grain yield in lb./ac.

'N'	P ₂ O ₅			Mean
	P ₀	P ₁	P ₁ '	
N ₀	2186	2297	2314	2266
N ₁	2246	2101	2289	2212
N ₂	2178	2306	2152	2212
Mean	2203	2235	2252	2230

S.E. of marginal means =40.8 lb./ac.
S.E. of body of table. =71.2 lb./ac.

Crop :-Paddy. (1st crop)

Site :-Paddy Breeding Stn. Mangalore.

Ref :-Ms. 51 (33)

Type :-'M'

Object :—To compare the relative merits of fused 'Phosphate' and super.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis Mangalore (iii) 18.5.51, 29.6.1951. (iv) (a) 6 ploughings with country plough. (b) Transplanting (c)—(d) 9". (e) 2. (v) Nil. (vi) P.T.B. 14 (Medium). (vii) Unirrigated (viii) Weeding. (ix) N.A. (x) 15.10.1951.

2. TREATMENTS :

All possible combinations of (1) & (2)

- (1) 3 Forms of phosphate :— P₀=No phosphate P₁=Super at 30 lb. P₂O₅/ac. and (3) P₁'=Fused phosphate at 30 lb. P₂O₅/ac.

- (2) 3 Forms of N :— (a) N₀=Leaf at 2500 lb./ac. (b) N₁=A/S at 30 lb. N/ac. and N₂= (a)+(b)

Leaf spread uniformly on 22.6.50; A/S on 29.7.50 by broad cast and P₂O₅ on 28.6.50 while planting.

3. DESIGN :

- 3×3 fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 4 (iv) (a) (b) 34'×9'. (v) Nil (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950-1951. (b) No. (c) N.A. (v) (a) N.A. (b)N.A. (vi) &(vii) Nil.

5. RESULTS -

- (i) 1590 lb./ac.
- (ii) 239.0 lb./ac.
- (iii) Main effect of N alone is highly significant.
- (iv) Av. grain yield in lb./ac.

'N'	P ₂ O ₅			Mean
	P ₀	P ₁	P ₁ '	
N ₀	1701	1759	1708	1723
N ₁	1346	1263	1317	1309
N ₂	1579	1859	1777	1738
Mean	1542	1627	1601	1590

S.E. for marginal means =69.3 lb./ac.
S.E. of the body of the table. =119.5 lb./ac.

Crop :-Paddy (2nd crop).
Site :-Paddy Breeding Stn. Mangalore.

Ref :-Ms. 51 (34)
Type :-'M'

Object :-To compare the relative merits of fused phosphates and super.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis Mangalore (iii) 17.9.51/24.10.51 (iv) (a) 6 ploughings with country plough (b) Transplanting. (c)—(d) 9". (e) 2. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) Jan. 1952.

2. TREATMENTS ;

All combinations of (1) and (2)

(1) 3 Forms of phosphate :- P_0 =No phosphate P_1 =Super at 30 lb. P_2O_5 /ac.
and P_1' =Fused phosphate at 30 lb P_2O_5 /ac.

(2) 3 Forms of N :- (a) N_0 =Leaf at 2500 lb./ac. (b) N_1 =A/S at 30 lb. N/ac.
and (c) N_2 =(a)+(b)

Leaf spread uniformly on 22.6.50; A/S on 29.7.50 by broad cast and P_2O_5 on 28.6.50 while planting.

3. DESIGN :

(i) 3×3 fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 4 (iv) (a), (b) 45'×7'. (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950-1951. (b) No. (c)N.A. (v) (a)N.A (b) N.A..(vi) & (vii) Nil.

5. RESULTS :

(i) 2193 lb./ac.

(ii) 157.5 lb./ac.

(iii) Main effect of N alone is significant.

(iv) Av. yield of grain in lb./ac.

N	'RO ₅ '			Mean.
	P_0	P_1	P_1'	
N_0	2115	2213	2094	2141
N_1	2159	2107	2107	2124
N_2	2269	2254	2420	2314
Mean	2181	2191	2207	2193

'S.E. of the marginal means. =45.4 lb./ac.

'S.E. of the body of the table. =78.7 lb./ac.

Crop :-Paddy.
Site:-Paddy Breeding Stn. Mangalore.

Ref :-Ms. 50 (20)
Type :-'M'

Object :-To study the effect of phosphatic manures on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis Mangalore. (iii) 23.9.50/12.10.1950 (iv) (a) 6 ploughings with country plough. (b) Transplanting. (c)—(d) 9" (e) 2 (v) Leaf 2500 lb./ac. (vi) PTB 19 (Medium) (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) 30.1.1951.

2. TREATMENTS :

All combinations of (1) & (2)and control (No manure).

(1) 2 levels of P_2O_5 :- 30&45 lb./ac.

(2) 3 Sources of P_2O_5 : B.M ; Fused phosphate and Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 6 (iv) (a),(b) 45'×9½' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield (iv) (a) No (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1264 lb./ac.
 (ii) 81.40 lb./ac.
 (iii) Control vs. others and levels of P are highly significant, while that of source of P is significant. Interaction of source \times levels is not significant.
 (iv) Av. yield in lb./ac.

control=1164 lb./ac.
Source

Levels	B.M.	Super	Fused	Mean
30	1212	1279	1198	1230
45	1355	1391	1245	1330
Mean	1284	1335	1222	1280

S.E. for 'P' level means=19.18 lb./ac.

S.E. for 'P' source means=23.49 „

S.E. for the body of table=33.22 „

Crop :-Paddy.

Site :-Paddy Breeding Stn. Mangalore.

Ref :-Ms. 49 (28).

Type :-'M'

Object :-To study the effect of application of leaf and coffee husks.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Mangalore. (iii) 29.10.1949.
 (iv) (a) Ploughing with country plough (b) Transplanting (c)—(d) 6" (e) 2 (v) Nil (vi) PTB-19 (Medium) (vii) Unirrigated (viii) Weeding. (ix) 0.23" (29.10.1949 to 27.1.1950) (x) 27.1.1950.

2. TREATMENTS :

- Leaf 5000 lb./ac. to supply 30 lb. N
- Coffee husks at 2300 lb./ac. to supply 30 lb. N.
- No manure.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a) & (b) 55' \times 20' (v) Nil (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Attacked by leaf-roller in early stages but was effectively checked by spraying Guesarol. (iii) grain yield (iv) (a) No. (b) No (c) N.A. (v) (a) Nil (b) N.A. (vi) Nil (vii) Residual effects of this studied in 1950-51 please see Ms. 50 (19).

5. RESULTS :

- (i) 1559 lb./ac.
 (ii) 46.53 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Grain wt. (lb./ac.)

Treatment	Mean
1.	1792
2.	1482
3.	1403

S.E /Mean =19.00 lb./ac.

Crop :- Paddy.

Site :- Paddy Breeding Stn. Mangalore.

Ref:- Ms. 50(19)

Type :- 'M'

Object : To Study the residual effect of Coffee husk and Green leaf.

1. BASAL CONDITIONS :

- (i) (a) None (b) Paddy (c) As per treatments (ii)(a) Sandy loam (b) Refer soil analysis Mangalore(iii) 3.5.50. 12.6.1950. (iv) (a) 6 ploughings with country plough (b) transplanting (c)—(d) 9" (e) 1 (v) Nil (vi) PTB 9 (medium) (vii) Unirrigated. (viii) Weeding (ix) 141.64" (3.5.50 to October 1950) (x) October 1950.

2. TREATMENTS :

1. Control.
2. Leaf 5000 lb/ac. to supply 30 lb N
3. Coffee husk 2300 lb/ac. to supply 30 lbN
Applied to the previous paddy crop.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a) 57'×21' (b) 55'×20' (v) 1' along length, $\frac{1}{2}$ ' along breadth.
(vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil (iii) Grain yield (iv) (a) No (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2211 lb/ac.
(ii) 146.6 lb/ac.
(iii) The differences in yield due to treatments are not significant.
(iv) Av. grain yield in lb/ac.

Treatment	Mean
1.	2211
2.	2231
3.	2191
S.E./mean.	= 59.8 lb/ac.

Crop :- Paddy (2nd crop).

Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 48(26)

Type :- 'M'

Object:- To find the efficacy of lime treatment with and without G.L.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis Mangalore. (iii) 1.10.1948/3.11.1948.
(iv) (a) 6 ploughings with country plough. (b) Transplanting. (c)—(d) 9", (e) 2. (v) Nil (vi) PTB 19 (medium)
(vii) unirrigated. (viii) weeding (ix) 7.86" (1.10.48 to 28.1.1949) (x) 28.1.1949.

2. TREATMENTS :

2 Main plot treatment:—

G₀=No leaf.

G₁=Leaf at 4000 lb/ac.

4 Sub plot treatment :—

L₀= 0 lb/ac. of Lime.

L₁=1000 lb/ac. of Lime

L₂=2000 lb/ac. ,, ,,

L₃=3000 lb/ac. ,, ,,

Leaf applied (spread uniformly) 2 weeks before planting, lime doses in the form of slaked lime broadcast a week before planting.

3. DESIGN :

- (i) Split plot. (ii) (a) 2 main plots/block ; 4 sub - plots / main plot (b) N.A. (iii) 4 (iv) (a) 45'×10'
(b) 45'×8' (Main plot size N.A.) (v) 1' along breadth. (vi) Yes.

4. GENERAL :

- (i) Normal (ii) Rice caseworm made its appearance, causing slight damage to young nursery and late planted bulk crops. The pest was easily controlled by dusting the effected plots with gammaxene. (iii) Yield data. (iv) (a) 1948 - 1952 (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2249 lb/ac.
(ii) (a) 173.5 lb/ac.
(b) 84.2 lb/ac.

- (iii) The differences in yield due to main plot treatments are significant. The differences due to sub-plot treatments are highly significant.

(iv) Av. yield of grain in lb./ac.

Leaf	Lime				Mean
	L ₀	L ₁	L ₂	L ₃	
G ₀	1993	2151	2201	2215	2140
G ₁	2310	2299	2390	2435	2358
Mean.	2151	2225	2329	2325	2249

S.E. for the difference between two :

- (1) main plot treatment means = 61.46 lb/ac.
 (2) sub-plot treatment means = 42.1 lb/ac.
 (3) sub-plot treatment mean at the same level
 of main plot treatment = 59.51 lb/ac.
 4) main plot treatment means the same level
 of sub-plot treatment = 90.17 lb/ac.

Crop :- Paddy (1st crop)

Ref :- Ms. 49(30)

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'

Object :- To find out the residual effects of application of lime to previous crop.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy (c) As per treatments (ii) (a) Sandy loam (b) Refer soil analysis Mangalore (iii) 9.7.1949. (iv) (a) 6 ploughings with country plough (b) Transplanted. (c)—(d) 9" (e) 2 (v) Nil (vi) PTB 13 (Medium) (vii) Unirrigated. (viii) Weeding (ix) 87.38" (9.7.49 to 15.10.1949) (x) 15.10.1949.

2. TREATMENTS :

2 Main plot treatments :

- G₀ = No leaf
 G₁ = leaf at 4000 lb/ac.

4 Sub plot treatments :

- L₀ = 0 lb/ac. of lime
 L₁ = 1000 " " "
 L₂ = 2000 " " "
 L₃ = 3000 " " "

Leaf & lime applied in October 1948 to the previous crop.

3. DESIGN ;

- (i) Split plot (ii) (a) 2 main plots/block ; 4 sub - plots/main plot. (b) N.A. (iii) 4 (iv) (a),(b) 45'×8' (sub) (v) Nil (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield (iv) (a) 1948—1953 (b) No (c) N.A. (v) (a) Nil (b) N.A. (vi) Nil (vii) In the first crop season residual effects observed and in the second crop season regular expts. tried.

5. RESULTS :

- (i) 2241 lb/ac.
 (ii)(a) 314.8 lb/ac.
 (b) 112.8 lb/ac.
 (iii) The differences in yield due to main plot treatments not significant. The differences due to sub-plot treatments highly significant. Interaction not significant.
 (iv) Average yield of grain in lb/ac

Leaf	Lime				Mean
	L ₀	L ₁	L ₂	L ₃	
G ₀	2074	2131	2347	2320	2218
G ₁	2174	2223	2310	2351	2265
Mean	2124	2177	2329	2335	2241

S.E. of difference between two :

- (1) main plot treatment means = 111.3 lb/ac.
 (2) sub-plot treatment means = 56.4 lb/ac.
 (3) sub-plot treatment means at the same level of main plot. = 79.7 lb/ac.
 (4) main plot treatment means at the same level of sub - plot. = 131.0 lb/ac.

Crop :- Paddy (2nd crop)

Ref :- Ms. 49(29)

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'

Object :- To find efficacy of the application of lime

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy. (c) Nil (ii) (a) Sandy loam (b) Refer soil analysis Mangalore. (iii) 4.11.1949 (iv) (a) 6 ploughings with country plough (b) Transplanted (c)—(d) 9" (e) 2 (v) Nil (vi) PTB 19 (Medium). (vii) Unirrigated. (viii) Weeding. (ix) 0.20" (4.11.1949 to 4.2.1950) (x) 4.2.1950

2. TREATMENTS :

2 Main plot treatments :

- G_0 = No leaf
 G_1 = Leaf at 4000 lb/ac.

4 Sub plot treatments :

- L_0 = 0 lb/ac. of lime
 L_1 = 1000 lb/ac. " "
 L_2 = 2000 lb/ac. " "
 L_3 = 3000 lb/ac. " "

Slaked lime applied to plots a week before planting.

Leaf spread uniformly 2 weeks before planting by broadcasting.

3. DESIGN :

- (i) Split plot (ii) (a) 4 main plots/block ; 4 sub-plots/main plot (b) N.A. (iii) 4 (iv) (a),(b) sub - plot 45' x 8' (v) Nil (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Attacked by leaf roller in early stages but effectively checked by spraying Guesarol. (iii) Grain yield (iv) (a) 1948 - 1953 (b) No (c) N.A. (v) (a) Nil (b) Nil (vi) & (vii) Nil.

5. RESULTS :

- (i) 2276 lb/ac.
 (ii) (a) 258.7 lb/ac.
 (b) 146.1 lb/ac.
 (iii) The difference in yield due to main plot treatments not significant. [The differences due to sub-plot treatments highly significant. Interaction is not significant.
 (iv) Average yield of grain in lb/ac.

Leaf	Lime				Mean
	L_0	L_1	L_2	L_3	
G_0	2753	2874	2987	1294	2902
G_1	2231	2609	2745	3017	2650
Mean.	2492	2741	2866	3006	2776

S.E. of difference between two :

- (1) main plot treatment means = 91.5 lb./ac.
 (2) sub-plot treatment means = 73.0 " "
 (3) sub-plot treatment means at the same level of main plot. = 103.3 " "
 (4) main plot treatment means at the same level of sub - plot. = 127.9 " "

Crop :-Paddy. (1st crop)
Site :-Paddy Breeding Stn. Mangalore.

Ref :-Ms. 50 (21)
Type :-'M'

Object :-To study the residual effect of different doses of lime with and without leaf.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy (c) As per treatments. (ii) (a) Sandy loam (b). Refer soil analysis Mangalore (iii) 10. 5. 1950/20. 6. 1950. (iv) (a) 6 ploughings with country plough. (b) Transplanted (c)—(d) 9" (e) 2. (v) Nil (vi) PTB. 13 (Medium) (vii) Unirrigated. (viii) Weeding, one month after planting. (ix) 145.22" (10.5.50 to 16. 10. 50. (x) 16.10.50.

2. TREATMENTS :

Residual effect of following treatments :

2 Main plot treatments :-

- G₀ = No leaf
G₁ = Leaf at 4000 lb./ac.

4 Sub-plot treatments :-

- L₀ = 0 lb./ac of lime
L₁ = 1000 ,, ,,
L₂ = 2000 ,, ,,
L₃ = 3000 ,, ,,

3. DESIGN :

- (i) Split plot (ii) (a) 2 main plots/block; 4 sub-plots/main plot. (b), N.A. (iii) 4 (iv) (a) 46' x 9' (b) 45' x 8' (sub) (v) Border ½' all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil (iii) Grain yield (iv) (a) 1949-1953 (b) No. (c) N.A. (v) (a) Nil (b) N.A. (vi) & (vii) Nil

5. RESULTS :

- (i) 2528 lb./ac.
(ii) (a) 240.8 lb./ac.
(b) 87.1 lb./ac.
(iii) Leaf manure has no effect on the yield. The differences in yield due to lime highly significant. Interaction not significant.
(iv) Av. grain yield in lb./ac.

Leaf	Lime				Mean
	L ₀	L ₁	L ₂	L ₃	
G ₀	2344	2449	2540	2563	2474
G ₁	2510	2540	2601	2676	2581
Mean	2427	2495	2570	2619	2528

S.E. of difference between two :

- (1) main plot treatment means = 85.1 lb./ac.
(2) sub plot treatment means = 43.5 lb./ac.
(3) sub plot treatment means at the same level of the main plot treatment. = 61.6 lb./ac.
(4) Main plot treatment means at the same level of the sub plot treatment. = 100.5 lb./ac.

Crop :-Paddy (2nd crop)
Site :-Paddy Breeding Stn. Mangalore.

Ref :-Ms. 50 (22)
Type :-'M'

Object :-To study the requirements of liming for paddy.

BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy. (c) Nil (ii) (a) Sandy loam. (b) Refer soil analysis Mangalore, (iii) 3.10.50/2.11.50. (iv) (a) 6 ploughings with country plough (b) Transplanted: (c)—(d) 9". (e) 2. (v) Nil. (vi) 19 (Medium) (vii) Unirrigated (viii) Weeding one month after planting. (ix) 8.00" (3.10.50 to 8.2.1951) (x) 8.2.51.

2 TREATMENTS :

2 Main-plot treatments :—

G₀ = No leaf (Control)
G₁ = Leaf at 4000 lb./ac.

Sub-plot treatments :—

L₀ = 0 lb./ac of lime
L₁ = 1000 lb./ac „
L₂ = 2000 lb./ac „
L₃ = 3000 lb./ac „

Leaf applied on 30.10.50 by spreading uniformly.

Lime broadcast on 30.10.50.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main plots/block ; 4 sub plots/main plot (b) N.A. (iii) 4 (iv) (a) 46'×7' (b) 45'×6'. Main plot size N.A. (v) Border $\frac{1}{2}$ ' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield (iv) (a) 1948-1952 (b) No (c) N.A. (v) (a) Nil. (b)N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1942 lb./ac.

(ii) (a) 319.9 lb./ac.

(b) 129.1 lb./ac.

(iii) The effect of leaf manure significant. The differences in yield due to lime highly significant.

Interaction not significant.

(iv) Av. grain yield in lb./ac.

Leaf	Lime				Mean
	L ₀	L ₁	L ₂	L ₃	
G ₀	1527	1678	1811	1847	1716
G ₁	2015	2187	2129	2339	2187
Mean	1771	1933	1970	2393	1942

S.E. of difference between two :

(1) main plot treatment means =113.1 lb./ac.

(2) sub-plot treatment means =64.5 lb./ac.

(3) sub plot treatment means at the same level of main plot treatment. =91.3 lb./ac.

(4) main plot treatment means at the same level of sub plot treatment. =137.9 lb./ac.

Crop :- Paddy (1st crop).

Site : Paddy Breeding Stn. Mangalore.

Ref :- Ms. 51(29).

Type :- 'M'

Object :— To study the residual effect of different doses of lime with and without G.L.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis Mangalore (iii) 16.4.51/9.6.51. (iv) (a) 6 ploughings with country plough (b) Transplanted. (c)—(d) 9" (e) 2. (v) Nil. (vi) PTB 13 (Red Kayama) (Medium). (vii) Unirrigated. (viii) Weeding one month after planting. (ix) 11.80" (16.4.1951 to 16.10.1951). (x) 16.10.1951.

2. TREATMENTS :

2 Main plots treatments :—

G₀=No leaf.

G₁=Leaf at 4000 lb./ac.

4 Sub-plot treatments :—

L₀= 0 lb./ac. of lime.

L₁=1000 „ „

L₂=2000 „ „

L₃=3000 „ „

Time and method of application N.A.

Treatments applied to previous crop.

3. DESIGN :
 (i) Split plot (ii) (a) 2 main plots/block ; 4 sub-plots/main plot. (b) N.A. (iii) 4 (iv) (a) 46'×7' (b) 45'×6' (main plot size N.A.) (v) $\frac{1}{2}$ ' around. (vi) Yes.
4. GENERAL :
 (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1949-1953. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.
5. RESULTS :
 (i) 2878 lb./ac.
 (ii) (a) 172.6 lb./ac.
 (b) 169.6 lb./ac.
 (iii) None of the effects is significant.
 (iv) Av. yield of grain in lb./ac.

Leaf	Lime				Mean
	L ₀	L ₁	L ₂	L ₃	
G ₀	2802	2855	2827	2918	2851
G ₁	2807	2986	2958	2868	2905
Mean.	2805	2921	2893	2893	2878

S.E. for the difference between two

- (1) main plot treatment means. = 61.0 lb./ac.
 (2) sub plot treatment means. = 84.8 lb./ac.
 (3) sub plot treatment means at the same level of main plot treatment. = 119.9 lb./ac.
 (4) Main plot treatment means at the same level of sub plot treatment. = 120.5 lb./ac.

Crop :- Paddy (2nd crop).
 Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms 51(30).
 Type 'M'.

Object :— To study the direct effect of different doses of lime with and without the application of G.L.

1. BASAL CONDITIONS :
 (i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis Mangalore. (iii) 17.9.51/2.11.1951. (iv) (a) 6 ploughings with country plough. (b) Transplanted. (c)— (d) 9". (e) 2. (v) Super and G.N.C. applied to all plots (uniformly) on 2.11.1951 each at 200 lb/ac. broadcast. (vi) PTB 19 (Athikrays) ; Medium (vii) Unirrigated. (viii) Weeding one month after planting. (ix) 15.84" (17.9.51 to 8.2.1952) (x) 8.2.1952.
2. TREATMENTS :
 2 Main-plot treatments :—
 G₀=No leaf.
 G₁=Leaf 4000 lb./ac.
 4 Sub-plots treatments : —
 L₀= 0 lb./ac. of lime
 L₁= 1000 " "
 L₂= 2000 " "
 L₃= 3000 " "
 Leaf spread uniformly, lime broadcast before transplanting.
3. DESIGN :
 (i) Split-plot (ii) (a) 2 main plots/block ; 4 sub-plots/main plot. (b) N.A. (iii) 4 (iv) (a) 46'×6' (b) 45'×5', (main plot size N.A.). (v) $\frac{1}{2}$ ' all round. (vi) Yes.
4. GENERAL :
 (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1948—1953. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.
5. RESULTS :
 (i) 1700 lb./ac.
 (ii) (a) 222.0 lb./ac.
 (b) 134.9 lb./ac.

- (iii) The differences in yield due to the application of different doses of lime are highly significant. Other effects not significant.
 (iv) Av. yield of grain in lb./ac.

Leaf	Lime				Mean.
	L ₀	L ₁	L ₂	L ₃	
G ₀	1618	1579	1767	1845	1702
G ₁	1555	1609	1770	1860	1698
Mean.	1587	1594	1769	1853	1700

S.E. for the difference between two :

- main plot treatment means. = 78.5 lb./ac.
- sub plot treatment means = 67.6 lb./ac.
- sub plot treatment means at the same level of main plot treatment. = 95.4 lb./ac.
- main plot treatment. means at the same level of sub plot treatment. = 114.0 lb./ac.

Crop :- Paddy (1st crop)

Ref :- Ms. 52 (82).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'

Object :- To observe the residual effect of the application of different doses of lime with and without G.L.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy (c) As under treatments (ii) (a) Sandy loam (b) Refer soil analysis Mangalore. (iii) 25.4.52./13.6.52. (iv) (a) 6 ploughings with country plough (b) Transplanting. (c)— (d) N.A. (e) 3 (v) 60 lb./ac. of G.N.C. by spreading. (vi) PTB,-13 (Medium) (vii) Rainfed. (viii) Weeding one month after planting. (ix) 113.00" (25.4.52 to 20.10.1952) (x) 2.10.1952.

2. TREATMENTS :

2 Main plot treatments :-

G₀=No. leaf.

G₁=Leaf 4000 lb./ac.

4 Sub-plot treatments :

L₀= 0 lb./ac. of lime.

L₁=1000 " "

L₂=2000 " "

L₃=3000 " "

Treatments applied to previous crop.

3. DESIGN :

- (i) Split plot. (ii) (a) 2 main plots/block ; 4 sub-plots/main plot. (b) N.A. (iii) 4 (iv) (a) 43'×8' (b) 42'×7' (Sub) (v) ½ all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1949—1953 (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2558 lb./ac.

(ii) (a) 120.3 lb./ac.

(b) 171.9 lb./ac.

(iii) The differences in yield due to leaf significant.

Lime does not show any significant effect on the yield. Interaction is not significant.

(iv) Av. grain yield in lb./ac.

Leaf	Lime				Mean.
	L ₀	L ₁	L ₂	L ₃	
G ₀	2333	2454	2565	2593	2486
G ₁	2583	2704	2658	2574	2630
Mean.	2459	2579	2611	2583	2558

S.E. of difference between two :

- (1) main plot treatment means = 42.5 lb./ac.
 (2) sub plot treatment means. = 86.0 lb./ac.
 (3) sub plot treatment means at the same level of main plot treatment. = 121.6 lb./ac.
 (4) main plot treatment means at the same level of sub plot treatment. = 113.5 lb./ac.

Crop :- Paddy (2nd crop)

Ref : Ms. 52(80)

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'.

Object :—To observe the direct effect of the application of different doses of lime with and without G.L.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy (c) Nil. (ii) (a) Sandy loam (b) Refer soil analysis Mangalore. (iii) 23.9.52/28.10.52. (iv) (a) 6 ploughings with country plough (b) Transplanted. (c)— (d) N.A. (e) 2 (v) Nil. (vi) PTB-19 (Medium) (vii) Rainfed. (viii) Weeding one month after planting. (ix) 15.16" (23.9.52 to 23.1.1953) (x) 23.1.1953.

2. TREATMENTS :

2 Main plot treatments :—

G₀ = No leaf.

G₁ = Leaf. 4000 lb./ac.

4 Sub-plot treatments :—

L₀ = 0 lb./ac. of lime.

L₁ = 1000 " " "

L₂ = 2000 " " "

L₃ = 3000 " " "

Leaf spread uniformly and lime broadcast before transplanting.

2. DESIGN :

- (i) Split plot. (ii) (a) 2 main plots/block; 4 sub-plots/main plot (b) N.A. (iii) 4 (iv) (a) 45' × 7' (b) 40' × 6' (sub) (v) Border ½ all round (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1948—1953. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1734 lb./ac.
 (ii) (a) 508.4 " "
 (b) 256.2 " "
 (iii) None of the effects is significant.
 (iv) Average yield of grain in lb./ac.

Leaf	Lime				Mean.
	L ₀	L ₁	L ₂	L ₃	
G ₀	1785	1745	1612	1721	1716
G ₁	1639	1773	1687	1909	1752
Mean.	1712	1759	1649	1815	1734

S.E. for difference between two :

- (1) main plot treatment means = 179.7 lb./ac.
 (2) sub plot treatment means. = 128.1 "
 (3) sub plot treatment means at the same level of main-plot treatment. = 181.2 "
 (4) main plot treatment means at the same level of sub plot treatment. = 238.6 "

Crop :-Paddy (1st crop)

Ref :-Ms. 53 (60)

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'

Object :—To observe the residual effects of the application of lime with and without G.L.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) As per treatments (ii) (a) Sandy loam (b) Refer soil analysis Mangalore. (iii) 28.4.53/29.6.53 (iv) (a) 6 ploughings with country plough (b) Transplanting (c) 25 lb./ac. (d) N.A. (e) 2 (v) Nil (vi) PTB. 13 (medium) (vii) Unirrigated (viii) Weeding one month after planting (ix) 125.02" (28.4.53 to 18.10.53) (x) 18.10.53.

2. TREATMENTS :

2. Main plot treatments :—

G₀ = No green leafG₁ = 4000 lb./ac. of G.L.

4 Sub-plots treatments

L₀ = 0 lb./ac. of limeL₁ = 1000 " " "L₂ = 2000 " " "L₃ = 3000 " " "

G.L. applied a fortnight before transplanting and lime applied a week to 10 days before planting for the previous second crop.

DESIGN :

(i) Split-plot (ii) (a) 2 main plots/block and 4 sub-plots/main plot (b) N.A. (iii) 4 (iv) subplot size (a) 45' × 10' (b) 42' × 6' ; main plot size (a) 45' × 40' (v) Border 1½' along length ; 2' along breadth (vi) Yes

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Flowering duration also noted along with grain yield (iv) (a) 1948—1953 (b) No (c) N.A. (v) (a) & (b) N.A. (vi) No (vii) Nil.

5. RESULTS :

(i) 1960 lb./ac.

(ii) (a) = 137.2 lb./ac.

(b) = 212.8 lb./ac.

(iii) None of the effects is significant.

(iv) Av. grain yield in lb./ac.

Leaf	Lime				Mean
	L ₀	L ₁	L ₂	L ₃	
G ₀	1998	1930	1907	1953	1947
G ₁	2020	1921	1989	1959	1972
Mean	2009	1926	1948	1956	1960

S.E. of the difference of two :—

(1) main plot treatment means = 48.5 lb./ac.

(2) sub plot means = 106.4 lb./ac.

(3) means in the same column = 150.5 lb./ac.

(4) means in the same row = 139.1 lb./ac.

Corp :-Paddy.

Ref:-Ms. 52 (31).

Site :-Paddy Breeding Stn. Mangalore.

Type :- 'M'

Object :—To study the effect of application of P to paddy crop either directly or through G.M. crop preceding the paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M. —Paddy (b) Paddy (c) C.M. 1 ton/ac. ; Super 150 lb./ac. as basal dressing ; A/S. 60 lb./ac. as top dressing one month after planting (ii) (a) Clayey loam (b) Refer soil analysis Mangalore (iii) 25.4.52 (iv) (a) 6 to 8 ploughings (b) Transplanting (c)—(d) 6" × 6" (e) N.A. (v) Nil (vi) PTB 13 (Medium) (vii) Rainfed. (viii) Weeding one month after planting. (ix) 103.6" (25.4.1952 to 15.10.52). (x) 15.10.1952.

2. TREATMENTS :

1. Control (No Manure)
2. G.M. in situ.
3. G.M. in situ+Super 30 lb./ac. P_2O_5 .
4. Super at 30 lb./ac. of P_2O_5 through G.M.
5. " " 45 lb./ac. " " " "
6. G.M. in situ+Super at 45 lb./ac. of P_2O_5 .
7. Super at 60 lb./ac. of P_2O_5 through G.M.
8. G.M. in situ+Super at 60 lb./ac. of P_2O_5 .

3. DESIGN :

- (i) R.B.D. (ii) (a) 8 (b) N.A. (iii) 4 (iv) (a) 23'×10' (b) 21'×8'. (v) 1' all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory, no lodging. (ii) Nil (iii) Flowering duration & grain yield (iv) (a) 1951—1952. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 2514 lb./ac.
 (ii) 215.2 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. yield of grains in lb./ac.

Treatment	Mean
1.	2111
2.	2629
3.	2557
4.	2544
5.	2634
6.	2411
7.	2585
8.	2645

S.E./mean = 107.6 lb./ac.

Crop :-Paddy.

Site :-Paddy Breeding Stn. Mangalore.

Ref :-Ms. 51 (32)

Type :-'M'

Object :-To study the effect of common manures.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Mangalore (iii) 13.10.1951.
 (iv) (a) 6 ploughings by country plough (b) Transplanting (c)—(d) 9". (e) 2. (v) Nil (vi) GEB. 24—
 Early. (vii) Unirrigated. (viii) Weeding. (ix) 15.34" (13.10. 1951 to Jan. 1952) (x) Jan. 1952.

2. TREATMENTS :

Application of common manure.

- C.M. @ 8000 lb./ac.
 2. Burnt earth obtained from 8000 lb./ac. of C.M.
 3. Ash obtained from 8000 lb./ac. of C.M.
 4. No manure (Control).
 Time and method of application N.A.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 3 (iv) (a) 25'×25' (b) 22'×22' (v) 1½' around. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) Not known
 (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1813 lb./ac.
 (ii) 73.2 lb./ac.
 (iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of grain in lb./ac.	
Treatment	Av. yield
1.	1845
2.	1835
3.	1790
4.	1783
S.E./mean	= 36.6 lb./ac.

Crop :-Paddy.
Site :-Paddy Breeding Stn. Mangalore.

Ref :-Ms. 51 (77)
Type :-'M'

Object :—To study the efficiency of common manures.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy. (c) N.A. (ii) (a) Sandy loam, (b) Refer soil analysis, Mangalore. (iii) 15.5.51/20.6.1951. (iv) (a) 6 ploughings with country plough, (b) Transplanting. (c) 50—70 lb./ac. (d) 9". (e) 2. (v) Nil (vi) PTB—14, Medium. (vii) Unirrigated. (viii) Weeding. (ix) 100.98" (15.5.51 to 6.10.1951) (x) 6.10.1951.

2. TREATMENTS :

1. Control.
 2. C.M at 16000 lb./ac.
 3. Ash at 2000 lb./ac.
 4. Burnt earth from 16000 lb./ac. of C.M.
 5. C.M. at 800 lb./ac.
 6. Ash at 1000 lb /ac.
 7. Burnt earth from 8000 lb./ac. of C.M.
 8. C.M. 8000 lb./ac. + Ash 1000 lb./ac.
 9. C.M. 8000 lb./ac. + Burnt earth from 8000 lb./ac. of C.M.
 10. Ash 1000 lb./ac. + Burnt earth from 8000 lb./ac. of C.M.
- Method of application not available.

3. DESIGN :

(i) R.B.D. (ii) (a) 16 (Treat Nos. 5 to 10 occur twice in each replication). (b) N.A. (iii) 4 (iv) (a) 24'×6' (b) 23'×5 (v) Border 1/2' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) None. (b) N.A. (vi) Nil (vii) It is mentioned in the original records that the design is a split-plot with following treatments.

Main plots (Manures applied to nursery).

1. Cattle manure at 8000 lb./ac.
2. Ash obtained from the above at 1000 lb./ac.
3. Burnt earth obtained from 8000 lb. C.M./ac.
4. Control.

Sub-plots : Same four treatments.

As the distribution of the treatments vitiates the design from a split-plot design, the data were analysed as R.B.D. with treatments as above.

5. RESULTS :

- (i) 2951 lb./ac.
- (ii) 249.6 lb./ac.
- (iii) The differences in yield due to treatments are significant.
- (iv) Av. yield in lb./ac.

Treatment	Av. yield
1.	2753
2.	3303
3.	2910
4.	2907
5.	2994
6.	2757
7.	2948
8.	3049
9.	3089
10.	2768

S.E. for treatment means (1...to.....4) = 124.8 lb./ac.

" " " " (5...to.....10) = 88.3 lb./ac.

S.E. for the difference between

treatment means(1...to...4) & (5...to...10) = 152.9 lb./ac.

Crop :- Paddy (1st crop)

Ref :- Ms. 51 (35).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S on paddy if any.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 19.5.51
22.6.1951 (iv) (a) 6 ploughings with country plough (b) Transplanting. (c)—(d) 9" (e) 2. (v) Nil (vi) PTB
14 (Medium). (vii) Unirrigated. (viii) Weeding one month after planting. (ix) 104.92" (19.5.51 to 3.10.
1951). (x) 3.10.1951.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 levels of leaf :- 0 & 2500 lb/ac.

(2) 2 levels of A/S :- 0 & 100 lb/ac.

Leaf applied on 16.6.51. by spreading uniformly. A/S on 22.7.1951 by broadcast.

3. DESIGN :

(i) 2x2 Factorial in R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 30'x14' (b) 26'x11' (v) 2' along length
1½ along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data (iv) (a) 1951—1955. (b) Yes (c) N.A. (v) (a) None. (b)
N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2892 lb/ac.

(ii) 199.8 lb/ac.

(iii) Main effect of leaf alone is significant. Others are not significant.

(iv) Av. grain yield in lb/ac.

'A/S'	0	Leaf. 2500	Mean
0	2799	3027	2913
100	2812	2932	2872
Mean	2805	2979	2892

S.E. of marginal means.

= 57.7 lb/ac.

S.E. of body of table.

= 81.6 lb/ac.

Crop :- Paddy. (2nd crop)

Ref :- Ms. 51(36) / 51(35).

Site :- Paddy Breeding. Stn. Mangalore

Type :- 'M'

Object :- To study the effect of the continuous application of A/S on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis Mangalore. (iii)
8.9.1951 / 13.10.1951. (iv) (a) 6 ploughings with country plough (b) Transplanting, (c)— (d) 9". (e) 2 (v)
Nil (vi) C.E.B. 24 (Early) (vii) Unirrigated (viii) Weeding one month after planting (ix) 18.04"
(8.2.1951. to 4.1.1952.) (x) 4.1.1952.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 2 levels of leaf :- 0. & 2500 lb/ac

(2) 2 levels of A/S :- 0. & 100 lb/ac.

Leaf applied on 11.10.51. by spreading uniformly.

A/S applied broadcast on 5.11.51. and on 20.11.1951.

DESIGN :

(i) 2x2 factorial in R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 27'x11' (b) 26'x10' (v) Border ½' al.
round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield data . (iv) (a) 1951—1955. (b) Yes. (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS ;

(i) 1756 lb/ac.

(ii) 148.5 lb/ac.

(iii) Main effect of leaf and A/S are highly significant. Interaction is not significant.

(iv) Av yield in grain lb/ac.

'A/S'	G.L.		Mean
	0	2500	
0	1482	1825	1653
100	1846	1873	1859
Mean.	1664	1849	1756

S.E. for the marginal means.

= 42.9 lb/ac.

S.E. for the body of the table.

= 60.7

Crop :- Paddy. (1st crop)

Ref :- Ms. 52(28)/51(36)/51(35)

Site :- Paddy Breeding. Stn. Mangalore, Type :- 'M'

Object :- To study the effect of continuous application of A/S on yield of Paddy.

1. BASAL CONDITIONS .

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Mangalore. (iii) 4.5.1952. 20.6.1952. (iv) (a) 6 ploughings with country plough (b) Transplanting (c) — (d) 6"×6" (e) N.A. (vi) PTB - 14 (Medium). (vii) Rainfed (viii) Weeding one month after planting. (ix) 103.16" (4.5.1952 to 4.10.52) (x) 4.10.1952.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 2 levels of leaf :- 0 & 2500 lb/ac.

(2) 2 levels of A/S :- 0 & 100 lb/ac.

3. DESIGN :

(i) 2×2 fact. in R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 28'×12' (b) 26'×10' (v) One foot on all sides (vi) Yes.

4. GENERAL :

(i) Satisfactory. No lodging. (ii) Nil (iii) Grain weight. (iv) (a) 1951 — 1955. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

(i) 2757 lb/ac.

(ii) 193.9 .

(iii) Main effect of leaf alone is highly significant. Others are not significant.

(iv) Av. grain yield in lb/ac.

A/S	Leaf		Mean
	0	2500	
0	2512	2988	2750
100	2540	2988	2764
Mean	2526	2988	2757

S.E. for marginal means :-

= 55.98 lb/ac.

S.E. for the body of table

= 79.16 lb/ac.

Crop :- Paddy (2nd crop)

Ref. - Ms. 52(40)/52(18)/51(36)/51(35)

Site :- Paddy Breeding Stn. Mangalore

Type :- 'M'

Object :- To study the effect of the continuous application of A/S on yield of paddy

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy (c) As under treatments. (ii) (a) Sandy loam (b) Refer soil analysis Mangalore. (iii) 7.8.52/19.11.1952 (iv) (a) 8 to 10 ploughings with country plough (b) Transplanting, (c)—(d) N.A. (e) 2 (v) N.A. (vi) G.E.B. 24 (Early) (vii) Rainfed. (viii) Weeding one month after planting. (ix) 15.35* (7.8.52 to 8.1.53.) (x) 8.1.1953.

2. TREATMENTS :

- All combinations of (1) & (2)
 (1) 2 levels of G.L. :-O & 2500 lb/ac.
 (2) 2 levels of A/S. :-O & 100 lb/ac.

3. DESIGN :

- (i) 2×2 factorial in R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 29'×13' (b) 27'×11' (v) 1' all round. (vi) Yes.

4. GENERAL :

- (i) Fairly satisfactory. No lodging (ii) Nil (iii) Grain weight. (iv) (a) 1951 - 1955. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 1254 lb/ac.
 (ii) 75.67 lb/ac.
 (iii) Main effects and interaction are not significant.
 (iv) Av. grain yield in lb/ac.

A/S	Leaf		Mean
	0	2500	
0	1207	1322	1264
100	1230	1258	1244
Maen	1218	1290	1254

S.E. for marginal means
 S.E. for the body of table

= 21.84 lb/ac.
 = 30.89 lb/ac.

Crop :-Paddy. (1st crop).

Ref :-Ms. 53 (64)/52 (40)/52 (28)/51 (36)/51 (35)

Site :-Paddy Breeding Stn. Mangalore.

Type :-'M'

Object :-To study the effect of continuous application of A/S on yield of paddy.

1. BASAL CONDITIONS :

- (i) (a) No (b) Paddy (c) As under treatments (ii) (a) Sandy loam (b) Refer soil analysis Mangalore. (iii) 1.5.53/6.7.53 (iv) (a) 6 ploughings with country plough (b) Transplanting (c)—(d) N.A. (e) 2 (v) Nil (vi) PTB. 10 (Medium) (vii) Unirrigated (viii) Weeding one month after planting. (ix) 119.03* (1.5.53 to 6.10.1953) (x) 6.10-1953.

2. TREATMENTS :

- All combinations of (1) & (2)
 (1) 2 levels of G.L. :-O & 2500 lb./ac.
 (2) 2 levels of A/S :-O & 100 lb./ac.

DESIGN :

- (i) 2×2 factorial in R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 28'×12' (b) 26'×10' (v) 1' all round the net plot (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Flowering duration also noted along with grain yield (iv) (a) 1951-1955 (b) Yes. (c) N.A. (v) (a) No (b) No (vi) No (vii) Nil.

5. RESULTS :

- (i) 2400 lb./ac.
 (ii) 141.8 „ „
 (iii) Main effects of A/S, leaf and interaction A/S×leaf are highly significant.
 (iv) Av. grain yield in lb./ac.

A/S	Leaf		Mean
	0	2500	
0	2012	2512	2262
100	2473	5605	2539
Mean	2243	2558	2400

S.E. for marginal means =40.9 lb./ac.

S.E. for the body of table =57.8 „ „

Crop :-Paddy (2nd crop) Ref :-Ms 53/(65)/53 (64)/52 (40)/52 (28)/51(36)/51(35)

Site :-Paddy Breeding Stn. Mangalore.

Type :-'M'

Object :—To study the effect of continuous application of A/S on yield of paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) As per treatments (ii) (a) Sandy loam (b) Refer soil analysis Mangalore. (iii) 5.9.53/13.10.53 (iv) (a) 6 ploughings with country plough. (b) Transplanting. (c)—(d) N.A. (e) 2 (v) As under treatments (vi) G.E.B. 24 (early) (vii) Unirrigated (viii) Weeding one month after planting. (iv) 12.14" (5.9.53 to 8.1.54) (x) 8.1.1954.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 2 levels of G.L. :—0 & 2500 lb./ac.

(2) 2 levels of A/S :—0 & 100 lb./ac.

3. DESIGN :

(i) 2×2 factorial in R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 28'×12' (b) 26'×10' (v) 1' all round the net plot (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Flowering duration and grain yield. (iv) (a) 1951-1955 (b) Yes. (c) N.A. (v) (a) No (b) No (vi) No (vii) Nil.

5. RESULTS :

- (i) 643 lb./ac.
 (ii) 204.9 „ „
 (iii) Main effects and interaction are not significant.
 (iv) Av. grain yield in lb./ac.

A/S	Leaf		Mean
	0	2500	
0	614	736	675
100	635	588	611
Mean	625	662	643

S.E. for marginal means =59.1 lb./ac.

S.E. for the body of table =83.6 lb./ac.

Crop :-Paddy (1st crop).

Ref :-Ms. 51 (27)

Site :-Paddy Breeding Sta. Mangalore.

Type :-'M'

Object :-To compare the relative merits of Super and B.M.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatment. (ii) (a) Sandy loam, (b) Refer soil analysis, Mangalore. (iii) 13.5.51/2.7.1951. (iv) (a) 6 ploughing, with country plough, (b) Transplanting (c)—(d) 9" (e) 2. (v) Nil. (vi) PTB. 14 (Mascathy: fairly early). (vii) Unirrigated. (viii) Weeding, one month after planting. (ix) 109.98" (13.5.51 to 9.10.1951) (x) 9.10.1951.

2. TREATMENTS :

2 Main plot treatment :-Common manures.

M₁=G.L. 4000 lb./ac.M₂=C.M. " " "

5 Sub plot treatment :-Phosphatic manures.

1. B.M. 45 lb./ac. of P₂O₅.

2. " 30 " " "

3. Super 45 " " "

4. " 30 " " "

5. Control.

Leaf and C.M. applied on 29.6.51 (by spreading). B.M. and Super applied on 2.7.1951; broadcast uniformly.

3. DESIGN :

(i) Split-plot design. (ii) (a) 2 main plots/block; 5 sub-plots/main plot. (b) N.A. (iii) 4 (iv)(a) 40'×7' (b) 38'×4' (v) 1' along length, 1½' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950-1953. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5 RESULTS :

(i) 1261 lb./ac.

(ii) (a) 265.3 lb./ac.

(b) 212.1 lb./ac.

(iii) Main plot treatment highly significant while sub plot treatments are significant. Interaction is not significant.

(iv) Av. yield of grain in lb./ac.

Basal manures	'P' manures					Mean
	45 B.M. 30	45 Super 30	Control			
M ₁	1660	1572	1536	1254	1357	1477
M ₂	1155	1092	1142	945	895	1046
Mean.	1410	1332	1339	1099	1126	1261

S.E. for the difference between two :

(1) main plot treatment means.

=83.9 lb./ac.

(2) sub plot treatment means.

=106.0 lb./ac.

(3) sub plot treatment means at the same level of main plot treatment.

=149.9 lb./ac.

(4) main plot treatment means at the same level of sub plot treatment.

=158.2 lb./ac.

Crop :-Paddy (2nd crop).

Ref :-Ms. 51 (28).

Site :-Paddy Breeding Sta. Mangalore.

Type :-'M'

Object :-To compare the relative merits of Super and B.M.

BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Sandy loam. (b) Refer soil analysis Mangalore. (iii) 26.10.1951, (iv) (a) 6 ploughings with country plough (b) Transplanting. (c)—(d) 9". (e) 2. (v) Nil. (vi) CO. 3 (Medium). (vii) Unirrigated. (viii) Weeding. (ix) 15.72" (26.10.1951 to 31.1.1952) (x) 30, 31.1.1952.

2. TREATMENTS :

2. Main plot treatment & Common manures

M_1 =C.M. 4000 lb./ac.

M_2 =G. L. 4000 lb./ac.

5. Sub plot treatments :—Phosphatic manures.

1. Super 45 lb./ac. of P_2O_5 .

2. " 30 " " " "

3. B.M. 45 " " " "

4. " 30 " " " "

5. Control.

Leaf applied on 24.10.1951 by spreading uniformly. C.M. applied on 24.10.1951 by spreading uniformly.

B.M. & Super on 26.10.1951 broadcast.

3. DESIGN :

(i) Split plot (ii) (a) 2 main plots/block; 5 sub plots/main plot. (b) N.A. (iii) 6 (iv) (a) 28'×14' (b) 24'×10' (main plot size N.A.) (v) Border 2' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield data. (iv) (a) 1950-1953. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1553 lb./ac.

(ii) (a) 360.2 lb./ac.

(b) 95.8 lb./ac.

(iii) Sub plot treatments are significant. Others are not significant.

(iv) Av. yield of grain in lb./ac.

Basal manure	'P' manures					Mean
	45 Super	30	45 B.M.	30	Control	
M_1	1504	1523	1631	1529	1450	1527
M_2	1608	1607	1571	1619	1491	1579
Mean	1556	1565	1601	1574	1470	1553

S.E. of the difference between two :

(1) main plot treatment means.

=93.0 lb./ac.

(2) sub plot treatment means.

=39.0 lb./ac.

(3) sub plot treatment means at the same level of main plot treatment

=55.3 lb./ac.

(4) main plot treatment means at the same level of sub plot treatment.

=105.3 lb./ac.

Crop :- Paddy.

Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 52(81)

Type :- 'M'

Object :— To compare the relative merits of Super and B. M. each at two levels over a basal dressing of Cattle manure or G.L.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) As per treatments. (ii) (a) Sandy loam (b) Refer Soil analysis Mangalore (iii) 16.5.52/3.7.1952. (iv) (a) 6 ploughings with country plough (b) Transplanting (c)—. (d) N. A. (e) 2 (v) Nil (vi) PTB—14 (vii) Rainfed. (viii) Weeding one month after planting. (ix) 112'03" (16.5.52 to 14.10.52) (x) 14.10.1952.

2. TREATMENTS :

2. Main plot treatments :— Common manures

M_1 =G.L. at 4000 lb./ac.

M_2 =G.M. 4000 lb./ac.

5. Subplot treatments :— Phosphate manures

1. B. M. 45 lb. $P_2 O_5$ /ac.
2. " 30 " " "
3. Super 45 lb. $P_2 O_5$ /ac.
4. " 30 " " "
5. Control (No manure)

G. M. and leaf applied on 29.6.52 (by spreading uniformly). Super & B. M. on 3.7.52 broadcast.

3. DESIGN :

- (i) Split plot (ii) (a) 2 main plots/block. 5 sub-plots/main plot. (b) N. A. (iii) 4 (iv) (a) $33' \times 4\frac{1}{2}'$ (b) $32' \times 6\frac{1}{2}'$. (sub) (v) Border $\frac{1}{2}'$ all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory, no lodging. (ii) Nil (iii) Grain Yield. (iv) (a) 1950-1953. (b) No (c) N. A. (v) Nil (b) N. A. (vi) & (vii) Nil.

5. RESULTS :

- (i) = 2048 lb./ac.
 (ii) (a) = 380.8 lb./ac.
 (b) = 133.7 lb./ac.
 (iii) No effect is significant.
 (iv) Av. yield of grain in lb./ac.

'P' manures

Basal manures	'P' manures					Mean.
	30 lb. B.M.	45 lb.	30 lb. Super	45 lb.	Control	
M ₁	2025	2291	2258	2343	2153	2214
M ₂	1947	1891	1168	1935	1764	1881
Mean	1986	2091	2063	2139	1958	2048

S. E. of difference between two :

- (1) main plot treatment mean = 120.4 lb./ac.
 (2) sub plot treatment means. = 66.9 "
 (3) sub plot treatment means at the same level of main plot treatment. = 94.6 "
 (4) main plot treatment means at the same level of the sub plot treatment. = 147.1 "

Crop :— Paddy.

Ref :— Ms. 53(59)

Site :— Paddy Breeding Stn. Mangalore.

Type :— 'M'.

Object :— To compare the merits of Super and B. M. each at two levels.

1. BASAL-CONDITIONS :

- (i) (a) No (b) Paddy (c) As per treatments (ii) (a) Belthi land (b) Refer soil analysis, Mangalore (iii) 26.5.53/7.7.53 (iv) (a) 6 ploughings with country plough (b) Transplanting (c) —. (d) N. A. (e) 2 (v) As per treatments (vi) PTB-14 (medium) (vii) unirrigated (viii) weeding, one month after planting (ix) 124.50" (26.5.53 to 16.10.53) (x) 16.10.1953.

2. TREATMENTS :

2. Main plot treatments : Common manures

M₁ = Leaf 4000 lb./ac.

M₂ = C. M. 4000 lb./ac.

5. Sub plot treatments :— Phosphate manures

1. B. M. 45 lb. $P_2 O_5$ /ac.
2. " 30 " " "
3. Super 45 lb. $P_2 O_5$ /ac.
4. " 30 " " "
5. Control.

G. L. and C. M. applied as basal dressing.

B. M. & Super applied before the final ploughing during the preparatory cultivation of the plot.

3. DESIGN :

- (i) Split plot (ii) (a) 2 main plots/block and 5 sub-plots/main plot (b) N.A. (iii) 4 (iv) (a) 35' × 8½' (b) 32' × 6½' main plot size 35×42.5' (v) 1½' along length and 1' along breadth. (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil (iii) Flowering duration grains yield. (iv) (a) 1950-53 (b) No (c) N. A. (v) (a), (b) N. A.

5. RESULTS :

- (i) 1977 lb./ac.
 (ii) (a) 188.9 lb./ac.
 (b) 191.0 lb./ac.
 (iii) The differences in yield due to main and sub-plot treatments are significant. Interaction not significant.
 (iv) Average grain yield in lb./ac.

Basal manure	'P' manures				Control	Mean
	45 lb.	B.M. 30 lb.	45 lb.	Super 30 lb.		
M ₁	1943	2166	2212	2249	1840	2082
M ₂	1937	1948	1944	1963	1570	1872
Mean	1940	2057	2078	2106	1705	1977

S. E. of the difference between two :

1. main plot treatment means = 59.7 lb./ac.
 2. sub plot treatment means = 95.5 lb./ac.
 3. sub-plot treatment means at the same level of main plot treatment = 135.1 lb./ac.
 4. main plot treatment means at same the level of sub plot treatment = 134.7 lb./ac.

Crop :- Paddy. (1st crop)

Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 52 (32).

Type :- 'M'.

Object :- To study the efficiency of calcium carbonate slurry and lime as soil corrective.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) C.M. 2 ton./ac. + G.N.C 200 lb./ac. as basal dressing + B.M. 100 lb./ac. + A/S 50 lb./ac. (ii) (a) Loamy soil. (b) Refer soil analysis, Mangalore. (iii) 26.4.52. (iv) (a) 6 ploughings with country plough. (b) N.A. (c) 30 lb./ac. (d) 6" × 6" (e) N.A. (v) Nil (vi) PTB-9 (Medium) (viii) Rainfed (viii) Weeding one month after planting (ix) 103.16" (26.4.52 to 24.10.52) (x) 24. 10.1952.

2. TREATMENTS :

1. No lime, no calcium carbonate slurry (Control).
2. Lime at 1 ton/ac.
3. " " 2 " "
4. " " 3 " "
5. Calcium carbonate slurry at 1 ton/ac.
6. " " " " 2 "
7. " " " " 3 "

3. DESIGN :

- (i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 5 (iv) (a) 40½' × 11' (b) 38½' × 9'. (v) 1' on all sides. (vi) Yes.

4. GENERAL :

- (i) The crop had lodged badly. (ii) Nil (iii) Flowering duration and grain yield. (iv) (a) 1952-53. (b) Yes. (c) N.A. (v) (a) Nil (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2270 lb./ac.
 (ii) 114.4 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Average yield of grain in lb./ac.

Treatment	Mean
1.	2325
2.	2344
3.	2365
4.	2162
5.	2322
6.	2181
7.	2193
S.E./mean	=51.5 lb./ac.

Crop :- Paddy (2nd crop).

Ref :- Ms. 52 (33)/52 (32).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'.

Object :- To study the efficiency of calcium carbonate slurry and lime as soil corrective.

1- BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) As per treatments. (ii) (a) Loamy (b) Refer soil analysis, Mangalore. (iii) 22.9.1952. (iv) (a) 8 to 10 ploughings with country plough (b) N.A. (c) 30 lb./ac. (d) 6" x 6". (e) N.A. (v) Nil. (vi) PTB. 20 Early (vii) Unirrigated. (viii) Weeding one month after planting. (ix) 15.19" (22.9.52 to 16.1.1953) (x) 16.1.1953.

2. TREATMENTS :

- Control (No manure).
- Lime at 1 ton/ac.
- " " 2 "
- " " 3 "
- Calcium carbonate slurry 1 ton/ac.
- " " " 2 "
- " " " 3 "

Treatments applied to previous crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 5 (iv) (a) 40' x 11' (b) 38' x 9' (v) 1' on all sides (vi) Yes.

4. GENERAL :

(i) Satisfactory, there was slight lodging. (ii) Nil (iii) Flowering duration, grain & straw yield (iv) (a) 1952-1953 (b) Yes. (c) N.A. (v) (a), (b) Nil (vi) & (vii) Nil.

5. RESULTS :

(i) 2110 lb./ac.

(ii) 101.9 lb./ac.

(iii) The differences in yield due to treatments are highly significant.

(iv) Av. yield of grain in lb./ac.

Treatment	Mean
1.	2013
2.	2104
3.	2102
4.	2253
5.	2136
6.	2067
7.	2093
S.E./mean	=45.6 lb./ac.

Crop :- Paddy (1st crop).

Ref :- Ms. 53 (74)/52 (33)/52 (32)

Site :- Paddy Breeding Stn. Mangalore. Type :- 'M'.

Object :- To find the efficiency of calcium carbonate slurry and lime as soil corrective.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) As under treatments (ii) (a) Loamy (b) Refer soil analysis, Mangalore. (iii) 10.5.53/30.6.53 (iv) (a) 6 ploughings with country plough (b) Transplanting (c) — (d) N.A. (e) 2 (v) Nil (vi) PTB. 9 (Medium) (vii) Unirrigated (viii) Weeding one month after planting. (ix) 119.81" (10.5.53 to 10.10.53) (x) 10.10.1953.

2. TREATMENTS :

1. Control.
2. Lime at 1 ton/ac.
3. " " 2 "
4. " " 3 "
5. Calcium carbonate slurry at 1 ton/ac.
6. " " " at 2 "
7. " " " " 3 "

3. DESIGN :

(i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 5 (iv) (a) N.A. (b) $39\frac{1}{2}' \times 9\frac{1}{2}'$ (v) N.A. (vi) **Yes**.

1. GENERAL :

(i) Satisfactory (ii) Nil (iii) Flowering duration and grain yield. (iv) (a) 1952-1953. (b) **Yes**. (c) N.A. (v) (a), (b) N.A. (vi) No. (vii) Nil.

5. RESULTS :

- (i) 2498 lb./ac.
- (ii) 158.1 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Average yield in lb./ac.

Treatment	Mean
1.	2519
2.	2594
3.	2502
4.	2426
5.	2519
6.	2467
7.	2461
S.E./mean	=70.7 lb./ac.

Crop :- Paddy (2nd crop)

Ref - Ms. 53 (73)/53 (74)/52 (33)/52 (32)

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'.

Object :-To study the efficiency of calcium carbonate slurry and lime as soil corrective.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) As under treatments (ii) (a) Loamy soil (b) Refer soil analysis, Mangalore. 5 9 53/1 11.53 (iv) (a) 6 ploughings with country plough (b) Transplanting (c)—(d) N.A. (e) 2 (v) Nil (vi) PTB. 20 (Medium) (vii) Unirrigated (viii) Weeding one month after planting. (ix) 12.84" (5.9.53 to 13.1.54) (x) 13.1.1954.

2. TREATMENTS :

1. Control.
2. Lime at 1 ton/ac.
3. " 2 "
4. " 3 "
5. Calcium carbonate slurry at 1 ton./ac.
6. " " " " 2 " "
7. " " " " 3 " "

3. DESIGN :

(i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 5 (iv) (a) N.A. (b) $39\frac{1}{2}' \times 9\frac{1}{2}'$ (v) N.A. (vi) **Yes**.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Flowering duration & grain yield (iv) (a) 1952-1953 (b) **Yes** (c) N.A. (v) (a), (b) N.A. (vi) No. (vii) Nil.

5. RESULTS :

- (i) 2055 lb./ac.
- (ii) 265.5 lb./ac.
- (iii) The differences in yield due to treatments are significant.

(iv) Average yield in lb./ac.

Treatment	Mean
1.	1596
2.	2050
3.	2274
4.	2666
5.	1924
6.	2005
7.	1873

S.E./mean = 118.7 lb./ac.

Crop: -Paddy (1st crop)

Site :-Paddy Breeding Stn., Mangalore

Ref:-Ms. 52 (29)

Type :-'M'

Object :-To study the relative merits of A/S and C/N.

AL CONDITIONS:

- (i) (a) Nil (b) Paddy (c) C.M. 2 ton+G.N.C. 200 lb.+B.M. 100 lb.+A/S 50 lb./ac. A/S as top dressing
(ii) (a) Loamy (b) Refer soil analysis Mangalore. (iii) 25.4.52 (iv) (a) 6 ploughings with country plough
(b) Transplanting (c)-(d) N.A. (e)-(v) 450 tons of lime+3 tons of C.M. and 30 lb. P₂O₅/ac. (vi) PTB-19
(Medium) (vii) Rainfed (viii) Weeding one month after planting (ix) 103.16" (25.4.52 to 25.10.52)
(x) 25.10.52.

2. TREATMENTS:

All possible combinations of (1), (2) & (3)+ 1 Basal dressing as control.

(1) Two sources of 'N' viz. 'A/S' and 'C/N'

(2) Two levels of 'N' viz. 40 lb. & 60 lb. N/ac.

(3) Two levels of basal dressing viz. No basal dressing and basal dressiffg

Basal dressing=450 lb/ac. of lime+3 tons/ac. of C.M.+30 lb./ac. of P₂O₅.

3. DESIGN:

(i) R.B.D. (ii) (a) 9 (b) N.A. (iii) 5 (iv) (a) 42'×8' (b) 40'×6' (v)' on all sides. (vi) Yes.

4. GENERAL:

(i) Satisfactory, slight lodging (ii) Nil (iii) Flowering durations grain yield (iy) (a) 1952—1954 (b) Yes
(c) N.A. (v) (a) No. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS:

(i) 2221 lb./ac.

(ii) 165.6 "

(iii) Main effect of basal dressing is significant while that of source of N is highly significant. Others are not significant.

(iv) Av. grain yield in lb./ac.

Control=2206 lb./ac.

N	0	B.D.	Mean
A/S 40	2016	2242	2129
" 60	2011	2138	2074
C/N 40	2311	2352	2332
" 60	2311	2397	2354
Mean	2162	2282	2222

S.E. of marginal mean of N=52.4 lb./ac.

S.E. " " of B.D. =37.4 "

S.E. of the body of table =74.1 "

Crop :-Paddy (2nd crop)

Ref :-Ms. 52 (30)/52 (29)

Site :-Paddy Breeding Stn. Mangalore.

Type :-M.

Object :-To study the relative merits of A/S and C/N

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy (c) As under treatments (ii) (a) Clayey loam (b) Refer soil analysis Mangalore. (iii) 23.9.1952/4.11.52 (iv) (a) 8 ploughings with country plough (b) N.A. (c) 30 lb./ac. (d) 6" x 6" (e) N.A. (v) Nil (vi) PTB 19 (Medium) (vii) Rainfed (viii) Weeding one month after ploughing (ix) 17.41" (23.9.1952 to 27.1.1953). (x) 27.1.1953.

2. TREATMENTS :

All possible combinations of

(1) (2) & (3) + 1 Basal dressing as control.

(1) Two sources of 'N' viz. 'A/S' and 'C/N'

(2) Two levels of 'N' viz. 40 lb. & 60 lb. N/ac.

(3) Two levels of basal dressing viz. No basal dressing and basal dressing (B.P.)

Basal dressing=450 lb. of lime+3 tons of C.M.+30 lb P₂O₅/ac.

3. DESIGN :

- (i) R.B.D. (ii) (a) 9 (b) N.A. (iii) 5 (iv) (a) N.A. (b) 40' x 6' (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil (iii) Flowering duration, grain & straw yield (iv) (a) 1952-54 (b) Yes (c) N.A. (v) (a) Nil (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1558 lb./ac.

(ii) 44.25 "

(iii) Main effect of B.D. alone is highly significant.

(iv) Av. grain yield in lb./ac.

Control=1668 lb/ac.

N	σ	B.D.	Mean
A/S 40	1414	1857	1636
„ 60	1158	1737	1448
C/N 40	1382	1727	1554
„ 60	1462	1612	1537
Mean	1354	1733	1544

S.E. of marginal of N =14.00 lb./ac.

S.E. „ „ of B.D.= 9.89 „

S.E. of body of table =19.79 lb/ac.

Cryp :-Paddy. (1st crop)

Ref :-Ms 53 (76)/52 (30)/5 2(29)

Site :-Paddy Breeding Stn., Mangalore

Type :- JN.

Object :-To study the relative merits of A/S and C/N.

1. BASAL CONDITIONS :

- (i) (a) No (b) Paddy (c) As per treatments (ii) (a) Loamy (b) Refer soil analysis Mangalore. (iii) 1.5.53/25.6.53. (iv) (a) 6 ploughings with country plough (b) Transplanting (c)—(d) N.A. (e) 2 (v) As under treatments (vi) MGL 2 (Medium) (vii) Unirrigated (viii) Weeding one month after planting. (ix) 107".46" (1 5.53 to 9.10.53) (x) 9.10.53.

TREATMENTS :

All possible combinations of

- (1) (2) & (3)+1 Basal dressing as control.
 (1) Two sources of 'N' viz 'A/S' and 'C/N'
 (2) Two levels of 'N' viz. 40 lb. & 60 lb. N/ac.
 (3) Two levels of basal dressing viz. No basal dressing and basal dressing (B.D.)
 Basal dressing :-450 lb. of lime+3 tons of C.M.+30 lb. P_2O_5 /ac.

3. DESIGN :

- (i) R.B.D. (ii) (a) 9 (b) N.A. (iii) 5 (iv) (a) N.A. (b) 40'x6' (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil (iii) Flowering duration and grain yield (iv) (a) 1952—1954. (b) Yes. (c) N.A.
 (v) (a) N.A. (b) N.A. (vi) No (vii) Nil.

5. RESULTS :

- (i) 3076 lb./ac.
 (ii) 193.6 „
 (iii) Main effect of B.D. interaction (sources of N x levels of N) and Control vs. others are highly significant. Others are not significant.
 (iv) Av. grain yield in lb./ac.
 Control = 3493 lb./ac.

N	0	B.D.	Mean
A/S:40	2617	3170	2894
„ 60	2703	3221	2962
C/N:40	2776	3375	3076
„ 60	2998	3329	3164
Mean	2774	3274	3024

S.E. of the marginal mean of N=61.2 lb./ac.
 S.E. of the marginal mean of B.D.=43.3 lb./ac.
 S.E. of in tody of table =86.6 lb.ac,

Crop :- Paddy (2nd crop)

Ref :- Ms. 53 (75) 53 (76)/52(30)/52(29).

Site :- Paddy Breeding Strn. Mangalore. Type :- 'M'

Object :- To study the relative merits of A/S and C/N.

1. BASAL CONDITIONS :

- (i) (a) No (b) Paddy (c) As per treatments (ii) (a) Loamy soil (b) Refer soil analysis, Mangalore.
 (iii) 5.9.53/26.10.53 (iv) (a) 6 ploughings with country plough (b) Transplanting (c) — (d) N.A. (e) 2
 (v) As under treatments (vi) PTB. 20 (Medium) (vii) Unirrigated (viii) Weeding one month after planting.
 (ix) 12.8" (5.9.53 to 15.1.54) (x) 15.1.54.

TREATMENTS :

- All possible combinations of (1), (2) & (3) +1 Basal dressing as control.
 1. Two sources of N viz. 'A/S' and 'C/N'
 2. Two levels of N viz. 40 lb. & 60 lb./ac.
 3. „ „ „ basal dressing viz. No basal dressing and basal dressing.
 Basal dressing =450 lb. of lime +3 ton of C.M.+30 lb. P_2O_5 /ac.

3. DESIGN :

- (i) R.B.D. (ii) (a) 9 (b) N.A. (iii) 5 (iv) (a) N.A. (b) 40'x6' (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil. (iii) Flowering duration and grain yield (a) 1952—1954. (b) Yes (c) N.A.
 (v) (a), (b) N.A. (vi) No. (vii) Nil.

5. RESULTS :

- (i) 1782 lb./ac.
 (ii) 32.1 „
 (iii) Main effect of B.D. is highly significant. Interaction B.D. x N and control vs. others are significant. Others are not significant.
 (iv) Av. grain yield in lb./ac.
 Control = 2033

N	O	B.D	Mean
A/S 40 lb.	1434	2178	1806
„ 60 lb.	1302	2219	1761
C/N 40 lb.	1511	1967	1739
„ 60 lb.	1661	1724	1693
Mean.	1477	2022	1750

- S.E. for the marginal mean of N = 101.2 lb./ac.
 S.E. for the marginal mean of B.D; = 71.6 lb./ac.
 S.E. for the body of table = 143.1 lb./ac.

Crop :- Paddy.

Ref :- Ms. 53(71).

Site :- Paddy Breeding Stn. Mangalore.

Type : 'M'

Object :- To find out the relative merits of two forms of P (Super and Kotka Phosphate)

1. BASAL CONDITIONS :

- (i) (a) No (b) Paddy (c) C.M. 2 ton/ac. + Super 150 lb./ac. + A/S at 100 lb./ac. (ii) (a) Sandy loam (b) Refer soil analysis Mangalore. (iii) 24.9.53/3.11.1953. (iv) (a) 6 to 8 ploughings with country plough (b) Transplanting (c) — (d) N.A. (e) 2. (v) Nil. (vi) Culture 859 (Medium) (vii) Unirrigated (viii) Weeding one month after planting (ix) 9.94" (24.9.1953 to 24.1.54) (x) 24.1.54.

2. TREATMENTS :

- Control.
- C.M. at 5000 lb./ac. + A/S to supply 40 lb./ac. N
- „ „ „ „ „ Super „ 60 „ P₂O₅ (by broadcast).
- „ „ „ „ „ Kotka phosphate to supply 60 lb./ac. N
- „ „ „ „ „ Super to supply 60 lb./ac. P₂O₅ by placement.
- „ „ „ „ „ Kotka phosphate to supply 60 lb./ac. P₂O₅ by placement.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a) 26' x 26' (b) 24' x 24' (v) About 1' border. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Flowering duration and grain yield. (iv) No. (v) Nil. (vi) No (viii) Nil.

5. RESULTS :

- (i) 1219 lb./ac.
 (ii) 172.8 lb./ac.
 (iii) Differences in yield due to treatments are significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Mean.
1.	961
2.	1198
3.	1318
4.	1531
5.	1238
6.	1066
S.E./mean	= 77.5 lb./ac.

Crop :- Paddy.

Ref :- Ms. 49(2)

Site :- Agri. Res. Stn. Mugad. Type :- 'M'

Object — To find-out the optimum dose of N and P_2O_5 alone or in combination to produce maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) N.A. (b) Refer soil analysis Mugad. (iii) 9.6.1949. (iv) (a) Ploughing, levelling etc. (b) Dibbling (c) N.A. (d) 12" between rows ; 4" to 5" between plants. (e) 3 seeds ; but only plant to be retained (v) 5 C.L. of F.Y.M./ac. during last week of May (vi) M-141; Late (vii) Irrigated (viii) One interculturing by means of a pair of slit blade hoes was given on 2.7.49., thinning, gap filling. (ix) N.A. (x) 4.12.1949.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N : $N_0=0$, $N_1=32$ lb./ac., $N_2=64$ lb./ac., $N_3=96$ lb./ac.(2) 4 levels of P_2O_5 ; $P_0=0$, $P_1=32$ lb./ac., $P_2=64$ lb./ac., $P_3=96$ lb./ac.N as G.N.C. & P_2O_5 as Super.

Super was added to the soil on 2.7.1949 to a depth of about 6"—8".

G.N.C. added on 3.10.49 in form of powder.

3. DESIGN :

(i) 4×4 Factorial in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 22'—6"×15' (b) 17'—6"×10'. (v) 2½' all round. (vi) Yes.

4. GENERAL :

(i) Due to failure of rain after sowing germination not satisfactory.—growth satisfactory. (ii) Blue beetle attack in the month of September. Controlled by tobacco decoction and dusting D.D.T. (iii) Grain yield data (iv) (a) 1949=1953 (b) No. (c) N.A. (v) (a) No (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 2400 lb./ac.

(ii) 619.8 lb./ac.

(iii) Main effect of N alone is highly significant. Others are not significant.

(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	Mean.
P_0	1875	2408	2625	2642	2413
P_1	2019	2525	2816	3033	2591
P_2	2201	2194	2392	2889	2479
P_3	1825	1996	2599	2291	2178
Mean.	1980	2281	2608	2731	2400

S.E. of marginal mean = 154.9 lb./ac.

S.E. of any means in the body of the table = 309.9 lb./ac.

Crop :- Paddy.

Ref : Ms. 50(14)

Site :- Agri. Res. Stn. Mugad.

Type : 'M'

Object :- To find out the optimum dose of N and P_2O_5 , alone or in combination, required to produce the maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) Nil (ii) (a) N.A. (b) Refer soil analysis Mugad (iii) 12-14.6.1950 (iv) (a) Ploughing, levelling, harrowing etc., (b) Dibbling (c) N.A. (d) 12" between rows, 4"—5" between plants (e) 3-4 seeds/dibble (v) 5 C.L. of compost/ac. uniformly spread on 9.6.1950 and mixed well in the soil. (vi) M-141, Late, (vii) Rainfed (viii) Weeding on 23.7.1950 and 30.9.50 thinning and gap filling (ix) N.A. (x) 25-27.12.1950.

2. TREATMENTS :

All combinations of (1)&(2).

(1) 4 levels of N : $N_0 = 0$, $N_1 = 32$ lb./ac., $N_2 = 64$ lb./ac., $N_3 = 96$ lb./ac.

(2) 4 levels of $P_2 O_5$: $P_0 = 0$, $P_1 = 32$ lb./ac., $P_2 = 64$ lb./ac., $P_3 = 96$ lb./ac.

N as G. N. C. & $P_2 O_5$ as Super.

3. DESIGN :

(i) 4×4 Factorial in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4. (iv) (a) $20' \times 13'$ (b) $16' \times 9'$ (v) 2' all round. (vi) Yes.

4. GENERAL :

(i) Poor germination. Growth satisfactory. (ii) Slight attack of stem borers. But damage negligible. (iii) Grain yield data. (iv) (a) 1949-1953. (b) No. (c) N. A. (v) (a) No. (b) N. A. (vi) Nil (vii) Nil.

5. RESULTS :

(i) 3285 lb./ac.

(ii) 435.6 lb./ac.

(iii) Main effect of N is highly significant. Others are not significant.

(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	Mean.
P_0	2435	3315	3324	3787	3215
P_1	2366	2998	3315	4318	3249
P_2	2568	2897	3376	4236	3269
P_3	2429	3176	3919	4099	3406
Mean.	2449	3096	3484	4110	3285

S. E. of marginal means = 108.9 lb./ac.

S. E. of any mean in the body of the table = 217.8 lb./ac.

Crop :- Paddy.

Ref : Ms. 51(16)

Site :- Agri. Res. Stn. Mugad.

Type 'M'.

Object :- To find out the optimum dose of N and $P_2 O_5$ alone or in combination required to produce the maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) As per treatments (ii) (a) N. A. (b) Refer soil analysis Mugad. (iii) 15.6.51/26, 27.7.51 (iv) (a). Ploughing, levelling, soil pulverised by hand (b) Transplanted. (c) —. (d) 12" between rows, 4"—5" between plants. (e) 3—4 seeds/dibble. (v) 5 C.L. of compost/ac. given & mixed uniformly on 23.6.51 (vi) M-141, Late (vii) Irrigated (viii) Transplanted as dibbling was not possible due to excessive rains. No interculturing. One hand weeding, thinning, gap filling (ix) N.A. (x) 3-5.12.1951.

2. TREATMENTS :

All combinations of (1) & (2).

(1) 4 levels of N : $N_0 = 0$, $N_1 = 32$ lb./ac., $N_2 = 64$ lb./ac., $N_3 = 96$ lb./ac.

(2) 4 levels of $P_2 O_5$: $P_0 = 0$, $P_1 = 32$ lb./ac., $P_2 = 64$ lb./ac., $P_3 = 96$ lb./ac.

N as G.N.C. & $P_2 O_5$ as Super.

Super applied on 10.7.1951 to a depth of 4" to 5" and was well mixed with soil. G.N.C. applied on 30.8.51.

3. DESIGN :

(i) 4×4 Factorial in R.B.D. (ii) (a) 16 (b) N. A. (iii) 4 (iv) (a) $20' \times 13'$ (b) $16' \times 9'$ (v) 2' all round. (vi) Yes.

4. GENERAL :

(i) Crop heavily damaged by crabs. General conditions not satisfactory. (ii) Little trouble by blue beetles. Damage by crabs. (iii) Grain yield data. (iv) (a) 19.9.53 (b) Yes: (c) N. A. (v) (a) Not known. (b) N. A. (vi) Heavy pre-monsoon rains made the fields inaccessible for sowing. Distribution of rains quite adverse. (vii) Nil.

5. RESULTS :

- (i) 2113 lb./ac.
- (ii) 405.4 lb./ac.
- (iii) Main effect of N is highly significant Others are not significant.
- (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean.
P ₀	1570	1990	2133	2223	1979
P ₁	1500	1878	2143	3056	2144
P ₂	1368	2074	2165	2839	2112
P ₃	1487	2133	2581	2673	2218
Mean	1481	2019	2256	2698	2113

S. E. of marginal means = 101.3 lb./ac.

S. E. of body of the table = 202.7 lb./ac.

Crop :- Paddy.

Ref :- Ms. 52(55)

Site :- Agri. Res. Stn. Mugad.

Type :- 'M'

Object :- To find out the optimum doses of N and P₂O₅ alone or in combination, required to produce the maximum yield.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy. (c) As per treatments. (ii) (a) N.A. (b) Refer soil analysis Mugad (iii) 12.6.52.
- (iv) (a) Ploughing, harrowing, grubbing, etc. (b) Dibbling (c) N.A. (d) 12" between rows and 3"—4" between plants. (e) 3-4 seed/dibble. (v) 5. C.L. of F.Y.M./ac. applied and uniformly mixed on 28.5.52. (vi) M-141, Late (vii) Irrigated. (viii) Interculturing, hoes were drawn, hand weeding, thinning, gap filling (ix) N.A. (x) 6.12.52 to 11.12.52.

2. TREATMENTS :

All combinations of (1) & (2).

(1) 4 levels of N : N₀ = 0, N₁ = 32 lb/ac., N₂ = 64 lb/ac., N₃ = 96 lb/ac.,

(2) 4 levels of P₂O₅ : P₀ = 0, P₁ = 32 lb/ac. P₂ = 64 lb/ac., P₃ = 96 lb/ac.

N as G.N.C. & P₂O₅ as Super.

Supper applied on 8.6.52 and was well mixed with soil to depth of about 4"—5".

G.N.C. applied in powered conditions on 18.8.52

3. DESIGN :

- (i) 4×4 Factorial in R.B.D. (ii) (a) 16 (b) N.A. (iii) 3 (iv) (a) 20'×13' (b) 16'×9'. (v) 2' ali round.
- (vi) Yes.

4. GENERAL :

- (i) Germination & growth satisfactory. (ii) Slight attack of blue beetles. Slight damage of seedlings in young stage due to crabs which created gaps. (iii) Grain yield data. (iv) (a) 1949 - 1953. (b) No (c) N.A.
- (v) (a) N.A. (b) N.A. (vi) Nil.

5. RESULTS :

- (i) 2743
- (ii) 378.1 lb/ac.
- (iii) Main effect of N is highly significant. Others are not significant.

(iv) Av. yield of grain in lb/ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	1903	2470	3382	3331	2772
P ₁	1770	2426	2886	4056	2785
P ₂	1721	2440	2944	3782	2722
P ₃	1717	2823	2803	3430	2693
Mean.	1778	2540	3004	3650	2743

S.E. of marginal means = 94.5 lb/ac-

S.E. of body of table = 189.1 lb/ac.

Crop :- Paddy.

Ref :- Ms. 53(187)

Site :- Agri. Res. Stn. Mugad.

Type :- 'M'

Object :- To find out the optimum dose of N and P₂O₅ alone or in combination required to produce maximum yield.

1. BASAL CONDITIONS :-

(i) (a) Nil (b) N.A. (ii) (a) Mixed red and black soil. (b) Refer soil analysis Mugad. (iii) 18, 19.6.53/6,8,19, 20.8.1953. (iv) (a) Ploughing, levelling, harrowing etc. (b) Transplanting. (c) N.A. (d) 12" between rows 4"-5" between plants. (e) 3-4 (v) N.A. (vi) Paddy M-141-Late. (vii) Unirrigated (viii) Hand weeding, gap filling. (ix) N.A. (x) 6,7, 8.12.1953.

2. TREATMENTS :

All combinations of (1) & (2).

(1) 4 levels of N : N₀ = 0, N₁ = 32 lb/ac., N₂ = 64 lb/ac., N₃ = 96 lb/ac.(2) 4 levels of P₂O₅ : P₀ = 0, P₁ = 32 lb/ac., P₂ = 64 lb/ac., P₃ = 96 lb/ac.N as G.N.C. & P₂O₅ as Super.

3. DESIGN :

(i) 4x4 Factorial in R.B.D. (ii, (a) 16 (b) N.A. (iii) 4 (iv) (a) 20'x13'. (b) 16'x9' (v) 2' all round. (vi) Yes.

4. GENERAL :

(i) The growth of the crop was not good due to heavy rains. (ii) Nil (iii) Grain yield data. (iv) (a) 1949-1953. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1767 lb/ac.

(ii) 815.2 lb/ac

(iii) Main effects and interaction are not significant.

(iv) Av. yield of grain in lb/ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	1825	1943	1570	1588	1731
P ₁	1853	1385	2439	2071	1937
P ₂	1801	1026	1418	1782	1507
P ₃	2392	1489	1650	2033	1891
Mean	1968	1461	1769	1869	1767

S.E. of marginal means. = 203.8 lb/ac.

S.E. of the body of table = 407.6 lb/ac.

Crop :- Paddy.
Site :- Agri. Res. Stn. Mugad.

Ref :- Ms. 50 (13)
Type :- 'M'

Object :- To study the effect of leguminous crop grown with and without P manure on the succeeding crop.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Wal (c) As per treatments. (ii) (a) N.A. (b) Refer soil analysis Mugad. (iii) Wal—26.11.1949 ; Paddy 20.6.1950. (iv) (a) Ploughing, opening furrows (b) Seed drill (c) 60 lb/ac. (d) N.A. (e) — (v) Nil (vi) M—141, Late (vii) Rainfed. (viii) Hand weeding, thinning, gap filling (ix) N.A. (x) 8.12.50 for Paddy and Wal—11.4.1950.

2. TREATMENTS :

1. 0 lb P_2O_5 /ac.
2. 50 lb. „ „
3. 100 lb. „ „
4. 150 lb. „ „
5. Fallow.

P_2O_5 as Super applied just before sowing Wal ; applied in the soil 4"—6" deep.

2. DESIGN :

(i) R.B.D (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 12'×23' (b) 9'×20' (v) 1½' all round (vi) Yes.

4. GENERAL :

(i) Germination of Wal and Paddy uneven. Growth normal (ii) Attack of Aphis which was controlled by spraying Fishoil Resin soap solution for Wal. Slight attack of stem borer and blue beetle for Paddy. (iii) Yield data. (iv) (a) 1949—1953 (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

(i) 1803 lb/ac.

(ii) 288.0 lb/ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of grain in lb/ac.

Treatment	Av. yield.
1.	1791
2.	1727
3.	1802
4.	1852
5.	1840

S.E./mean = 128.3 lb/ac.

Crop :- Paddy.
Site :- Agri. Res. Stn. Mugad

Ref :- Ms. 51(17)
Type :- 'M'

Object :- To study the effect of leguminous crop Wal grown with & without P manure on the succeeding paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Wal (c) As per treatments (ii) (a) N.A. (b) Refer soil analysis Mugad. (iii) Wal 28.12.50 ; Paddy 23.6.1951. (iv) (a) Ploughing, opening furrow (b) Drill sowing with 6 coultered 9" spaced seed drill (c) 60 lb/ac. (d) 9" (e) — (v) Nil (vi) M—141. Late. (vii) Irrigated (viii) One interculturing by a pair of hoes ; thinning, gap filling. (ix) N.A. (x) Wal 12.4.1951. ; Paddy 28.11.1951.

2. TREATMENTS :

Applied to the previous crop (Wal).

1. 0 lb. P_2O_5 / ac.
2. 50 lb. „ „
3. 100 lb. „ „
4. 150 lb. „ „
5. Fallow.

P_2O_5 as Super applied at sowing of Wal.

3. DESIGN :

(i) R.B.D (ii) (a) 5 (b) N.A. (iii) 5. (iv) (a) 23'×12' (b) 20'×9' (v) 1½' all round, (vi) Yes

4. GENERAL :

(i) Poor germination of Wal crop. Heavy rains soon after sowing paddy had bad effect on germination. Growth satisfactory (ii) Slight attack of pod borer for Wal crop ; slight damage in patches due to stem borer for paddy (iii) Grain yield data. (iv) (a) 1949—1953 (b) No (c) N.A ; (v) (a) N.A. (b) N.A (vi) Nil (vii) Nil

5. RESULTS :

- (i) 2029 lb/ac.
 (ii) 389.6 lb/ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb/ac.

Treatment	Av. yield
1.	2110
2.	2155
3.	2032
4.	2041
5.	1808
S.E./mean	= 174.2 lb/ac.

Crop :-Paddy.

Ref :-Ms. 52 (53)

Site :-Agri. Res. Stn. Mugad.

Type :-'M'

Object :—To study the effect of a leguminous crop *Wal* grown with and without P_2O_5 on the succeeding paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Wal (c) As per treatments (ii) (a) N.A. (b) Refer soil analysis Mugad. (iii) Wal 11.12.51 ; Paddy 8.6.52 (iv) (a) Two ploughings, harrowing, grubbing (b) Wal seed broadcast behind plough. Paddy drilled (c) 60 lb /ac. (d) 9" (e)—(v) Nil (vi) M-141. Late (vii) Rainfed (viii) Interculturing, heavy wooden plank was moved on the crop to put down weeds & encourage tillering. Two hand-weedings, thinning and gap filling (ix) N.A. (x) Wal 13.4.52 ; Paddy 3, 4.12.52.

2. TREATMENTS :

- 0 lb. P_2O_5 /ac.
- 50 „ „ „
- 100 „ „ „
- 150 „ „ „
- Fallow.

The Wal seed was covered by running a wooden plank, P_2O_5 as Super applied just at sowing Wal.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 12'×23' (b) 9'×20'. (v) 1½' all round (vi) Yes.

4. GENERAL :

(i) Due to uneven moisture conditions in the plot, the germination of wal crop was extremely poor and uneven, for growth and yield. Germination of paddy crop was quite normal. Growth quite satisfactory. (ii) Wal crop affected by Aphis and had slight damage. No pests or disease to paddy. (iii) Grain yield data (iv) (a) 1949-1953. (b) No (c) N.A. (v) (a) Not known (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 3076 lb./ac.
 (ii) 208.1 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb /ac.

Treatment	Av. yield
1.	2977
2.	3008
3.	2995
4.	3123
5.	3275
S.E./mean	=92.0 lb./ac.

Crop :-Paddy.

Ref :-Ms. 53 (190)

Site :-Agri. Res. Stn. Mugad.

Type :-'M'

Object :—To study the effect of leguminous crop *Wal*, with and without P on the yield of succeeding paddy crop.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) *Wal*. (c) As per treatments. (ii) (a) Mixed red and black soils. (b) Refer soil analysis, Mugad. (iii) 8.7.1953/3.8.1953. (iv) (a) Ploughing, harrowing, grubbing. (b) Transplanted. (c)—(d) 9" (e) N.A. (v) Nil. (vi) M-141- Late. (vii) Unirrigated. (viii) Hand weeding. (ix) N.A. (x) 16 to 18.12.1953.

2. TREATMENTS :

1. 0 lb. P₂O₅/ac.
2. 50 lb. „ „ „
3. 100 lb. „ „ „
4. 150 lb. „ „ „
5. Fallow.

Super was added to *Wal* in Rabi season of 1952.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 23'×12'. (b) 20'×9'. (v) 1½' all round. (vi) Yes.

4. GENERAL :

- (i) Below normal due to heavy showers (ii) Nil. (iii) Grain yield data. (iv) (a) 1949-1953. (v) (a), (b) N.A. (b) No. (c) N.A. (vi) The rain started as late as in the second fortnight of June and caused irregular conditions for the crop in respect of its growth and yield (vii) Nil.

5. RESULTS :

- (i) 1102 lb./ac.
 (ii) 479.7 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1153
2.	965
3.	983
4.	1150
5.	1261
S.E./mean	=214.5 lb./ac.

Crop :-Paddy.

Ref :-Ms 50 (3).

Site :- Agri. Res. Stn. Nagenahally.

Type : 'M'

Object :—To find-out the effect of minor elements on paddy.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Nagenahally. (iii) 21.8.1950 (Seedlings at the age of 45 days) (iv) (a) Ploughing, levelling, forming ridges etc. (b) Transplanting (c)—(d)&(e) N.A. (v) Farm compost at 2000 lb./ac. and A/S at 75 lb./ac. (vi) S.684 ; Duration N.A. (vii) Irrigated (viii) weeding (ix) N.A. (x) 23.12.1950.

2. TREATMENTS :

1. Zn. Sul. at 5 lb./ac.
2. „ „ „ 10 „
3. Borax „ „ 20 lb./ac.
4. C/S at 5 „
5. „ at 10 „
6. Control.

3. DESIGN.

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a), (b) 3 cents. (dimensions N.A.) (v) Nil (vi) Yes.

4. GENERAL ;

(i) Normal (ii) Nil (iii) Grain yield, & straw yield. (iv) (a) Yes, 1950 to 1953 (b) Yes (c) N.A. (v) (a) Yes. Agri. Res. Stn. Mandya ; 50 (1). (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 1061 lb./ac.
 (ii) 197.8 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1092
2.	1145
3.	1012
4.	1026
5.	1079
6.	1012
S.E. mean	=88.24 lb./ac.

Crop :-Paddy.
 Site :- Agri. Res. Stn. Nagenahally

Ref --Ms. 51 (7)/ 50 (3)
 Type :-'M'

Object :—To find the effect of minor elements on paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Nagenahally (iii) 24.8.51
 (iv) (a) Ploughing, forming ridges, levelling etc. (b) Transplanting (c)—(d) to (e) N.A. (v) Farm compost at 3000 lb./ac., G.M. at 4000 lb./ac., G.N.C. at 6½ mds/ac., at planting; Super at 56 lb./ac. at planting; A/S at 56 lb./ac. 6 weeks after planting. (vi) S. 684 (duration N.A.) (vii) Irrigated (viii) Weeding (ix) N.A. (x) 24.12.1951.

2. TREATMENTS :

1. Zn. Sul. at 5 lb./ac.
 2. „ „ „ 10 „
 3. Borax „ 20 „
 4. C/S „ 5 „
 5. „ „ 10 „
 6. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a), (b) 3 cents. (dimensions N.A.) (v) Nil (vi) Yes.

4. GENERAL :

(i) Nil (ii) Nil (iii) Grain yield straw yield. (iv) (a) 1950-1953 (b) Yes. (c) N.A. (v) (a) Agri. Res. Stn. Mandya, 51 (5) (b) N.A. (vi) Nil (vii) None.

5. RESULTS :

- (i) 2622 lb./ac.
 (ii) 329.7 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2547
2.	2707
3.	2687
4.	2680
5.	2527
6.	2600
S.E./mean	=147.2 lb./ac.

Crop :- Paddy.

Ref :- Ms. 52 (25) /51 (7)/50 (3)

Site :- Agri. Res. Stn. Nagenhally.

Type :- 'M'.

Object :- To find the effect of minor elements on paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Nagenhally. (iii) 11.8.1952. (iv) (a) Ploughing with iron mould board plough, levelling, forming ridges etc., (b) Transplanting (c)— (d) 6"-8" spacing (e) 2 to 3 (v) G.M. at 2000 lb./ac., Farm compost at 3000 lb./ac.; G.N.C. at 6 $\frac{3}{4}$ mds/ac.; Super at 56 lb./ac. at planting; A/S 56 lb./ac. 4 weeks after planting on 12.9.52. (vi) S. 661, Medium (vii) Irrigated (viii) Weeding (ix) N.A. (x) 15.12.52.

2. TREATMENTS :

1. Zn. Sul. at 5 lb./ac.
2. " " 10 "
3. Borax at 20 "
4. C/S at 5 "
5. " 10 "
6. Control.

Manures broadcast at the time of transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a), (b) 3 cents (v) Nil (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain yield & straw yield, (iv) (a) 1950-1953 (b) No. (c) N.A. (v) (a) Nil (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 3010 lb./ac.
- (ii) 227.8 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3015
2.	2941
3.	3015
4.	2928
5.	3095
6.	3095
S.E./mean	= 101.6 lb./ac.

Crop :- Paddy.

Ref :- Ms. 53 (33)/52 (25)/51 (7)/50 (3).

Site :- Agri. Res. Stn. Nagenahally. Type :- 'M'.

Object :- To find the effect of minor elements on paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy. (c) N.A. (ii) (a) Red sandy loam (b) Refer soil analysis, Nagenahally. (iii) 25.8.53. (iv) (a) Ploughing, levelling, forming ridges etc. (b) Transplanting (c)—(d) 6"-8". (e) 2 to 3. (v) G.M. at 3000 lb./ac.; Farm compost 4000 lb./ac.; G.N.C. at 6 $\frac{3}{4}$ mds/ac. at planting; Super 56 lb./ac. at planting and A/S 56 lb./ac. 4 weeks after planting. (vi) S. 661 (vii) Irrigated (viii) weeding (ix) N.A. (x) 19.12.1953.

2. TREATMENTS :

1. Borax at 20 lb./ac.
2. Zn. Sul. at 5 lb./ac.
3. " " " 10 lb./ac.
4. C/S at 5 lb./ac.
5. " at 10 lb./ac.
6. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a), (b) 3 cents (v) Nil (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain and straw yield (iv) (a) 1950-1953 (b) No. (c) N.A. (v) None (vi) No (vii) None.

5. RESULTS :

- (i) 1864 lb./ac.
- (ii) 228.1 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	1785
2.	1838
3.	1871
4.	1871
5.	1871
6.	1951
S.E./mean	=101.9 lb./ac.

Crop :- Paddy.

Ref :- Ms. 50 (5).

Site :- Agri. Res. Stn. Nagenahally.

Type :- 'M'

Object :- To find out the effect of incremental doses of N on paddy.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Nagenahally. (iii) 24.8.1950. Age of seedlings 44 days. (iv) (a) Ploughing, levelling, forming ridges etc., (b) Transplanting (c)—(d), & (e) N.A. (v) Farm compost at 2,000 lb./ac. and Super at 56 lb./ac. (vi) S. 684. Duration N.A. (vii) Irrigated. (viii) Weeding (ix) N.A. (x) 24.12.1950.

2. TREATMENTS :

- 1. 15 lb./ac. N 4 weeks after planting.
 - 2. 20 lb./ac. " " " " "
 - 3. 30 lb./ac. " " " " "
 - 4. 40 lb./ac. " " " " "
 - 5. 15 lb./ac. N at planting.
- N in the form of A/S.)

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 6 (iv) (a), (b) 3 cents. (dimensions N.A.) (v) Nil (vi) Yes.

4. GENERAL :

- (i) Normal (ii) Nil (iii) Grain yields, straw yield. (iv) (a) Yes. 1950-53. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 1321 lb./ac.
- (ii) 157.2 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1310
2.	1276
3.	1299
4.	1387
5.	1332
S.E./mean	=63.9 lb./ac.

Crop :- Paddy

Ref :- Ms. 51 (9)/50 (5)

Site :- Agri. Res. Stn. Nagenahally

Type :- 'M'

Object :- To find the effect of increased doses of N on paddy.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Nagenahally (iii) 23.8.1951. (iv) (a) Ploughing, levelling, opening furrows etc. (b) Transplanting. (c)—(d) & (e) N.A. (v) Farm compost at 3000 lb./ac. ; Super at 56 lb./ac. ; G.M. at 4000 lb./ac. (vi) S. 684. Duration N.A. (vii) Irrigated (viii) Weeding (ix) N.A. (x) 23.12.1951.

2. TREATMENTS :

1. 15 lb./ac. N applied 4 weeks after planting.
2. 20 lb. " " " " " "
3. 30 lb. " " " " " "
4. 40 lb. " " " " " "
5. 15 lb./ac. N applied at planting.
N in the form of A/S.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 6 (iv) (a), (b) 3 cents ; (dimensions) N.A. (v) Nil (vi) Yes.

4. GENERAL :

- (i) Normal (ii) Nil (iii) Grain yield, straw yield. (iv) (a) 1950-1953. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 2568 lb./ac.
 (ii) 433.2 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Average yield of grain in lb./ac.

Treatment	Av. yield
1.	2717
2.	2472
3.	2589
4.	2511
5.	2567
S.E./mean	=176.8 lb./ac.

Crop :-Paddy.

Ref :-Ms. 52 (23)/51 (9)/50 (5)

Site :-Agri. Res. Stn. Nagenahally.

Type :-'M'

Object :-To find the effect of incremental doses of N as A/S on paddy crop.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) N.A. (ii) Sandy loam (b) Refer soil analysis, Nagenahally (iii) 9.8.1952 (iv) (a) Ploughing with iron mould board plough, levelling, forming ridges, etc. (b) Transplanting (c)—(d) 6"—8" generally (e) 2—3. (v) G.M. at 2000 lb/ac. Farm compost at 3000 lb/ac. Super at 56 lb/ac. at planting. (vi) S. 661. Medium (vii) Irrigated (viii) weeding. (ix) N.A. (x) 15.12.1952. 15.12.1952.

2. TREATMENT :

1. 15 lb./ac. N applied 4 weeks after planting.
2. 20 lb. " " " " " "
3. 30 lb. " " " " " "
4. 40 lb. " " " " " "
5. 15 lb./ac. N applied at planting.
N in the form of A/S.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 6 (iv) (a),(b) 3 cents. (v) Nil (vi) Yes.

4. GENERAL :

- (i) Normal (ii) Nil (iii) Grain yield & straw yield. (iv) (a) 1950—53 (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil (vii) Nil.

RESULTS :

- (i) 2975 lb./ac.
 (ii) 433.6 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2775
2.	2725
3.	3058
4.	3335
5.	2980
S.E./mean	= 176.8 lb./ac.

Crop :-Paddy.

Ref :-Ms. 53 (31)/52 (23)/51 (9)/50 (5)

Site :-Agri. Res. Stn. Nagenahally.

Type :-'M'

Object :-To find out the effect of incremental doses of N as A/S.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Red sandy loam (b) Refer soil analysis Nagenahally. (iii) 25,26.8.53
 (iv) (a) Ploughing, levelling, forming ridges etc. (b) Transplanting (c)—(d) 6"—8". (e) 2—3 (v) G.M. at
 3000 lb./ac.+Farm compost at 4000 lb/ac.+Super at 56 lb./ac. at transplanting (vi) S. 661 (vii) Irrigated
 (viii) Weeding (ix) N.A. (x) 19.12.1953.

2. TREATMENTS :

1. 15 lb./ac. N 4 weeks after transplanting.
 2. 20 " " " "
 3. 30 " " " "
 4. 40 " " " "
 5. 15 lb./ac. N at transplanting.
- N applied in the form of A/S.

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a), (b) 3 cents (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal (ii) Crop was attacked by borer and helminthosporium. No control measures taken (iii)
 Grain and straw yield. (iv) (a) 1950—1953 (b) No. (c) N.A. (v) None (vi) No (vii) Nil.

5. RESULTS :

- (i) 1572 lb./ac.
 (ii) 186.1 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	1492
2.	1558
3.	1625
4.	1505
5.	1678
S.E./mean	= 83.25 lb./ac.

Crop :-Paddy.

Ref : Ms. 50 (6)

Site :-Agri. Res. Stn. Nagenahally.

Type :-'M'

Object :-To find-out the maximum potential yield of paddy.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Nagenahally (iii) 22.8.50. (Age
 of seedlings 46 days) (iv) (a) Ploughing, levelling, forming ridges etc. (b) Transplanting (c)—(d) & (e)
 N.A. (v) Nil (vi) S. 684 ; Duration N.A. (vii) Irrigated. (viii) Weeding (ix) N.A. (x) 23.12.50.

2. TREATMENTS :

1. G.M. 4 tons+125 lb. Super/ac.
2. G.M. 3000 lb.+75 lb. A/S+224 lb. G.N.C./ac.
3. 150 lb. A/S+112 lb. Super applied at planting.
4. 150 lb. A/S applied after 6 weeks+3000 lb. G.M.+ 56 lb. Super/ac.
5. 3000 lb. G.M. ac. only.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 6 (iv) (a),(b) 3 cents ; (dimensions N.A.) (v) Nil (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain yield; straw yield. (iv) (a) No. (b) No. (c).N.A. (v) (a),(b)N.A. (vi) Nil
 (vii) Nil.

5. RESULTS :

- (i) 1607 lb./ac.
- (ii) 473.2 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1687
2.	1587
3.	1532
4.	1632
5.	1598
S.E./mean	= 193.1 lb./ac.

Crop :-Paddy.

Ref:-Ms. 51 (10)

Site :-Agri. Res. Stn. Nagenahally.

Type : 'M'

Object :—To find-out the maximum potential yield of paddy.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Nagenahally (iii) 25.8.51
- (iv) (a) Ploughing, levelling, forming ridges etc. (b) Transplanting (c)—(d) & (e) N.A. (v) Nil (vi) S. 684 (Duration N.A.) (vii) Irrigated (viii) Weeding (ix) N.A. (x) 24.12.1951.

2. TREATMENTS :

1. G.M. at 4 tons/ac. +224 lb./ac. Super at planting.
2. G.M. at 4 tons/ac. +224 lb./ac. Super at planting +112 lb./ac. A/S at 4 weeks +112 lb./ac. at the end of 6 weeks after planting.
3. G.M. at 4 tons/ac. +224 lb./ac. Super at planting +6 $\frac{3}{8}$ mds/ac. G.N.C. at planting +1 $\frac{1}{2}$ cw/ac. A/S at the end of 6 weeks after planting.
4. 3000 lb./ac. G.M. +6 $\frac{3}{8}$ mds. G.N.C. at planting +56 lb./ac. A/S at 6 weeks after planting +56 lb./ac. Super at planting.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 5 (iv) (a), (b) 3 cents (v) Nil (vi) Yes.

4. GENERAL :

- (i) Normal (ii) Nil (iii) Grain yield ; straw yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2691 lb./ac.
- (ii) 196.5 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2800
2.	2487
3.	2753
4.	2733
S.E./mean	= 87.6 lb./ac.

Crop :-Paddy.

Ref :-Ms 50(7)

Site :-Agri. Res. Stn. Nagenahally.

Type :-'M'

Object :—To find the effect of application of T.C. on paddy.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Nagenahally. (iii) 18.9.1950. (Age of seedlings 36 days) (iv) (a) Ploughing, levelling, forming ridges etc., (b) Transplanting (c)—(d) & (e) N.A. (v) Super at 56 lb./ac. applied just before transplanting (vi) S. 199 Duration N.A. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 30.12.1950.

2. TREATMENTS :

1. No manure.
2. 4 tons/ac. of T.C.
3. 6 " " "
4. 8 " " "
5. 10 " " " "

Applied on 6, 7.9.1950

3. DESIGN :

- (i) L. Sq. (ii) (a) 5 (b) Nil (iii) 5 (iv) (a),(b) 1/20th ac. (dimensions N.A.) (v) Nil (vi) Yes.

4. GENERAL :

- (i) Normal (ii) Nil (iii) Grain yield. (iv) (a) 1950-1951 (b) Yes (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 1311 lb./ac.
 (ii) 286.2 lb./ac.
 (iii) The differences in yield due treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1212
2.	1296
3.	1352
4.	1352
5.	1344
S.E. mean	=128.0 lb./ac.

Crop :- Paddy.

Site :- Paddy Res. Stn. Nagenahally.

Ref :- Ms. 51 (12)/50 (7)

Type :- 'M'.

Object :- To find the effect of application of T.C. on the growth and yield of paddy at different levels.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Nagenahally. (iii) 27.8.1951. (iv) (a) Ploughing, levelling, forming ridges etc., (b) Transplanting (c)-(d)&(e) N.A. (v) Super applied at 56 lb./ac. at planting (vi) S.199 (Duration N.A.) (vii) Irrigated (viii) Weeding (ix) N.A. (x) 20.12.1951.

2. TREATMENTS :

1. No compost.
 2. 4 tons/ac. of T.C.
 3. 6 " " "
 4. 8 " " "
 5. 10 " " "
- Time and method of application N.A.

3. DESIGN :

- (i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a),(b) 5 cents (dimensions N.A.) (v) Nil (vi) Yes.

4. GENERAL :

- (i) Normal (ii) Nil (iii) Grain yield, straw yield. (iv) (a) 1950-51 (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.
 (i) 1490 lb./ac.
 (ii) 100.0 lb./ac.
 (iii) The difference in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1488
2.	1452
3.	1440
4.	1512
5.	1556
S.E./mean	=44.8 lb./ac.

Crop :-Paddy.

Ref :-Ms. 51 (11)

Site : Agri. Res. Stn. Nagenahally.

Type : 'M'

Object :-To find the effect of sewage scum on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Nagenahally. (iii) 13.8.51. (iv) (a) Ploughing, levelling, forming ridges etc. (b) Transplanting (c)—(d) and (e) N.A. (v) G.M. at 4000 lb./ac. A/S at 40 lb./ac. at planting and 75 lb./ac. at the end of 5 weeks. Super at 60 lb./ac. at planting G.N.C. at 100 lb./ac. at planting (vi) S. 684. Duration N.A. (vii) Irrigated (viii) Weeding (ix) N.A. (x) 24.12.1951.

2. TREATMENTS :

1. Scum at $\frac{1}{2}$ ton/ac.
2. " " 1 "
3. " " $1\frac{1}{2}$ ton/ac.
4. " " 2 "
5. " " $2\frac{1}{2}$ ton/ac.
6. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 4 (iv) 2 cents; dimensions N.A. (v) Nil (vi) Nil.

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain yield, straw yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 3518 lb./ac.
- (ii) 811.5 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3600
2.	3437
3.	3750
4.	3300
5.	3850
6.	3175
S.E./mean	=405.7 lb./ac.

Crop :-Paddy.

Ref :-Ms. 50(4)

Site :-Agri. Res. Stn. Nagenahally.

Type :-'M'.

Object :-To find-out the optimum dose and time of application of N.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Nagenahally. (iii) 23.8.1950. (Age of seedlings 43 days). (iv) (a) Ploughing, levelling, forming ridges etc. (b) Transplanting (c)—(d) and (e) N.A. (v) Farm compost at 2000 lb./ac. and Super at 56 lb./ac. (vi) S.684; duration N.A. (vii) Irrigated (viii) Weeding (ix) N.A. (x) 23.12.1950.

2. TREATMENTS :

1. 20 lb. N/ac. at planting.
 2. 20 " " " the end of 6 weeks.
 3. 30 " " " " " 6 "
 4. 10 " " " " " 4 " + 10 lb N/ac. at the end of 6 weeks.
 5. 15 " " " " " 4 " + 15 lb. N/ac. at the end of 6 weeks.
- N in the form of A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6 (iv) 3 cents; dimensions N.A. (v) Nil (vi) Yes.

5. RESULTS :

- (i) 1836 lb./ac.
- (ii) 222.8 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	1958
2.	1865
3.	1851
4.	1705
5.	1798
S.E./mean	=99.6 lb./ac.

Crop :- Paddy.

Ref :- Ms. 53 (28)

Site :- Agri. Res. Stn. Nagenahally.

Type :- 'M'.

Object :- To study the optimum time of application of N and P to paddy.

1. BASAL CONDITIONS :

- (i) (a) No (b) Paddy (c) N.A. (ii) (a) Red sandy loam (b) Refer soil analysis, Nagenahally. (iii) 29.8.1953.
- (iv) (a) Ploughing, levelling, forming ridges etc. (b) transplanting (c) - (d) 6'-8". (e) 2-3 (v) G.M. grown in situ and applied to all plots at the rate of 3000 lb./ac. + compost at 4000 lb./ac. + 75 lb. of N as A/S at the end of 4 weeks after planting. (vi) S.651 (vii) Irrigated (viii) Weeding etc. (ix) N.A. (x) N.A. (x) 23.12.1953.

2. TREATMENTS :

- 1. N at planting.
 - 2. N at ploughing in of G.M.
 - 3. N at planting + P at ploughing in of G.M.
 - 4. N and P at planting.
 - 5. N and P at ploughing in of G.M.
 - 6. N at ploughing in of G.M. and P at planting.
- N :- 15 lb./ac. as a mixture of G.N.C. and A/S i.e., 112 lb. G.N.C. + 40 lb. A/S.
P :- 10 lb./ac. as super

3. DESIGN :

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a), (b) 3 cents (v) Nil (vi) Yes.

4. GENERAL :

- (i) Normal (ii) The crop was attacked by borer and helminthosporium. No control measures taken (iii) Grain and straw yield (iv) (a), (b) No. (c) N.A. (v) (a) & (b) No. (vi) No (vii) Nil.

5. RESULTS :

- (i) 1886 lb./ac.
- (ii) 232.6 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	1946
2.	1893
3.	1906
4.	1900
5.	1893
6.	1780
S.E./mean	=104.0 lb./ac.

Crop :- Paddy.

Ref :-Ms 52 (22)

Site :-Agri- Res. Stn. Nagenahally.

Type :-'M'

Object :-To find the effect of Hyperphosphate and Super on paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Nagenahally (iii) 12.8.52
 (iv) (a) Ploughing with iron mould board plough, levelling, forming ridges etc. (b) Transplanting (c) N.A.
 (d) 6"—8" (e) 2 to 3 (v) G.M. at 2000 lb./ac. Farm compost at 3000 lb./ac. G.N.C. at 6½ mds/ac. at
 planting, A/S at 40 lb./ac. at planting and 56 lb./ac. after 4 weeks on 12.9.52 (vi) S. 661, Medium (vii)
 Irrigated (viii) Weeding (ix) N.A. (x) 15.12.1952.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 2 levels of P_2O_5 :- $P_0 = \frac{1}{2}$ cwt/ac, $P_1 = 1$ cwt/ac.(2) 2 sources of P_2O_5 :- (a) Super, (b) Hyperphos.
and 1 Control (No P_2O_5).

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 6 (iv) 3 cents (v) Nil (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain yield, straw yield (iv) (a). No (b) No. (c) N.A. (v) (a) Nil (b) N.A.
(vi) Nil (vii) Nil.

5. RESULTS :

- (i) 3415 lb./ac.
 (ii) 346.0 lb./ac.
 (iii) None of the effects is significant.
 (iv) Av. grain yield in lb./ac.
 Control=3644 lb./ac.

Doses	Sources		Mean
	a	b	
P_0	3432	3333	3382
P_1	3416	3252	3333
Mean	3424	3292	3357

S.E. of marginal mean = 99.8 lb./ac.
 S.E. of body of table = 141.2 lb./ac.

Crop :Paddy.

Ref :Ms. 53 (32)

Site :-Agri. Res. Stn. Nagenahally.

Type :-'M'

Object :-To study the different methods of placement of A/S.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) N.A. (ii) (a) Red sandy loam (b) Refer soil analysis, Nagenahally. (iii) 26.8.53
 (iv) (a) Ploughing, levelling, forming ridges etc. (b) Transplanting (c)—(d)6"—8" (e) 2—3. (v) G.M. at
 4000 lb./ac. +Super 112 lb./ac. at the time of sowing G.M. on 21.4.53 ; 2nd application of A/S at 50 lb./ac. on
 8.9.53 (vi) S. 701 (vii) Irrigated (viii) Weeding (ix) N.A. (x) 19.12.1953.

2. TREATMENTS :

1. Placement of A/S just before transplanting.
2. Placement of A/S at time of ploughing in of G.M.
3. Broadcasting of A/S just before transplanting.
A/S applied at 100 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a), (b) 1/50 th ac. (v) Nil (vi) Yes:

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain and straw yield (iv) (a) 1952—N.A. (b) Yes. (c) N.A. (v) (a) & (b)
None (vi) No. (vii) Nil.

5. RESULTS :

- (i) 2758 lb./ac.
 (ii) 282.2 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	3007
2.	2766
3.	2499

S.E./mean = 115.1 lb./ac.

Crop :-Paddy

Ref :-Ms 52 (1)

Site :- Rice Breeding Stn. Ponnampet.

Type :- 'C'

Object :—To determine the optimum N & P requirement of paddy and application of N in different forms.

1. BASAL CONDITIONS :

- (i) No (a) (b) Paddy (c) F.Y.M. 5 C.L./ac. ; G.N.C. 200 lb./ac. ; B.M. 100 lb./ac. (ii) (a) Sandy to sandy loam (b) Refer soil analysis, Ponnampet (iii) 10.7.52/6.8.52 to 9.8.52 (iv) (a) Two rounds of dry ploughing, three rounds of puddling, levelling. Two rounds of weeding and regulation of water. (b) Transplanting (c)—(d) & (e) N.A. (v) No. (vi) Kiribilya ; Late variety (vii) Rainfed (viii) Two rounds of dry ploughing, three rounds of puddling and levelling. Two rounds of weeding after transplantation (ix) 45.28" (10.7.52 to 6.1.1953) (x) 6.1.1953.

2. TREATMENTS :

All combination of (1) & (2)

(1) 4 levels of 'N' viz. $N_0=0$; $N_1=20$ lb./ac. $N_2=40$ lb./ac. $N_3=60$ lb./ac.(2) 3 levels of P_2O_5 viz. $P_0=0$, $P_1=20$ lb./ac. $P_2=40$ lb./ac.

Experiment with above treatments conducted with 4 different sources of N viz (1) A/S (2)G.N.C. (3) Compost and (4) G.L.

Compost manure applied on 14.7.52 ; G.L. on 21.7.52 and 23.7.52. P_2O_5 as B.M. and A/S applied just before digging the plots finally.

3. DESIGN :

- (i) R.B.D. Combinations of N & P tried in R.B.D. with 3 replications for each source of N (ii) (a) 12 (b) N.A. (iii) 3 (for each source of N). (iv) (a) $105' \times 58'$ (b) $5.5' \times 53'$ (v) $2\frac{1}{2}'$ all round (vi) Yes.

4. GENERAL :

- (i) Completely lodged at the time of maturity. (ii) Leaf spot and neck infection was noticed mostly in plots with 'N' as A/S. Spraying of 1% perenox was done. (iii) Tiller counts and plant height at two stages. (iv) (a) 1952—53 to 1953—54 (b) Yes (c) N.A. (v) (a) No. (b) N.A. (vi) Nil (vii) Analysed like groups of experiments, each source of 'N' treated as a group. The error variances homogeneous. Interaction not significant. Combined the pooled error and interaction.

6. RESULTS :

- (i) 1962 lb./ac.
 (ii) 473.6 lb./ac.
 (iii) In general, the differences in yield due to treatments are not significant. The increase in yield linearly proportional to the increase in N dosage. So also the yield is quadratically proportional to the increase in P_2O_5 dosage. The significant of both of these is at 5% level.
 (iv) Av. yield of grain in lb./ac. (over all the sources of 'N').

	N_0	N_1	N_2	N_3	Mean
P_0	1764	1831	1850	1985	1858
P_1	2062	1993	2026	2229	2077
P_2	1726	1968	1957	2156	1952
Mean	1851	1931	1944	2123	1962

S.E. of marginal mean of 'N' = 77.1 lb./ac.

S.E. of marginal mean of 'P' = 67.2 ..

S.E. of body of table = 135.9 ..

Crop:- Paddy.

Ref :- Ms. 53 (13)/52 (1).

Site :- Rice Breeding Stn. Ponnampet.

Type :- 'M'

Object :- To determine the optimum N and P_2O_5 requirements of paddy and application of N in different forms.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) F.Y.M. at 5 C.L. /ac. + G.N.C. 200 lb./ac. + B.M. 100 lb./ac. (ii) (a) Sandy to sandy loam (b) Refer soil analysis, Ponnampet. (iii) 30.7.53/28.8.53 to 1.9.53 (iv) (a) Two rounds of dry ploughing, 3 rounds of puddling, levelling. (b) Transplanting (c)— (d) to (e) N.A. (v) No (vi) Kiribiliya—Local variety (vii) Unirrigated (viii). Two rounds of weeding after transplanting (ix) 45.28" (30.7.53 to 4.1.54) (x) 4.1.54.

2. TREATMENTS :

All combinations of (1)&(2).

(1) 4 levels of N viz $N_0=0$ lb./ac., $N_1=20$ lb./ac., $N_2=40$ lb./ac. and $N_3=60$ lb./ac.

(2) 3 levels of P_2O_5 viz $P_0=0$ lb./ac., $P_1=20$ lb./ac., $P_2=40$ lb./ac.

P_2O_5 as B.M.

Experiment with above treatments conducted with different sources of N viz (1) A/S (2) G.N.C.

(3) Compost and (4) G.L.

3. DESIGN :

(i) R.B.D. (ii) (a) 12 (b) N.A. (iii) 3 (for each source of N) (iv) (a) 10.5' x 58' (b) 5.5' x 53' (v) 2½' all round net plot (vi) Yes.

4. GENERAL :

(i) Completely lodged at the time of maturity (ii) Leaf spots and neck infection was noticed in plots with N as A/S. Spraying of 1% perenox was done (iii) Tiller count and plant height at two stages. (iv) (a) 1952—1954 (b) Yes. (c) N.A. (v) No (vi) No. (vii) (Analysed as groups of experiments; Each source of N treated as a group. The error variances homogeneous. Interaction not significant. Combined the pooled error and interaction.)

5. RESULTS :

(i) 1719 lb./ac.

(ii) 403.4 lb./ac.

(iii) The differences in yield due to treatments are not significant. The quadratic component of P levels alone is significant.

(iv) Mean yield of grain in lb./ac. (over all sources of N).

	N_0	N_1	N_2	N_3	Mean
P_0	1569	1597	1699	1732	1649
P_1	1889	1726	1828	1876	1830
P_2	1531	1666	1733	1780	1678
Mean.	1663	1663	1753	1796	1719

S.E. of marginal mean of N = 68.7 lb./ac.

S.E. of marginal mean of P_2O_5 = 58.3 "

S.E. of body of table = 118.0 "

Crop :- Paddy

Ref :- Ms. 50(68).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'M'

Object :- To see the most economical dose of manure for paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis Siruguppa (iii) 30.12.53/29.1.51. (iv) (a) Ploughing, levelling, bund forming, (b) Transplanting. (c)— (d) & (e) N.A. (v) 5000 lb. G.L./ac. (vi) Co. 13 Paddy; Medium (vii) Irrigated. (viii) Interculturing. (ix) 0.95" (30.12.50 to 18.5.1951) (x) 18.5.1951.

2. TREATMENTS :

1. No manure
2. 150 lb. A/S + 1.5 cwt. B.M./ac.
3. 75 „ „ + 200 lb. G.N.C. + 1.5 cwt. B.M./ac.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 5 (iv) (a) 2 cents (b) 1 cent. (v) Yes, Dimensions N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) No (b) No. (c) N.A. (v) (a) N.A. (b) Nil. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

- (i) 2380 lb./ac.
- (ii) 650.7 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain lb./ac.

Treatments	Mean.
1.	1950
2.	2400
3.	2790
S.E./mean.	= 291 lb./ac.

Crop :- Paddy.

Ref :- Ms. 52(83).

Site :- Agri Res. Stn. Siruguppa.

Type :- 'M'.

Object :- To find the relative merits of Dicalcium phosphate and super on paddy when applied broadcast and placed.

1. BASAL CONDITIONS :

- (i) (a) None (b) Paddy (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) 30.6.52/8.8.1952. (iv) (a) Ploughing, levelling, bund forming etc. (b) Transplanting (c) — (d) & (e) N.A. (v) Nil. (vi) GEB. 24 (Late). (vii) Irrigated. (viii) Intercultivation, weeding twice. (ix) 9.02" (30.6.52 to 16.12.1952) (x) 16.12.1952.

2. TREATMENTS :

1. Control. (No manure).
 2. N (alone).
 3. „ + Super.)
 4. „ „ Dicalcium phosphate) fertilizers broadcast.
 5. „ „ Super) fertilizers placed at a depth of 4" by
 6. „ „ Dicalcium phosphate) means of drill.
- Level of N : 40 lb./ac. ; level of P₂O₅ 80 lb./ac. ; form of N : G.N.C.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a) 2 cents (b) 1 cent (v) Border left ; dimensions N.A. (vi) Yes.

4. GENERAL

- (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1952—1953. (b) No (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2462 lb./ac.
- (ii) 418.6 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. grain yield in lb./ac.

Treatment.	Mean.
1.	1348
2.	2276
3.	2890
4.	2674
5.	2868
6.	2716
S.E./mean.	= 187.2 lb/ac.

Crop :- Paddy.

Ref :- Ms. 53(41).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'M'

Object :- To find out the relative merits of Super and Dicalcium phosphate on paddy when applied broadcast and by placement.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) N.A. (ii) (a) Heavy black clayey soil (b) Refer soil analysis Siruguppa. (iii) 1.7.53/1.8.53 (iv) (a) ploughing, levelling, bund forming etc. (b) Transplanting (c) — (d) to (e) N.A. (v) Nil (vi) G.E.B. 24 (late) (vii) Irrigated. (viii) Intercultivation and weeding twice (ix) 17.34" (1.7.53 to 10.12.53) (x) 9,10.12.53.

2. TREATMENTS :

1. Control.
2. 40 lb. N/ac. as G.N.C.
3. 40 lb. N/ac. as G.N.C. + 80 lb. P_2O_5 /ac. as Super (broadcast)
4. " " + " " as Dicalcium P_2O_5 (broadcast).
5. Same as treat. 3 (placed).
6. Same as treat. 4 (placed).

3. DESIGN :

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a) 39'3" × 21' (b) 27'3" × 16' (v) 6' along length and 2½' along breadth. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield (iv) (a) No. (b) No (c) No. (v) (a) Nil (b) Nil. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2088 lb./ac.
 (ii) 268 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Mean
1.	1191
2.	1894
3.	2440
4.	2144
5.	2325
6.	2533
S.E./mean.	= 120 lb./ac.

Crop :- Paddy

Ref :- Ms. 53(42)

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'M'

Object :- To find out the relative merits of super and kotka phosphate manures on paddy.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Heavy black clayey soil (b) Refer soil analysis Siruguppa. (iii) 8.7.53 /8.8.53. (iv) (a) ploughing, levelling etc. (b) Transplanting (c) — (d) to (e) N.A. (v) Nil. (vi) G.E.B. 24. (late) (vii) Irrigated (viii) intercultivation and weeding twice (ix) 17.13" (8.7.53 to 13.12.53) (x) 12, 13.12.1953.

2. TREATMENTS :

1. Control.
2. 5000 lb. G.L/ac.
3. Same as 2+60 lb/ac. P_2O_5 as Super (broadcast).
4. " " + " " P_2O_5 as Kotka phos. (broadcast)
5. Same as treat. 3 (placed)
6. Same as treat. 4 (placed)

3. DESIGN :

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a) 24'10" × 22' (b) 21'10" × 20' (v) 1½' along length and 1' along breadth. (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil (iii) Grain yield (iv) (a) 1953—1957 (b) Yes. (c) N.A. (v) (a) & (b) Nil (vi) No (vii) Nil

5. RESULTS :

- (i) 2369 lb./ac.
 (ii) 165 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Mean
1.	1618
2.	2465
3.	2429
4.	2638
5.	2694
6.	2369
S.E./mean	= 74 lb./ac.

Crop :- Paddy.

Site :- Agri. Res. Stn. Siruguppa.

Ref :- Ms. 53(168).

Type :- 'M'.

Object :- To find-out the effect of inorganic fertilizers in the form of A/S against a mixture of organic and inorganic fertilizers over a basal dressing of 5000 lb. G.L./ac. keeping the total quantity of N for both the mixtures the same.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy following G.M. (c) 5 tons F.Y.M./ac. and super 40 lb. P_2O_5 /ac. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) 14.2.53. (iv) (a) Ploughing and incorporating G.L. and letting in water for rotting, trampling with cattle pair, working wet land puddler and levelling. (b) to (e) N.A. (v) 5000 lb./ac. of G.L. was applied on 13.2.1953 to all plots. (vi) Co—13 Medium. (vii) Irrigated. (viii) Weeding. (ix) 1.77" (14.2.1953 to 19.5.1953) (x) 19.5.53.

2. TREATMENTS :

1. Control (No fertilizer).
 2. Mixture I (150 lb.A/S/ac. + 168 lb. Super/ac.)
 3. Mixture II (A/S 75 lb./ac. + G.N.C. 200 lb./ac.+Super 168 lb./ac.).
 Applied just before transplanting by broadcasting. on 14.2.1953.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 5 (iv) (a) 2 cents (b) 1 cent. (v) Border left (measurements N.A.) (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1950—1954. [(b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1416 lb./ac.
 (ii) 227.9 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1056
2.	1527
3.	1665
S.E./mean.	= 101.9 lb./ac.

Crop :- Paddy (2nd crop):
 Centre : Mangalore

Ref : Simple trials on cultivators' fields (T.C.M.)
 Year : 1953. Type 'M'

Object :- IV (i) To study the effect of types and levels of P and N.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Coastal alluvium—loam—pH. 6.0 (iii) F.Y.M. or G.M. was generally applied (iv) N.A. (v) N.A. (vi) October (vii) Unirrigated (viii) N.A. (ix) 75" (x) March—April.

2. TREATMENTS :

0 = Control.

N = A/S at 40 lb. N/ac.

NP₁ = " " " " " + Super at 20 lb. P₂O₅/ac.

NP₂ = " " " " " + " " 40 " "

NP'₁ = " " " " " + Nitrophos at 20 lb. P₂O₅/ac.

NP'₂ = " " " " " + " " 40 " "

N+30P = " " " " " + Super at 30 lb. P₂O₅/ac.

N+30P' = " " " " " + Nitro phos at 30 lb. P₂O₅/ac.

All fertilizers applied before planting.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire paddy growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing paddy for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Yield data (iv) (a) 1953—56 (b) No (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatments	Av. yield in lb./ac.
0	2056
N	2129
NP ₁	2442
NP ₂	2481
NP' ₁	2295
NP' ₂	2516
N+30 P	2396
N+30 P'	2356
G.M.	2334
S.E./mean.	86.39
No. of Expts.	5

Crop :- Paddy (2nd crop).

Ref : Simple trials on cultivators' fields (T.C.M.)

Centre :- Mangalore

Year : 1953.

Type :- 'M'

Object :- IV (ii) To study the effect of types and levels of P and N.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Coastal alluvium—loam—pH.6.0 (iii) F.Y.M. or G.M. was generally applied (iv) N.A. (v) N.A. (vi) October (vii) Unirrigated (viii) N.A. (ix) 75" (x) March—April.

2. TREATMENTS :

0 = Control.

N = A/S at 40 lb. N/ac.

NP₁ = " " " " " + Super at 20 lb. P₂O₅/ac.

NP₂ = " " " " " + " " 40 " "

NP''₁ = " " " " " + A/P at 20 lb. P₂O₅/ac.

NP''₂ = " " " " " + " " 40 " "

N+30P = " " " " " + Super at 30 lb. P₂O₅/ac.

N+30P'' = " " " " " + A/P at 30 lb. P₂O₅/ac.

All fertilizers applied before planting.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire paddy growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing paddy for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes,

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1953—55 (b) No (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatments	Av. yield in lb./ac.
0	2170
N	2267
NP ₁	2291
NP ₂	2476
NP ₁ '	2454
NP ₂ '	2495
N+30P	2270
N+30P'	2430
G.M.	2357
S.E./mean.	54.30
No. of Expts.	5

Crop :-Paddy (2nd crop) Ref :-Simple trials on cultivators' fields (T.C.M)
Centre :Mangalore (Mysore) Year. : 1953. Type :- M.

Object :—IV (iii) To study the effect of types and levels of P and N.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Coastal [alluvium- loam-p.H.6.0 (iii) F.Y.M. or G.M. was generally applied (iv) N.A. (v) N.A. (vi) October (vii) Unirrigated (viii) N.A. (ix) 75" (x) March-April.

2. TREATMENTS :

0 =Control
N =A/S at 40 lb.N/ac.
NP₁' = " " " " " +Nitro phos. at 20 lb.P₂O₅/ac.
NP₂' = " " " " " + " " 40 "
NP₁" = " " " " " +A/P. at 20 lb.P₂O₅/ac.
NP₂" = " " " " " + " " 40 "
N+30P' = " " " " " +Nitro phos. at 30 lb.P₂O₅/ac.
N+30P" = " " " " " +A/P. at 30 lb.p₂O₅

All fertilizers applied before planting.

3. DESIGN:

(i) & (ii) Eleven community project centres, representing the entire paddy growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing paddy for each selected village was prepared. From this list, two cultivators were selected and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Yield data (iv) (a) 1953-56 (b) No (c) N.A. (v) N.A. (vi) Nil (vii) Nil

5. RESULTS :

Treatments	Av. yield in lb./ac.
0	2358
N	2751
NP ₁ '	3031
NP ₂ '	3162
NP ₁ "	2807
NP ₂ "	3001
N+30P'	2974
N+30P"	3007
G.M.	2886
S.E./mean	141.5
No. of Expts.	5

Crop :- Paddy (2nd crop).
Centre :- Mangalore

Ref :- Simple trials on cultivators' field (T.C.M.)
Year : 1953
Type :- 'M'

Object :- IV (iv) To study the effect of types and levels of P and N.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Coastal alluvium-loam-pH. 6.0 (iii) F.Y.M. or G.M. was generally applied (iv) N.A. (v) N.A. (vi) October (vii) Unirrigated (viii) N.A. (ix) 75" (x) March-April.

2. TREATMENTS :

0 = Control
N = A/S at 40 lb. N/ac.
NP₁ = A/S at 40 lb. N/ac. + Super at 20 lb. P₂O₅/ac.
N+30P = " + Super at 30 " "
NP₂ = " + Super at 40 " "
NP₁" = " + B.M. at 20 lb. P₂O₅/ac.
N+30 P" = " + B.M. at 30 " "
NP₂" = " + " at 40 " "

All fertilizers applied before planting.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire paddy growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing paddy for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Yield data (iv) (a) 1953-56 (b) No. (c) N.A. (v) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

Treatments	Av. yield in lb./ac.
0	1830
N	2180
NP ₁	2304
N+30 P	2105
NP ₂	2134
NP ₁ "	2231
N+30 P"	2189
NP ₂ "	2115
G.M.	2136
S.E./mean	112.7
No. of expts.	5

Crop : Paddy (2nd crop)
Centre : Mangalore

Ref : Simple trials on cultivators. field (T.C.M.)
Year : 1953 Type :- 'M,

Object :- IV (v) To study the effect of types and levels of P and N.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Coastal alluvium-lom-pH. 6.0 (iii) F.Y.M. or G. M. was generally applied (iv) N.A. (v) N.A. (vi) October (vii) Unirrigated (viii) N.A. (ix) 75" (x) March-April.

2. TREATMENTS :

0 = Control
N = A/S at 40 lb. N/ac.
NP₁' = " + Nitro phos at 20 lb. P₂O₅/ac.
N+30P' = " + " at 30 " "
NP₂' = " + " at 40 " "
NP₁" = " + B.M. at 20 " "
N+30 P" = " + " at 30 " "
NP₂" = " + " at 40 " "

All fertilizers applied before planting.

DESIGN :

(i) & (ii) Eleven community project centres, representing the entire paddy growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were

selected at random from the selected block and a list of cultivators growing paddy for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Yield data (iv) (a) 1953-56 (b) No. (c) N.A. (v) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

Treatments	Av. yield in lb./ac.
0	1572
N	1721
NP ₁ '	1999
N+30 P'	1708
NP ₂ '	1697
NP ₁ ''	1720
N+30P''	1792
NP ₂ ''	1841
G.M.	1756
S.E./mean.	162.9
No. of expts.	5

Crop : Paddy (2nd crop)

Ref : Simple trials on cultivators' fields (T.C.M.)

Centre :- Mangalore

Year : 1953 Type :- 'M'

Object :—IV (vi) To study the effect of types and levels of P and N.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Coastal alluvium-loam-pH.6.0 (iii) F.Y.M. or G.M. was generally applied (iv) N.A. (v) N.A. (vi) October (vii) Unirrigated (viii) N.A. (ix) 75" (x) March-April.

2. TREATMENTS :

0	=Control
N	=A/S at 40 lb. N/ac.
NP ₁ '	= " + A/P at 20 lb. P ₂ O ₅ /ac.
N+30 P''	= " + " 30 "
NP ₂ '	= " + " 40 "
NP ₁ ''	= " + B.M. 20 "
N+30 P''	= " + " 30 "
NP ₂ ''	= " + " 40 "

All fertilizers applied before planting.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire paddy growing tract of the country were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing paddy for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

GENERAL :

(i) Normal (ii) Nil (iii) Yield data (iv) (a) 1953-56 (b) No (c) N.A. (v) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

Treatments	Av. yield in lb./ac.
0	1939
N	2192
NP ₁ ''	2375
N+30 P''	2724
NP ₂ ''	2440
NP ₁ ''	2427
N+30P''	2421
NP ₂ ''	2500
G.M.	2377
S.E./mean	113.5
No. of Expts.	5

Crop : Paddy (2nd crop)

Ref : Simple trials on cultivators' fields (T.C.M)

Centre : Mangalore

Year : 1953 Type 'M'

Object :—(I) (b) (ii). To study the effect of different levels and types of N and P.

BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Coastal alluvium—loam—pH. 6.0 (iii) F.Y.M. or G.M. was generally applied (iv) N.A. (v) N.A. (vi) October (vii) Unirrigated (viii) N.A. (ix) 75" (x) March-April.

2. TREATMENTS :

0 =Control.

P =20 lb. P₂O₅/ac. as Super.N₁ P =A/S at 20 lb. N/ac.+20 lb. P₂O₅/ac. as Super.N₂ P =A/S at 40 lb. N/ac.+ " " " " "N₁" P=Urea ,, 20 ,, + ,, " " " "N₂" P= ,, ,, 40 ,, + ,, " " " "N₃₀ P=A/S at 30 ,, + ,, " " " "N₃₀" P=Urea at 30 ,, + ,, " " " "

All fertilizers applied before planting.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire paddy growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing paddy for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Yield data (iv) (a) 1953—56 (b) No. (c) N.A. (v) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

Treatment	Av. yield in lb./ac.
0	1730
P	1857
N ₁ P	1961
N ₂ P	1947
N ₁ " P	2011
N ₂ " P	2088
N ₃₀ P	2143
N ₃₀ " P	2060
G.M.	1975
S.E./mean	69.12
No. of Expts.	14

Crop : Paddy (2nd crop)

Ref : Simple trials on cultivators' fields (T.C.M)

Centre : Mangalore

Year : 1953 Type : 'M'

Object :—(II) To study the effect of manures (N,P,K).

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Coastal alluvium—loam—pH. 6.0 (iii) F.Y.M. or G.M. was generally applied (iv) N.A. (v) N.A. (vi) October (vii) Unirrigated (viii) N.A. (ix) 75" (x) March—April.

2. TREATMENTS :

0 =Control.

N =A/S at 20 lb. N/ac.

NP =A/S at 20 lb. N/ac.+Super at 20 lb. P₂O₅/ac.N["]P =A/N ,, " " + ,, " " 20 " "N["]P =Urea ,, " " + ,, " " " "NPK =A/S ,, " " + ,, " " " " +Mur. Pot. at 20lb. K₂O/ac.

All fertilizers applied before planting.

3. DESIGN :

(i) & (ii) Eleven community project centres, representing the entire paddy growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing paddy for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Yield data (iv) (a) 1953—56 (b) No. (c) N.A. (v) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

Treatments	Av. yield in lb./ac.
0	2176
N	2120
NP	2266
N ² P	2308
N ³ P	2157
NPK	2289
G.M.	2219
S.E./mean	99.56
No. of Expts.	10

Crop :- Paddy (1st Crop)

Ref :- Complex experiments (T.C.M), 1953

Centre :- Ponnampet

Type :- 'M'

Object :- I (a) (ii) To study the effect of types and levels of P and N on acid soils.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Clayey and swampy soil (b) N.A. (iii) 28, 30.8.53 (iv) N.A. (v) N.A. (vi) Kiribilia (Local) (vii) Unirrigated (viii) N.A. (ix) N.A. (x) 29.12.53.

2. TREATMENTS :

All combinations of (1), (2) & (3) + 3 extra treatments.

1. 3 levels of N : N₀=0, N₁=20 lb./ac. and N₂=40 lb./ac.

2. 3 levels of P₂O₅ : P₀=0, P₁=20 lb./ac. and P₂=40 lb./ac.

3. 3 sources of P₂O₅ : S₁=Super or triple Super, S₂=B.M. and S₃= $\frac{1}{2}$ Super + $\frac{1}{2}$ Rock phosphate.

(N as A/S. manures applied before last puddling)
and 3 extra treatments are.

(a) 60 lb. N/ac. + 40 lb. P₂O₅/ac.

(b) 40 " + 80 "

(c) 60 " + 80 "

N as A/S and P₂O₅ as Super.

3. DESIGN :

(i) 3³ confounded fact. with 3 extra treatments in each block. (ii) (a) 12 plots/block and 3 blocks/replication (b) N.A. (iii) 1 (iv) (a) N.A. (b) 1/59.8 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Lodging occurred in plots receiving higher doses of N (ii) Nil (iii) Yield data (iv) (a) 1953—56 (b) No (c) N.A. (v) (a) Shimoga. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

(i) 2810 lb./ac.

(ii) 673.5 lb./ac.

(iii) None of the treatment effects is significant.

(vi) Av. grain yield in lb./ac.

	I			Mean	III			Mean
	N ₀	N ₁	N ₂		S ₁	S ₂	S ₃	
P ₀	2325	2597	3233	2718	—	—	—	—
P ₁	2552	2722	3380	2885	2635	2853	3167	2885
P ₂	2403	3126	2478	2669	2883	2162	2962	2669
Mean	2427	2815	3030	2757	2759	2507	3065	2777
S ₁	2244	2700	3307	2750				
II S ₂	2331	2411	2992	2578				
S ₃	2706	3335	2792	2944				
Mean	2427	2815	3030					

Mean yield of extra treatments.

(a) = 2716

(b) = 3004

(c) = 3186

S.E./mean = 388.8 lb./ac.

For table I and II

S.E. of mean in the body of table = 388.8 lb./ac.

S.E. of marginal means = 224.5 lb./ac.

For table III

S.E. of mean in the body of table = 388.8 lb./ac.

S.E. of marginal row mean = 224.5 lb./ac.

S.E. of marginal column mean = 275.0 lb./ac.

Crop :—Paddy (1st Crop)

Ref :—Complex experiments(T.C.M.), 1953.

Centre : Shimoga (Mysore)

Type : 'M'

Object :— I (b) (ii) To study the effect of types and levels of P and N on acid soils.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Coarse sandy loam (b) Acidic with pH. value 5.0.+5.5 (iii) T.P. 3.9.53 (iv) N.A. (v) N.A. (vi) S—701 Coimbatore Sanna (vii) Irrigated (viii) N.A. (ix) N.A. (x) 29.12.53.

2. TREATMENTS :

All combinations of (1), (2), (3) +3 extra treatments.

1. 3 levels of N as A/S : N₀=0, N₁=20 lb./ac. N₂=40 lb./ac.2. 3 levels of P₂O₅ : P₀=0, P₁=20 lb./ac. P₂=40 lb./ac.3. 3 sources of P₂O₅ : S₁=Super or triple Super, S₂=B.M.and S₃= $\frac{1}{2}$ Super + $\frac{1}{2}$ Rock phosphate

and 3 extra treatments are

(a) 60 lb. N/ac. +40 lb. P₂O₅/ac.

(b) 40 " +80 "

(c) 60 " +80 "

N as A/S and P₂O₅ as triple Super.

Manuring done on 23.7.53 to 4.8.53.

3. DESIGN :

(i) 3³ confounded factorial with 3 extra treatments in each block (ii) (a) 12 plot/block and 3 blocks/replication (b) N.A. (iii) 1 (iv) (a) N.A. (b) 1/60 acre (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal (ii) Severe incidence of Hispa and Gall-fly (iii) Yield data (iv) (a) 1953—56 (b) No (c) N.A. (v) (a) Ponnampet (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

(i) 1316 lb./ac.

(ii) 206.9 lb./ac.

(iii) Main effect of levels of P is highly significant. Extra treatments are also highly significant. Interaction "source × levels of P" is significant. Others are not significant.

(iv) Av. grain yield in lb./ac.

	I				III			
	N ₀	N ₁	N ₂	Mean	S ₁	S ₂	S ₃	Mean
P ₀	572	585	778	645	—	—	—	—
P ₁	997	1455	1262	1238	1177	966	1571	1238
P ₂	1318	1406	1406	1377	1259	1479	1393	1377
Mean	962	1149	1149	1087	1218	1222	1482	1307
S ₁	888	963	1051	967				
II S ₂	881	1074	1154	1036				
S ₃	1118	1409	1241	1256				
Mean	962	1149	1149	1087				

Mean yield of 3 extra treatments.

(a) =1530

(b) =2433

(c) =2052

S.E./mean=119.4 lb./ac.

For table I and II

S.E. of mean in the body of table = 119.4 lb./ac.

S.E. of marginal means = 68.9 lb./ac.

For table III

S.E. of mean in the body of table = 119.4 lb./ac.

S.E. of marginal row means = 68.9 lb./ac.

S.E. of marginal column means = 84.4 lb./ac.

Crop :- Paddy (1st Crop)**Ref :- Complex experiments (T.C.M.), 1953****Centre :- Shimoga****Type :- 'M'**

Object :-To study the effect of artificial manures in conjunction with organic manures.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Coarse sandy loam (b) Acidic with pH. value 4.5 (iii) 1.9.53 (iv) N.A. (v) N.A. (vi) S-701, Coimbatore Sanna (vii) Unirrigated (viii) N.A. (ix) N.A. (x) 22.12.53.

2. TREATMENTS :

All combinations of (1), (2) & (3)

(1) 3 levels of N :- N₀=0, N₁=20 lb./ac. and N₂=40 lb./ac.(2) 3 levels of P₂O₅ :- P₀=0, P₁=20 lb./ac. and P₂=40 lb./ac.(3) 3 levels of bulky manures : F₀=0, F₁=5 C.L./ac. & F₂=10 C.L./ac.A/S at planting and P₂O₅ at puddling.**3. DESIGN :**(i) 3³ factorial in R.B.D. (confounded) (ii) (a) 9 plots/block and 3 blocks/replication (b) N.A. (iii) 1 (iv) (a) N.A. (b) 1/60 acre (v) N.A. (vi) Yes.**4. GENERAL :**

(i) Normal (ii) Severe incidence of Hispa and Gall-fly (iii) Yield data (iv) (a) 1953-56 (b) No (c) N.A. (v) (a) Aduthurai, Maruteru, and Chalvai (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

(i) 1627 lb./ac.

(ii) 196.3 lb./ac.

(iii) Main effects of N & P are highly significant. Others are not significant.

(iv) Av. grain yield in lb./ac.

	N ₀	N ₁	N ₂	Mean	F ₀	F ₁	F ₂
P ₀	1009	1627	1483	1373	1460	1293	1367
P ₁	1460	1722	1810	1664	1671	1622	1700
P ₂	1553	1921	2057	1844	1954	1620	1957
Mean	1341	1757	1784	1627	1695	1512	1675
F ₀	1401	1712	1973				
F ₁	1200	1733	1602				
F ₂	1421	1826	1777				

S.E. of marginal mean = 65.4 lb/ac.

S.E. of mean in the body of table. = 113.3 lb/ac.

Crop : Paddy (1st crop) Ref :- Complex experiments (T.C.M.), 1953.
 Centre :- Shimoga Type :- 'M'

Object :- VI. To study the residual value of phosphatic manures. (1st year)

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Coarse sandy loam (b) Acidic with pH. value 4.5 (iii) 4.9.53
 (iv) N.A. (v) N.A. (vi) S-701 Coimbatore Sanna (vii) Irrigated (viii) N.A. (ix) N.A. (x) 29.12.53 to 10.1.54.

2. TREATMENTS :

5 treatments replicated in each block as follows :

1. 0=Untreated 1 plot/block
2. C=Control 6 plots/block
3. P_{1/2}= 1/2 unit dressing 1 ,,
4. P₁=1 unit dressing 2 ,,
5. P₂=2 unit dressing. 2 ,,

Unit dressing = 20 lb P₂O₅/ac.

A basal dressing of 20 lb N/ac. as A/S given to all treatments except treatment. (1)

3. DESIGN :

(i) R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a) N.A. (b) 1/60 acre. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal (ii) Severe incidence of Hispa and Gall-fly (iii) Yield data (iv) (a) 1953-56 (b) No (c) N.A. (v)
 (a) Aduthurai ; Sahaspur, Burdwan, Mankhanada, Maruteru and Chavai (b) N.A. (vi) Nil (vii) Nil.

RESULTS :

- (i) 802 lb/ac.
 (ii) 204.6 lb/ac.
 (iii) Treatment differences are highly significant.
 (iv) Av. grain yield in lb/ac.

Treatment	Av. yield	S.E./mean
1.	323	102.3
2.	575	41.8
3.	913	102.3
4.	1106	72.4
5.	1365	72.4

Crop :- Paddy (1st crop).
Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 51 (25).
Type :- 'VM'.

Object :-To study the effect of high yielding strains on soil fertility under ryots manuring and heavy manuring conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments, (ii) (a) Clayey loam. (b) Refer soil analysis Mangalore. (iii) 5.5. 1951/15.6.1951. (iv) (a) 6 ploughing with country plough (b) Transplanting (c)—(d) 9". (e) 2. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Weeding one month after planting. (ix) 110.03" (5.5.51 to 11.10.51). (x) 11.10.1951.

2. TREATMENTS :

2 Main plot treatments :-

- (1) Ryot manuring=2000 lb. of C.M./ac.
 (2) Heavy „ =4000 lb./ac. of G.L.+200 lb./ac. Super+56 lb./ac. A/S.

4 Sub-plot treatments :-

1. Local Kayama to be followed by Athikralya (local)
 2. „ „ „ „ Co-3 High yielder.
 3. High yielder G.B. „ „ local Athikralya.
 4. „ „ „ „ „ Co-3 High yielder.

3. DESIGN :

(i) Split plot (ii) (a) 2 main plots/block ; 4 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) 23'×13' (b) 21'×11'
 (v) Border 1' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1951-1955. (b) Yes. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2526 lb./ac.
 (ii) (a) = 545.4 lb./ac.
 (b) = 246.2 lb./ac.
 (iii) The differences in yield due to varieties are highly significant. Main treatment and interaction 'Main×Sub' are not significant.
 (iv) Av. yield of grain in lb./ac.

Manuring.	Varieties.				Mean.
	1	2	3	4	
Ryot	2226	2285	2551	2509	2333
Heavy.	2334	2511	2894	2900	2659
Mean.	2280	2398	2723	2705	2526

S.E. of the differences between two.

- (1) main treatment means =157.4 lb./ac.
 (2) sub-treatment means. =100.5 „ „
 (3) sub-treatment means at the same level of main treatment. =142.1 „ „
 (4) main-treatment means at the same level of sub-treatment. =199.8 „ „

Crop :- Paddy (2nd crop).
Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 51 (26)/51 (25).
Type :- 'VM'.

Object :-To study the effect of high yielding strains on soil fertility under ryots, manuring and heavy manuring conditions.

1. BASAL CONDITIONS ;

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Clayey loam. (b) Refer soil analysis Mangalore. (iii) 15.9.51/28.10.51. (iv) (a) 6 ploughings with country plough (b) Transplanting. (c)—(d) 9" (e) 2. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Weeding one month after planting. (ix) 15.84" (15.9.1951 to Jan., 1952) (x) Jan. 1952.

2. TREATMENTS :

2 Main plot treatments :-

- (1) Ryot manuring 2000 lb. of C.M./ac.
 (2) Heavy manuring 4000 lb./ac. of G.L.+200 lb./ac. of Super+56 lb./ac. of 'A/S'.

4. Sub-plot-treatments :-

1. Local Athikraya to be followed by local Kayama.
 2. " " " " " " " " M.G.L.-1 high yielder.
 3. High yielder Co. 3 to be followed by local Kayama.
 4. " " " " " " " " M.G.L.-1 high yielder.
 Time and method of application N.A.

3. DESIGN :

- (i) Split plot. (ii) (a) 2 main plots/block, 4 sub-plots/main plot (b) N.A. (iii) 6 (iv) (a) 21'×14' (b) 16'×10'
 (Main plot size N.A.) (v) 2½' along length ; 2' along breadth. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1951-1955. (b) Yes. (c) N.A. (v) (a) None. (b) N.A.
 (vi) & (vii) Nil.

5. RESULTS :

- (i) 1887 lb./ac.
 (ii) (a) 261.3 lb./ac.
 (b) 177.6 "
 (iii) The differences in yield due to manuring (main plot treatments) are significant. The interaction between manuring & varieties, is also significant. Varieties are not significant.
 (iv) Av. yield of grain in lb./ac.

Manuring.	Varieties.				Mean.
	1	2	3	4	
Ryot	1809	1882	1772	1681	1786
Heavy	1854	1882	2098	2118	1988
Mean.	1831	1882	1935	1899	1887

S.E. of the difference between two

- (1) main plot treatment means =75.4 lb./ac.
 (2) sub plot-treatment means =72.5 lb./ac.
 (3) sub plot-treatment means at the same level of main plot treatment. =102.6 lb./ac.
 (4) main plot treatment means at the same level of sub plot treatment =116.5 lb./ac.

Crop :-Paddy (1st crop).
 Site :-Paddy Breeding Stn. Mangalore.

Ref :-Ms. 52 (79)/51 (26)/51 (25)
 Type :-"VM"

Object :-To study the effect of high yielding strains on soil fertility under ryots, manuring and heavy manuring conditions.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy (c) As per treatments (ii) (a) Clayey loam (b) Refer soil analysis, Mangalore.
 (iii) 26.4.1952/26.6.52. (iv) (a) 6 ploughings (b) Transplanting (c) (d) bulk (e) 2 (v) Nil. (vi) Local kayama & G.B. 5966. (vii) Rainfed. (viii) Weeding one month after planting. (ix) 112.03"
 (26.4.52 to 21.10.1952). (x) 21.10.1952.

2. TREATMENTS ;

2 Main plot treatments :-

- (1) Ryots manuring -2000 lb. of C.M./ac.
 (2) Heavy manuring-4000 lb. of G.L.+200 lb. of B.M.+56 lb. A/S/ac.

2. 4 Sub-plots treatments :-

1. Local kayama to be followed by local Athikraya high yielder.
 2. Local kayama to be followed by Co. 3.
 3. High yielder GB 5966 to be followed by Local Athikraya.
 4. High yielder GB 5966 to be followed by Co. 3.

Leaf applied on 24.6.52 by spreading uniformly. B.M. applied on 26.6.52 broadcast ; A/S broadcast on 31.7.52.

3. DESIGN :

(i) Split plot (ii) (a) 2 main plots/block ; 4 sub-plots/main plot (b) N.A. (iii) 6 (iv) (a) 21'×14' (b) 16½'×10½', main plot size N.A. (v) Border :—2½' along length ; 1¾' along width.

4. GENERAL :

(i) Satisfactory, no lodging. (ii) Nil (iii) Grain yield (iv) (a) 1951-1955 (b) Yes (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2640 lb./ac,
 (ii) (a) 294.8 lb./ac.
 (b) 268.8 lb./ac.
 (iii) The differences in yield due to varieties are highly significant. The interaction between manure and varieties is highly significant. Manures are also significant.
 (iv) Av. grain yield in lb./ac.

Manuring	Varieties.				Mean
	1	2	3	4	
Heavy	3226	2974	2291	2375	2717
Ryots	2820	2595	2506	2333	2563
Mean.	2023	2785	2398	2354	2640

S.E. of difference between two

- main plot treatment means. = 85.1 lb./ac.
- sub plot treatment means. = 109.7 lb./ac.
- sub plot treatment means at the same level of main plot treatments. = 155.2 lb./ac.
- main plot treatment means at the same level of sub plot treatments. = 159.1 lb./ac.

Crop :-Paddy (2nd crop)

Ref :-Ms. 52 (39)/52 (79)/51 (26)/51 (25)

Site :-Paddy Breeding Stn. Mangalore. Type :-'VM'

Object :-To study the effect of high yielding strains on soil fertility under Ryots manuring & heavy manuring.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) As under treatments (ii) (a) Clayey loam. (b) Refer soil analysis Mangalore. (iii) 25.9.52/30.10.52 (iv) (a) 6 ploughings (b) Transplanting (c)—(d) N.A. (e) 2. (v) As under treatments (vi) Co. 3 local, Athikraya (medium duration). (vii) Rainfed (viii) Weeding one month after planting (ix) 15.16'' (25.9.52 to 31.1.1953) (x) 31.1.1953.

2. TREATMENTS :

2. Main plot treatments:—

- Ryots manuring =2000 lb. C.M./ac.
- Heavy manuring =4000 lb. G.L.+200 lb. B.M. + 56 lb./ac. A/S.

4 Sub plot treatments :—

- Local Kayama followed by local Athikraya.
- Local Kayama followed by Co. 3.
- High yielder MGL. 1 to be followed by local Athikraya.
- High yielder MGL. 1 to be followed by Co. 3.

3. DESIGN :

(i) Split plot (ii) (a) 2 main plots/block and 4 sub-plots/main plot (b) N.A. (iii) 6 (iv) (a) N.A. (b) 18'×11' (v) (a) & (b) Yes. Details N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. No lodging (ii) Nil (iii) Grain weight (iv) (a) 1951-1955. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1537 lb./ac.
 (ii) (a) 507.8 lb./ac.
 (b) 621.3 lb./ac.

(iii) Only main plot treatment effects are significant.

(iv) Av. yield of grain in lb./ac.

Manuring	Varieties				Mean
	1	2	3	4	
Ryots	1368	1355	1376	1434	1383
Heavy	1763	1630	1660	1710	1691
Mean.	1566	1493	1518	1572	1537

S.E. of difference between

- two main plot treatment means = 146.6 lb./ac.
- two sub-plot treatment means = 253.7 lb./ac.
- two sub-plot treatment means at the same level of main plot. = 358.7 lb./ac.
- two main plot means at the same level of sub-plot. = 343.5 lb./ac.

Crop :- Paddy (1st crop)

Ref :- Ms. 53(63)/52 (39)/52 (79)/51(26)/51 (25)

Site :- Paddy Breeding Stn. Mangalore. Type :- 'VM'

Object :- To study the effect of high yielding strains on soil fertility under ryots' manuring and heavy manuring conditions.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) As under treatments (ii) (a) Clayey loam (b) Refer soil analysis Mangalore. (iii) 5.5.53/8.7.53. (iv) (a) 6 ploughings with country plough (b) Transplanting (c)---(d) N.A. (e) 2 (v) As under treatments (vi) Local kayana, M.G.L. 1. (Medium) (vii) Unirrigated. (viii) Weeding one month after planting (ix) 124.5" (5.5.53 to 16.10.53) (x) 16.10.53.

2. TREATMENTS :

2 Main plot treatments :-

- Ryots manuring : 2000 lb./ac. C.M.
- Heavy " : 4000 lb. G.L. + 200 lb. super + 56 lb. A/S/ac.

4 Sub plot treatments :-

- Local kayana to be followed by local Athikraya.
- " " " Co 3 high yielder.
- M.G.L. 1 to be followed by local Athikraya.
- " " " Co 3 high yielder

3. DESIGN :

(i) Split plot (ii) (a) 2 main plots/block and 4 sub-plots/main plot (b) N.A. (iii) 6 (iv) sub-plot size (a) 21' x 14' (b) 16½' x 10½' main plot size 21' x 55' (v) Border 2½' along length ; 1½' along breadth (vi) yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain yield (iv) (a) 1951-1955 (b) Yes. (c) N.A. (v) (a)&(b)N.A. (vi) No. (vii) Nil.

5. RESULTS :

- (i) 2896 lb./ac.
(ii) (a) 348.0 lb./ac.
(b) 268.0 lb./ac.
(iii) Only main plots and sub-plot treatment effects are significant.
(iv) Av. grain yield in lb./ac.

Manuring	Varieties				Mean
	1	2	3	4	
Ryots	2305	2158	2711	3101	2569
Heavy	3012	2923	3468	3489	3223
Mean	2659	2541	3089	3295	2896

S.E. of the difference of two

- main plot treatment means = 100.5 lb./ac.
- sub-plot treatment means = 109.3 lb./ac.
- sub plot treatment means at the same level of main plot treatment = 154.6 lb./ac.
- main plot treatment means at the same level of sub plot treatment = 167.5 lb./ac.

Crop :-Paddy (2nd crop). Ref :- Ms. 53(62)/53(63)/52(39)/52(79)/51(26)/51(25)
 Site :-Paddy Breeding Stn. Mangalore. Type :-'VM'

Object :—To study the effect of high yielding strains on soil fertility under ryots' manuring and heavy manuring conditions.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) As under treatments (ii) (a) Clayey loam (b) Refer soil analysis Mangalore (iii) 21.9.53 (iv) (a) 6 ploughings with country plough (b) Transplanting (c)—(d) N.A. (e) 2. (v) As under treatments (vi) Co 3 and local Athikraya (medium) (vii) unirrigated (viii) Weeding one month after planting. (ix) 9.37'' (21.9.53 to 3.2.54) (x) 3.2.1954.

2. TREATMENTS :

2 Main plot treatments :—

1. Ryots manuring : 2000 lb./ac. of C.M.
2. Heavy ,, : 4000 lb./ac. of G.L.+Super 200 lb.+A/S 56 lb./ac.

4 Sub plot treatments :—

1. Local Athikraya to be followed by local kayama.
2. ,, ,, ,, M.G.L. I. high yielder.
- 3- High yielder Co 3 ,, local kayama.
4. ,, ,, ,, M.G.L. 1.

3. DESIGN :

(i) Split plot (ii) (a) 2 main plots/block and 4 sub-plots/main plot (b) N.A. (iii) 6 (iv) sub-plot size (a) 21'×14' (b) 18'×11'. Main plot size 21'×56' (v) 1½' all round (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain yield (iv) (a) 1951-1954 (b) Yes. (c) N.A. (v) (a)&(b) N.A. (vi) No (vii) Nil.

5. RESULTS :

(i) 1315 lb./ac.

(ii) (a) 246.1 lb./ac.
 (b) 139.1 lb./ac.

(iii) Main plot and sub-plot treatments are significant. Interaction not significant.

(iv) Av. grain yield in lb./ac.

Manuring	Varieties				Mean
	1	2	3	4	
Ryots	1169	1193	1136	1205	1176
Heavy	1332	1572	1411	1496	1453
Mean.	1251	1383	1274	1351	1315

S.E. of the difference of two

- (i) main plot treatment means =71.1 lb./ac.
- (ii) sub plot treatment means =56.8 lb./ac.
- (iii) sub plot treatment means at the same level of main plot treatment =80.4 lb./ac.
- (iv) main plot treatment means at the same level of sub plot treatment =99.6 lb./ac.

Crop :-Paddy (1st crop)

Ref :-Complex experiments(T.C.M.), 1953

Centre :-Ponnampet

Type :- 'VM'

Object :—I (b) (i) To study the effect of N along with varieties.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Sandy loam (b) N.A. (iii) 15, 17.9.53 (iv) N.A (v) N.A. (vi) As under treatments (vii) Unirrigated (viii) Nil (ix) N.A. (x) 8.1.54.

2. TREATMENTS :

All combinations of (1), (2) & (3)

1. 3 levels of N : $N_0=0$, $N_1=20$ lb./ac. and $N_2=40$ lb./ac.
2. 2 sources of N : A/S and Urea.
3. 3 varieties : $V_1=$ Local, V_2 & $V_3=$ Improved varieties.

Manures applied before last puddling. A basal dressing of 1 lb. and 2½ oz of triple super per plot was given.

3. DESIGN :

(i) R.B.D. (ii) (a) 15 (b) N.A. (iii) 3 (iv) (a) N.A. (b) 1/70/ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Lodging occurred in plots receiving high doses of N (ii) Nil (iii) Yield data (iv) (a) 1953—56 (b) No (c) N.A. (v) (a) Shimoga (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

(i) 2597 lb./ac.

(ii) 452.3 lb./ac.

(iii) Only main effect of varieties is significant. All other effects and interactions are not significant.

(iv) Av. grain yield in lb./ac.

	I			Mean	II		Mean
	V ₁	V ₂	V ₃		A/S	Urea	
N ₀	2612	2092	2197	2300	—	—	—
N ₁	2862	2448	2451	2587	2591	2583	2587
N ₂	2842	2343	3080	2755	2594	2917	2755
Mean	2804	2335	2652	2597	2593	2750	2671
III A/S	2671	2381	2725	2598			
Urea	3033	2410	2836	2750			
Mean	2852	2396	2766	2671			

For Table I

S.E. of mean in the body of table (N₀ row) = 261.1 lb./ac.S.E. of mean in the body of table (N₁ or N₂ row) = 184.7 "S.E. of marginal N₀ row means = 150.8 "S.E. of marginal N₁ or N₂ row means = 106.6 "

S.E. of marginal column means = 116.6 "

For table II

S.E. of mean in the body of table = 150.8 lb./ac.

S.E. of marginal means = 106.6 "

For Table III

S.E. of mean in the body of table = 184.7 lb./ac.

S.E. of marginal row means = 106.6 "

S.E. of marginal column means = 130.6 "

Crop :- Paddy (1st crop)

Ref :- Complex experiments (T.C.M.), 1953.

Centre :- Ponnampet

Type :- 'VM'

Object :- VIII. To study the effect of N, P along with varieties.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Clayey and swampy soil (b) N.A. (iii) 25, 26.9:53 (iv) N.A. (v) N.A. (vi) As under treatments (vii) Unirrigated (viii) N.A. (ix) N.A. (x) 29, 30.12.53.

2. TREATMENTS :

All combinations of (1), (2), & (3)

(1) 3 levels of N viz N₀=0, N₁=20 lb./ac. and N₂=40 lb./ac.(2) 3 levels of P₂O₅ viz : P₀=0, P₁=20 lb./ac. and P₂=40 lb./ac.(3) 3 varieties viz.: V₁=Local, V₂=G.E.B. 24 & V₃=B.A.M.S.N as A/S and P₂O₅ as Super. Manures applied just before last puddling.

3. DESIGN :

(i) 3³ confounded factorial (ii) (a) 9 plots/block and 3 blocks/replication (b) N.A. (iii) 1 (iv) (a) N.A. (b) 1/59.8 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Lodging occurred in plots receiving higher dose of N (ii) Nil (iii) yield data (iv) (a) 1953—56 (b) No (c) N.A. (v) (a) Karjat, Shahaspur, Burdwan, Mankhanada, Maruteru and Chalvai (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 2943 lb./ac.
(ii) 452.4 lb./ac.
(iii) Main effects and interactions are not significant.
(iv) Av. grain yield in lb./ac.

	N ₀	N ₁	N ₂	Mean	V ₁	V ₂	V ₃
P ₀	2671	2888	2642	2784	3087	2570	2544
P ₁	2672	3271	2952	2965	3045	2715	3066
P ₂	2857	2909	3624	3130	3613	2506	3207
Mean	2733	3023	3072	3953	3248	2620	2960
V ₁	2726	3040	2630	3248			
V ₂	2901	2347	2613	2620			
V ₃	2573	3312	2984	2960			

S.E. of marginal means = 150.8 lb/ac,
S.E. of mean in the body of table = 261.1 lb/ac.

Crop :-Paddy (1st crop)

Ref :-Complex Experiments (T.C.M.), 1953.

Centre :-Shimoga (Mysore)

Type :-'VM'

Object :-I (b) (i) To study the effect of N along with varieties.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Coarse sandy loam (b) Acidic with pH. value 4.5 (iii) 2.9.53 (iv) N.A. (v) N.A. (vi) As under treatments (vii) Irrigated (viii) N.A. (ix) N.A. (x) 15.12.53, 23.12.53 and 1.1.54 to 8.6.54 for V₁, V₂, V₃ respectively.

2. TREATMENTS :

All combinations of (1), (2) & (3)

(1) 3 levels of N viz. : N₀=0, N₁=20 lb./ac. & N₂=40 lb./ac.

(2) 2 sources of N viz. : A/S and Urea.

(3) 3 varieties viz. : V₁=Local, V₂=S 701 (Coimbatore sanna)
V₃=S 718 (Ratna Choodi)

A basal dressing of 2 C.L./ac. of F.Y.M. given to all plots before 2nd ploughing. Nitrogen applied at transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 15 (b) N.A. (iii) 3 (iv) (a) N.A. (b) 1/60 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal (ii) Severe incidence of Hispa and Gall-fly occurred (iii) Yield data (iv) (a) 1953—56 (b) No. (c) N.A. (v) (a) Ponnampet. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 1598 lb./ac.
(ii) 122.8 lb./ac.
(iii) Main effect of source of N, levels of N and varieties are highly significant. Interaction "source of N × level of N" is significant.

(iv) Av. grain yield in lb./ac.

	I			Mean	II		Mean
	N ₀	N ₁	N ₂		A/S	Urea	
V ₁	899	1430	1578	1383	1543	1464	1504
V ₂	1167	1500	1938	1608	1817	1621	1719
V ₃	1427	1770	2023	1803	1958	1835	1896
Mean	1164	1567	1846	1598	1773	1640	1706
III A/S	—	1589	1956	1773			
Urea	—	1544	1736	1640			
Mean	—	1567	1846	1706			

For Table I

S.E. of the marginal mean for N₀ Col. means = 40.9 lb./ac.S.E. of the marginal mean for N₁ or N₂ col. means = 28.9 „

S.E. of marginal row means = 31.7 „

S.E. of body of table (N₀ column) = 70.9 „S.E. of body of table (N₁ or N₂ col.) = 50.1 „

For Table II

S.E. of mean in the body of table = 50.1 lb./ac.

S.E. of marginal col. means = 28.9 lb./ac.

S.E. of marginal row means = 35.5 lb./ac.

For Table III

S.E. of mean in the body of table = 40.9 lb./ac.

S.E. of marginal means = 28.9 lb./ac.

Crop :- Paddy.**Site :- Agri. Res. Stn. Hebbal.****Ref :- Ms. 51(49).****Type :- 'C'****Object :- To study the different methods of sowing paddy.****1. BASAL CONDITIONS :**

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay mixed with sand (b) Refer soil analysis, Hebbal. (iii) 8.8.1951. (iv) (a) Ploughing, levelling, etc. (b) As per treatments (c) 25 seers/ac. (d) & (e) N.A. (v) Nil (vi) S-749. Late. (vii) Irrigated. (viii) Weeding (ix) 19.64" (8.8.1951 to 25.1.52) (x) 25.1.1952.

2. TREATMENTS :

1. Broadcasting.

2. Drilling.

3. DESIGN :

(i) Paired plot (ii) (a) 2 (b) N.A. (iii) 3 (iv) (a), (b) 3 Gunthas. (v) No (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain yield data (iv) (a) 1951-1952. (b) No (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 675 lb/ac.

(ii) 101.7 lb/ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of grain in lb/ac.

Treatment. Av. yield

1. 604

2. 746

S.E./mean = 58.7 lb/ac.

Crop :- Paddy.

Site :- Agri. Res. Stn. Hebbal

Ref :- Ms 52(6).

Type :- 'C'

Object :- To compare the different methods of sowing paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay mixed with sand. (b) Refer soil analysis, Hebbal. (iii) 14.8.1952. (iv) (a) 3 ploughings (b) As per treatments (c) 25 seers/ac. (d) N.A. (e) N.A. (v) None (vi) Humasehovina bhatta, H-320. (vii) Irrigated. (viii) Weeding once, passing chippagunte once. (ix) 15.70* (14.8.52 to 11.2.1953) (x) 11.2.1953.

2. TREATMENTS :

1. Drill sowing.
2. Broadcast sowing.

3. DESIGN :

(i) Paired plot (ii) (a) 2 (b) N.A. (iii) 3 (iv) (a) & (b) 1/120 ac. (v) Nil (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain & straw yield. (iv) (a) 1951—1952. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

() 5440 lb/ac.

(ii) 1074 lb/ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of grain in lb/ac.

Treatment.	Av. yield
1.	5400
2.	5480
S.E./mean.	= 619 lb/ac.

Crop :- Paddy.

Site :- Agri. Res. Stn. Jagalbet.

Ref :- Ms. 50(11)

Type :- 'C'

Object :- To find out the optimum spacing and number of seedlings per bunch to produce maximum yield.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) No. (ii) (a) Clayey loam (b) Refer soil analysis, Jagalbet. (iii) 24.6.1950 /9,.11.8.1950 (iv) (a) 3 ploughings and 2 puddlings (b) transplanted. (c)— (d), (e) As per treatments (v) 5 C.L./ac. of F.Y.M. (vi) Bangarakaddi (late) (vii) Rainfed. (viii) Weeding once on 21.9.1950. (ix) N.A. (x) 11.12.1950.

2. TREATMENTS :

3 Main plot treatments :—

Spacings :— 6", 9" and 12"

5 Sub plot treatments :—

Number of seedlings/bunch. 4, 6, 8, 10 and 12

3. DESIGN :

(i) Split plot (ii) (a) 3 main plots/ block ; 5 sub plots/main plot. (b) N.A. (iii) 4. (iv) (a) sub plot : 24' × 18' (b) 18' × 12'. Mainplot size (gross) = 90' × 24'. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Case worm observed but was controlled by a spray of Guesard 550. (iii) Grain yield data. (iv) (a) 1950—1952. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil

5. RESULTS :

(i) 1455 lb/ac.

(ii) (a) 786.2 lb/ac.

(b) 294.0 lb/ac.

(iii) The differences in yield due to the number of seedlings per bunch are significant.

Others are not significant.

(iv) Av. yield of grain in lb/ac.

Spacing.	Seedlings per bunch.					Mean
	4	6	8	10	12	
6"	1436	1524	1782	1723	1102	1513
9"	1187	1726	1593	1455	1685	1529
12"	1184	1285	1253	1631	1253	1321
Mean	1269	1512	1543	1603	1347	1455

S.E. of the difference between two

1. main plot treatment means. = 248.6 lb/ac.
2. sub plot treatment means. = 120.0 lb/ac.
3. sub plot treatment means at the same level of main plot treatment = 207.9 lb/ac.
4. main plot treatment means at the same level of sub-plot treatment. = 310.5 lb/ac.

Crop :- Paddy.

Ref :- Ms. 51(15).

Site : Agri. Res. Stn. Jagalbet.

Type :- 'C'

Object :— To find out the optimum spacing and number of seedlings per bunch to produce maximum yield.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Clayey loam. (b) Refer soil analysis, Jagalbet. (iii) 15.6.51/25.7.51. (iv) (a) 3 ploughings and 2 puddlings (b) transplanted (c) — (d) to (e) As per treatments (v) 5 C.L./ac. of F.Y.M. (vi) Bangarakaddi (late). (vii) Rainfed. (viii) Weeding. (ix) N.A. (x) Dec., 1951.

2. TREATMENTS :

3 Main plot treatments. :—

Spacings :— 6", 9" and 12".

5 Sub-plot treatments :—

Number of seedlings/bunch :— 4, 6, 8, 10 and 12.

3. DESIGN :

(i) Split plot (ii) (a) 3 main plots/block. 5 sub plots/main plot. (b) N.A. (iii) 4 (iv) (a) For sub plot 24'×18' (b) 18'×12'. Main plot size (gross) 90'×24' (v) 3' all round (vi) Yes.

GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950—1952. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 2069 lb./ac.
- (ii) (a) = 795.4 lb./ac.
- (b) = 569.8 lb./ac.
- (iii) Main treatments, sub-treatments and their interaction are not significant.
- (iv) Av. yield of grain in lb./ac.

Spacing	Seedlings/bunch.					Mean
	4	6	8	10	12	
6"	1924	2885	1638	2564	2271	2256
9"	2296	2318	2085	1927	1795	2084
12"	1360	2176	1685	2044	2063	1866
Mean.	1860	2460	1802	2178	2043	2069

S.E. of the difference between two

1. main plot treatment means = 251.5 lb./ac
2. sub plot treatment means = 232.6 lb./ac.
3. sub plot treatment means at the same level of main plot treatment = 402.8 „ „
4. main plot treatment means at the same level of sub plot treatment = 439.5 „ „

Crop :- Paddy.
Site :- Agri. Res. Stn. Jagalbet.

Ref :- Ms. 52(48)
Type :- 'C'

Object :- To find out the optimum spacing and no. of seedlings/bunch to produce the maximum yield.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) Nil. (ii) (a) Clayey loam (b) Refer soil analysis, Jagalbet. (iii) 22.6.52/1.8.52 (iv) (a) 3 ploughings, 2 puddlings (b) transplanted. (c)—(d) & (e) As per treatments. (v) Nil. (vi) A. 200 (vii) Rainfed. (viii) Weeding (ix) N.A. (x) Dec. 52.

2. TREATMENTS :

3 Main plot treatments :-

Spacings :- 6", 9" and 12"

5 Sub-plot treatments :

No. of seedlings/bunch:-4, 6, 8, 10 and 12.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/block ; 5 sub-plots/main plot. (b) N.A. (iii) 4. (iv) Sub-plot (a) 24'×18' (b) 18'×12'. Main plot size (gross) 90'×24'. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950—1952. (b) No. (c) N.A. (v) (a) N.A (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1403 lb. /ac.

(ii) (a) 466.5 lb./ac,

(b) 405.6 lb./ac.

(iii) None of the effects is significant.

(iv) Av. yield of grain in lb. /ac.

No. of seedlings/bunch.

Spacings	4	6	8	10	12	Mean.
6"	856	1776	1480	1404	1597	1423
9"	1360	1184	1471	1282	1685	1396
12"	1458	1256	1291	1316	1634	1391
Mean.	1225	1405	1414	1334	1639	1403

S.E. of the difference between two

1. main plot treatment means = 147.4 lb./ac.
2. sub-plot treatment means. = 165.6 lb./ac.
3. means in the same row = 286.8 lb./ac.
4. means in the same column. = 295.9 lb./ac.

Crop :- Paddy.
Site :- Agri. Res. Stn. Jagalbet.

Ref :- Ms. 50(12)
Type :- 'C'

Object :- To see whether the practice of rabbing the seed bed would reduce the incidence of 'blast' disease.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) Nil. (ii) (a) Clayey loam (b) Refer soil analysis, Jagalbet. (iii) 24.6.50/13.8.50. (iv) (a) 3 ploughings and 2 puddlings. (b) Transplanted (c)— (d) Between rows 12", between plants 6". (e) 1 (v) 5. C.L. of F.Y.M./ac. (vi) Bangarakaddi (Late) (vii) Rainfed. (viii) Weeding once on 21.9.50 (ix) N.A. (x) 21.12.1950.

2. TREATMENTS :

1. Seedlings raised on rabbed seed bed.
2. Seedlings raised on non-rabbed seed bed.

3. DESIGN :

- (i) Paired plot. (ii) (a) 2 (b) N.A. (iii) 12 (iv) (a) 20'×24' (b) 18'×20'. (v) 2' along length. 1' along breadth. (vi) Yes.

4. GENERAL :

- (i) Germination satisfactory in almost all blocks. Treated plots were observed to be more vigorous than untreated plots. (ii) Case worm observed but controlled by spraying Guesard—550, blast disease did not appear. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil

5. RESULTS :

- (i) 1116 lb./ac.
- (ii) 249.0 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield
1.	1196
2.	1037
S.E./mean	= 71.9 lb./ac.

Crop :- Paddy

Ref :- Ms. 49(1).

Site :- Agri Res. Stn. Mugud.

Type :- 'C'

Object :- To find out the optimum spacing and seed rate to produce maximum yield.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) Nil. (ii) (a) N.A. (b) Refer soil analysis, Mugud. (iii) 20.6.1949 (iv) (a) Ploughing, levelling etc., (b) Drill sowing (c) & (d) As per treatments (e) 3—4 (v) Nil. (vi) M—141, late (vii) Rainfed (viii) Thinning, gap filling. (ix) N.A. (x) 4.12.49.

2. TREATMENTS :**3 Main plot treatments :—**

Spacings :— 9", 12" and 15".

3 Sub-plot treatments :—

Seed rates :—40, 60 and 80 lb./ac.

3. DESIGN :

- (i) Split plot (ii) (a) 3 main plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 4. (iv) (a) 24'×16½'; 24'×17'; 24'×17½' according as the spacing is 9", 12" or 15". (b) 22'×15'. (v) 1' along length 9"; 12" or 15" along breadth according to spacing (vi) Yes.

4. GENERAL :

- (i) Germination satisfactory. Growth normal (ii) Blue beetle attack ; damage minimised by using tobacco decoction & D.D.T. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 2746 lb./ac.
- (ii) (a) 452.8 lb./ac.
- (b) 328.7 lb./ac.
- (iii) None of the effects is significant.
- (iv) Av. yield of grain in lb./ac.

Seed rate	Spacing			Mean.
	9"	12"	15"	
40 lb.	2933	2712	2470	2705
60 lb.	2708	2718	2782	2736
80 lb.	2926	2961	2505	2797
Mean.	2856	2797	2586	2746

1. main plot treatment means. = 184.8 lb./ac.
2. sub-plot treatment means. = 133.3 lb./ac.
3. sub-plot treatment means at the same level of main plot treatment. = 232.0 lb./ac.
4. main plot treatment means at the same level of sub plot treatment. = 264.0 lb./ac.

Crop :- Paddy.

Ref :- Ms 53 (143).

Site :- Agri. Res. Stn. Jagalbet.

Type :- 'CM'

Object :-To modify the cultural and manurial practices of the tract based on the principles adopted in Japan to increase the yield of paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) F.Y.M. at 5 C.L./ac. (ii) (a) Clayey loam. (b) Refer soil analysis, Jaglbet. (iii) 7,10.8.1953. (iv) (a) 3 ploughings and two puddlings. (b) transplanting. (c)— (d) & (e) As per treatments (v) Nil. (vi) A-200 (Late). (vii) Rainfed. (viii) Weeding on 1.9.1953. See treatments also (ix) N.A. (x) 9.12.1953.

2. TREATMENTS :

All combinations of 6 factors P.Q.R.S.T & U each at two levels,

P : Seed bed

p_0 = Flat

p_1 = Raised

Q : Manuring of seed bed

q_0 = Departmental :

1 C.L. of F.Y.M. + 8 lb. of A/S. per gunta.

q_1 = Japanese :

1 C.L. of F.Y.M. + 16 lb. of A/S + 16 lb. of Super per gunta + layer of ash

R : Manuring of field.

r_0 = Departmental :

5 C.L. of F.Y.M. + G.M. + 32 lb. of 'N' as A/S + 64 lb. P_2O_5 as Super/ac.

r_1 = Japanese :

5 C.L. of F.Y.M. + G.M. + 100 lb. N as A/S + 80 lb. P_2O_5 as super/ac.

S : Spacing bet. bunches

s_0 = 10" × 10".

s_1 = 9" × 9".

T : No. of seedlings/bunch

t_0 = 8

t_1 = 4

U : No. of interculturings.

u_0 = One hand weeding & no interculturing.

u_1 = One hand weeding 3 interculturings.

Manuring on 18.8.53, 15.9.53 and 6.10.1953.

3. DESIGN :

(i) 2⁶ confounded design. confounding PQR, RST, PSU, QTU, PQST, QRSU and PRTU. (ii) (a) 8 plots block ; 8 blocks/replication. (b) N.A. (iii) one (iv) (a) For spacing 9" × 9" = 10.50' × 33.00' and for spacing 10" × 10", 10.13' × 33.33' (b) 7.50' × 30'. (v) Nearly 1.5' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Lodging was observed in most of the cases due to heavy rains. (ii) Rice ease worm was observed to a limited extent. Wild boar, mice and cattle damaged a few plots. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS .

(i) 3407 lb./ac.

(ii) 449.5 lb./ac.

(iii) Only the main effect of P is highly significant.

(Table of mean and differential responses on page 122).

Crop :- Paddy.

Ref :- Ms.53 (181).

Site :- Agri. Res. Stn. Kumta.

Type :- 'CM'.

Object :—To assess the relative merits of Japanese method and departmentally recommended method of paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis ; Kumta. (iii) 6.6.53/14 to 18.7.1953. (iv) (a) First ploughed in Nov. 1952, after application of F.Y.M. ; again ploughed in 5.6.1953. (b) Transplanting (c)—(d) & (e) As per treatments (v) Nil. (vi) R.H. 244 (Paddy), Late. (vii) Unirrigated. (viii) Interculturing as per treatments. (ix) N.A. (x) 23.11.1953.

2. TREATMENTS :

All combinations of 6 factors P,Q,R,S,T & U each at two levels.

P : Seed bed

p_0 = Flat

p_1 = Raised

Q : Manuring of seed bed

q_0 = Departmental :

1 C.L. of F.Y.M. and 8 lb. of A/S. per gunta.

q_1 = Japanese :

1 C.L. of F.Y.M. plus 16 lb. of A/S plus 16 lb. of Super per gunta plus layer of ash.

R : Manuring of field.

r_0 = Departmental ;

5 C.L. of F.Y.M.+G.M.+32 lb. of N as A/S
+64 lb. of P_2O_5 /ac as super.

r_1 = Japanese :

5 C.L. of F.Y.M.+G.M.+100 lb. of 'N' as A/S
+80 lb. of P_2O_5 /ac as Super.

S : Spacing between bunches

s_0 = 10" × 10".

s_1 = 9" × 9".

T : No. of seedlings/bunch

t_0 = 8

t_1 = 4

U : No. of interculturings.

u_0 = One hand weeding & no interculturing.

u_1 = one hand weeding & 3 interculturings.

3. DESIGN :

(i) 2⁶ confounded: confounding PQR; RST, PSU, QTU, PQST, QRSU and PRTU (ii) (a) 8 plots/block ; 8 blocks/replication. (b) N.A. (iii) 1. (iv) For spacing 9" × 9". (a) 10'-6" × 33' (b) 7'-6" × 30' ; for spacing 10" × 10" (a) 10'-10" × 33'-4" (b) 7.5' × 30'. (v) Two rows at each side and two plants of each row at each end of the plot left as a ring. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Late rains caused lodging when the crop was in ripening stage. (ii) Nil. (iii) Grain yield data. (iv) (a) 1953-1956. (b) No. (c) N.A. (v) (a) Agri. Res. Stn. Jagalbet. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1913 lb./ac.

(ii) 451.3 lb./ac.

(iii) Only the effect of number of seedlings per bunch is highly significant.

Other main effects and interactions are not significant.

(Table of mean and differential responses on page 122).

Tables of mean and differential responses.

Ref :- Ms. 53 (143)

Factor	Mean response in lb./ac.	Differential responses :-											
		P		Q		R		S		T		U	
		p ₀	p ₁	q ₀	q ₁	r ₀	r ₁	s ₀	s ₁	t ₀	t ₁	u ₀	u ₁
P	354.95	—	—	455.69	254.22	476.49	233.41	365.42	344.48	239.82	470.08	493.19	216.71
Q	177.57	278.30	76.83	—	—	89.05	266.08	221.19	133.94	39.93	315.20	137.21	217.32
R	-74.84	46.70	-196.38	-163.35	-13.67	—	—	-150.52	0.84	118.82	-268.50	-33.15	-116.52
S	-57.66	-47.19	-68.12	-14.03	-101.27	-133.34	18.03	—	—	-132.61	17.30	-224.09	103.78
T	-199.95	325.08	-84.82	-337.59	-62.31	-6.29	-393.61	-274.91	-124.99	—	—	-313.39	-86.51
U	177.57	315.81	39.32	137.21	217.92	+219.25	135.88	11.13	344.00	64.13	291.00	—	—

S.E. of mean response = 112.4 lb./ac.

S.E. of differential response = 158.8 lb./ac.

Ref :- Ms 53(181)

Effect	Mean response in lb./ac.	Differential responses :-											
		P		Q		R		S		T		U	
		p ₀	p ₁	q ₀	q ₁	r ₀	r ₁	s ₀	s ₁	t ₀	t ₁	u ₀	u ₁
P	22.69	—	—	-15.13	60.50	90.75	-45.38	-78.65	124.03	184.53	-139.15	248.05	-201.68
Q	71.09	33.28	108.90	—	—	18.50	124.03	6.05	136.13	51.43	90.75	6.05	136.13
R	-89.24	-21.18	-157.30	-142.18	-36.30	—	—	-102.85	-75.63	-208.73	30.25	78.65	-257.13
S	-113.44	-214.78	-12.10	-178.48	-48.40	-127.05	-99.83	—	—	-184.53	-42.04	-211.75	-15.13
T	415.94	577.78	254.10	396.28	435.60	296.45	535.45	344.85	487.03	—	—	429.55	402.33
U	152.76	378.13	-72.60	87.73	217.80	320.65	-15.13	54.45	251.08	166.38	139.15	—	—

S.E. of the mean response. = 112.8 lb./ac.

S.E. of the differential response. = 159.5 lb./ac.

Crop :- Paddy
Site :- Agri. Res. Stn. Kumta.

Ref :- Ms. 52(67)
Type :- 'CM'

Object :- To determine the N & P₂O₅ requirements of paddy with spacing.

1. BASAL CONDITIONS :

(i) Nil (b) Paddy M. 1315 (c) 5 C.L. of F.Y.M. + 160 lb. of manure mixture/ac. (ii) (a) Sandy soil (b) Refer soil analysis, Kumta. (iii) 21.5.52./ 10, 16.7.52 (iv) (a) Ploughing in Nov. 51 and 3rd week of July 52, puddled in 3rd week of July. 52 (b) Transplanted. (c) — (d) As per treatments. (e) 8. (v) Nil (vi) R.H. 244 ; Late variety. (vii) Rainfed. (viii) Weeding in Aug. 52, Roguing in Sept. 52. (ix) N.A. (x) 24 to 26.11. 1952.

2. TREATMENTS :

All combinations of (1),(2),(3) and (4)
(1) 2 levels of N :- 0. & 32 lb. N/ac.
(2) 3 levels of P₂O₅ :- 64, 96 & 128 lb. P₂O₅ /ac.
(3) 2 levels of F.Y.M. :- 5 & 10. C.L. /ac.
(4) 2 levels of Spacing :- 8" × 8" & 10" × 10"
N as A/S and G.N.C ; P₂O₅ as B.M.
B.M. applied at the time of transplanting.
G.N.C. & A/S was given on 5th Aug.

3. DESIGN :

(i) 3 × 2³ Factorial in R.B.D (ii) (a) 24 (b) N.A. (iii) 3 (iv) (a) 36'—8" × 16'—8" (b) 30' × 10' (v) 3'—4" all round (vi) Yes.

4. GENERAL :

(i) Late rains caused lodging when the crop was in ripening stage. Plant height 4'—3". No of tillers 9
(ii) Attacked by "Kane" pest. No control measures taken. (iii) Grain yield data. (iv) (a) 1952—1955
(b) Yes (c) N.A. (v) (a) Nil (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2443 lb/ac.
(ii) 358.4 lb/ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb/ac.

	P ₂ O ₅			Mean
	64	96	128	
N				
0	2402	2432	2365	2400
32	2475	2620	2365	2487
F.Y.M				
5	2384	2541	2408	2444
10	2493	2511	2323	2452
Spacing				
8" × 8"	2390	2487	2390	2422
10" × 10"	2487	2565	2341	2464
Mean	2439	2526	2365	2443

	N		Spacing	
	0	32	8" × 8"	10" × 10"
F.Y.M				
5	2460	2428	2444	2444
10	2339	2545	2400	2485
Spacing				
8" × 8"	2432	2412		
10" × 10"	2368	2561		

1. S.E. of P_2O_5 means. = 73.2 lb/ac.
 2. S.E. of N or F.Y.M. for spacing means = 59.7 „
 3. S.E. for body of tables
 ($N \times P_2O_5$), ($P_2O_5 \times \text{Spacing}$), ($P_2O_5 \times \text{F.Y.M.}$) = 103.4 „
 4. S.E. for body of tables
 ($N \times \text{F.Y.M.}$), ($\text{F.Y.M.} \times \text{Spacing}$), ($\text{Spacing} \times N$) = 84.4 „

Crop :- Paddy.
 Site :- Agri. Res. Stn. Kumta

Ref :- Ms. 53(130)/52(67)
 Type :- 'CM'.

Object :- To study the effect of graded doses of N, P and NP in combination with two basal doses of F.Y.M. and two different spacings.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy (c) 5 C.L. of F.Y.M.+160 lb. manure mixture /ac. (ii) (a) Sandy soil (b) Refer soil analysis, Kumta. (iii) 21.5.53/15.7.53 to 18.6.53 (iv) (a) Ploughed in Nov. 52 and again in July 53. (b) Transplanted (c) — (4) As per treatments (e) 8 (v) As per treatments (vi) R.H. 244. Late variety (vii) Rainfed (viii) Weeding in August, 1953. (ix) N.A. (x) 23.11.58. to 24.11.1953.

2. TREATMENTS :

- All combinations of (1), (2), (3) & (4)
 (1) 2 levels of N :—0 & 32 lb N/ac.
 (2) 3 levels of P_2O_5 :—64 & 96, 128 lb/ac.
 (3) 2 levels of FYM :—5 & 10 CL/ac.
 (4) 2 levels of spacing :—8" × 8" & 10" × 10"
 N as A/S and G.N.C. applied on 10.3.53.
 P_2O_5 as B.M. on 16—20-7.53.
 F.Y.M. given on 6—8.6.53.

2. DESIGN :

- (i) 3×2^3 Factorial in RBD (ii) (a) 24 (b) N.A. (iii) 3 (iv) (a) 36' × 8" × 16' × 8" (b) 30' × 10" (v) 3'—4" all round. (vi) Yes.

3. GENERAL :

- (i) Height 4—4". No. of tillers 9. Late rains caused lodging when the crop was in ripening stage. (ii) Attacked by 'Eregera'. Control measures taken N.A. (iii) Grain yield data (iv) (a) 1952—1955. (b) Yes (c) N.A. (v) (a) Not known (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2813 lb/ac.
 (ii) 364.2 lb/ac.
 (iii) None of the effects is significant.
 (iv) Av. yield in lb/ac.

	P_2O_5			Mean
	64	96	128	
N				
0	2723	2813	2849	2795
32	2819	2825	2849	2831
F.Y.M.				
5	2734	2880	2886	2833
10	2809	2759	2813	2793
Spacing				
8" × 8"	2771	2771	2849	2797
10" × 10"	2771	2868	2849	2829
Mean	2771	2819	2849	2813

F.Y.M.	N		Spacing	
	0	32	8"×8"	10"×10"
5	2795	2872	2795	2872
10	2795	2791	2799	2787
Spacing				
8"×8"	2771	2823		
10"×10"	2819	2839		

1. S.E. of marginal means for P_2O_5 = 74.3lb/ac.
2. S.E. of marginal mean for N. or F.Y.M. or Spacing. = 60.7 lb/ac.
3. S.E. of mean in the body of the tables $N \times P$, $F.Y.M \times P$ & spacing $\times P$. = 105.1 lb/ac.
4. S.E. of mean in the body of the tables $N \times F.Y.M.$, Spacing $\times F.Y.M$ & $N \times$ spacing. = 85.8 lb/ac.

Crop :- Paddy.

Ref :- Ms 53(49)

Site :- Agri. Res. Stn. Mandya

Type :- 'CM'

Object :- To find the merits of Japanese method of rice cultivation on ryots field.

1. BASAL CONDITIONS.

- (i) (a) No (b) Generally paddy after paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Mandya (iii) 19.8.53/13.9.53 (iy) (a) 3 ploughings, levelling, harrowing, opening furrows etc. (b) Transplanting (c)—(d) & (e) N.A. (v) Nil (vi) S. 718 (vii) Irrigated (viii) Weeding twice. (ix) 23.62" (19.8.53 to 22.1.54) (x) 22.1.1954.

2. TREATMENTS :

1. Ryots Control - Exactly as the cultivation done normally.
2. Local method: manuring according to the recommendation of the local agricultural department.
3. Local method of cultivation + Manuring at transplanting as follows :- (i) Sowing of crops and if there is no crop of G.M., 6000 lb. of G. L./ac to be supplied from outside. (ii) 5. C.L. of F.Y.M. and plough it with G.M. if it is grown. If G.M. is not grown, 10 C.L. F.Y.M. or compost is applied at the time of ploughing (iii) 200 lb/ac. of A/S and 200 lb/ac. of Super to be applied at the time of transplanting.
4. Local method of cultivation + Manuring according to Japanese method as follows :- (i) G.M. at the rate of 603 lb/ac. (ii) 5 C.L. of Compost/ac. (iii) 100 lb/ac. of A/S and 100 lb/ac. of Super to be applied at the time of transplanting (iv) 100 lb. of A/S and 100 lb. of Super /ac. one month after transplanting.
5. Manuring as per 4 above. but raising of seedlings in the nursery and transplanting. as per Japanese method.

3. DESIGN :

- (i) R.B.D (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) & (b) 1/40th ac. (v) Nil (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil (iii) Grain yield data (iv) No. (v) None (vi) No. (vii) None.

5. RESULTS :

- (i) 2002 lb/ac.
(ii) 261.6 lb/ac.
(iii) The differences in yield due to treatments are not significant.
(iv) Av. grain yield in lb/ac.

Treatment	Av. yield.
1.	1260
2.	2056
3.	2120
4.	2080
5.	1792
S.E./mean	=116.8 lb/ac.

Crop :- Paddy
Site :- Govt. Agri. Farm Mercara

Ref : Ms. 53(5)
Type : 'CM'

Object -- To find out the merits of Japanese method of paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Mercara (iii) 14,22.6.53/6,8.8.53
(iv) (a), (b), (c), (d) & (e) N.A. (v) None (vi) N.A. (vii) Rainfed. (viii) Weeding done once (ix) N.A.
(x) 24/25.1.1954.

2. TREATMENTS :

1. Local practices + Local manuring of fields - control.
2. „ „ + Departmental „
3. „ „ + Japanese method „
4. Japanese practice + „ „ „
5. „ „ + Departmental „

3. DESIGN :

(i) R.B.D (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 35' x 31' (b) 33' x 16½' (v) 1' along length and 7¼' along breadth
(vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Blast disease ; spraying against the disease (Bordeaux mixture). Dusting against
case worm with gamaxene (iii) Grain and straw yield. (iv) (a) No (b) No (c) N.A. (v) N.A. (vi) No (vii)
Due to severe attack of piralasia Irizea, the experiment was not successful. In the beginning all the
plots did show some promising growth, but later on all the plots were affected with blast.

5. RESULTS :

(i) 1619 lb/ac.

(ii) 445.2 lb/ac.

(iii) The differences in yield due to treatments are not significant

(iv) Av. grain yield in lb/ac.

Treatments	Av. yield.
1.	1568
2.	1472
3.	1600
4.	1664
5.	1792
S.E./mean	= 194.4 lb/ac.

Crop :- Paddy.
Site :- Agri. Res. Stn. Nagenahally.

Ref :- Ms. 53 (29)
Type :- 'CM'

Object :- To test the merits of Japanese method of paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Red sandy loam (b) Refer soil analysis ; Nagenahally. (iii)
29.8.53. (iv) (a) Ploughing, levelling, forming ridges etc. (b) Transplanting (c) — (d) 6" — 8". (e) 2 — 3
(v) Nil (vi) S.669 (Late) (vii) Irrigated (viii) Weeding. (ix) N.A. (x) 17.12.1953.

2. TREATMENTS :

1. Local method : F.Y.M. 10 C.L./ac. + G.M. 4000 lb./ac.
2. Local method + A/S 40 lb./ac. + G.N.C. 100 lb./ac. at transplanting + A/S 75 lb./ac. after one month +
Super at 112 lb./ac. to G.M.
3. Local method + F.Y.M. 5 C.L./ac., + A/S 200 lb./ac. + Super 200 lb./ac. at planting.
4. Local method + F.Y.M. 5 C.L./ac., + A/S 100 lb./ac., + Super 100 lb./ac. at planting + 100 lb./ac. A/S,
+ 100 lb. Super one month after planting.
5. Manuring as in 4 with Japanese cultivation.
- 1, 2, 3, 4, :- Nursery raised as per local method.
5 :- „ „ Japanese method.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) & (b) 2 cents (v) Nil (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain and straw yield (iv) (a) 1953-N.A. (b) Yes. (c) N.A. (v) (a) & (b) None
(vi) No (vii) None.

RESULTS,

- (i) 2408 lb./ac.
 (ii) 313.5 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	2110
2.	2490
3.	2550
4.	2440
5.	2450
S.E./mean	=140.0 lb./ac.

Crop :-Paddy.
Site:- Rice breeding Stn. Ponnampet.

Ref :-Ms. 53 (6).
Type :- 'CM'.

Object :-To study the merits of Japanese method of rice cultivation under Coorg conditions.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) 2½ tons F.Y.M./ac.+G.L. 2000 lb./ac.+B.M. 200 lb./ac.+manure mixture 150 lb./ac. (G.N.C. and Super in equal proportions) (ii) (a) Sandy loam. (b) Refer soil analysis, Ponnampet. (iii) 30.7.53/25.8.1953. (iv) (a) 2 rounds of dry ploughing, three rounds of puddling and levelling (b) Transplanting (c)-(d) & (e) N.A. (v) No. (vi) Local variety- Kiribitiya. (vii) Rainfed. (viii) Nil (ix) 36.63" (30.7.53 to 2.1.54) (x) 2.1.1954.

2. TREATMENTS :

- F.Y.M. 84 lb./plot.
- F.Y.M. 84 lb./plot+G.L. 50 lb./plot.
- F.Y.M.140 lb./plot+G.L. 150 lb./plot+A/S 5 lb./plot+Super 5 lb./plot.
- Same as (3) but A/S and Super 2½ lb. each applied at the time of transplanting+2½lb. each applied 30 days after planting.
- Same as (4) but seedlings raised as per Japanese method.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 1/40th ac. (b) 1/80th ac. (v) Border only one side ; i .e. along breadth, 8½' (vi) Yes.

4. GENERAL :

(i) Lodged at the time of maturity (ii) Heavy attack of paddy blast, stray attack of stemborer and case worms. spraying was done with Perenox 1% and dusting with Gamaxene D₂025 at 10 lb./ac. (iii) Tiller counts and plant height at the time of maturity (iv) (a) No (b) No (c) N.A. (v) (a) & (b) N.A. (vi) No. (vii) None.

5. RESULTS :

- (i) 2217 lb./ac.
 (ii) 245.6 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	2432
2.	2616
3.	2112
4.	1726
5.	2198
S.E./mean	=109.8 lb./ac.

Crop :-Paddy.
Site :-Ryot's holding in Sanivarasanth Nad (Coorg).

Ref :-Ms. 53 (20)
Type :-'CM'

Object :-To test the merits of Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Reddish grey loamy soil. (b) N.A. (iii) 10.7.53 ; 19.7.52 (iv) N.A. (v) Nil. (vi) Kiribitiya, Late. (vii) Unirrigated. (viii) N.A. (ix) 60" (x) 13.12.53.

2. TREATMENTS :

1. Ryot's method (control)
2. 3 C.L./ac. of compost at 3rd round of ploughing, 100 lb./ac. of B.M. at puddling time and 2000 lb./ac. of G.L. at 4th round of ploughing (Departmental recommendation)
3. 5 C.L./ac. of compost at 3rd round of ploughing+6,000 lb./ac. of G.L. at 4th round of ploughing, 200 lb./ac. of A/S and 200 lb./ac. of super at transplanting.
4. Manures same as (3) but split into two doses.
5. Same as (4) but nursery and transplanting according to Japanese method.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) N.A. (b) 1½ cent. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) All plots had more or less uniform growth. (ii) Nil (iii) Grain yield, straw yield (iv) (a) 1953-continued (b) No (c) N.A. (v) (a) Ryot's holdings in Ammali Nad, Napokhe Nad, Fraserpet Nad, Mercara Nad, Ponnampet Nad, Srimangala Nad, Somvarpet Nad (b) N.A. (vi) Nil (vii) fields of suitable size not obtainable in this locality and plot size was reduced to 1½ cents.

5. RESULTS :

- (i) 3116 lb./ac.
(ii) 321.9 lb./ac.
(iii) Treatment differences are significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2857
2.	2743
3.	3064
4.	3354
5.	3561
S.E./mean	=144.0 lb./ac.

Crop :- Paddy.

Site :-Ryot's holding in Ammathi Nad (Coorg)

Ref :-Ms. 53 (21)

Type :-'CM'

Object :—To test the merits of Japanese method of paddy cultivation.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Grey clay and loamy soil (b) N.A. (iii) 26.6.53 ; 4.8.53 (iv) N.A. (v) Nil (vi) Kiribitiya Late (vii) Unirrigated (viii) N.A. (ix) 80" (x) 3.1.54.

2. TREATMENTS :

1. Ryot's method (Control)
2. 3 C.L./ac. of compost at 3rd round of ploughing, 100 lb./ac. of B.M. at puddling time and 2,000 lb./ac. of G.L. at 4th round of ploughing (Departmental recommendation).
3. 5 C.L./ac. of compost at 3rd round of ploughing, 6000 lb./ac. of G.L. at 4th round of ploughing, 200 lb./ac. of A/S and 200 lb./ac. of Super at transplanting time.
4. Manures same as (3) but split into two doses.
5. Same as (4) but nursery and transplanting according to Japanese method.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) N.A. (b) 2½ cents (v) N.A. (vi) Yes.

4. GENERAL :

- (i) There was lodging in the harvest stage. There was more or less uniform growth. (ii) Leaf roller attack, slight ; checked. (iii) Grain yield & straw yield (iv) (a) 1953-Continued (b) No (c) N.A. (v) (a) Ryot's holdings in Sanivarasanth Nad, Napokhe Nad, Fraserpet Nad, Mercara Nad, Ponnampet Nad, Srimangala Nad, Somvarpet Nad (b) N.A. (vi) All fields had heavy rains and hence seedlings were all washed and raised a fresh (vii) Nil.

5. RESULTS :

- (i) 3968 lb./ac.
(ii) 353.3 lb./ac.
(iii) Treatment differences are significant.
(vi) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3657
2.	3773
3.	4126
4.	4001
5.	4283
S.E./mean	=158.0 lb./ac.

Crop :- Paddy.
Site :- Ryot's Holding in Napokhe Nad (Coorg)

Ref :- Ms. 53 (22)
Type :- 'CM'

Object :- To test the merits of Japanese method of paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Sandy loam soil (b) N.A. (iii) 1.7.53/9.8.53 (iv) N.A. (v) Nil (vi) Kiribitiya ; Late (vii) Unirrigated (viii) N.A. (ix) 140" (x) 6.1.54.

2. TREATMENTS :

- Ryot's method (Control)
- 3 C.L./ac. of compost at 3rd round of ploughing, 100 lb./ac. of B.M. at puddling time and 2,000 lb./ac. of G.L. at 4th round of ploughing (Departmental recommendation).
- 5 C.L./ac. of compost at 3rd round of ploughing, 6000 lb./ac. of G.L. at 4th round of ploughing, 200 lb. of A/S and 200 lb. of Super at transplanting time.
- Manures same as (3) but split into two doses.
- Same as (4) but nursery and transplanting according to Japanese method.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) N.A. (b) 2½ cents (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Piricularia slight infestation. Controlled by Perenox spray (iii) Grain yield & straw yield (iv) (a) 1953-Continued (b) No (c) N.A. (v) (a) Ryot's holding in Sanivarasanthe Nad, Ammathi Nad, Fraser pet Nad, Mercara Nad, Ponnampet Nad, Srimangala Nad and Somvarpet Nad. (b) N.A. (vi) Nil (vii) 5th plot had heavier infestation of blast than other plots. There was lodging at harvest stage.

5. RESULTS :

- 3918 lb./ac.
- 328.7 lb./ac.
- Treatment differences are significant.
- Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3625
2.	3946
3.	4089
4.	4284
5.	3646
S.E./mean	=147.0 lb./ac.

Crop :- Paddy.
Site :- Ryot's Holding in Fraserpet Nad (Coorg)

Ref :- Ms. 53 (23)
Type :- 'CM.'

Object :- To test the merits of Japanese method of paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Grey, clay loam soil (b) N.A. (iii) 27.6.53; 2.8.53 (iv) N.A. (v) Nil (vi) Kiribitiya (late) (vii) Unirrigated (viii) N.A. (ix) 42" (x) 15.1.54.

2. TREATMENTS :

- Ryot's method (Control)
- 3 C.L./ac. of compost at 3rd round of ploughing, 100 lb./ac. of B.M. at puddling time and 2,000 lb./ac. of G.L. at 4th round of ploughing (Departmental recommendation)-
- 5 C.L./ac. of compost at 3rd round of ploughing, 6000 lb./ac. of G.L. at 4th round of ploughing, 200 lb./ac. of A/S and 200 lb./ac. of Super at transplanting time.

4. Manures same as (3) but split into two doses.
5. Same as (4) but nursery and transplanting according to Japanese method.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) N.A. (b) 2½ cents (v) N.A. (vi) Yes.

4. GENERAL :

- (i) 5th plot best and 4th next best in the growth of tiller (ii) Nil (iii) Grain yield & straw yield (iv) (a) 1953—continued (b) No (c) N.A. (v) (a) Ryot's holding in Sanivarsanthe Nad, Ammathi Nad, Napokhe Nad, Mercara Nad, Ponnampet Nad, Srimangala Nad, Somvarpet Nad (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 5703 lb./ac.
- (ii) 355.5 lb./ac.
- (iii) Treatment differences are significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	5403
2.	5264
3.	5184
4.	5616
5.	7042
S.E./mean	= 159.0 lb/ac.

Crop :- Paddy.

Ref :- Ms. 53 (24)

Site :- Ryot's Holding in Mercara Nad (Coorg)

Type :- 'CM'.

Object :- To test the merits of Japanese method of paddy cultivation.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Sandy loam soil (b) N.A. (iii) 26.6.53 ; 27.7.53 (iv) N.A. (v) Nil (vi) Kiribitiya (late) (vii) Unirrigated (viii) N.A. (ix) 90° (x) 14.1.54.

2. TREATMENTS :

1. Ryot's method (Control).
2. 3 C.L./ac. of compost at 3rd round of ploughing, 100 lb./ac. of B.M. at puddling time and 2,000 lb./ac. of G.L. at 4th round of ploughing (Departmental recommendation).
3. 5 C.L./ac. of compost at 3rd round of ploughing, 6000 lb./ac. of G.L. at 4th round of ploughing, 200 lb./ac. of A/S and 200 lb./ac. of Super at transplanting.
4. Manures same as (3) but split into two doses.
5. Same as (4) but nursery and transplanting according to Japanese method.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) N.A. (b) 2½ cents (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil (iii) Grain yield & straw yield (iv) (a) 1953—continued (b) No (c) N.A. (v) (a) Ryot's holding in Sanivarsanthe Nad, Ammathi Nad, Napokhe Nad, Fraserpet Nad, Ponnampet Nad, Srimangala Nad, Somvarpet Nad (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2659 lb./ac.
- (ii) 138.6 lb./ac.
- (iii) Treatment differences are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2696
2.	2616
3.	2648
4.	2608
5.	2728
S.E./mean	= 62.0 lb/ac.

Crop :- Paddy.

Site :- Ryot's Holding in Srimangala Nad (Coorg)

Ref :- Ms. 53 (26)

Type :- 'CM'.

Object :- To test the merits of Japanese method of paddy cultivation.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Sandy loam, grey—white soil (b) N.A. (iii) 29.6.53 ; 8.8.53 (iv) N.A. (v) Nil (vi) Kiribitiya (Late) (vii) Unirrigated (viii) N.A. (ix) 70" (x) 24.12.53.

2. TREATMENTS :

1. Ryot's method (Control).
2. 3 C.L./ac. of compost at 3rd round of ploughing, 100 lb./ac. of B.M. at puddling time and 2000 lb./ac. of G.L. at 4th round of ploughing (Departmental recommendation).
3. 5 C.L./ac. of compost at 3rd round of ploughing, 6000 lb./ac. of G.L. at 4th round of ploughing, 200 lb./ac. of A/S and 200 lb./ac. of Super at transplanting.
4. Manures same as (3) but split into two doses.
5. Same as (4) but nursery and transplanting according to Japanese method.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) N.A. (b) 2½ cents (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Treatments 3 and 5 were better than the rest (ii) Slight blast infestation (iii) Grain yield & straw yield (iv) (a) 1953-continued (b) No. (c) N.A. (v) (a) Ryot's holding in Sanivarasanth Nad, Ammathi Nad, Napokhe Nad, Fraserpet Nad, Mercara Nad, Ponnampet Nad, Somvarpet Nad (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 4669 lb./ac.
 (ii) 234.8 lb./ac.
 (iii) Treatment differences are significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3907
2.	4382
3.	4764
4.	5219
5.	5075
S.E./mean	= 105.0 lb./ac.

Crop :- Paddy.

Site :- Ryot's holding in Ponnampet Nad, (Coorg)

Ref :- Ms. 53 (25)

Type :- 'CM'

Object :- To test the merits of Japanese method of paddy cultivation.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Sandy loam, grey soil (b) N.A. (iii) 2.7.53 ; 3.8.53 (iv) N.A. (v) Nil (vi) Kiribitiya (late) (vii) Unirrigated (viii) N.A. (ix) 70" (x) 16.12.53

2. TREATMENTS :

- (1) Ryot's method (Control).
- (2) 3 C.L./ac. of compost at 3rd round of ploughing, 100 lb./ac. of B.M. at puddling and 2000 lb./ac. of G.L. at 4th round of ploughing (Departmental recommendation)
- (3) 5 C.L./ac. of compost at 3rd round of ploughing, 6000 lb./ac. of G.L. at 4th round of ploughing, 200 lb./ac. of A/S and 200 lb./ac. of Super at transplanting.
- (4) Manures same as (3) but split into two doses.
- (5) Same as (4) but nursery and transplanting according to Japanese method.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) N.A. (b) 2½ cents (v) N.A. (vi) Yes.

4. GENERAL :

- (i) 3, 4, 5 were better than 1 and 2 (ii) Mild attack of case worm controlled by D.D.T. Slight infection of blast and Perenox sprayed (iii) Grain yield & straw yield. (iv) (a) 1953-continued (b) No (c) N.A. (v) (a) Ryot's holding in Sanivarasanth Nad, Ammathi Nad, Napokhe Nad, Fraserpet Nad, Mercara Nad, Srimangala Nad, Somvarpet Nad, (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 4855 lb./ac.
 (ii) 404.7 lb./ac.
 (iii) Treatment differences are significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	3934
2.	4541
3.	4997
4.	5356
5.	5446
S.E./mean	=181.0 lb./ac.

Crop :- Paddy.

Ref : Ms. 53 (27)

Site : Ryot's holding in Somavarpet Nad (Coorg)

Type :- 'CM'.

Object :—To test the merits of Japanese method of paddy cultivation.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Sandy loam, greyish soil (b) N.A. (iii) 20.5.53 ; 26.7.53 (iv) N.A.
 (v) Nil (vi) Kiribitiya (Late) (vii) Unirrigated (viii) N.A. (ix) 70" (x) 28.12.53,

2. TREATMENTS :

- (1) Ryot's method (Control)
 (2) 3 C.L./ac. of compost at 3rd round of ploughing, 100 lb./ac. of B.M. at puddling and 2000 lb./ac. of G.L. at 4th round of ploughing (Departmental recommendation)
 (3) 5 C.L./ac. of compost at 3rd round of ploughing, 6000 lb./ac. of G.L. at 4th round of ploughing, 200 lb./ac. of A/S and 200 lb./ac. Super at transplanting.
 (4) Manures same as (3) but split into two doses.
 (5) Same as (4) but nursery and transplanting according to Japanese method.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) N.A. (b) 2½ cents (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil (iii) Grain yield & straw yield (iv) (a) 1953— continued (b) No. (c) N.A. (v) (a) Ryot's holding in Sanivarsanthe Nad, Ammathi Nad, Napokhe Nad, Fraserpet Nad, Mercara, Nad Ponnampet Nad and Srimangala Nad, (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1719 lb./ac.
 (ii) 98.4 lb./ac.
 (iii) Treatment differences are significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1524
2.	1570
3.	1860
4.	1858
5.	1781
S.E./mean	=44.0 lb./ac.

Crop :-Paddy.

Ref :- Ms. 48 (43).

Site :-Paddy Breeding Stn. Mangalore.

Type :-'CV'

Object :—To study the effect of broadcasting vs. transplanting on different varieties of paddy.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 25.10.48 20.11.1948. (iv) (a) 6 ploughings with country plough (b) As per treatments. (c) N.A. (d) N.A. (e) 2 (v) Nil. (vi) As per treatments (Medium) (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

2. Main plot treatments :

1. Broadcast on 25.10.48.
2. Planted on 20.11.48.

5. Sub-plot treatments : 5. (Varieties)

1. PTB 19.
2. PTB 20.
3. Arikarai 6027.
4. Co-3.
5. PTB 4.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main plots/block ; 5 sub-plots/main plot. (b) N.A. (iii) 4 (iv) (a) 50'×4½' (b) 50'×4½' (Main plot size N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) Nil (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1064 lb./ac.

(ii) (a) 162.0 lb./ac.

(b) 130.8 lb./ac.

(iii) The effect of broadcasting vs planting is not significant.

Main effect of varieties is highly significant.

The interaction varieties × method of sowing is also significant.

(iv) Av. yield of grain in lb./ac.

Method of sowing	Varieties					Mean.
	1	2	3	4	5	
	1149	1730	1101	726	766	1094
2	1177	1379	1119	699	800	1035
Mean	1163	1555	1110	712	783	1064

S.E. for the difference between two

1. main plot treatment means =51.2 lb./ac.
2. sub-plot treatment means =65.4 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment =92.5 lb./ac.
4. main plot treatment means at the same level of sub-plot treatment =97.3 lb./ac.

Crop :-Paddy. (1st crop).

Site :-Paddy Breeding Stn. Mangalore.

Ref :-Ms. 53 (61).

Type :-'CVM'

Object :- To compare the relative merits of Japanese method of cultivation and farm method of cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) C.M. 1 ton/ac.+Super 100 lb./ac.+A/S 75 lb./ac. (ii) (a) Sandy loam (b) Refer soil analysis, Mangalore. (iii) 31.5.53/28.6.53 (iv) As under treatments (v) N.A. (vi) MCL 2 and MTU 15 (medium) (vii) unirrigated (viii) Nil (ix) 112.5" (31.5. 53 to 13.10.53) (x) 13.10.1953.

2. TREATMENTS :

Main plot treatments :

1. MCL 2.
2. MTU 15.

Sub-plot treatments :

1. Japanese method
2. Farm method

3. DESIGN :

(i) Split plot (ii) (a) 2 main plots/block and 2 sub-plots/main plot (b) N.A. (iii) 8 (iv) subplot size (a) 17'×27' (b) 15'×25'; main plot size 34'×27' (v) 1' all round (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain and straw yield (iv) (a) 1953—1955 (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) No (vii) Nil.

5. RESULTS :

- (i) 2856 lb./ac.
 (ii) (a) 405.0 lb./ac.
 (b) 260.0 lb./ac.
 (iii) Main plot and subplot treatments are significantly different. Interaction not significant.
 (iv) Av. grain yield in lb./ac.

Varieties	Cultivation method		Mean
	Japanese	Farm	
MCL. 2.	3462	2972	3217
MTU. 15.	2743	2247	2495
Mean	3102	2609	2856

S.E. for difference of two

- (1) main plot treatment means = 143.1 lb./ac.
 (2) sub-plot treatment means = 91.9 „ „
 (3) main plot treatment means for the same sub plot treatment = 130.0 „ „
 (4) Sub plot treatment means for the same main plot treatment = 170.5 „ „

Crop :-Paddy.

Site :-Agri. Res. Stn, Hebbal

Ref :- Ms. 50 (31)

Type :-'D'

Object :—To study the effect of seed treatment on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Clay mixed with sand. (b) Refer soil analysis Hebbal. (iii) 13th and 14 th Sept. 1950. (iv) (a) 3 ploughings (b) to (d) N.A. (e) 3—4. (v) Nil. (vi) H—320 (Late). (vii) Irrigated, (viii) Weeding. (ix) 24.85" (13.9.50. to 3.3.1951). (x) 2nd and 3rd March 1951.

2. TREATMENTS :

1. Control.
2. Arasan.
3. Mergamma.
4. Agrosan.
5. Nomersan.
6. Fermate.

Seeds treated with 0.2% concentration by weight.

Treated seeds stored for two weeks before sowing.

3. DESIGN :

(i) L. Sq. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a) (b) $\frac{3}{4}$ rd Guntha. Dimensions N.A. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory, (ii) Nil (iii) Grain yield data. (iv) (a) 1950—1952. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 926 lb /ac.
 (ii) 450.4 lb /ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	980
2.	1017
3.	767
4.	805
5.	1042
6.	942
S.E./mean	= 183.9 lb./ac.

Crop :-Paddy.

Ref :-Ms. 51 (48)

Site :-Agri. Res. Stn. Hebbal.

Type :- 'D'

Object :-To study the effect of seed treatment on paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay mixed with sand. (b) Refer soil analysis Hebbal. (iii) 3.9.1951. (iv) (a) 3 ploughings (b) to (d) N.A. (e) 3—4. (v) Nil. (vi) S—1043 ; (Late.) (vii) Irrigated. (viii) Weeding, interculturing. (ix) 33.62" (3.9.1951 to 17.2.1952) (x) 15.2.52 ; 17.2.1952.

2. TREATMENTS :

1. Control.
2. Arason.
3. Mergamma.
4. Agrosan G.N.
5. Nomersan
6. Fermate.

Seeds treated with 0.2% concentration by weight. Treated seeds stored for two weeks before sowing.

3. DESIGN :

(i) L. Sq. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a), (b) 2/3 rd Guntha. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950—1952. (b) No (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2222 lb./ac.
- (ii) 362.7 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	2215
2.	2300
3.	2065
4.	2420
5.	2140
6.	2190
S.E./mean	148.1 lb./ac.

Crop :-Paddy.

Ref :-Ms. 52 (26)

Site :-Agri. Res. Sta. Hebbal.

Type :-'D'

Object :-To study the effect of seed treatment on the incidence of disease and yield of crop.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Clay mixed with sand. (b) Refer soil analysis Hebbal. (iii) 30.8.52. (iv) (a) 3 ploughings (b) to (d) N.A. (e) 3—4 (v) None. (vi) S.1053, very late (vii) Irrigated (viii) weeding once, passing chippagunte once (ix) 10.99" (30.8.52 to 17.3.53) (x) 17.3.1953.

2. TREATMENTS :

1. Control.
2. Arason.
3. Margamma.
4. Agrosan G.N.
5. Nomersan.
6. Fermate.

Seeds treated with 2% concentration by weight. Treated seeds stored for two weeks before sowing.

3. DESIGN :

(i) L. Sq. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a), (b) 1 cent (v) Nil (vi) Yes.

4. GENERAL :

(i) Suffered at earhead stage for want of irrigation as the tank dried up (ii) Nil (iii) No. of infected earheads, grain yield data (iv) (a) 1950—1952 (b) No. (c) N.A. (v) (a) None (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 1194 lb./ac.
 (ii) 671.0 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1521
2.	1248
3.	1375
4.	1004
5.	1050
6.	967
S.E./mean	= 273.0 lb/ac.

Crop :-Paddy.
 Site :-Agri. Res. Stn. Hebbal.

Ref :-Ms. 53 (39)
 Type :-'D'

Object : To study the comparative efficacy of different fungicides on paddy.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) N.A. (ii) (a) Clay mixed with sand (b) Refer soil analysis, Hebbal. (iii) 1.9.53.
 (iv) (a) 3 ploughings (b) to (d) N.A. (e) 3—4 (v) Nil (vi) S.317 (vii) Irrigated (viii) weeding once and passing chippagunte once. (ix) 25.04 (1.9.53 to 17.12.1953) (x) 17.12.1953.

2. TREATMENTS :

1. Agrosan G.N.
2. Special Agrosan.
3. Fermasan A.
4. Copper seed dressing Y.F. 2776
5. Control.

2½ seers of seed sufficient to sow 5 plots each of 3×4 yds. were mixed thoroughly with 0.25% Concentration by weight of fungicides. The seeds were treated with each fungicide in bottles twelve days before sowing the seeds treated with each fungicide were divided into five equal parts of half a seer each and sown in five replicated plots forming a L. Sq. in the nursery.

3. DESIGN :

- (i) L.Sq. (ii) (a) 5 (b) N.A (iii) 5 (iv) (a), (b) 3/4 gunta (v) Nil (vi) Yes.

4. GENERAL :

(i) Suffered for want of water at the time of flowering and portion of crop in some of the plots were destroyed by birds. (ii) Nil (iii) Grain and straw yield. (iv) (a) No (b) & (c)—(v) (a) P.B.S., Nagenahally on two different varieties (S.54 and S.1053) and different fungicides (b) None (vi) No (vii) None.

5. RESULTS :

- (i) 2451 lb./ac.
 (ii) 160.0 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	2294
2.	2315
3.	2443
4.	2657
5.	2550
S.E./mean	= 71.5 lb./ac.

Crop :-Paddy.
 Site :-Agri. Res. Stn. Jagalbet.

Ref Ms. 50 (10)
 Type :-'D'

Object :-To see whether treatment of paddy seedlings with Perenox solution would help in re-isting blast disease.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) Nil (ii) (a) Clayey loam (b) Refer soil analysis Jagalbet. (iii) 24.6.1950/13.8.1950
 (iv) (a) 3 ploughings, 2 puddlings. (b) Transplanted (c)—(d) Spacing between rows 12", between plants
 in rows 6" (e) N.A. (v) 5 C.L. of F.Y.M./ac. (vi) Bangarakaddi (Late.) (vii) Rainfed (viii) Weeding
 once on 21.9.1950 (ix) N.A. (x) 11.12.1950.

TREATMENTS :

1. Dipping paddy seedlings in Perenox solution (3 lb. in 100 gallons of water) just before transplanting.
2. Control.

DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 6 (iv) (a) 20'×24' (b) 18'×20' (v) 2' along length ; 1' along breadth.
 (vi) Yes.

4. GENERAL :

(i) Germination satisfactory. Height normal, tillering below normal. (ii) Caseworm observed but
 controlled by Guesarol-550. Blast did not appear (iii) Grain yield data (iv) (a) No. (b) No. (c) N.A.
 (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 626 lb./ac.
- (ii) 174.7 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	637
2.	615
S.E./mean	= 71.3 lb./ac.

Crop :-Paddy.

Site :-Agri. Res. Stn. Jagalbet.

Ref :-Ms. 52 (42).

Type :-'D'

Object :—To see the effectiveness of Perenox against blast disease by treating the seed as well as
 seedlings and spraying the crop at different stages of growth.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) 5 C.L. of F.Y.M./ac. (ii) (a) Clayey loam. (b) Refer soil analysis, Jagalbet.
 (iii) 22.6.52/1.8.52 (iv) (a) 3 ploughings, 2 puddlings (b) Transplanted. (c)—(d) 12" between rows and
 6" between plants. (e) 1 (v) 5 C.L. of F.Y.M./ac. (vi) Y-4 ; highly susceptible to blast. Duration
 N.A. (vii) Rainfed. (viii) Weeding (ix) N.A. (x) Dec. 1952.

2. TREATMENTS :

1. One spray at boot stage.
2. One spray at boot and flower stage.
3. One spray at flower stage.
4. No spraying.

Seedlings in all cases have received a dip in Perenox solution of 3 lb. in 100 gallons of water just before
 transplanting and the Perenox solution has been sprayed in different treatments.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 8 (iv) (a) 20'×12' (b) 16'×8' (v) 2' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1952-1953 (b) No. (c) N.A. (v) (a) N.A. (b)
 N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 715 lb./ac.
- (ii) 246.1 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	707
2.	627
3.	704
4.	821
S.E./mean	= 87.0 lb./ac.

Crop :- Paddy.

Ref :- Ms. 53 (103).

Site :- Agri. Res. Stn. Jagalbet.

Type :- 'D'.

Object :—To study the effectiveness of PerenoX treatment in controlling paddy blast.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) F.Y.M. at 5 C.L./ac. (ii) (a) Clayey loam (b) Refer soil analysis, Jagalbet (iii) 15.6.53/28.7.53 (iv) (a) 3 ploughings and 2 puddlings (b) Transplanted (c)—(d) 9"×9" (e) 4 seedlings/bunch (v) F.Y.M at 5. C.L./ac. (vi) Y-4 (vii) Unirrigated (viii) Weeding twice (ix) N.A. (x) 20.12.1953.

2. TREATMENTS :

1. One spray at boot stage.
2. One spray at boot and flower stage.
3. One spray at flower stage.
4. Control.
Strength of the PerenoX solution is 3 : 100.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 4 (iv) (a) 12'×12' (b) 9'×9' (v) 1½' all round (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Case worm observed to a limited extent. (iii) Grain yield data (iv) (a) 1952-1953 (b) No (c) N.A. (v) (a) & (b) N.A. (vi) No (vii) None.

5. RESULTS :

- (i) 2014 lb./ac.
- (ii) 294.8 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	1999
2.	2032
3.	2049
4.	1974
S.E./mean	= 147.4 lb/ac.

Crop :- Paddy.

Ref :- Ms. 53 (105)

Site :- Agri. Res. Stn. Jagalbet.

Type :- 'D'

Object :—To compare the effects of mercurial cuprons and organic seed dressing on germination, disease and yield of rice.

1. BASAL CONDITIONS :

(i) (a) No (b) Paddy (c) 5. C.L. of F.Y.M./ac. (ii) (a) Clayey loam (b) Refer soil analysis, Jagalbet. (iii) 15.6.53/20.7.53. (iv) (a) 3 ploughings ; 2 puddlings. (b) Transplanted (c)—(d) 9"×9". (e) 4. (v) 5 C.L. of F.Y.M /ac. (vi) Bangarkaddi. (Late) (vii) Rainfed (viii) Weeding twice. (ix) N.A. (x) 15.12.1953.

2. TREATMENTS :

1. Agrosan G.N.
2. Special Agrosan of low vitality.
3. Fermasan A.
4. Copper seed dressing YF 2776.
5. Control.
Other details N.A.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 18'×18' (b) 15'×15'. (v) 1½' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory, (ii) Case worm was observed to a small extent. No trace of blast disease. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 3182 lb./ac.
- (ii) 475.3 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2901
2.	3022
3.	3254
4.	3414
5.	3317
S.E./mean.	=212.5 lb./ac.

Crop :- Paddy.

Site :- Agri. Res. Stn. Mandya.

Ref :- Ms. 48 (2)

Type :- 'D'

Object :- To study the effects of different disinfectants on the paddy crop.

1. BASAL CONDITIONS :

- (i) (a) No (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Mandya. (iii) 25.6.1948/20.7.1948
- (iv) (a) 3 ploughings, levelling, harrowing, opening furrows, etc. (b) Transplanting (c)—(d) to (e) N.A. (v) Nil (vi) N.A. (vii) Irrigated (viii) Weeding (ix) N.A. (x) Dec., 1948.

2. TREATMENTS :

- 1. Agrosan G.N.
- 2. Agrosan G.N. 4%
- 3. Nomerson
- 4. T.M.T.D.
- 5. Control.

Details N.A.

3. DESIGN :

- (i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) & (b) 1/40th ac. (v) Nil (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil (iii) Grain yield data (iv) (a) No (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1566 lb./ac.
- (ii) 498.0 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield.
1.	1518
2.	1411
3.	2022
4.	1378
5.	1500
S.E./mean	=222.0 lb./ac.

Crop :- Paddy.

Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 53 (58).

Type :- 'D'.

Object :- To compare the mutant secured by treating a variety with acenaphthene with the standard variety.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) 2 tons of C.M./ac+150 lb./ac. of Super+100 lb./ac. A/S in two doses. (ii) (a) Loamy soil (b) Refer soil analysis, Mangalore. (iii) 11.7.53/8.8.53 (iv) (a) First ploughing with iron plough and cross ploughing done with country plough (b) to (e) N.A. (v) G.M. at 4000 lb./ac. (vi) Mutant of CC— 13 and CO— 10 (vii) Irrigated (viii) Nil (ix) 14.40" (11.7.53 to 16.11.1953) (x) 16.11.1953.

2. TREATMENTS :

1. CO—13 mutant secured by treating with acenaphthene.
2. CO—10. Control.

3. DESIGN :

- (i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 12 (iv) (a) 6'×12' (b) 4'×10' (v) 1' on all sides left as border row (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil (iii) Flowering duration and grain yield data (iv) (a) No (b) & (c)— (v) (a) & (b) Nil (vi) No (vii) Nil.

5. RESULTS :

- (i) 2280 lb./ac.
 (ii) 158.0 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment.	Av. yield
1.	2358
2.	2202
S.E./mean	= 45.6 lb/ac.

Crop :- Paddy.

Ref :- Ms. 52(54).

Site :- Agri. Res. Stn. Mugad.

Type :- 'D',

Object :- To see the effect of 2—4—D on the growth & yield of drilled paddy and also to determine the optimum concentration of hormone and time of immersion to give best results.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy (c) Nil. (ii) (a) N.A. (b) Refer soil analysis, Mugad. (iii) 31.5.52 (iv) (a) Ploughing, 2—4 harrowings, grubbling, etc. (b) Drill sowing with 4 coultered 12" seed drill (c) N.A. (d) 12" between rows (e)— (v) Nil. (vi) M—141, (Late) (vii) Rainfed (viii) One interculturing, heavy plank was moved on the crop to put down the weeds and to encourage tillering. One weeding, thinning & gap filling. (ix) N.A. (x) 3.12.1952.

2. TREATMENTS :

All combinations of (1) & (2) + a Control.

- (1) 4 concentrations of hormone in p.p.m. :— 0.01, 0.10, 1.00 & 10.00

- (2) 2 times of immersion :— 30 minutes & 20 hours.

and one control=seeds not treated

Seeds treated with various concentrations of 2—4—D coupled with two timings of immersion the previous day and dried in shade.

3. DESIGN :

- (i) R.B.D. (ii) (a) 9 (b) N.A. (iii) 4 (iv) (a) 30'×10' (b) 28'×8' (v) 1' all round (vi) Yes.

4. GENERAL :

- (i) Germination perfect, & stand of the crop uniform. (ii) Severe attack of blue beetle in almost all plots (iii) Grain yield data. (iv) (a) No (b) No (c) N.A. (v) (a) & (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 1394 lb./ac.
 (ii) 167.2 lb./ac.
 (iii) Main effects, interaction and control vs. others are not significant.
 (iv) Av. yield of grain in lb./ac.

Concentration of hormone (p.p.m.)	Time of Immersion		Mean.
	30 minutes	20 hours.	
0.01	1264	1143	1204
0.10	1134	1120	1127
1.00	1084	1156	1120
10.00	940	1133	1037
Mean.	1106	1138	1122

S.E. of any mean in the body of the table = 83.6 lb./ac.
 S.E. of marginal mean of Time of immersion = 41.8 lb/ac.
 S.E. of marginal mean of Concentration of hormones = 59.1 lb/ac.

Crop :- Paddy.
Site :- Agri. Res.Stn. Nagenahally.

Ref :- Ms. 48(30).
Type :- 'D'.

Object :- To study the effects of different disinfectants on the paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis, Nagenahally. (iii) 16.8.48. (iv) (a) Ploughing, levelling, etc. (b) to (e) N.A. (v) 40 lb. of A/S + 100 lb. of G.N.C. and 60 lb. of concentrated Super/acre applied just before transplanting. (vi) As per treatments ; Late. (vii) Irrigated. (viii) Weeding (ix) N.A. (x) 16,17.12. 1948.

2. TREATMENTS :

2 Main plot treatments :-

V₁—S. 54

V₂—S.699

4 Sub-plot treatments :-

1. Control,
2. Cerean dust.
3. Cerean solution.
4. Mono copper sulphate.

Other details N.A.

3. DESIGN :

(i) Split plot design. (ii) (a) 2 main plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 8 (iv) (a) , (b) Sub-plot size : 1/50 th ac. dimensions N.A. (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1890 lb./ac.
- (ii) (a) 321.5 lb./ac.
(b) 280.2 lb./ac.
- (iii) None of the effects is significant.
- (iv) Av. yield of grain in lb./ac.

Varieties..	Sub-plot treatments				Mean.
	1	2	3	4	
V ₁	1925	1900	2050	1969	1961
V ₂	1737	1913	1713	1913	1819
Mean.	1831	1906	1881	1941	1890

S.E. of the difference between two :

main plot treatment means = 80.38 lb./ac.
 sub-plot treatment means. = 99.06 „
 sub-plot treatment means at the same level of main plot. = 140.1 „
 main-plot treatment means at the same level of sub-plot treatment = 145.5 „

Crop :- Paddy.
Site :- Agri. Res. Stn. Nagenahally.

Ref :- Ms. 48(31).
Type :- 'D'

Object :- To study the effect of different disinfectants on the paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis, Nagenahally. (iii) 17.8.48. Age of seedlings 50 days. (iv) (a) Ploughing, levelling etc. (b) Transplanting (c)— (d) & (e) N.A. (v) 40 lb./ac. of A/S+100 lb/ac. G.N.C., +60 lb/ac. of concentrated Super applied just before transplanting. (vi) S. 699; Late. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 18.12.1948.

2. TREATMENTS :

1. Nomersan.
 2. T.M.T.D.
 3. Agrosan G.N.
 4. 4% Agrosan G.N.
 5. Control.
- Other details N.A.

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a), (b) 1/40th ac. (dimensions N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1584 lb./ac.
- (ii) 210.0 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1568
2.	1552
3.	1456
4.	1728
5.	1616
S.E./mean.	=93.9 lb./ac.

Crop :- Paddy.

Site :- Agri. Res. Stn. Nagenahally.

Ref :- Ms. 50(8)

Type :- 'D'

Object :— To find the effect of seed dressing against *Piricularia* and *Ephetes* on paddy S. 54 variety

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Nagenahally.. (iii) 26.8.1950 (iv) (a) Ploughing, levelling, forming ridges etc. (b) Transplanting. (c)— (d) to (e) N.A. (v) 40 lb./ac. A/S+100 lb./ac. G.N.C. + 60 lb./ac, B.M. applied just before planting (vi) S.54; Late (vii) Irrigated (viii) Weeding etc., (ix) N.A. (x) 16.12.1950

2. TREATMENTS :

1. Control.
2. Arasan.
3. Agrosan G.N.
4. Mergamma.
5. Fermate.
6. Nomersan.

Seeds treated with these seed dressing on the day of sowings and each is of 0.2 per cent concentration by weight.

3. DESIGN :

(i) L. Sq. (ii) (a) 6 (b) Nil. (iii) 6 (iv) 2 cents. (dimensions N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil. (iii) Grain yield, straw yield, no. of earheads/plant. (iv) (a) Yes. 1950—1951 (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 1947 lb./ac.
- (ii) 178.5 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield
1.	1824
2.	1991
3.	1883
4.	2008
5.	1933
6.	2041
S.E./mean.	= 72.5 lb./ac.

Crop :-Paddy.

Site :-Agri. Res. Stn. Nagenahally.

Ref :-Ms. 50 (9)

Type :- 'D'

Object :-To find the effect of seed dressing against Piricularia and Ephetes on paddy S. 1053 variety.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis, Nagenahally (iii) 29.8.1950.
- (iv) (a) Ploughing, levelling, forming ridges, etc., (b) Transplanting (c)—(d) to (e) N.A. (v) 40 lb./ac A/S+100 lb./ac G.N.C.+60 lb./ac. B.M. applied just before planting (vi) S. 1053 ; Very late (vii) Irrigated (viii) Weeding, transplanting etc., (ix) N.A. (x) 25.1.1951.

2. TREATMENTS :

1. Control.
2. Arason.
3. Agrosan G.N.
4. Mergamma.
5. Fermate.
6. Nomersan.

Seeds treated with these seed dressings on the day of sowing and each is of 0.2 concentration by weight.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 2 (iv) (a) 2 cents. (dimensions N.A.) (v) Nil (vi) No.

4. GENERAL :

- (i) Normal (ii) Nil (iii) Grain yield, straw yield, no. of earheads/plant. (iv) (a) Yes. 1950—1951 (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 2354 lb./ac.
- (ii) & (iii) The two blocks were identical and as such the expt was not analysed.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2275
2.	2000
3.	2450
4.	2300
5.	2475
6.	2625

Crop :-Paddy.

Site :-Agri. Res. Stn. Nagenahally.

Ref :-Ms. 51 (13)/50 (8)

Type :- 'D'

Object :-To find the effect of seed dressing against Piricularia and Ephetes on Paddy S. 54 variety.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Nagenahally (iii) 13.8.1951.
- (iv) (a) Ploughing, levelling, forming ridges, etc., (b) Transplanting (c)—(d)&(e) N.A. (v) Sewage silt applied at 2000 lb./ac.+G.M. at 4000 lb./ac.+A/S at 40 lb./ac. at planting+75 lb./ac. of A/S after 5 weeks+Super at 60 lb./ac. at planting + G.N.C. at 100 lb./ac. at planting. (vi) S. 54 (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 19.12.1951.

2. TREATMENTS :

1. Control.
2. Arasan.
3. Mergamma.
4. Agrosan G.N.
5. Nomersan.
6. Fermate.

Seeds treated with these seed dressings on the day of sowing and each is of 0.2 percent concentration by weight.

3. DESIGN :

(i) L. Sq. (ii) (a) 6 (b) N.A. (iii) 6 (iv) 2 cents, Dimensions N.A. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal (ii) No appearance of disease. (iii) Grain yield, straw yield, No. of earheads/plant. (iv) (a) Yes. 1950—1951 (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS ;

(i) 2660 lb./ac.

(ii) 173.0 lb./ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2624
2.	2716
3.	2766
4.	2666
5.	2591
6.	2591
S.E./mean	=73.5 lb./ac.

Crop :-Paddy.

Site :-Agri. Res. Stn. Nagenahally.

Ref :- Ms. 51 (14)/50 (9)

Type :- 'D'

Object :-To find the effect of seed dressing against Piricularia and Ephetes.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Nagenahally (iii) 10.7.1951, (iv) (a) Ploughing, levelling, forming ridges etc. (b) Transplanting. (c)—(d) to (e) N.A. (v) Silt applied at 2000 lb./ac. ; G.M. at 8000 lb./ac. ; A/S at 40 lb./ac. at planting and 75 lb./ac. after six weeks ; Super at 60 lb./ac. at planting ; G.N.C. at 100 lb./ac. at planting (vi) S. 1053. Very late (vii) Irrigated (viii) Weeding (ix) N.A. (x) 9.1.1952.

2. TREATMENTS :

1. Control.
2. Arasan.
3. Mergamma.
4. Agrosan.G.N.
5. Nomersan.
6. Fermate.

Seeds treated with these seed dressings on the day of sowing and each is of 0.2 per cent concentration by weight.

3. DESIGN:

(i) R B.D. (ii) (a) 6 (b) N.A. (iii) 2 (iv) 2 cents, dimensions N.A. (v) Nil (vi) No.

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain yield, straw yield, number of earheads/plant. (iv) (a) Yes. 1950 1951. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 2146 lb./ac.

(ii) & (iii) The two blocks were identical, as such the experiment was not analysed.

Treatment	Av. yield.
1.	2225
2.	2150
3.	2075
4.	2100
5.	2275
6.	2050

Crop :- Paddy.

Ref :- Ms. 52 (17)

Site :- Agri. Res. Stn. Nagenahally.

Type :- 'D'

Object :- To study the effect of seed treatment on the incidence of disease and yield of paddy variety S.1053

BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) N.A. (ii) (a) Red sandy loam (b) Refer soil analysis, Nagenahally. (iii) 19.7.52 (iv) (a) Ploughing with iron plough, levelling with country blade (b) Transplanting behind ploughing (c)—(d) 6"—8" spacing (e) 2—3. (v) G.M. at 2000 lb./ac., Super at 60 lb./ac., applied at the time of sowing G.M. seeds. G.N.C. at 100 lb./ac. at planting, A/S at 40 lb./ac. at planting and 75 lb./ac. on 10.8.52 (vi) S. 1053. (vii) Irrigated (viii) Hand weeding (ix) N.A. (x) 13.1.1953.

2. TREATMENTS :

Main plot treatments :-

1. Control.
2. Arasan.
3. Mergamma.
4. Agrosan G.N.
5. Nomersan.
6. Fermate.

Sub-plot treatments :-

Seeds treated with these seed dressings.

- A. on the day of sowing.
- B. three weeks before sowing.

Seed dressings are of 0.2 per cent concentration by weight.

3. DESIGN :

(i) Split plot design. (ii) (a) 6 main plots/block ; 2 sub-plots/main plot. (b) N.A. (iii) 2 (iv) (a), (b) 1 cent. (v) Nil (vi) No. The two replications are identical.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Germination studies infected earheads, yield data, no. of cultures per sq. ft. and no. of earheads per culture. (iv) (a) No. (b) No. (c) N.A. (v) Agri. Res. Stn. Hebbal, Nagenahally with different variety (b) N.A. (vi) Nil (vii) The experiments not analysed as the treatments are not randomised independently in each block.

5. RESULTS :

- (i) 2858 lb./ac.
- (ii) & (iii) The experiment not analysed as the treatments are not randomised independently in each block.
- (iv) Av. grain yield in lb./ac.

Main plot treatments	Sub-plot treatments		Mean
	A	B	
1.	2200	3100	2650
2.	1850	2900	2375
3.	2400	3650	3025
4.	2600	3300	2950
5.	2200	2950	2575
6.	3800	3350	3575
Mean	2508	3208	2858

Crop :-Paddy.
Site :-Agri. Res. Stn. Nagenahally.

Ref :-Ms. 52 (18)
Type :-'D'

Object :-To study the effect of seed treatment on the incidence of disease and yield of crop paddy variety S. 54.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy (c) N.A. (ii) (a) Red sandy loam (b) Refer soil analysis Nagenahally. (iii) 25.7.52. (iv) (a) Ploughing with iron plough (b) N.A. (c) N.A. (d) 6"—8" (e) 2—3 (v) G.M. at 1200 lb./ac., Super at 60 lb./ac. at the time of sowing G.M. seeds, G.N.C. compare with text for the dose lb./ac. at planting, A/S at 40 lb./ac. at planting and 75 lb./ac. on 1.10.52, (vi) S.54 (vii) Irrigated (viii) Hand weeding (ix) N.A. (x) 25.7.52 to 3.12.1952.

2. TREATMENTS :

Main plot treatments :—

1. Control
2. Arasan.
3. Mergamma.
4. Agrosan G.N.
5. Nomersan
6. Fermate.

Sub plot treatments :—Seeds treated with these seed dressings.

- A. on the day of sowing
- B. three weeks before sowing.

Seeds treated with seed dressings of 0.2 per cent concentration by weight.

3. DESIGN :

(i), (ii), (iii) This is reported to be a R.B.D. But this is a split plot design, the treatments 1,2,3,4,5,6 being arranged in a L.Sq, and these form the main plots, the main plots are split into two to accommodate the treatments A and B (iv) (a) & (b) One cent (v) Nil (vi) The randomisation of the main plots is correct as L. Sq. The sub-plots are not randomised.

4. GENERAL :

(i) Satisfactory (ii) N.A. (iii) Germination studies, infected earheads, yield data, no. of cultures per sq. ft. and no. of earheads per culture. (iv) (a) No. (b) No (c) N.A. (v) (a) Agri. Res. Stn. Hebbal and Agri. Res. Stn. Nagenahally with different variety (b) N.A. (vi) Nil (vii) The layout has been given as L. Sq. with split plot. In view of design, the analysis is not correct. Further, a scrutiny of the analysis, assuming that the layout is L.Sq. split plot shows that the degrees of freedom have not been allocated correctly. As such analysis not checked.

5. RESULTS :

- (i) 3272 lb./ac.
- (ii) N.A.
- (iii) N.A.
- (iv) Av. grain yield in lb./ac.

Main plot treatments	Sub plot treatments		Mean
	A	B	
1.	3215	3249	3232
2.	3382	3149	3265
3.	3399	3382	3390
4.	3115	3249	3182
5.	3232	3282	3257
6.	3199	3399	3299
Mean	3258	3286	3272

S.E. s N.A.

Crop :-Paddy.
Site :-Agri. Res. Stn. Nagenahally.

Ref :-Ms. 53 (34)
Type :-'D'

Object :-To try the comparative efficacy of different fungicides on paddy variety S. 1053.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy. (c) N.A. (ii) (a) Red sandy loam (b) Refer soil analysis Nagenahally. (iii) 20.7.53/23.8.53 (iv) (a) Ploughing, levelling, forming ridges, etc. (b) Transplanting (c)—(d) 6"—8" (e) 2—3. (v) G.M. at

3000 lb./ac.+Farm compost at 4000 lb./ac.+A/S at 100 lb./ac., applied just before transplanting and 50 lb./ac. of A/S on 14.9.1953 (iv) S.1053 (very late). (vii) Irrigated (viii) Weeding etc. (ix) N.A. (x) 18.1.1954.

2. TREATMENTS :

1. Control.
2. Ceresan.
3. Agrosan G.N.
4. Fermate.
5. Yellow cuproicide.

The seeds treated two days before sowing. They were sown in the nursery and transplanted into plots similarly replicated.

3. DESIGN :

(i) L.Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a), (b) 0.75 cent (v) No (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain and straw yields (iv) No (v) Agri. Res. Stn. Hebbal ; Agri. Res. Stn. Nagenahally with different varieties and fungicides (vi) No (vii) None.

5. RESULTS :

- (i) 2277 lb./ac.
- (ii) 210.7 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	2506
2.	2346
3.	2079
4.	2239
5.	2213
S.E./mean	=94.7 lb./ac.

Crop :-Paddy.

Site :-Agri. Res. Stn. Nagenahally.

Ref :-Ms. 53 (35)

Type :-'D'

Object :-To try the the comparative efficacy of different fungicides on paddy variety S. 53.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy (c) N.A. (ii) (a) Red sandy loam (b) Refer soil analysis Nagenahally. (iii) 19.7.53/22.8.53 (iv) (a) Ploughing, levelling, forming ridges etc. (b) Transplanting (c)-(d) 6"-8" (e) 2-3 (v) G.M. at 3000 lb./ac.+Farm compost at 4000 lb./ac.+A/S at 100 lb./ac. just before transplanting.+ Super at 112 lb./ac. on 22.4.53 at the time of sowing of G.M. seeds.+Lime applied at 224 lb./ac. on 22.4.53. x2nd application of A/S at 50 lb./ac. on 14.9.53 (vi) S.53. (vii) Irrigated (viii) Weeding etc. (ix) N.A. (x) 24.12.1953.

2. TREATMENTS :

1. Control.
2. Ceresan.
3. Agrosan G.N.
4. Fermate,
5. Yellow cuproicide.

The seeds were treated two days before sowing. They were sown in the nursery and transplanted into plots similarly replicate

3. DESIGN :

(i) L.Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a), (b) 2 cents (v) No. (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain and straw yields. (iv) (a) No (b) & (c)-(v) (a) Agri. Res. Stn. Hebbal with different varieties and fungicides. Agri. Res. Stn. Nagenahally with different variety (S. 1053) (b) N.A. (vi) No (vii) None.

5. RESULTS :

- (i) 2790 lb./ac.
- (ii) 294.5 lb./ac.
- (iii) The differences in yield due to treatments are not significant.

(iv) Av. grain yield in lb./ac.	
Treatment	Av. yield.
1.	2890
2.	2900
3.	2660
4.	2800
5.	2700
S.E./mean	$\sqrt{}$ = 131.5 lb./ac.

Crop :-Wheat. (Rabi)
Site :-Agri. School Farm, Arbhavi.

Ref :- Ms. 53(178)
Type :- 'M'

Object :- To find out the optimum dose of N.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis Arbhavi. (iii) 20.10.53. (iv) (a) to (e) N.A. (v) Sann G.M. was applied (vi) Khapli wheat. Medium. (vii) Irrigated. (viii) Weeding. (ix) 5.20' (20.10.1953 to 27.2. 1954) (x) 27.2.1954.

2. TREATMENTS :

1. 0 lb N/ac.
2. 32 lb. N/ac.
3. 64 lb. N/ac.
4. 96 lb. N/ac.

Source of N : G.N.C.

Time of application : One month after sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 5 (iv) (a) 36'×32.5' (b) 30'×25'. (v) 3.75' along breadth and 3' along length (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield (iv) (a) No (b) No. (c) N.A. (v) (a) N.A. (b) N.A.(vi) Nil (vii) Nil

5. RESULTS :

(i) 974 lb/ac.

(ii) 296.0 lb/ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. grain yield in lb/ac.

Treatment	Mean
1.	741
2.	1135
3.	1063
4.	956
S.E./mean	= 132.4 lb/ac.

Crop :-Wheat (Rabi)
Site :- Agri. School Farm, Arbhavi.

Ref :- Ms. 53(179)
Type :: 'M'

Object :- To find out optimum dose of N for wheat under the Gokak canal tract.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Medium black soil (b) Refer soil analysis Arbhavi (iii) 14.11.1953 (iv) (a) to (e) N.A. (v) Sann G.M. was applied (vi) Wheat R.R. Medium (vii) Irrigated. (viii) Weeding. (ix) Nil. (x) 27.2.1954.

2. TREATMENTS :

1. 0 lb. N/ac.
 2. 32 lb. N/ac.
 3. 64 lb. N/ac.
 4. 96 lb. N/ac.
- N as G.N.C.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 3 (iv) (a) $27\frac{1}{2}' \times 36'$ (b) $20' \times 30'$. (v) $3\frac{1}{2}'$ along breadth and $3'$ along length (vi) Yes.

4. GENERAL :

- (i) Yield very poor due to poor germination. (ii) Nil (iii) Grain yield (iv) (a) No. (b) No, (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 268 lb/ac,
 (ii) 82.5 lb/ac.
 (iii) The differences in yield due treatments are not significant.
 (iv) Av. grain yield in lb/ac.

Treatment	Mean
1.	224
2.	274
3.	324
4.	249

S.E./mean = 47.6 lb/ac.

Crop :- Wheat. (Rabi).

Ref :- Ms. 53 (180)

Site :- Agri. School Farm, Arbhavi.

Type :- 'M'

Object :- To find out the optimum dose of N

1. BASAL CONDITIONS :

- (i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis Arbhavi. (iii) 20.10.1953. (iv) (a) to (e) N.A. (v) Sann G.M. was applied. (vi) Wheat N-4, Medium (vii) Irrigated. (viii) Weeding. (ix) 5.20" (20.10.1953 to 9.2.1954) (x) 9.2.1954.

2. TREATMENTS :

1. 0 lb. N/ac.
 2. 32 lb. N/ac.
 3. 64 lb. N/ac.
 4. 96 lb. N/ac.
 N as G.N.C.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 5 (iv) (a) $36' \times 32.5'$ (b) $30' \times 25'$. (v) $3\frac{1}{2}'$ along breadth $3'$ along length (vi) Yes.

4. GENERAL :

- (i) Not satisfactory. (ii) The crop was attacked by wheat rust and it was sprayed with sulphur once (iii) Grain yield (iv) (a) No (b) No (c) N.A. (v) (a),(b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 514 lb./ac.
 (ii) 188.0 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment.	Mean.
1.	454
2.	526
3.	526
4.	550

S.E./mean = 84.1 lb./ac.

Crop :- Wheat (Rabi).

Ref :- Ms. 52 (45)

Site :- Agri. Res. Stn. Bijapur.

Type :- 'M'.

Object :- To study the effect of leguminous crop grown with and without Super on the succeeding cereal crop.

1. BASAL CONDITIONS :

(i) (a) Cereals rotated with legumes. (b) Chinamug (c) As per treatments. (ii) (a) Medium black soil (b) Refer soil analysis, 'Bijapur'. (iii) 14.10.52 (iv) (a) Ploughing once in 3 years as per dry farming methods. (b) Drilling with 3 coultered 18" seed drill for Chinamug and drilling with 4 coultered 12" seed drill for wheat. (c) 6 lb./ac. for chinamug and 40 lb./ac. for wheat (d) 12" (wheat) (e) N.A. (v) 5 C.L. of F.Y.M./ac. (vi) R.R. Wheat (Mediu m). (vii) Rainfed (viii) Interculturing to wheat crop on 26.11.52 (ix) 4.65" (14.10.52 to 12.1.53) (x) 12.1.53.

2. TREATMENTS :

1. 0 lb. P_2O_5 /ac.
2. 50 " " "
3. 100 " " "
4. 150 " " "
5. Fallow plot without legume but manured at 5 C.L. of F.Y.M./ac. P_2O_5 as Super given to previous crop chinamug.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 42'×27' (b) 30'×15'. (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Germination of the crop satisfactory while growth of the crop was poor and stunted. No tillering for want of rains after sowing. Prevalence of famine conditions during the growing period of the crop. (ii) Nil. (iii) Grain yield (iv) (a) 1948—53. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) Growing—season of the crop abnormal and dry as there were no showers during growth period. Famine conditions hastened maturity of crop. (vii) Nil.

5. RESULTS :

- (i) 211 lb./ac.
- (ii) 51.3 lb./ac.
- (iii) The differences in yield due to treatments are significant.
- (iv) Av. grain yield in lb./ac

Treatment	Av. yield
1.	181
2.	193
3.	238
4.	174
5.	269
S.E./mean.	= 23.2 lb./ac.

Crop :- Wheat (Rabi).

Ref :- Ms. 53(99)

Site :- Agri. Res. Stn. Bijapur.

Type :- 'M'.

Object :- To study the effect of leguminous crop of chinamug grown with and without Super on the succeeding cereal crop of wheat.

1. BASAL CONDITIONS ;

(i) (a) Cereals usually rotated with legumes (b) Chinamug (c) As per treatments and F.Y.M. at 5 C.L./ac. once in 3 years (ii) (a) Medium black soil. (b) Refer soil analysis Bijapur. (iii) 20.10.53 (iv) (a) Ploughing is done once in 3 years as per dry farming methods (b) Drilling with 12", 4 coultered seed drill. (c) 40 lb./ac. (d) 12" (e) N.A. (v) F.Y.M. at 5 lb./ac. once in 3 years (vi) Kempfad (vii) Unirrigated. (viii) Interculturing on 29.11.53 (ix) 18.12" (20.10.53 to 13.2.54) (x) 13.2.54.

2. TREATMENTS :

1. 0 lb. of P_2O_5 /ac.
2. 50 " " "
3. 100 " " "
4. 150 " " "
5. Fallow plot to be manured according to local practice of 5 C.L. of F.Y.M./ac. once in 3 years to the cereal crop of wheat. P_2O_5 as Super given to the previous crop, chinamug.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 42'×27' (b) 30'×15' (v) 6' all round (vi) Yes.

4. GENERAL :

(i) Due to dry whether in later stage of its growth the crop did not attain the satisfactory stand and tillering (ii) Nil. (iii) Grain yield data (iv) (a) 1948—1953 (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) No (vii) None.

5. RESULTS :

- (i) 294 lb./ac.
- (ii) 109.6 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment.	Av. yield.
1.	211
2.	262
3.	231
4.	327
5.	389
S.E./mean	= 49.0 lb./ac.

Crop:- Wheat (Rabi).

Ref :- Ms. 52(124)

Site :- Agri. Res. Stn. Bijapur.

Type :- 'M'

Object :- To study the effect of leguminous crop of gram grown with and without Super on succeeding cereal crop of wheat.

1. BASAL CONDITONS :

- (i) (a) Wheat-gram. (b) Gram (c) As per treatments. F.Y.M. applied once in three years at 5 C.L./ac.
- (ii) (a) Medium black soil (b) Refer soil analysis Bijapur. (iii) 11.10.52. (iv) (a) Ploughing done once in three years. (b) Sowing by 12" 4 coultured seed drill. (e) Wheat 40 lb./ac. & gram 30 lb./ac. (d) 12"
- (e) N.A. (v) F.Y.M. at 5 C.L./ac. once in three years. (vi) Kempfad ; Medium (vii) Rainfed. (viii) Nil.
- (ix) 4.15" (11.10.52 to 10.1.53) (x) 10.1.53

2. TREATMENTS :

- 1. 0 lb. P₂O₅/ac.
 - 2. 50 ,, ,,
 - 3. 100 ,, ,,
 - 4. 150 ,, ,,
 - 5. Fallow plot manured at 5 C.L./ac. for wheat according to local practices.
- P₂O₅ as Super applied to gram (previous crop).
Time and method of application N.A.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 38'×23' (b) 30'×15' (v) 4' all round. (vi) Yes.

4. GENERAL :

- (i) Not satisfactory. The annual rainfall during 1952—53 was much below the average normal rainfall of the tract. (ii) Nil. (iii) Grain yield. (iv) (a) 1948—1953. (b) No. (c) No. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 234 lb./ac.
- (ii) 97.2 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. grain yield in lb./ac.

Treatment.	Av. yield.
1.	150
2.	181
3.	142
4.	217
5.	482
S.E./mean.	= 43.5 lb./ac.

Crop :- Wheat (Rabi).
Site :- Agri. Res.Stn. Bijapur.

Ref :- Ms. 53(100).
Type :- 'M'

Object :- To study the effect of leguminous crop gram grown with and without Super on the succeeding cereal crop of wheat.

1. BASAL CONDITIONS :

(i) (a) Cereals are rotated with legumes (b) Gram (c) As per treatments and F.Y.M. at 5 C.L./ac. once in 3 years (ii) (a) Medium black (b) Refer soil analysis Bijapur. (iii) 20.10.53 (iv) (a) Ploughing is done once in 3 years as per dry farming method (b) Drilling with 12", 4 coulters seed drill (c) 30 lb./a (d) 12" (e) N.A. (v) F.Y.M. at 5 C.L./ac. once in 3 years (vi) Kenphad (vii) Unirrigated (viii) Interculturing on 29.11.53 (ix) 6'08" (2).10.53 to 13.2.54 (x) 13.2.1954.

2. TREATMENTS :

1. 0 lb. of P_2O_5 /ac.
2. 50 " " "
3. 100 " " "
4. 150 " " "
5. Fallow for gram and sown for wheat.
 P_2O_5 as Super applied to gram, previous crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 33' x 23' (b) 30' x 15' (v) 4' all round (vi) Yes.

4. GENERAL :

(i) In the later stage, crop growth was affected due to dry weather (ii) Nil. (iii) Grain yield data (iv) (a) 1948—1953 (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) The season was wet for the crop in its early stage and later it was quite dry. (vii) Nil.

5. RESULTS :

- (i) 264 lb./ac.
- (ii) 70.8 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	238
2.	255
3.	348
4.	318
5.	161
S.E./mean	= 31.6 lb./ac.

Crop :- Wheat (Rabi).
Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 49(20).
Type :- 'M'

Object :- To study the effect of leguminous crop grown with and without Super on the succeeding cereal crop.

1. BASAL CONDITIONS

(i) (a) Udid, Wheat. (b) Udid. (c) As per treatments. (ii) (a) Medium black soil. (b) Refer Soil Analysis. (iii) 1.11.49 (iv) (a) Harrowing, (b) N.A. (c) 40 lb./ac. (d) 1' between lines (e) N.A. (v) Nil. (vi) 808 wheat (Medium) (vii) Unirrigated. (viii) Weeding. (ix) 5.57" (1.11.49 to 3.2.1950.) (x) 3.2.1950.

2. TREATMENTS :

1. 0 lb. P_2O_5 /ac.
2. 50 " " "
3. 100 " " "
4. 150 " " "
5. Fallow plot.

These were applied to previous leg. crop Udid.

P_2O_5 was applied in the form of Super on 19.7.1949.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 4 (iv) (a) 42' x 27' (b) 30' x 15' (v) 6' all round (vi) Yes.

4. GENERAL:

(i) Due to lack of moisture, crop did not develop properly. (ii) Nil. (iii) Height, no. of grains per earhead, and weight of 100 grains of each treatment, grain yield data. (iv) (a) 1948-1955 (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS:

- (i) 687 lb./ac.
 (ii) 106.8 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	637
2.	656
3.	717
4.	659
5.	768
S.E./mean.	= 53.4 lb./ac.

Crop :- Wheat (Rabi).

Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 50 (45).

Type :- 'M'

Object :- To study the effect of leguminous crop grown with and without Super on succeeding cereal crop.

1. BASAL CONDITIONS:

(i) (a) Udid followed by wheat. (b) Udid (c) As per treatments. (ii) (a) Medium Black soil (b) Refer soil analysis, Dharwar. (iii) 29.10.1950 (iv) (a) Harrowing. (b) Drill sown. (c) 40 lb./ac. (d) 1' between rows. (e)-(v) Nil. (vi) Wheat 808; Medium. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 19.40" (29.10.1950 to 7.2.1951) (x) 7.2.1951.

2. TREATMENTS:

1. 0 lb. P₂O₅/ac.
 2. 50 ,,
 3. 100 ,,
 4. 150 ,,
 5. Fallow.

These treatments were applied to previous Udid crop. P₂O₅ in the form of Super weighing 7 lb. 4 oz. applied to plots 2, 3, 4 and 5 on 15.7.50.

3. DESIGN:

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 4 (iv) (a) 42'×27' (b) 30'×15' (v) 6' all round. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Powdery-mildew and caterpillar attack on Udid. No control measures taken. (iii) Grain yield. (iv) (a) 1948 (vitiated)-1955 (b) No (c) N.A. (v) (a) Nil (b) Nil. (vi) & (vii) Nil.

5. RESULTS:

- (i) 565 lb./ac.
 (ii) 87.8 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield
1.	535
2.	502
3.	535
4.	559
5.	693
S E/mean	=43.9 lb./ac.

Crop :- Wheat (Rabi)
Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 51 (67)
Type :- 'M'

Object :- To study the effect of application of P_2O_5 to leguminous crops on succeeding cereal crop.

1. BASAL CONDITIONS :

(i) (a) Udid followed by wheat. (b) Udid, (c) As per treatments. (ii) (a) Medium black soil. (b) N.A. (iii) 18.10.1951. (iv) (a) 4 harrowings in Kh. season. (b) Drill sowing. (c) 40 lb./ac. (d) 12" (e)— (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) 4 interculturings and weeding (for Udid). (ix) 5.86" (18.10.51 to 2.2.52) (x) 2.2.1952.

2. TREATMENTS :

1. 0 lb. P_2O_5 /ac.
2. 50 "
3. 100 "
4. 150 "
5. Fallow.

Super was applied on 18.6.1951. 5. C.L. of F.Y.M /ac. was applied to fallow plots on 18.6.1951. Treatments were given in Kharif season and their residual effect was observed in Rabi season. P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 4 (iv) (a) 42'×27' (b) 30'×15' (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1948-(vitiated.) 1949-1955. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 875 lb./ac.
- (ii) 93.4 lb./ac.
- (iii) The differences in yield due to treatments are significant.
- (iv) Av. grain yield in lb./ac.

Treatment.	Av. yield
1.	726
2.	810
3.	928
4.	1001
5.	907
S.E/mean	= 46.7 lb./ac.

Crop :- Wheat (Rabi)
Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 52 (110).
Type :- 'M'

Object :- To study the effect of P_2O_5 to leguminous crops on succeeding cereal crop.

1. BASAL CONDITIONS :

(i) (a) Udid—Wheat (b) Udid (c) As per treatments (ii) (a) Medium black soil (b) Refer Soil Analysis (iii) 23.10.52 (iv) (a) harrowings. (b) N.A. (c) 40 lb./ac. (d) 12". (e) N.A. (v) Nil, (vi) Jaya variety (Medium) (vii) Rainfed (viii) Interculturing. (ix) 16.07" (17.6.52 to 16.2.1953) (x) 16.2.1953.

2. TREATMENTS :

1. 0 lb. P_2O_5 /ac.
2. 50 "
3. 100 "
4. 150 "
5. Fallow.

Super was applied on 16.6.1952. These were applied to previous crop Udid.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 4 (iv) (a) 42'×27' (b) 30'×15' (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield data. (iv) (a) 1949-1955. (b) The expt. remains on same plots for two crops only. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

RESULTS :

- (i) 933 lb./ac.
 (ii) 157.4 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	801
2.	844
3.	986
4.	537
5.	1098
S.E./mean	=78.7 lb./ac.

Crop :-Wheat (Rabi)

Ref :-Ms. 53 (77)

Site :-Agri. Res. Stn. Dharwar.

Type :-'M'

Object :-To study the effect of application of P_2O_5 to leguminous crops on the succeeding cereal crop.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Udid (c) N.A. (ii) (a) Medium black (b) N.A. (iii) 6.11.1953. (iv) (a) Harrowing 4 times after the harvest of the previous crop. (b) Drilled (c) 40 lb./ac. (d) 12" apart (e) N.A. (v) Nil (vi) Kempfad. (vii) Unirrigated (viii) Nil (ix) 36.29" (6.11.1953 to 15.2.54) (x) 15.2.1954.

2. TREATMENTS :

1. 0 lb. P_2O_5 /ac.
 2. 50 " " "
 3. 100 " " "
 4. 150 " " "
 5. Fallow in kharif season (receiving 5 C.L. F.Y.M./ac.)

 P_2O_5 applied as Super.

Treatments applied to previous crop Udid.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 4 (iv) (a) 42' x 27' (b) 30' x 15' (v) 6' on all sides (vi) No randomisation for wheat. Wheat is sown as usual on all plots.

4. GENERAL :

- (i) Growth of the crop was profuse in plots which were left fallow in Kharif season. In these plots there were more tillers/plant (ii) Nil. (iii) Height of plant, length of earhead and no. of tillers/plant. (iv) (a) 1949-1956 (b) No (c) N.A. (v) (a) Expt. continues on same plots only for two crops. Every time the leg. crop is taken site changes. (b) N.A. (vi) No (vii) None.

5. RESULTS :

- (i) 416.6 lb./ac.
 (ii) 49.68 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. yield in lb./ac. (Grain)

Treatment	Av. yield.
1.	365.9
2.	371.7
3.	414.3
4.	414.3
5.	516.9
S.E./mean	=24.8 lb./ac.

Crop :-Wheat (Rabi)

Ref :-Ms. 53 (106)

Site:-College of Agri. Dharwar.

Type :-'M'

Object :-To study the effect of different times of application of Urea on wheat crop.

1. BASAL CONDITIONS :

- (i) (a) Jowar-cotton-wheat (b) Cotton (c) Nil (ii) (a) Medium black soil (b) Refer soil analysis, Dharwar (iii) 1st week of Nov. 53 (iv) (a) Harrowing (b) Sowing with seed drill (c) 40 lb./ac. (d) 12" between lines (e) N.A. (v) Nil (vi) Kempfad (Medium) (vii) Unirrigated (viii) Weeding. (ix) 42.80" (1st week of Nov. 53 to 19.2.1954) (x) 19.2.1954.

2. TREATMENTS :

Application of Urea :—

1. One week before sowing of wheat.
2. Applied at the time of sowing of wheat.
3. Control.

Urea containing 45% of N was applied at the rate of 40 lb. N/ac.

2. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a) 45'×24' (b) 41'×20' (v) 2' all round (vi) Yes.

4. GENERAL :

(i) Good (ii) Nil (iii) Grain yield (iv) (a) 1953-1954 (b) No (c) N.A. (v) (a) N.A. (b) Nil (vi) No (vii) None.

5. RESULTS :

- (i) 234 lb./ac.
- (ii) 39.3 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	251
2.	224
3.	225
S.E./mean	=15.9 lb./ac.

Crop :- Wheat (Rabi).

Site :- College of Agri. Dharwar

Ref :- Ms. 53(107)

Type :- 'M'

Object :—To study the effect of application of Mn. Sul. on wheat crop.

1. BASAL CONDITIONS :

(i) (a) No (b) Jowar (c) 5. C.L. of F.Y.M./ac. (ii) (a) Medium black (b) Refer soil analysis, Dharwar. (iii) 8.11.1953 (iv) (a) Harrowing (b) Sowing with drill. (c) 40 lb./ac. (d) 12" between two lines (e) N.A. (v) Nil (vi) Kempfad (Medium) (vii) Unirrigated (viii) Weeding (ix) 15.67" (8.11.1953 to 10.2.1954) (x) 12/13.2.1954.

2. TREATMENTS :

1. Mn. Sul. at 10.0 lb./ac.
2. " " " 5.0 "
3. " " " 2.5 "
4. Control.

Mn. Sul. applied at the time of sowing of wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 40'×24' (b) 36'×20' (v) 2' all round (vi) Yes.

4. GENERAL :

(i) Fair (ii) Nil (iii) Grain yield (iv) (a) 1953—1954 (b) No (c) N.A. (v) (a) N.A. (b) Nil (vi) No (vii) None.

5. RESULTS .

- (i) 312 lb./ac.
- (ii) 90.1 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatments	Av. yield.
1.	341
2.	273
3.	325
4.	308
S.E./mean	=36.9 lb /ac.

Crop :-Wheat (Rabi).

Ref :- Ms. 53 (108).

Site :-College of Agri. Dharwar.

Type :- 'M'.

Object :—To study the effect of application of Boron as Borax in different doses.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Jowar (c) 5 C.L. of F.Y.M./ac. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar (iii) 2nd week of Nov. 53 (iv) (a) Harrowing (b) Drilling. (c) 40 lb./ac. (d) 12" between two lines (e)—(v) Nil (vi) Kempfad (Medium) (vii) Unirrigated (viii) Weeding (ix) 42.80" (2nd week of Nov. 53 to 13.2.1954) (x) 13.2.1954.

2. TREATMENTS :

1. Borax at 7.5 lb./ac.
2. " " 5.0 " "
3. " " 2.5 " "
4. Control.

Borax applied at the time of sowing of wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 40'×24' (b) 26'×20' (v) 7' along length, 2' along breadth (vi) Yes.

4. GENERAL :

(i) Fair (ii) Nil (iii) Grain yield (iv) (a) 1953—1954 (b) No. (c) N.A. (v) (a), (b) N.A. (vi) No. (vii) None.

5. RESULTS :

- (i) 394 lb./ac.
- (ii) 78.7 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	405
2.	436
3.	374
4.	361

S.E./mean =31.8 lb./ac.

Crop :-Wheat.

Ref :- Ms. 51 (69)

Site :-Agri. Res. Stn. Nargund.

Type :- 'M'.

Object :—To study the intensity and dose of Sulphur application.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Karl soil (b) Refer soil analysis, Nargund (iii) 16.10.1951. (iv) (a) 4 harrowings. (b) Drill sowing. (c) 40 lb./ac. (d) 14". (e) N.A. (v) F.Y.M. at 2.5 tons/ac. given every year. (vi) Wheat Kempfad, Medium. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 21.1.1952.

2. TREATMENTS :

1. control.
2. 1 Cwt. Sulphur/ac. per year.
3. 2 " " " alternate year 1951, 1953 etc.
4. " " " " " 1952, 1954 etc.
5. 4 " " " once in 4 years 1951, 1955 etc.
6. " " " " " 1952. etc.
7. " " " " " 1953. "
8. " " " " " 1954. "

Time of application, usually during July—August.

Sulphur mixed with F.Y.M. (basal dose) is broadcast and mixed with soil by harrowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 8 (b) N.A. (iii) 6. (iv) (a) 58'×27' (b) 52'×21' (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Not satisfactory, generally failed. (ii) Nil. (iii) Grain yield data. (iv) (a) 1951 continued. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 33.76 lb./ac.
 (ii) 28.57 lb./ac.
 (iii) Treatment differences are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
A (Av. of 1, 4, 6, 7 and 8)	35.11
B (Av. of 2)	28.99
C (Av. of 3)	37.36
D (Av. of 5)	28.19
S.E./mean of (2, 3, 4)	=11.66 lb./ac.
S.E./mean (A)	= 5.21 lb./ac.
S.E. of diff. between (A) and one of (B, C&D)	=12.77 lb./ac.

Crop :-Wheat.

Site :-Agri. Res. Stn. Nargund.

Ref :-Ms. 52 (114)/51 (69)

Type :- 'M'.

Object :-To find out the intensity and dose of Sulphur application for reclamation of Karl soils.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Wheat (c) As per treatments. (ii) (a) Karl soil. (b) Refer soil analysis, Nargund (iii) 16.10.1952. (iv) (a) 4 harrowings (b) Drill sowing (c) 40 lb./ac. (d) Spacing 14" (e) N.A. (v) 2½ tons of F.Y.M./ac. on 12.7.52 applied uniformly. (vi) Kempfad wheat; Medium. (vii) Rainfed. (viii) Nil. (ix) 4.85" (16.10.1952 to 14.1.1953) (x) 14.1.1953.

2. TREATMENTS :

- Control.
- 1 cwt Sulphur/ac. per year.
- 2 " " " alternate year 1951, 1953 etc.
- " " " " " 1952, 1954 etc.
- 4 " " " once in 4 years 1951, 1955 etc.
- " " " " " 1952.
- " " " " " 1953.
- " " " " " 1954.

Sulphur applied on 12.7.1952.

3. DESIGN :

- (i) R.B.D. (ii) (a) 8 (b) N.A. (iii) 6 (iv) (a) 58'×27' (b) 52'×21'. (v) 3' all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil (iii) Grain yield data. (iv) (a) 1951—continued. (b) Yes (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 206 lb./ac.
 (ii) 57.8 lb./ac.
 (iii) Treatment differences are not significant.
 (iv) Av. yield in lb./ac.

Treatment	Av. yield.
A (Av. of 1, 7, 8)	189
B (Av. of 2)	209
C (Av. of 3)	230
D (Av. of 4)	193
E (Av. of 5)	190
F (Av. of 6)	258
S.E./mean (B, C, D, E & F)	= 23.6 lb./ac.
S.E./mean (A)	= 13.6 lb./ac.
S.E. of diff. of (A) and one of (B, C, D, E & F)	= 27.3 lb./ac.

Crop : Wheat
Site : Agri. Res. Stn. Nargund

Ref : Ms. 53(119)/52(114)/51(69)
Type : 'M'

Object :—To find out intensity and dose of Sulphur application for reclamation of Karl soils.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) As per treatments. (ii) (a) Karl soil. (b) Refer soil analysis Nargund (iii) 20.10.1953. (iv) (a) Harrowing (b) Drill sowing, (c) 40 lb./ac. (d) Spacing 14". (e) N.A. (v) 2½ tons of F.Y.M. on 24.7.1953 applied uniformly. (vi) Kemphead wheat ; Medium. (vii) Rainfed. (viii) Nil (ix) 13.74" (20.10.1953 to 3.2.1954) (x) 3.2.1954.

2. TREATMENTS :

1. Control.
 2. 1 cwt Sulphur/ac. per year.
 3. 2 " " " alternate year 1951, 1953 etc.
 4. " " " " " 1952, 1954 etc.
 5. 4 " " " once in 4 years 1951, 1955 etc.
 6. " " " " " 1952
 7. " " " " " 1953
 8. " " " " " 1954
- Sulphur applied on 24.7.1953.

3. DESIGN :

(i) R.B.D. (ii) (a) 8 (b) N.A. (iii) 6 (iv) (a) 58'×27' (b) 52'×21'. (v) 3' all round (vi) Yes.

4. GENERAL :

(i) The germination of the crop had failed for which the gaps had to be filled which was also not successful. Hence stand of the crop was not uniform. (ii) Slightly attacked by grass hoppers. (iii) Grain yield data. (iv) (a) 1951—continued. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 96 lb./ac.
- (ii) 50.3 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
A. (Av. of 1, 8)	114
B.	100
C.	75
D.	91
E.	98
F.	90
G.	98
S.E./mean (B, C,...G)	= 20.5 lb./ac.
S.E./mean (A)	= 14.5 lb./ac.
S.E. of difference (A) vs (B, C...or G)	= 25.1.

Crop :- Wheat.
Site :- Agri. Res. Stn. Siruguppa.

Ref :- Ms. 48 (36).
Type :- 'M'.

Object :—To find the optimum dose of manure for wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa (iii) 9.10.1948 (iv) (a) Ploughing, levelling, bund forming etc. (b) to (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Nil. (ix) 6'94". (9.10.1948 to 18.2.1949) (x) 18.2.1949.

2. TREATMENTS :

All combinations of (1) & (2) :
(1) 4 levels of N : N₀=0, N₁=20 lb./ac., N₂=40 lb./ac., N₃=60 lb./ac.
(2) 3 levels of P₂O₅ : P₁=10 lb./ac., P₂=20 lb./ac. P₃=30 lb./ac.
N as G.N.C. and P₂O₅ as Super.

3. DESIGN :

(i) 3×4 Fact. in R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a), (b) 38'×12'. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) At grain setting stage, the crop was severely affected with rust. (iii) Grain yield (iv) (a) 1948-1949. (b) No. (c) No. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Raw data N.A.

5. RESULTS :

- (i) 753 lb./ac.
 (ii) N.A.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₁	731	788	938	900	839
P ₂	591	788	778	928	771
P ₃	600	656	713	628	649
Mean.	641	744	810	819	753

S.E. etc. N.A.

Crop :- Wheat.

Site :- Agri. Res. Stn. Siruguppa.

Ref :- Ms. 49 (33)

Type :- 'M'

Object :- To fix the optimum dose of P₂O₅ for glumed wheat under project conditions.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Groundnut (c) Nil (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa (iii) 1.11.1949. (iv) (a) Ploughing, levelling, bund forming etc. (b) to (c) N.A. (v) Nil (vi) N.A. (vii) Irrigated. (viii) Nil. (ix) 25.96" (1.11.1949 to 26.2.1950). (x) 26.2.1950.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N : N₀=0, N₁=20 lb./ac., N₂=40 lb./ac., N₃=60 lb./ac.

(2) 3 level of P₂O₅ : P₁=10 lb./ac., P₂=20 lb./ac., P₃=30 lb./ac.

N and P₂O₅ applied in the form of G.N.C. and Triple super respectively.

3. DESIGN :

- (i) 3×4 Fact. in R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a), (b) 38'×12' (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil (iii) Grain yield (iv) (a) 1948-1949 (b) No. (c) N.A. (v) (a), (b) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

- (i) 1311 lb./ac.
 (ii) 325.6 lb./ac.
 (iii) Main effect of N alone is highly significant. Others are not significant.
 (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₁	1094	1128	1431	1361	1253
P ₂	1072	1285	1664	1485	1377
P ₃	956	1272	1650	1330	1302
Mean.	1041	1228	1582	1392	1311

S.E. of marginal means.

„ of N

=94.0 lb./ac.

„ of P

=81.4 lb./ac.

S.E. of body of table

=162.8 lb./ac.

Crop :- Wheat.

Ref :- Ms. 52 (52).

Site :- Agri. Res. Stn. Bijapur.

Type :- 'C'

Object :- To find out the suitable spacing combined with an economic seed rate to get an increased yield per acre.

1. BASAL CONDITIONS :

- (i) (a) Cereals are rotated with pulses. (b) Wheat. (c) F.Y.M. applied at 5 C.L./ac. once in three years.
 (ii) (a) Medium black soil (b) Refer soil analysis Bijapur. (iii) 16.10.52. (iv) (a) Ploughing done once in three years as per dry farming methods. (b) Drilling with 9" & 12" spaced 4 coultured seed drills (c) & (d) As per treatments (e) N.A. (v) Nil. (vi) R.R. Wheat, Medium (vii) Rainfed. (viii) 2 interculturings (ix) 4.60" (16.10.52 to 17.1.53) (x) 17.1.53.

2. TREATMENTS :

3 Mai plot treatments :

Seed rates : $R_1=30$ lb./ac, $R_2=40$ lb./ac, $R_3=50$ lb./ac.

2 Sub-plot treatments :

Spacings : $S_1=9''$, $S_2=12''$

3. DESIGN :

- (i) Split plot (ii) (a) 3 main plots/block ; 2 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) 42' x 21' (b) 36' x 15' (v) 3' all round. (vi) Yes.

4. GENERAL :

- (i) Germination of seeds was satisfactory. But the growth of the crop was quite poor due to failure of rain and famine conditions, that prevailed during the growth period. No tillering & seed formation in one of the plots situated on a bit higher level. (ii) Nil. (iii) Grain yield data (iv) (a) 1952-1954 (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 465 lb./ac.
 (ii) (a) 198.4 lb./ac.
 (b) 178.3 lb./ac.
 (iii) None of the effects is significant.
 (iv) Av. yield of grain in lb./ac.

Seedrate	Spacing		Mean.
	S_1	S_2	
R_1	302	418	360
R_2	370	609	489
R_3	569	523	546
Mean.	413	517	465

S.E. the difference between two :-

1. main plot treatment means. = 80.77 lb./ac.
 2. sub-plot treatment means. = 59.78 lb./ac.
 3. sub-plot treatment means at the same level of main plot treatment. = 103.3 lb./ac.
 4. main plot treatment means at the same level of sub-plot treatment. = 108.9 lb./ac.

Crop :- Wheat.

Ref :- Ms. 53 (117)

Site :- Agri. Res. Stn. Bijapur.

Type :- 'C'

Object :- To find out the suitable spacing combined with an economic seed rate to get an increased yield.

1. BASAL CONDITIONS :

- (i) (a) Cereals are rotated with pulses. (b) Safflower (c) F.Y.M. 5 C.L./ac. once in 3 years. (ii) (a) Medium black soil (b) Refer soil analysis Bijapur. (iii) 21.10.53 (iv) Ploughing is done once in 3 years as per dry farming methods. (b) Drilling with 9" & 12" spaced 4 coultured seed drills. (c) & (d) As per treatments (e) N.A. (v) Nil (vi) R.R. Wheat, (Medium) (vii) Rainfed (viii) 2 interculturings. (ix) 6.08" (21.10.53 to 16.2.54) (x) 16.2.1954.

2. TREATMENTS :

3 Main plot treatments :—

Seed rates : $R_1=30$ lb./ac., $R_2=40$ lb./ac., $R_3=50$ lb./ac.

2 Sub-plot treatments :—

Spacing : $S_1=9''$, $S_2=12''$

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/block ; 2 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) $42' \times 21'$
(b) $36' \times 15'$. (v) 3' all round (vi) Yes.

4. GENERAL :

(i) Seed germination satisfactory. Frequent showers in the early stage of the growth. No showers later hence the crop matured abruptly. Uniform lodging of the crop. (ii) Nil (iii) Grain yield data. (iv) (a) 1952-1954. (b) No. (c) N.A. (v) (a) N.A. (d) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 358 lb./ac.
 (ii) (a) 50.14 lb./ac.
 (b) 39.91 lb./ac.
 (iii) None of the effects is significant
 (iv) Av. yield of grain in lb./ac

Seed-rate	Spacing		Mean.
	S_1	S_2	
R_1	327	332	329
R_2	359	382	370
R_3	376	373	375
Mean.	354	362	358

S.E. for difference between two :

1. main plot treatment means. =20.46 lb./ac.
 2. sub-plot treatment means. =13.30 lb./ac.
 3. sub-plot treatment means at the same level of main plot treatment. =23.08 lb./ac.
 4. main plot treatment means at the same level of sub-plot treatment. =26.15 lb./ac.

Crop :- Wheat.

Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 49(18).

Type :- 'C'.

Object :—To find out the best sowing date combined with spacing for wheat with a view to get maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Alsandi in Kharif season. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) As per treatments (iv) (a) Harrowed (b) N.A. (c) 40 lb./ac. (d) As per treatments. (e)—(v) Nil (vi) Wheat 803 (Medium) (vii) Unirrigated. (viii) Tilling. (ix) $5.57''$ (1.10.1949 to 4th week of Jan. 1950.) (x) Third and fourth weeks of Jan. 1950.

2. TREATMENTS :

5 Main plot treatments :-

Dates of sowing : $D_1=1.10.49$, $D_2=8.10.49$, $D_3=15.10.49$, $D_4=22.10.49$, $D_5=29.10.1949$.

2 Sub plot treatments :-

Spacings : $S_1=12''$, $S_2=15''$.

3. DESIGN :

(i) Split plot. (ii) (a) 5 main plots/block, 2 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) $39' \times 19'$, $39' \times 20'$
(b) $33.0' \times 15.0'$ (v) 3' at the ends and 2', $2\frac{1}{2}'$ along sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory., (ii) Nil (iii) Grain yield data. (iv) (a) 1948-1950. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 681 lb./ac.
 (ii) (a) 148.8 lb./ac.
 (b) 110.1 lb./ac.
 (iii) None of the effects is significant.
 (iv) Av. grain yield in lb./ac.

Spacings	Dates of sowing					Mean.
	D ₁	D ₂	D ₃	D ₄	D ₅	
S ₁	674	715	605	677	770	688
S ₂	667	680	585	709	729	674
Mean.	670	697	595	693	750	681

S.E. of the difference between two

- (1) main plot treatment means. = 60.8 lb./ac.
 (2) sub plot treatment means. = 28.4 lb./ac.
 (3) sub plot treatment means at the same level of main plot treatment = 63.5 lb./ac.
 (4) main plot treatment means at the same level of subplot treatment. = 75.6 lb./ac.

Crop :- Wheat.

Ref :- Ms. 52 (105)

Site :- Agri. Res. Stn. Dharwar.

Type :- 'C'

Object :- To know the optimum spacing and seed-rate combination so as to get maximum yield.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Mug (c) Nil (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar (iii) 25.10.52 (iv) (a) Harrowing (b) Seed drill. (c) & (d) As per treatments (e)-(v) Nil (vi) Red ; (Early.) (vii) Rainfed. (viii) Nil. (ix) 6.96" (25.10.52 to 16.2. 1953) (x) 16.2.1953.

2. TREATMENTS :

3 Main plot treatments :-

Seed rates : R₁=30 lb./ac., R₂=40 lb./ac., R₃=50 lb./ac.

2 Sub plot treatments :-

Spacings : S₁=9", S₂=12"

3. DESIGN :

- (i) Split plot (ii) (a) 3 main plots/block ; 2 sub-plots/main plot (b) N.A. (iii) 6 (iv) sub-plot (a) 21'×42' (b) 15'×36'. Main plot size N.A. (v) 3' all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil (iii) Grain yield (iv) (a) 1952-1954. (b) No (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 820 lb./ac.
 (ii) (a) 71.28 lb./ac.
 (b) 81.64 lb./ac.
 (iii) None of the effects is significant.
 (iv) Av. yield of grain in lb./ac.

Spacing	Seed rate			Mean
	R ₁	R ₂	R ₃	
S ₁	769	851	828	816
S ₂	803	821	850	825
Mean.	786	836	839	820

S.E. of the diff. between two :

- (1) main plot treatment means. =29.10 lb./ac.
 (2) sub plot treatment means. =27.21 lb./ac.
 (3) sub plot treatment means at the same level of main plot treatment. =47.14 lb./ac.
 (4) main plot treatment means at the same level of sub plot treatment. =44.24 lb./ac.

Crop :- Wheat.
 Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 53 (87)
 Type :- 'C'.

Object :—To find out the suitable spacing and seedrate combinations so as to obtain maximum yield.

1. BASAL CONDITIONS :

- (i) (a) No (b) Chinamug (c) 5 C.L. of F.Y.M./ac. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) 9.11.1953 (iv) (a) 4 harrowings given after the harvest of chinamug (b) sowing done through seed drill (c) & (d). As per treatments. (e) N.A. (v) Nil (vi) Kempfad. (vii) Unirrigated (viii) Nil (ix) 36.29" (9.11.1953 to 18.2.54) (x) 18.2.54.

2. TREATMENTS :

2 Main plot treatments :-

Spacing : $S_1=9''$, $S_2=12''$

3 Sub plot treatments :-

Seed rate : $R_1=30$ lb./ac., $R_2=40$ lb./ac., $R_3=60$ lb./ac.

3. DESIGN :

- (i) Split plot (ii) (a) 2 main plots/block and 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) sub-plot size (a) $42' \times 21'$ (b) $36' \times 15'$ (v) $3'$ along rows on either side and $3'$ across (vi) Yes.

4. GENERAL :

- (i) Normal (ii) Nil (iii) weight of bhusa & grain yield. (iv) (a) 1952-1956 (b) No (c) N.A. (v) (a) N.A. (b) Nil (vi) No (vii) None.

5. RESULTS :

- (i) 539.0 lb./ac.
 (ii) (a) 76.64 lb./ac.
 (b) 71.80 lb./ac.
 (iii) None of the effects is significant.
 (iv) Mean yield in lb./ac.

Spacing	Seed rate			Mean
	R_1	R_2	R_3	
S_1	514.1	579.5	561.1	551.6
S_2	541.0	495.4	542.4	526.3
Mean.	527.6	537.5	551.8	539.0

S.E. of the marginal mean of spacing. =18.04 lb./ac.

S.E. of the marginal mean of seed rate. =20.57 lb./ac.

S.E. of the difference of two means in the same row. =41.50 lb./ac.

S.E. of the difference of two means in the same column. =42.67 lb./ac.

Crop :- Wheat.
 Site :- Agri. Res. Stn. Nargund.

Ref :- Ms. 48 (18).
 Type :- 'CV'.

Object :—To find out the suitable cultural methods for wheat crop.

1. BASAL CONDITIONS :

- (i) (a) Jowar—Cotton—Wheat. (b) Cotton. (c) F.Y.M. 2.5 ton/ac. (ii) (a) Karl soil. (b) Refer soil analysis, Nargund. (iii) 12.10.1948. (iv) (a) Harrowing (b) drill sowing. (c) & (d) as per treatments. (e)—(v) F.Y.M. 5 C.L./ac. Time and method of application N.A. (vi) As per treatments. (Medium). (vii) Unirrigated. (viii) Nil. (ix) 4.97" (12.10.1948 to 2.1.1949) (x) 2.1.1949.

2. TREATMENTS :

4 Main plot treatments :-

All combinations of (1) & (2)

(1) 2 Varieties :- V_1 =Local Red, V_2 =White.(2) 2 Spacings :- S_1 =14", S_2 =18"

3 Sub plot treatments :-

Seed rates : R_1 =20 lb./ac., R_2 =30 lb./ac., R_3 =40 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 4 main-plots/block ; 3 sub-plots/main plot (b) N.A. (iii) 6 (iv) (a), (b) Sub-plot 52.3' x 21'. (v) No (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1947-continued (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 45 lb./ac.
 (ii) (a) 36.5 lb./ac.
 (b) 14.4 lb./ac.
 (iii) None of the main effects and interactions is significant.
 (iv) Av. yield of grain in lb./ac.

Variety	Spacing		Mean.
	S_1	S_2	
V_1	51	42	47
V_2	48	38	43
Mean.	50	40	45

S.E. of any marginal mean = 6.09 lb./ac.

S.E. of the body of table = 8.61 lb./ac.

Seed-rate	Variety		Mean	Spacing	
	V_1	V_2		S_1	S_2
R_1	50	44	47	51	43
R_2	46	43	44	52	37
R_3	45	41	43	45	41
Mean.	47	43	45	50	40

S.E. of the marginal mean of seed-rate. = 2.94 lb./ac.

S.E. of difference of two :

(1) seed-rate means at the same level of variety or spacing. = 5.89 lb./ac.

(2) variety or spacing means at the same level of seed-rate. = 9.87 lb./ac.

(3)

Crop :- Wheat.

Site :- Agri. Res. Stn. Nargund.

Ref :- Ms. 49 (24).

Type :- 'CV'

Object :- To find out the suitable cultural methods for wheat crop.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton-Wheat. (b) Cotton (c) F.Y.M. 2.5 ton/ac. (ii) (a) Karl soil. (b) Refer soil analysis, Nargund (iii) 14.10.1949 (iv) (a) harrowing (b) drill sowing (c) & (d) As per treatments (e) — (v) F.Y.M. at 5 C.L./ac. Time and method of application—N.A. (vi) As per treatments, (Medium) (vii) Unirrigated. (viii) Nil (ix) 5.34" (14.10.49 to 16.1.50) (x) 16.1.1950.

2. TREATMENTS :

4 Main plot treatments :- All combinations of (1), (2)

(1) 2 Varieties :- V_1 =Local Red, V_2 =No.808(2) 2 Spacings :- S_1 =14", S_2 =18"

3 Sub plot treatments :-

Seedrates :- R_1 =20 lb./ac., R_2 =30 lb./ac. & R_3 =40 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 4 main plots/block. 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) & (b) sub plot size 52.3'×21' mainplot size=55.3'×76' for 14" spacing and 55.3'×81' for 18" spacing (v) No (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Yield data. (iv) (a) 1947—contd (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) No reasons mentioned for low yields.

5. RESULTS :

- (i) 164 lb./ac.
 (ii) (a) 57.33 lb./ac.
 (b) 45.45 lb./ac.
 (iii) Only main effect of seedrate is highly significant. Other main effects and interactions are not significant.
 (iv) Av. grain yield in lb./ac.

Variety	Spacing		Mean
	S ₁	S ₂	
V ₁	158	156	157
V ₂	185	158	171
Mean	171	157	164

S.E. of any marginal mean =9.55 lb./ac.

S.E. of the body of table =13.51 lb/ac.

Seedrate	Variety		mean	Spacing	
	V ₁	V ₂		S ₁	S ₂
R ₁	168	205	187	189	184
R ₂	167	161	164	165	163
R ₃	136	148	142	161	123
mean	157	171	164	171	157

S.E. of the marginal mean of seedrate = 9.28 lb/ac.

S.E. of difference of two

(1) seedrate means at a level of variety or spacing mean =18.55 lb./ac.

(2) Variety or spacing means at a level of seedrate mean =20.30 lb./ac.

Crop :-Wheat.

Site :-Agri. Res. Stn. Nargund.

Ref :-Ms 50 (48)

Type :-'CV'

Object :-To find out the suitable cultural methods for wheat crop.

1. BASAL CONDITIONS ;

(i) (a) Jowar-Cotton-Wheat. (b) Cotton. (c) F.Y.M. at 2.5 ton/ac. (ii) (a) Karl soil (b) Refer soil analysis, Nargund. (iii) 21, 22.10.1950. (iv) (a) Ploughing, harrowing (b) Sowing by seed-drill. (c) & (d) As per treatments. (e)—(v) F.Y.M. 5 C.L./ac. was applied on 28, 29.9.50. Method of application N.A. (vi) As per treatments (Medium). (vii) Unirrigated. (viii) Nil (ix) 7.56" (21.10.50 to 16.1.1951) (x) 16.1.51.

2. TREATMENTS :

4 Main plot treatments :—

All combinations (1) & (2)

1. Varieties :—V₁=Niphad. 4 V₂=No. 808.

2. Spacings :—S₁=14", S₂=18".

3 Sub plot treatments :—

Seed-rates :— R₁=20, R₂=30 and R₃=40 lb./ac.

3. DESIGN :

- (i) Split plot. (ii) (a) 4 main plots/block 3 sub plots/main plot ; (b) N.A. (iii) 5. (iv) (a) 55.3'×25.7' for 14" spacing ; 55.3'×27' for 18" spacing. (b) 52.3'×21' (v) 1½' along length, 3' or 2½' along breadth (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil (iii) Grain yield data. (iv) (a) 1947-Contd (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) No reasons mentioned for low yields.

5. RESULTS :

- (i) 135 lb./ac.
 (ii) (a) 93.41 lb./ac.
 (b) 55.21 lb./ac.
 (iii) None of the effects is significant.
 (iv) Av. yield of grain in lb./ac.

Variety	Spacing		mean
	S ₁	S ₂	
V ₁	148	135	141
V ₂	124	134	129
mean	136	134	135

S.E. of any marginal means =15.57 lb./ac.
 S.E. of the body of table =20.02 lb./ac.

Seed-rate	Varieties		mean	Spacing	
	V ₁	V ₂		S ₁	S ₂
R ₁	127	115	121	127	115
R ₂	153	117	135	138	131
R ₃	144	157	150	143	157
mean	141	129	135	136	134

S.E. for the marginal means of seed-rate =11.26 lb/ac.

S.E. of difference of two.

1. Seed-rate means at the same level of variety or spacing mean =22.53 lb./ac.
 2. Variety or spacing mean at the same level of seed-rate. =28.69 "

Crop :-Wheat.

Site :-Agri. Res. Stn. Nargund.

Ref :-Ms. 51 (72)

Type :-'CV'

Object :-To find out the suitable cultural methods for wheat crop.

1. BASAL CONDITIONS :

- (i) (a) Cotton—Wheat—Jowar. (b) Cotton. (c) F.Y.M. at 2.5 ton/ac. (ii) (a) Karl soil. (b) Refer soil analysis, Nargund. (iii) 11.10.1951. (iv) (a) Ploughing, harrowing, (b) seed-drill. (c) & (d) As per treatments (e) N.A. (v) F.Y.M. at 5 C.L./ac. Time and method of application N.A. (vi) As per treatments (Medium) (vii) Unirrigated. (viii) Nil. (ix) 8.29" (11.10.51 to 16.1.1952). : (x) 16.1.1952.

2. TREATMENTS :

4 main plots treatments :-

All combinations of (1) & (2)

(1) Varieties : V₁=Niphad, V₂=Kemphad.

(2) Spacings : S₁=14", S₂=18"

3 sub plot treatments :-

Seed-rates : R₁=20 lb./ac., R₂=30 lb./ac., R₃=40 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 4 main plots/block ; 3 sub-plots/main plot (b) N.A. (iii) 6 (iv) (a) 55.3'×25.7' for 14" spacing. ; 55.3' ×27' for 18" spacing. (b) 52.3'×21' (v) 1.5' at the ends and 2.35' or 3' along the sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1947-contd. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) No reasons mentioned for low yields. S.E./main plot greater than G.M., may be due to too much variation of yield from plot to plot.

5. RESULTS :

(i) 59 lb./ac.

(ii) (a) 73.29 lb./ac.

(b) 24.97 lb./ac.

(iii) The differences in yield due to varieties alone are significant. Spacings, seed-rates and interactions are not significant.

(iv) Av. yield of grain in lb./ac.

Variety	Spacing		Mean
	S ₁	S ₂	
V ₁	29	45	37
V ₂	74	87	80
Mean	52	66	59

S.E. of any marginal mean =12.21 lb./ac.

S.E. of the body of table. =17.27 lb./ac.

Seedrate	Variety		Mean	Spacing	
	V ₁	V ₂		S ₁	S ₂
R ₁	40	89	65	57	73
R ₂	42	77	60	56	64
R ₃	28	74	51	42	61
Mean	37	80	59	52	66

S.E. of the marginal mean of Seedrate

=5.09 lb./ac.

S.E. of difference of two.

1. seed-rate means at the same level of variety or spacing.

=10.19 lb./ac.

2. variety or spacing means at a level of seed-rate.

=19.16 lb./ac.

Crop :-Wheat.

Site :-Agri. Res. Stn. Nargund.

Ref :-Ms. 52 (113)

Type :-'CV'

Object :-To find-out suitable cultural methods for wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Jowar. (c) 5 C.L. of F.Y.M./ac. (ii) (a) Karl soil. (b)Refer soil analysis Nargund. (iii) 14, 15.10.1952. (iv) (a) Harrowing, (b) Drill sowing. (c) & (d) As per treatments (e) (v) 2½ tons/ac. of F.Y.M./ac. applied uniformly on 21.9.52. (vi) As per treatments (Medium) (vii) Rainfed. (viii) No. (ix) 4.85" (14.10.52 to 9.1.1953) (x) 9.1.1953.

2. TREATMENTS :

4 main plot treatments :-

All combinations of (1) & (2)

(1) 2 Varieties :-V₁=Niphad 4, V₂=Kenphad.

(2) 2 Spacings :-S₁=14", S₂=18".

3 Sub plot treatments :-

Seedrates : R₁=20 lb./ac., R₂=30 lb./ac., R₃=40 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 4 main plots/block ; 3 sub-plots /main-plot (b) N.A. (iii) 6 (iv) (a) 55'×27' for 18" spacing ; 55'×25.7' for 14" spacing. (b) 52'×21' (v) 1½' along length, 3' or 2½' along breadth (vi) Yes.

4. GENERAL :

(i) There was no rainfall for about 1½ months after sowing the crop due to which the crop withered on ridges and growth was stunted. (ii) Nil. (iii) Grain yield data. (iv) (a) 1951—continued. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 134 lb./ac.
 (ii) (a) 107.9 lb./ac.
 (b) 59.06 lb./ac.
 (iii) Main effect of 'spacings' is highly significant and main effect of seedrate is significant. Others are not significant.
 (iv) Av. grain yield in lb./ac.

Variety	Spacing		Mean
	S ₁	S ₂	
V ₁	148	92	120
V ₂	209	87	148
Mean	170	90	134

S.E. of any marginal mean = 17.99 lb./ac.
 S.E. of the body of table = 25.43 lb./ac.

Seedrate	Variety		Mean	Spacing	
	V ₁	V ₂		S ₁	S ₂
R ₁	92	126	109	147	72
R ₂	131	180	155	209	101
R ₃	136	138	137	179	95
Mean	120	148	134	178	90

S.E. of the marginal mean of Seedrate = 12.06 lb./ac.
 S.E. of diff. of two seedrate means for the same 'spacing or variety mean. = 24.10 lb./ac.
 S.E. of diff. of two "variety or spacing" means for the same seedrate mean. = 32.20 lb./ac.

Crop :- Wheat.

Site :- Agri. Res. Stn. Nargund.

Ref :- Ms. 53 (158)

Type :- 'CV'

Object ;—To find out the suitable cultural operations for wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Karl soil. (b) Refer Soil analysis, Nargund. (iii) 22.10.53 and resown on 10.11.1953. (iv) (a) Harrowing (b) Drill sowing. (c) & (d) As per treatments. (e) — (v) 2½ ton F.Y.M./ac. on 30.9.1953. (vi) As per treatments (Medium). (vii) Rainfed. (viii) N.A. (ix) 13.74" (22.10.1953 to 14.2.1954) (x) 14.2.1954.

2. TREATMENTS ;

4 Main plot treatments :

All Combinations of (1), & (2)

- (1) 2 Varieties :- V₁=Niphad 4, V₂=Kemphad
 (2) 2 Spacings :- S₁=14", S₂=18".

3 Sub plot treatments :

Seed rates : R₁=20 lb/ac. R₂=30 lb/ac. & R₃=40 lb/ac.

3. DESIGN :

(i) Split plot (ii) (a) 4 main-plots/block ; 3 sub-plots/main-plot (b) N.A. (iii) 6 (iv) (a) 55'×27' for 18" spacing ; 55.2'×25.7' for 14" spacing. (b) 52'×21'. (v) 1½' along length, 3' and 2½' along breadth. (vi) Yes.

4. GENERAL :

(i) Resown as the germination failed at first due to the hard crust formation on account of receipt of rains immediately after sowing. (ii) Grass hopper attack. No control measures were taken. (iii) Grain yield data. (iv) 1947-continued. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 121 lb./ac.
 (ii) (a) 96.48 lb./ac.
 (b) 46.14 lb./ac.
 (iii) The differences in yield due to treatments are not significant. (M.P., S.P. and interaction not significant).
 (iv) Av. yield of grain in lb./ac.

Sub-plot	Mainplot				Mean
	V ₁ S ₁	V ₂ S ₁	V ₁ S ₂	V ₂ S ₂	
20	121	66	88	68	86
30	151	72	147	99	117
40	199	127	182	126	159
Mean	157	88	139	98	121

S.E. of difference between two

1. main plot treatment means. = 32.16 lb./ac.
 2. sub-plot treatment means = 13.32 lb./ac.
 3. sub-plot treatment means at the same level of main-plot treatment = 26.63 lb./ac.
 4. Main plot treatment means at the same level of sub-plot treatment = 38.82 lb./ac.

Crop :-Wheat.

Ref :- Ms. 52 (144)

Site :-Agri. Res. Stn. Bailhongal.

Type :- 'D'

Object :-To study the effect of hormone on growth and yield of wheat.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Medium black (b) Refer soil analysis Bailhongal (iii) 30.10.1952. (iv) (a) 3 harrowings (b) drilling. (c, d & e) N.A. (v) Nil. (vi) Niphad 4 (vii) Unirrigated. (viii) Once weeding. (ix) N.A. (x) 25.1.1953.

2. TREATMENTS :

All 6 combinations of (1) & (2) + a Control treatment.

- (1) Two durations of the seed treatment, Hormone 2—4—D viz (a) for 12 minutes (b) for 2 hours.
 (2) Three concentrations of the Hormone (2—4—D) viz, 0.01, 0.10, 1.00 p.p.m.

3. DESIGN :

(i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 4 (iv) (a) 36' × 18' (b) 30' × 12' (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil (iii) Grain yield data. (iv) (a) 1952—1954. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 322 lb./ac.
 (ii) 30.75 lb./ac.
 (iii) Main effects, interaction and control vs others are not significant.
 (iv) Av. grain yield in lb./ac.

Control = 331 lb./ac.

Duration	Concentration			Mean
	0.01	0.10	1.00	
12 min.	297	333	333	321
2 hours.	308	333	319	320
Mean	302	333	326	

S.E. of the marginal mean of Concentration = 10.87 lb./ac.
 S.E. " " of Duration = 8.88 "
 S.E. of the body of table = 15.38 "

Crop :-wheat.

Ref :-Ms. 53 (94)

Site :-Agri Res. Stn. Bailhongal.

Type :- 'D'

Object :-To study the effect of hormone on growth and yield of wheat.

1. BASAL CONDITIONS :

(i) (a) No (b) French beans (c) 4 C.L. of F.Y.M./ac. (ii) (a) Medium black. (b) Refer soil analysis, Bailhongal (iii) 14.11.1953 (iv) (a) 3 harrowings (b) to (c) N.A. (v) Nil (vi) Niphad 4 (vii) unirrigated (viii) One weeding (ix) N.A. (x) 23.2.54.

2. TREATMENTS :

All 6 combinations of (1) & (2)+a Control treatment.

(1) Two durations of the seed treatment (Hormone 2—4—D) viz (a) for 12 minutes (b) for 2 hours.

(2) Three concentrations of Hormone 2—4—D viz 0.01 0.10, 1.00 p.p.m.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4 (iv) (a) 36'×18' (b) 30'×12' (v) 3' all round the net plot (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain yield data (iv) (a) 1952—1955 (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) No. (vii) None.

5. RESULTS :

(i) 382 lb./ac.

(ii) 96.8 lb./ac.

(iii) All main effects and interaction are not significant.

(iv) Av. grain yield in lb./ac.

Control=430 lb./ac.

Duration	Concentration			Mean
	0.01	0.10	1.00	
12 min.	378	390	402	390
2 hours	318	430	324	357
Mean	348	410	363	374

S.E. of the marginal mean of duration =27.94 lb./ac.

" " " Concentration=34.22 lb./ac.

" of the body of table =48.4 lb./ac.

Crop :-Wheat.

Ref :- Ms. 53(118).

Site :-Agri. Res. Stn. Bijapur.

Type :-'D'

Object :-To study the effect of hormone treatment of seed on the yield of wheat.

1. BASAL CONDITIONS :

(i) (a) Cereals rotated with pulses. (b) N.A. (c) 5 C.L. of F.Y.M./ac. once in 3 years (ii) (a) Medium black soil (b) Refer soil analysis, Bijapur (iii) 4.11.1953 (iv) (a) Ploughing once in 3 years, 2 to 3 harrowings. (b) Drilling with 12" spaced 4 coultered seed drill (c) 40 lb./ac. (d) 12" between rows, uneven between plants (e) — (v) 5 C.L. of F.Y.M./ac. spread once in 3 years (vi) Kempfad R.R. Wheat (vii) Rainfed (viii) one interculturing (ix) N.A. (x) 20.2.54.

TREATMENTS :

All 6 combinations of (1) & (2)+a Control treatment

(1) Three concentrations of the Hormone 2—4—D in p.p.m. viz. 0.001, 0.01, 0.1.

(2) Two durations for which the seed is soaked viz. (a) ½ hour (b) 20 hours.

DESIGN :

(i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 4 (iv) (a) 36'×18' (b) 30'×12' (v) 3' all round (vi) Yes.

4. GENERAL :

(i) Germination satisfactory. Subsequent growth of the crop quite normal. The season was dry, and the crop matured abruptly for want of moisture in the soil. (ii) Nil (iii) Grain yield (iv) (a) 1952—54. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 527 lb./ac.
 (ii) 42.26 lb./ac.
 (iii) Main effects, interaction and "Control vs others" effects are not significant.
 (iv) Av. grain yield in lb./ac.

Duration	Control = 539 lb./ac. Concentration			Mean
	.001	.01	.1	
½ hour	563	541	518	541
20 hours	535	501	490	509
Mean	549	521	504	525

S.E. of concentration mean = 12.20 lb./ac.
 S.E. of duration mean = 14.94 „
 S.E. of the body of table = 21.13 „

Crop :-Wheat.

Ref :-Ms. 48 (8)

Site :-Agri. Res. Stn. Dharwar.

Type :-'D'

Object :—To find out the best method of controlling seedling blight in relation to yield.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Chinamug (c) 5 C.L. of F.Y.M./ac. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar (iii) 24.10.1948 (iv) (a) Harrowing. (b) N.A. (c) 40 lb./ac. (d) Between two lines 1' (e) N.A. (v) Nil (vi) N.A. (vii) Unirrigated (viii) Weeding. (ix) 7.48" (24.10.1948 to 3.2.1949) (x) 3.2.1949.

2. TREATMENTS :

Seeds treated with.

1. Ceresan.
2. T.M.T.D.
3. Spurgon.
4. A.A. Grano.
5. Control.

Details N.A.

Time and method of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 4 (iv) (a) 32'×34' (b) one gunta dimensions N.A. (v) Yes. Details N.A. (vi) Yes.

4. GENERAL :

(i) Bad (ii) The crop has completely succumbed due to the attack of rust, Very few grains of shrivelled type had been formed. (iii) Grain yield data (iv) (a) No (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 15.34 lb./ac.
 (ii) 16.43 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	19.80
2.	20.50
3.	8.00
4.	20.50
5.	7.90
S.E./mean	=8.22 lb./ac.

Crop :- Jowar (Rabi)
Site :- Agri. School Farm, Arbhavi.

Ref :- Ms. 53(176).
Type :- 'M'.

Object :- To find out the optimum dose of 'N' for Rabi Jowar under the Gokak canal tract.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Arbhavi. (iii) 16.10.1953
 (iv) (a) to (e) N.A. (v) Sann G.M. applied. (vi) M—351—Early (vii) Irrigated. (viii) Weeding. (ix) 6.82
 (16.10.53 to 6.3.54). (x) 6.3.1954

2. TREATMENTS :

1. 0 lb. N/ac.
 2. 30 " "
 3. 60 " "
 4. 90 " "
 N as G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 4 (iv) (a) 46' × 21' (b) 38' × 15'. (v) 3' along breadth and 4' along length.
 (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield (iv) (a) No (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil.
 (vii) Nil.

5. RESULTS :

(i) 1680 lb./ac.
 (ii) 440.9 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment.	Mean.
1.	1788
2.	1493
3.	1886
4.	1552
S.E./mean.	= 220.4 lb./ac.

Crop :- Jowar.

Ref :- Ms. 52(145).

Site :- Agri. Res. Stn. Bailhongal.

Type :- 'M'.

Object :- To compare the manurial values of calcium cyanamide as a source of 'N' with F.Y.M., A/S and G.N.C.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black (b) Refer soil analysis, Bailhongal. (iii) 14.8.52. (iv) (a) Once ploughing and two times harrowing. (b) drilling 18" apart with 3 coultered drill (c) about 6 lb./ac.
 (d) N.A. (e) — (v) 5 C-L. of F.Y.M./ac. (vi) Dharwar Nandyal (Improved). (vii) Unirrigated. (viii) 2 interculturings and weeding (ix) N.A. (x) 4.1.1953.

2. TREATMENTS :

1. 60 lb./ac. of N as Calcium cyanamide (alone).
 2. 30 " " " " Calcium cyanamide. +30 " " " " G.N.C.
 3. 60 " " " " A/S (alone)
 4. 30 " " " " A/S +30 " " " " G.N.C.
 5. Control.

Calcium cyanamide was given to the soil on 2.8.52. Top dressing was done with G.N.C. and A/S on 7.10.52.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 2 (iv) (a) 48' × 22½' (b) 42' × 19½'. (v) 3' at the ends and 1.5' along the sides. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1952—1954. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 596 lb./ac.
- (ii) 174.4 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb/ac.

Treatment	Av. yield
1.	465
2.	809
3.	741
4.	621
5.	342
S.E./mean.	= 123.3 lb./ac.

Crop :- Jowar.

Ref :- Ms. 53(167).

Site :- Agri. Res. Stn. Bailhongal.

Type :- 'M'.

Object :- To compare the manurial values of calcium cyanamide as a source of 'N' with F.Y.M./A/S and G.N.C.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Groundnut. (c) 4 C.L. of F.Y.M./ac. (ii) (a) Medium black (b) Refer soil analysis Bailhongal. (iii) 22.7.53 (iv) (a) once ploughing and two times harrowing (b) drilling (c) about 6 lb./ac. (d) 18" apart. (e)—(v) 4 C.L. of F.Y.M/ ac. broadcast during May and June (vi) Dharwar Nandyal (Improved) Early. (vii) Rainfed. (viii) 2 interculturings and a weeding (ix) 22.88". (22.7.53 to 3.1.1954), (x) 3.1.1954.

2. TREATMENTS :

- 1. 60 lb/ac. of N as Calcium cyanamide (alone).
 - 2. 30 " " " " Calcium cyanamide + 30 lb./ac. of N as G.N.C.
 - 3. 60 " " " " G.N.C.
 - 4. 30 " " " " A/S + 30 lb/ac of N as G.N.C.
 - 5. 5 C.L./ac. of F.Y.M.
- Drilled with the soil at the time of sowing.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 2 (iv) (a) 48' × 22.50'. (b) 42' × 19.50' (v) 3' at the ends and 1.5' along the sides. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Attack of sugary disease and rust. Control measures taken. N.A. (iii) Grain yield data (iv) (a) 1952—54. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Low yields are p rhaps due to disease.

5. RESULTS :

- (i) 107 lb./ac.
- (ii) 4.03 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. yield of grain in lb./ac.

Treatment.	Mean.
1.	129
2.	92
3.	134
4.	134
5.	53
S.E./mean.	= 2.85 lb./ac.

Crop :- Jowar.

Type :- Ms. 52(46).

Site :- Agri. Res. Stn. Bijapur.

Type :- 'M'

Object :- To study the effect of leguminous crop grown with and without Super on the succeeding cereal crop (Jowar).

1. BASAL CONDITIONS :

- (i) (a) Cereals following legumes. (b) Cainamug (c) 5 C.L. of F.Y.M./ac. and manures as per treatments
- (ii) (a) Medium black soil (b) Refer soil analysis, Bijapur. (iii) 29.9.52/3.10.52 for Jowar

and 31.5.52 for Chinamug (iv) (a) Ploughing once in 3 years as per dry farming methods. (b) drill sowing (c) 6 lb. of Chinamug and 4 lb. of Jowar/ac. (d). 18" both for Jowar and chinamug (e) N.A. (v) 5 C.L. of F.Y.M./ac. once in 3 years (vi) Jowar M—35—1 late (vii) Rainfed (viii) Interculturing on 8.11.1952 for Jowar and on 18.6.52 and 29.6.52 for Chinamug (ix) 4.65" (31.5.52 to 19.2.53) (x) 19.2.53 for Jowar and 19.26.7.52. for Chinamug.

2. TREATMENTS :

1. 0 lb. of P_2O_5 /ac.
3. 50 ,, ,, ,,
3. 100 ,, ,, ,,
4. 150 ,, ,, ,,
5. Fallow plot without legume but manured at 5 C.L. of F.Y.M./ac. P_2O_5 as Super given to preceding crop "Chinamug".

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 42' × 21' (b) 30' × 15' (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Chinamug. Satisfactory ; Jowar:- Germination was not satisfactory and resowing done, even then there were gaps. Crop growth poor and stunted. (ii) Nil. (iii) Grain yield data (iv) (a) 1948—1953 (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) Nil. (vii) The season was abnormal and dry for want of rain during period of crop growth and famine conditions that existed hastened the maturity of the crop, thereby reducing the yield/per acre.

5. RESULTS :

- (i) 472 lb./ac.
 (ii) 175.2 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	349
2.	381
3.	552
4.	418
5.	663
S.E./mean	= 78.4 lb./ac.

Crop :- Jowar.

Site :- Agri. Res. Stn. Bijapur.

Ref :- Ms. 53 (169)

Type : 'M',

Object :—To study the effect of leguminous crop of Chinamug grown with and without Super on the succeeding cereal crop of Jowar.

1. BASAL CONDITIONS :

(i) (a) Cereals usually rotated with legume. (b) Chinamug. (c) As per treatments, 5. C.L./ac. of F.Y.M. applied once in three years. (ii) (a) Medium black soil. (b) Refer soil analysis, Bijapur. (iii) Chinamug 27.6.53/20.3.53 ; Jowar. 18.9.1953. (iv) (a) Ploughing once in three years as per dry farming methods (b) Drilling with 18", 3 coultured seed drill (c) 6 lb./ac for Chinamug and 4 lb./ac. for Jowar. (d) 18" (e) N.A. (v) F.Y.M. applied at 5 C.L./ac. once in three years. (vi) Chinamug ; Jowar M-35-1 Medium. (vii) Rainfed. (viii) Interculturing. (ix) 22.58" (27.6.53 to 7.3.1954) (x) Chinamug 1.9.53 ; Jowar. 7.3.1954.

2. TREATMENTS :

1. 0 lb. P_2O_5 /ac.
2. 50 lb ,, ,,
3. 100 lb. ,, ,,
4. 150 lb. ,, ,,
5. Fallow plot without legume but manured at 5 C.L. of F.Y.M./ac. for Jowar crop. These treatments were applied to Chinamug and their effects were studied on Jowar. Super was applied on 20.7.1953.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 42' × 27' (b) 30' × 15' (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Germination satisfactory. Chinamug :- Crop suffered from aptic attack resulting in the poor yield. Jowar :- Maturity of the crop was abrupt due to the absence of late rains & desicating weather. (ii) Jowar :- Sugary disease was observed in the months of Nov.-Dec., which subsided later due to the dry and clear weather. (iii) Grain yield data. (iv) (a) 1948-53 (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 300 lb./ac.
 (ii) 110.9 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	318
2.	259
3.	289
4.	320
5.	315
S.E./mean	=49.6 lb./ac.

Crop :- Jowar.

Ref :- Ms. 52 (125)

Site :- Agri. Res. Stn. Bijapur.

Type :- 'M'.

Object :—To study the effect of leguminous crop grown with and without Super on the succeeding cereal crop of Jowar.

1. BASAL CONDITIONS :

(i) (a) Cereals are usually rotated with pulses. (b) Gram. (c) F.Y.M. at 5 C.L./ac. once in three years and as per treatments (ii) (a) Medium black soil. (b) Refer soil analysis, Bijapur (iii) 29.9.1952. (iv) (a) Ploughing once in three years, (b) Drilling with 18" spaced 3 coultered seed drill (c) 4 lb./ac. (d) 18" (e) N.A. (v) F.Y.M. at 5 C.L./ac. once in three years. (vi) Jowar M-35.1 Medium. (vii) Unirrigated. (viii) Interculturing. (ix) 6.51" (29.9.52 to 10.2.1953) (x) 10.2.1953.

2. TREATMENTS :

1. 0 lb. P₂O₅/ac.
 2. 50 lb. „
 3. 100 lb. „
 4. 150 lb. „
 5. Fallow plot manured for Jowar according to local practices at 5 C.L. of F.Y.M./ac. P₂O₅ as Super applied to Gram. Time & method of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 42' × 30' (b) 30' × 18'. (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Due to failure of rains after sowing the seeds and the famine conditions that prevailed during growth period of the crop, the growth of the crop was very poor. (ii) Nil. (iii) Grain yield data. (iv) (a) 1948-1953. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 302 lb./ac.
 (ii) 192.9 lb./ac.
 (iii) The differences in yield due to treatments are significant
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	39
2.	392
3.	307
4.	339
5.	432
S.E./mean	=86.3

Crop :- Jowar.

Ref :- Ms. 53 (101).

Site :- Agri. Res. Stn. Bijapur.

Type :- 'M'.

Object :-To study the effect of leguminous crop gram grown with and without super on the succeeding cereal crop of jowar.

1. BASAL CONDITIONS :

(i) (a) Cereals are usually rotated with pulses (b) Gram (c) As per treatments (ii) (a) Medium black soil (b) Refer soil analysis, Bijapur. (iii) 18.9.53. (iv) (a) ploughing once in 3 years as per dry farming method (b) drilled with 18", 3 coultured seed drill (c) 4 lb./ac. (d) 11" (e) N.A. (v) F.Y.M. at 5 C.L./ac. once in 3 years. (vi) M.35-1 (late) (vii) unirrigated (viii) Interculturing done on 17, 25.11.1953. and 6.12.53 (ix) 27.23" (18.9.53 to 6.3.1954) (x) 6.3.1954.

2. TREATMENTS :

1. 0 lb. of P_2O_5 /ac.
2. 50 ,, ,, "
3. 100 ,, ,, "
4. 150 ,, ,, "
5. Fallow for gram and sown for jowar.

P_2O_5 as super applied to the preceeding crop gram.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 42'×30' (b) 30'×18' (v) 6' all round (vi) Yes.

4. GENERAL :

(i) Normal (ii) Sugary disease was observed during the months of November and December. (iii) Grain yield (iv) (a) 1948-1953 (b) No (c) N.A. (v) N.A. (vi) No. (vii) None.

5. RESULTS :

- (i) 804 lb./c.
- (ii) 155.3 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	828
2.	734
3.	801
4.	892
5.	767
S.E./mean	=69.5 lb./ac.

Crop :- Jowar.

Ref :- Ms. 52 (126).

Site :- Agri. Res. Stn. Bijapur.

Type :- 'M'

Object :-To study the deleterious effect of T.C. on jowar crop.

1. BASAL CONDITIONS :

(.) (a) Cereals usually rotated with legumes. (b) Jowar. (c) As per treatments. (ii) (a) Medium black soil. (b) Refer soil analysis, Bijapur (iii) Sept. 1952. (iv) (a) Ploughing, (b) Drilling with 18" spaced 3 coultured seed drill. (c) 4 lb./ac. (d) 18" (e)-(v) Nil. (vi) M-35-1 Medium. (vii) Unirrigated. (viii) Interculturing. (ix) 6.51" (Sept. 52 to Feb.1953) (x) Feb. 1953.

2. TREATMENTS :

All combinations of (1) & (2)+a control:

- (1) Two levels of T.C. in C.L./ac. viz $M_1=2\frac{1}{2}$, $M_2=5$.
- (2) Three times of application of T.C. :-
 - T_1 =every year.
 - T_2 =every alternate year starting from 1948.
 - T_3 =every alternate year starting from 1949.

+

Method of application—Broadcast.

3. DESIGN :

(i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 6 (iv) (a) 42'×27' (b) 30'×15' (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1948-1952. (b) Yes. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 262 lb./ac.
 (ii) 109.2 „
 (iii) Main effects, interaction and control vs. others are not significant.
 (iv) Av. grain yield in lb./ac.

Control = 286 lb./ac.

Levels	Time of application			Mean
	T ₁	T ₂	T ₃	
M ₁	227	248	214	230
M ₂	285	330	245	287
Mean	256	289	230	258

S.E. of marginal mean of time =31.5 lb./ac.

S.E. of „ „ of levels =25.7 „

S.E. of the body of table =44.6 „

Crop :- Jowar. (Kharif)

Site :- Agri. Res. Stn. Dharwar.

Ref. :- Ms. 51 (59)

Type :- 'M'

Object :- To study the effect of super on germination when drilled along with seeds.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat (c) Nil. (ii) (a) Medium black soil. (b) Refer soil analysis Dharwar. (iii) 21.7.1951. (iv) (a) Three harrowings. (b) sowing with 18" spaced 3 coultered seed-drill. (c) 4 lb./ac. (d) 18" (e) —. (v) Nil. (vi) Nandyal Jowar (early) (vii) Unirrigated. (viii) Two interculturings. (ix) 30.53" (21.7.51 to 21.11.51.) (x) 21.11.51.

2. TREATMENTS :

1. Super at 20 lb./ac. of P₂O₅ drilled along with seeds.
 2. An equal quantity of sand drilled along with seed.

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 8 (iv) (a) 66.5' × 16.5'. (b) 56.5' × 13.5' (v) 5' at the ends. 1½' along the sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950—1951. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1850 lb./ac.
 (ii) 194.7 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1846
2.	1854

S.E./mean =68.8 lb./ac.

Crop :- Jowar (Kharif)

Ref :- Ms. 49 (17).

Site :- Agri. Res. Stn. Dharwar.

Type :- 'M'

Object :- To study the N & P₂O₅ requirements of kharif Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil (b) wheat (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis Dharwar. (iii) 22.7.1949
 (iv) (a) Harrowed three to four times. Again harrowed after sowing. (b) Sowing with 3 coultered
 drill. (c) 5 lb./ac. (d) 18" (e) N.A. (v) F.Y.M. at 5 C.L./ac. was applied on 22.7.1949. (vi) Nandyal
 Jowar (early) (vii) Unirrigated. (viii) Interculturing, hand weeding. (ix) 20.44" (22.7.49 to 24.12
 1949) (x) 23.24.12. 1949.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N : N₀=0, N₁=20 lb./ac., N₂=40 lb./ac., N₃=60 lb./ac. (N as G.N.C.)(2) 4 levels of P₂O₅ : P₀=0, P₁=20 lb./ac., P₂=40 lb./ac., P₃=60 lb./ac., (P₂O₅ as Super)

Super applied on 22.7.49 and G.N.C. applied on 22.8.49 by drill between two rows.

3. DESIGN :

(i) 4×4 factorial in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 27'×42' (b) 15'×30' (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Lodging was observed on 30.10.1949. (ii) Nil (iii) Grain yield (iv) (a) 1948-1951. (b) No (c) N.A.
 (v) (a) N.A. (b) N.A. (vi) Nil (vii) Expt vitiated in 1948.

5. RESULTS :

(i) 1982 lb./ac.

(ii) 276.9 lb./ac.

(iii) Main effect of 'N' alone is significant.

(iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	1895	1871	1850	2046	1915
P ₁	1795	1862	2276	2151	2021
P ₂	1900	1918	1797	2270	1971
P ₃	1850	2134	1919	2178	2020
Mean.	1860	1946	1960	2161	1982

S.E. of body of table = 138.5 lb./ac.

S.E. of marginal means = 69.23 lb./ac.

Crop :- Jowar

Ref :- Ms 50(39).

Site :- Agri. Res. Stn. Dharwar.

Type :- 'M'.

Object :- To study the requirements of 'N' and P₂O₅ on Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Medium Black soil. (b) Refer soil analysis Dharwar. (iii) 31.7.50
 (iv) (a) Harrowing (b) Drilling. (c) 4 lb./ac. (d) 18" (e) N.A. (v) F.Y.M. at 5 C.L./ac. applied on
 12.6.50 and mixed well with soil, harrowed. (vi) Nadyal Jowar (early) (vii) Unirrigated. (viii) Weeding,
 interculturing. (ix) 37.14" (31.7.1950 to 5.1.1951) (x) 5.1.51.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N : N₀=0, N₁=20 lb./ac., N₂=40 lb./ac., N₃=60 lb./ac. (N as G.N.C.)(2) 4 levels of P₂O₅ : P₀=0, P₁=20 lb./ac., P₂=40 lb./ac., P₃=60 lb./ac. (P₂O₅ as Super)

G.N.C powdered and drilled between lines on 25.8.50

3. DESIGN :

(i) 4×4 factorial in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 54'×21' (b) 30'×15' (v) 12' along length, 3' along breadth (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight attack of mildew (iii) Grain yield (iv) (a) 1948-1951 (1948 vitiated) (b) No (c) N.A. (v) (a) No (b) N.A. (vi) Nil (vii) Expt. vitiated in 1948.

5. RESULTS :

- (i) 1121 lb./ac.
 (ii) 175.7 lb./ac.
 (iii) Main effect of N alone is significant.
 (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean.
P ₀	971	950	1277	1467	1166
P ₁	923	1037	1104	1509	1143
P ₂	717	1022	1176	1458	1093
P ₃	777	868	1370	1309	1081
Mean.	847	969	1232	1436	1121

S.E. of body of table. =87.81 lb./ac.
 S.E. of marginal means =43.91 lb./ac.

Crop :- Jowar. (Kharif)

Ref :- Ms. 51(60)

Site :- Agri. Res. Stn. Dharwar.

Type :- 'M'

Object :- To find out how far manuring of P₂O₅ in combination with 'N' will help to get the maximum yield per acre.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium Black soil. (b) Refer soil analysis Dharwar. (iii) 17.7.1951
 (iv) (a) Four ploughings. (b) Sulphur treated jowar seeds were sown by 3 coultured seed-drill. (c) 4 lb./ac.
 (d) 18" (e) N.A. (v) F.Y.M. at 5 C.L./ac. (12.6.1951) (vi) Nandyal Jowar (early) (vii) Unirrigated.
 (viii) 3 interculturings. (ix) 30.53" (17.7.51 to 26.12.1951) (x) 26.12.1951.

2. TREATMENTS :

All combinations of (1) & (2) where

- (1) 4 levels of N : N₀=0, N₁=20 lb./ac., N₂=40 lb./ac., N₃=60 lb./ac. (N as G.N.C.)
 (2) 4 levels of P₂O₅ : P₀=0, P₁=20 lb./ac., P₂=40 lb./ac., P₃=60 lb./ac. (P₂O₅ as—Super)
 Super and G.N.C. applied on 8.7.51 and 10.7.51 respectively with 18" 3 coultured seed drill.

3. DESIGN :

(i) 4×4 Fact. in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 54'×21'. (b) 30'×14' (v) 12' at the ends and 3½' along the sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1948-51 (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) The experiment vitiated in 1948.

5. RESULTS :

- (i) 2023 lb./ac.
 (ii) 184.9 lb./ac.
 (iii) Main effect of N is highly significant, P and interaction NP are not significant.
 (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean.
P ₀	1857	1821	1961	2256	1974
P ₁	1837	1782	2235	2674	2132
P ₂	1575	1958	2013	2469	2004
P ₃	1637	1974	1993	2321	1981
Mean	1727	1884	2051	2430	2023

S.E. of body of table =92.0 lb./ac.
 S.E. of marginal means =46.0 lb./ac.

Crop :-Jowar (Kharif).

Ref :-Ms. 50 (41)

Site :-Agri. Res. Stn. Dharwar

Type :-'M'

Object :-To study the residual effect of N and P_2O_5 applied to cotton on Kharif Jowar.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) Cotton. (c) As per treatments. (ii) (a) Medium black soil. (b) Refer Soil analysis, Dharwar (iii) 19.7.1950 (iv) (a) Harrowing (b) Drilled. (c) 4 lb./ac. (d) 15" (e) N.A. (v) Nil. (vi) Nandyal Jowar Early. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 37.14" (19.7.50 to 5, 6.1.1951) (x) 5, 6.1.1951.

TREATMENTS :

All combinations of (1), (2) & (3)

(1) 3 levels of N : 0, 30, 60 lb. N/ac.

(2) 2 Sources of 'N' viz. G.N.C. and A/S.

(3) 3 levels of P_2O_5 : 0, 30, 60 lb. P_2O_5 /ac. (P_2O_5 as Super)

All manures applied to cotton in 1949. Residual effect being studied now.

3. DESIGN :

(i) $3 \times 2 \times 3$ Fact. in R.B.D. (ii) (a) 18. (b) N.A. (iii) 4. (iv) (a) $48' \times 20'$. (b) $4' \times 12'$. (v) 4' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1950-1955. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1158 lb./ac.

(ii) 176.1 lb./ac.

(iii) Only " P_2O_5 doses at 0 lb. N" vs others is highly significant. Others are not significant.

(iv) Av. grain yield in lb./ac.

P_2O_5	Av. over 0 lb. N/ac.
0	1015
30	1065
60	950

P	N				Mean
	30	A/S	60	G.N.C.	
	30	60	30	60	
0	1160	1284	1151	1222	1204
30	1180	1177	1188	1285	1208
60	1346	1432	1290	1078	1286
Mean	1228	1298	1210	1195	1232

S.E. of the marginal mean of N = 50.8 lb./ac.

S.E. of the marginal mean of P = 44.0 "

S.E. of the body of table = 88.0 "

Crop :-Jowar (Kharif)

Ref :-Ms. 51 (61)

Site :-Agri. Res. Stn. Dharwar.

Type :-'M'

Object :-To study the residual effect of N and P_2O_5 applied to cotton on kharif Jowar.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) Cotton. (c) As per treatments. (ii) (a) Medium black soil. (b) Refer soil analysis Dharwar. (iii) 11.7.1951. (iv) (a) Three harrowings. (b) 3 coultured seed-drill, (c) 4 lb./ac. (d) 18" (e)-(v) Nil. (vi) Nandyal Jowar, (Early). (vii) Unirrigated. (viii) Three interculturings. (ix) 30.53" (11.7.1951 to 23.12.1951). (x) 23.12.1951.

2. TREATMENTS :

All combinations of (1) (2) & (3) :

(1) 3 levels of N : 0, 30, 60 lb./ac.

(2) 2 sources of N viz G.N.C. and A/S.

(3) 3 levels of P_2O_5 : 0, 30, 60 lb. N/ac. (P_2O_5 as super)

All manures applied to previous crop cotton. Residual effect being studied now.

3. DESIGN :

(i) $3 \times 2 \times 3$ Fact. in R.B.D. (ii) (a) 18 (b) N.A. (iii) 4 (iv) (a) $48' \times 20'$ (b) $40' \times 12'$ (v) 4' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950—1955 (b) No. (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1871 lb./ac.
 (ii) 286.1 lb./ac.
 (iii) Only the effect 'P₂O₅ doses at 0 lb. N' vs. others is significant. Others are not significant.
 (iv) Av. grain yield in lb./ac.

P ₂ O ₅	Averaged over 0 lb. N./ac.
0	1817
30	1631
60	1771

P	N				Mean.	
	30	A/S	60	G.N.C.		
0	1854		2036	1917	1911	1871
30	2138		2073	1844	1809	1966
60	1823		1996	1702	2135	1914
Mean.	1938		2035	1821	1952	1937

S.E. of the marginal mean of N = 82.6 lb./ac.
 S.E. " " " of P = 71.5 lb./ac.
 S.E. of the body of table = 143.1 lb./ac.

Crop :- Jowar (Kharif).

Ref :- Ms. 52 (90).

Site :- Agri. Res. Stn. Dharwar

Type :- 'M'

Object :- To study the residual effect of N and P₂O₅ applied to cotton on Jowar.

1. BASAL CONDITIONS :

(i) (a) Cotton—Kh. Jowar. (b) Cotton. (c) As per treatments. F.Y.M. at 5 C.L./ac. (ii) (a) Medium black soil. (b) Refer soil analysis Dharwar. (iii) 15.7.1952. (iv) (a) N.A. (b) Drilling. (c) 4 lb./ac. (d) 18". (e)—(v) Nil, (vi) Nandyal Jowar. (vii) Rainfed. (viii) Two interculturings (ix) N.A. (x) 7.12.52.

2. TREATMENTS :

All combinations of (1), (2) & (3)

- (1) 3 levels of N: 0, 30, 60 lb./ac.
 (2) 2 sources of 'N' viz. G.N.C. and A/S
 (3) 3 levels of P₂O₅ : 0, 30, 60 lb. P₂O₅/ac (P₂O₅ as Super)
 Manures applied to previous crop cotton. Residual effect being studied.

3. DESIGN :

(i) $3 \times 2 \times 3$ Fact. in R.B.D. (ii) (a) 18 (b) N.A. (iii) 4 (iv) (a) $48' \times 20'$ (b) $40' \times 12'$ (v) 4' all round (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Appearance of downy mildew and stem borer attack were observed to little extent. (iii) Grain yield data. (iv) (a) 1950-1955. (b) No. (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2665 lb./ac.
 (ii) 212.9 lb./ac.
 (iii) Main effect of levels of N and 'P₂O₅ doses at 0 lb. N' vs. others' are highly significant while that of P is significant. Others are not significant.

(iv) Av. grain yield in lb./ac.

P	Av. over 0 lb. N.				Mean
	P ₂ O ₅				
	A/S		G.N.C.		
	30	60	30	60	
0	2667	2883	2712	2752	2754
30	2900	2931	2714	3085	2908
60	2570	2892	2555	2977	2748
Mean	2712	2902	2660	2938	2803

S.E. of the marginal mean of N=61.5 lb./ac.

S.E. of the marginal mean of P=53.2 lb./ac.

S.E. of the body of table =106.5 lb./ac.

Crop :- Jowar (Kharif).

Ref :- Ms. 53 (90)

Site :- Agri. Res. Stn. Dharwar

Type :- 'M'

Object :- To study the residual effect of N and P₂O₅ applied to cotton crop on Kharif Jowar.

1. BASAL CONDITIONS :

(i) (a) Jowar—Cotton (b) Cotton (c) As under treatments (ii) (a) Medium black (b) Refer soil analysis Dharwar (iii) 18.7.53. (iv) (a) Plot was harrowed 4 times (b) Drilled (c) 4 lb./ac. (d) 18" (e) N.A. (v) Nil (vi) Nandyal. (vii) Unirrigated. (viii) Crop received two interculturings. (ix) 36.29" (18.7.53 to 23.12.1953) (x) 23.12.1953.

2. TREATMENTS :

All combinations of (1) (2) & (3)

(1) 3 levels of N : 0 lb. 30 lb. and 60 lb./ac.

(2) 2 sources of N : G.N.C. and A/S.

(3) 3 levels of P₂O₅ : 0 lb. 30 lb. and 60 lb./ac. of P₂O₅.

Residual effect of above treatments applied to cotton are studied on Jowar.

3. DESIGN :

(i) 3×2×3 Fact. in R.B.D (ii) (a) 18 (b) N.A. (iii) 4 (iv) (a) 48'×29' (b) 40'×12' (v) 4' along the row and 3 lines on either side (vi) Yes.

4. GENERAL :

(i) Heavy rains in the month of October hindered the growth of the crop ; otherwise normal growth. (ii) Stemborer attack in the early stages and leaf eating caterpillars in the later stages were observed. No control measures taken. (iii) Weight of fodder, grain yield (iv) (a) 1950-1955 (b) No (c) N.A. (v) (a) N.A. (b) Nil. (vi) No. (vii) None.

5. RESULTS :

(i) 1222 lb./ac.

(ii) 215.8 lb./ac.

(iii) The main effect of N is significant and interaction N×P is highly significant. Others are not significant

(iv) Av. grain yield in lb./ac.

P	Av. over 0 lb. N/ac,				Mean
	P ₂ O ₅				
	A/S		G.N.C.		
	30	60	30	60	
0	1112	1260	1194	1302	1217
30	1132	1472	1196	1270	1268
60	1390	1202	916	1406	1228
Mean.	1211	1311	1102	1326	1238

S.E. of the marginal mean of N=62.3 lb./ac.

S.E. of the marginal mean of P=53.9 lb./ac.

S.E. of the body of table =107.9/ac.

Crop :- Jowar (Kharif).

Ref :- Ms. 52 (109).

Site :- Agri. Res. Stn. Dharwar.

Type :M'.

Object :— To find out how far manuring with P_2O_5 and N in the form of G.N.C. and A/S and F.Y.M. will help to reap the maximum yield.

1. BASAL CONDITIONS :

(i) a Jowar-Cotton. (b) Cotton. (c) Nil. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 17.7.1952. (iv) (a) N.A. (b) Sown with 18"-3 coultured seed-drill. (c) 4 lb./ac. (d) 18" (e)— (v) Nil. (vi) Nandyal Jowar (early). (vii) Rainfed. (viii) Two interculturings. (ix) 21.84". (17.7.52 to 8.12.52). (x) 8.12.1952

2. TREATMENTS :

All combinations of (1), (2) & (3).

1. 3 levels of N viz. $N_1=40$ lb./ac. $N_2=60$ lb./ac. and $N_3=80$ lb./ac.

2. 2 levels of P_2O_5 viz. $P_1=20$,, and $P_2=40$,,

3. 2 levels of F.Y.M., viz. $F_1=5$ C.L./ac, and $F_2=10$ C.L./ac.

F.Y.M. was applied on 6.7.52 & Super on 9.7.52. P_2O_5 as Super.

N as G.N.C. and A/S applied on 11.8.1952.

3. DESIGN :

(i) $3 \times 2 \times 2$ Fact. in R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a) $42' \times 18'$ (b) $36' \times 12'$ (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1952-continued. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2942 lb./ac.

(ii) 330.7 lb./ac.

(iii) Main effect of N is highly significant. Other effects and interactions are not significant.

(iv) Av. yield of grain in lb /ac.

	N_1	N_2	N_3	Mean.	F_1	F_2
P_1	2651	2988	3181	2940	2929	2951
P_2	2754	2821	3259	2945	2883	3007
Mean.	2702	2905	3220	2942	2906	2979
F_1	2686	2836	3197			
F_2	2718	2974	3244			

S.E. of marginal mean of

1. 'N' = 82.7 lb /ac.

2. 'P' or F.Y.M. = 67.5 lb./ac.

S.E. of the body table.

1. $N \times P$ (or F.Y.M.) = 116.9 lb./ac.

2. $P \times F.Y.M.$ = 95.5 lb./ac.

Crop :- Jowar.

Ref :- Ms. 53(82).

Site :- Agri. Res. Stn. Dharwar.

Type 'M'

Object :— To find out how far manuring with P_2O_5 and N in the form of A/S, and G.N.C. and F.Y.M. will help to get maximum yield.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton (b) Cotton (c) Nil. (ii) (a) Medium black (b) Refer soil analysis, Dharwar (iii) 17.6.53 (iv) (a) Two harrowings (b) Seeds drilled (c) 4 lb./ac. (d) 18" (e) N.A. (v) Nil. (vi) Nandyal. (vii) Unirrigated. (viii) 2 interculturings given to the crop. (ix) 36.29" (17.6.1953 to 21.12.53) (x) 21.12.1953.

2. TREATMENTS .

All combinations of (1), (2) & (3)

1. 3 levels of N. : $N_1=40$ lb./ac, $N_2=60$ lb./ac, and $N_3=80$ lb./ac.

2. 2 levels of P_2O_5 : $P_1=20$,, ,, and $P_2=40$,,

3. 2 levels of F.Y.M. : $F_1=5$ C.L./ac, and $F_2=10$ C.L./ac.

P_2O_5 as Super, N as A/S & G.N.C.

3. DESIGN :

(i) 3×2×2 Fact in R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a) 42'×18' (b) 36'×12' (v) 3' on all sides. (vi) Yes.

4. GENERAL :

(i) Growth of the crop was normal up to leaf stage. Then it suffered due to excess of moisture. This had the effect on the size of earhead (ii) Stemborer and rat trouble. No control measures taken (iii) Fodder yield. (iv) (a) 1949—N.A. (b) No (c) N.A. (v) N.A. (vi) No (vii) None.

5. RESULTS :

- (i) 1543 lb./ac.
 (ii) 196.6 lb./ac.
 (iii) Only the effect of P_2O_5 is significant. Other effects & interactions are not significant.
 (iv) Av. yield of fodder in lb./ac.

	N ₁	N ₂	N ₃	Mean.	F ₁	F ₂
P ₁	1473	1415	1566	1485	1481	1488
P ₂	1519	1785	1500	1601	1557	1646
Mean.	1496	1600	1533	1543	1519	1567
F ₁	1478	1616	1462			
F ₂	1514	1583	1604			

S.E. of the marginal mean of P or F.Y.M. = 39.9 lb./ac.
 S.E. of the marginal mean of N = 49.1 lb./ac.
 S.E. of the mean in the table P×N or F.Y.M×N = 69.1 lb./ac.
 S.E. of the mean in the table P×F.Y.M. = 56.4 lb./ac.

Crop :- Jowar.

Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 50(43).

Type :- 'M'.

Object :- To study the residual effect of a leguminous crop grown with and without Super on succeeding cereal crop (Jowar).

1. BASAL CONDITIONS

(i) (a) (Cotton+Groundnut)—Jowar. (b) Groundnut and Cotton (c) As per treatments (ii) (a) Medium black soil (b) Refer soil analysis, Dharwar (iii) 18.7.1950. (iv) (a) Ploughing with iron plough, frequent harrowings. (b) Drilled (c) 4 lb./ac. (d) 18" (e) N.A. (v) Nil. (vi) Nandyal Jowar. (early) (vii) Unirrigated (viii) Filling the gaps. (ix) 37.14" (18.7.50 to 2.1.51) (x) 2.1.51.

2. TREATMENTS :

- 0 lb. P_2O_5 /ac.
- 50 " "
- 100 " "
- 150 " "
- Cotton crop

All these were applied to the previous crop-Groundnut.

Treatments applied on 18.7.1949.

F.Y.M. at 5 C.L./ac. applied to plots where cotton was grown in 1949, on 29.6.50.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 4 (iv) (a) 42'×30' (b) 30'×18' (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1949—50 to 1953—54. (b) The experiment remains on the same plot for 2 crops as mentioned above. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

RESULTS :

- (i) 1337 lb./ac.
- (ii) 178.9 lb./ac.
- (iii) The differences in yield due to treatments are significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	1432
2.	1265
3.	1467
4.	1461
5.	1056
S.E./mean.	=89.5 lb/ac.

Crop :- Jowar. (Kharif).

Ref :- Ms. 51(64)

Site :- Agri. Res Stn. Dharwar.

Type :- 'M'.

Object :- To study the residual effect of leguminous crop with and without Super on succeeding cereal crop jowar.

1. BASAL CONDITIONS :

(i) (a) Cotton.—Groundnut—Jowar. (b) Groundnut and cotton. (c) As per treatments. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 9.7.51. (iv) (a) Harrowing, (b) Sulphur treated Jowar seeds sown with 3 coultured seed-drill. (c) 4 lb./ac. (d) 18" (e)—. (v) Nil. (vi) Nandyal, Jowar (early) (vii) Unirrigated. (viii) Interculturings, weeding. (ix) 37.14". (9.7.51 to 25.12.51) (x) 25.12.51.

2. TREATMENTS :

Residual effect of the following treatments :—

- 1. 0 lb./ac. of P_2O_5
- 2. 50 " "
- 3. 100 " "
- 4. 150 " "
- 5. Cotton crop (usual method.)
F.Y.M. at 5 C.L./ac. applied to plots where only Cotton was grown in 1950, on 18.6.51.
The above treatments were applied to previous groundnut crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 4 (iv) (a) 42'×30' (b) 30'×18'. (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1949—50., 1953—54. (b) The experiment remains on the same plot for two crops as mentioned above. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2334 lb./ac.
- (ii) 259.3 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	2490.
2.	2458
3.	2566
4.	2473
5.	1681
S.E./mean.	=129.6 lb./ac.

Crop :- Jowar. (Kharif)
Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 52 (106).
Type :- 'M'.

Object :- To study the effect of leguminous crop grown with and without Super on succeeding cereal crop jowar.

1. BASAL CONDITIONS :

(i) (a) (Cotton+Groundnut)—Jowar. (b) Groundnut and Cotton. (c) As per treatments. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 15.7.1952. (iv) (a) Harrowings, (b) Sown with 18"–3 coultured drill (c) 4 lb./ac. (d) 18" (e) N.A. (v) Nil. (vi) Nandyal (early) (vii) Rainfed. (viii) Interculturing, hand weeding. (ix) 29.04" (15.7.52 to 13.11.1952) (x) 13.11:1952.

2. TREATMENTS :

Residual effects of following treatments studied on Jowar in 1952.

1. 0 lb./ac. of P_2O_5
2. 50 " " "
3. 100 " " "
4. 150 " " "
5. Cotton crop (usual cultivation).
Super was applied on 22.6.1951.
The above treatments were applied to previous groundnut crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 4 (iv) (a) 42'×30' (b) 30'×18'. (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight attack of Ticca. (iii) Grain yield data. (iv) (a) 1949-50, 1953-54. (b) The experiment remains on the same plot for two crops as mentioned above. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2466 lb./ac.
- (ii) 284.7 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. grain yield in lb./ac.

Treatment.	Av. yield
1.	2546
2.	2664
3.	2652
4.	2828
5.	2638
S.E./mean	=142.4 lb./ac.

Crop :- Jowar. (Kharif)
Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 53 (79).
Type :- 'M'.

Object :- To study the effect of leguminous crop grown with and without Super on succeeding cereal crop jowar.

1. BASAL CONDITIONS :

(i) (a) No (b) Groundnut and Cotton (c) Nil (ii) (a) Medium black (b) Refer soil analysis, Dharwar (iii) 18.7.53 (iv) (a) The plot was harrowed 4 times (b) Seeds drilled (c) 4 lb./ac. (d) 18" between rows (e) N.A. (v) Nil. (vi) Nandyal. (vii) Unirrigated. (viii) Two interculturings. (ix) 25.36" (18.7.53 to 22.12.1953) (x) 22.12.1953.

2. TREATMENTS :

1. 0 lb./ac. of P_2O_5 as super.
2. 50 " " "
3. 100 " " "
4. 150 " " "
5. Cotton crop in previous season.
Applied to previous groundnut crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 4 (iv) (a) 42'×30' (b) 30'×18' (v) 6' on all sides (vi) yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain yield (iv) (a) 1949-1956 (b) The experiment remains on the same plot for two crops as mentioned above. (c) N.A. (v) (a) N.A. (b) Nil (vi) No (vii) Every time leguminous crop is taken, the site changes.

5. RESULTS :

- (i) 1335 lb./ac.
 (ii) 163.8 lb /ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1	1316
2.	1306
3.	1371
4.	1331
5.	1351
S.E./mean.	=81.9 lb./ac.

Crop :- Jowar. (Kharif).

Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 52 (91).

Type :- 'M'

Object :—To compare the yield data and soil and plant analysis of plots treated with Di-calcium phosphate and Super.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cotton. (c) Nil. (ii) (a) Medium black soil (b) Refer soil analysis Dharwar. (iii) 19.7.1952 (iv) (a) N.A. (b) Drilling (c) 4 lb./ac. (d) 18". (e) N.A. (v) F.Y.M. at 5 C.L./ac. was applied on 30.5.1952. 'N'. at 60 lb./ac. in the form of A/S was applied on 8.8.1952. (vi) Nandyal Jowar. (vii) Rainfed. (viii) interculturations. (ix) N.A. (x) 26.12.1952.

2. TREATMENTS :

1. Di-calcium phosphate at 20 lb. of P₂O₅/ac.
 2. Super " " " " "

These treatments were given on 12.7.1952.

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 12 (iv) (a) 42'×21' (b) 30'×9'. (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1952-1954. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 3202 lb./ac.
 (ii) 475.6 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3221
2.	3183
S.E./mean	=137.3 lb./ac.

Crop :- Jowar. (Kharif)
Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 53 (91)
Type :- 'M'.

Object :- To compare the yield data and soil, and plant analysis of plots treated with Dicalcium phosphate and Super.

1. BASAL CONDITIONS :

(i) (a) No (b) Chinamug (Kharif) — Wheat (Rabi) (c) Chinamug manured with 5 C.L. of F.Y.M./ac. (ii) (a) Medium black (b) Refer soil analysis Dharwar (iii) 17.7.53 (iv) (a) The plot was tractor ploughed (b) Seeds drilled (c) 4 lb/ac. (d) 18" (e) N.A. (v) F.Y.M. at 5 C.L./ac. & A/S at 60 lb. N/ac. (vi) Nandyal (vii) Unirrigated (viii) 3 interculturings (ix) 36.29" (17.7.53 to 21.12.1953) (x) 21.12.1953.

2. TREATMENTS :

1. Dicalcium Phos. at 20 lb. P₂O₅/ac.
2. Super " " " " "

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 12 (iv) (a) 42'×21' (b) 30'×9' (c) 6' around (vi) Yes.

4. GENERAL :

(i) Growth was hindered due to excess of moisture after the hay-leaf stage ; otherwise the stand of the crop was good. (ii) Slight attack of stem borer and army worm. (iii) Grain yield. (iv) (a) 1952. to 1955 (b) No. (c) N.A. (v) (a) N.A. (b) Nil. (vi) No. (vii) None.

5. RESULTS :

- (i) 2251 lb./ac.
- (ii) 211.4 lb./ac.
- (iii) The treatments do not differ significantly.
- (iv) Av. grain yield in lb/ac.

Treatment	Av. yield
1.	2231
2.	2272
S.E./mean	=61.3 lb./ac.

Crop :- Jowar.

Site :- Agri. Res. Stn. Hagari.

Ref :- Ms. 53 (9)

Type :- 'M'.

Object :- To study the result of application of G.N.C. and A/S in combination over a basal dressing of F.Y.M.

1. BASAL CONDITIONS :

(i) (a) Cotton—Jowar (b) Navane (c) No. (ii) (a) Deep black soil. (b) Refer soil analysis Hagari. (iii) 10.10.1953. (iv) (a) During summer, country blade harrow was worked 3—4 times. Junior hoe worked to incorporate F.Y.M. (b) Seeds sown in lines with seed drill. (c) 3 lb./ac. (d) 18" (e) N.A. (v) 2½ tons of F.Y.M. applied one month prior to sowing (vi) M-47-3 Jowar. (vii) Unirrigated. (viii) N.A. (ix) 6.05" (10.10.53 to 20.4.54) (x) 20.4.1954.

2. TREATMENTS :

1. F.Y.M. 2½ tons/ac.
2. " " +30 lb./ac. of N as A/S.
3. " " +30 lb./ac. " as G.N.C.
4. " " + " half as G.N.C. and half as A/S.
5. No manure.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 6 (iv) (a) 40'×18' (b) 36' 4"×12' (v) 2 rows, one on each side. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil (iii) Germination, stand, flowering, maturity and yield (grain, straw) (iv) (a) 1953—1957 (b) Yes. (c) N.A. (v) (a) & (b) N.A. (vi) No. (vii) None.

5. RESULTS :

- (i) 703 lb./ac.
- (ii) 185.0 lb./ac.
- (iii) The differences in yield due to treatments are not significant.

(iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	690
2.	627
3.	626
4.	793
5.	781
S.E./mean	=75.0 lb./ac.

Crop :-Jowar.

Ref :-Ms. 48 (22).

Site :-Agri. Res. Stn. Hagari.

Type :- 'M'.

Object :-To find-out at what rate it will be possible to manure the dry land crop of Jowar and Cotton of the locality of very poor rainfall with G.N.C. in view of scarcity of C.M. to meet local needs adequately.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) N.A. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis Hagari. (iii) 4.10.1948. (iv) (a) Working blade harrow three times (b) Drill sowing. (c) 5 lb./ac. (d) 18" (e) One seed. (v) Nil. (vi) M-47-3 early. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 6.06" (4.10.1948 to 19.2.1949). (x) 19.2.1949.

2. TREATMENTS :

1. = No manure.

Other treatments from 2 to 16 :-

Amount of N Source	Period of application								
	once in 4 yrs.		once in 2 yrs.			every year.			
	30 lb.	20 lb.	30 lb.	20 lb.	10 lb.	30 lb.	20 lb.	10 lb.	
F.Y.M.	2	3	6	7	—	11	12	13	
G.N.C.	4	5	8	9	10	14	15	16	

1, 2, 3, 4, 5.....16 indicate the treatment number.

N in the form of G.N.C. & F.Y.M. applied through akkadi behind the seed drill before sowing in lines. 30 lb. N is supplied by 6,000 lb. F.Y.M. or 400 lb. G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 80'×18' (b) 74'×12' (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield data. (iv) (a) 1948—1955. (b) Two sets of the expts. are tried. One layout has the crop rotation Cotton-Jowar-Cotton and the other has Jowar-Cotton-Jowar. The randomisation of the treatments is different for the two sets. (c) N.A. (v) (a) None (b) N.A. (vi) Nil. (vii) Plot wise data N.A.

5. RESULTS :

(i) 283 lb./ac.

(ii) N.A.

(iii) N.A.

(iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield	Treatment	Av. yield
1	247	9.	339
2.	254	10.	250
3.	251	11.	228
4.	304	12.	293
5.	381	13.	249
6.	303	14.	277
7.	265	15.	248
8.	324	16.	321

S.E./mean =N.A.

Crop :-Jowar.

Ref :-Ms. 50 (55)/48 (22)

Site :-Agri. Res. Stn. Hagari.

Type :-'M'

Object :-To find out at what rate it will be possible to manure the dry land crop of Jowar and cotton of this locality of very poor rainfall, with G.N.C. in view of scarcity of C.M. to meet the local needs adequately.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton (b) Cotton (c) As per treatment (ii) (a) Black cotton soil. (b) Refer soil analysis, Hagari. (iii) 4.10.1950. (iv) (a) Working blade harrow three times (b) Drill sowing (c) 5 lb./ac. (d) 18" (e) One seed (v) Nil (vi) M-47-3 ; Early. (vii) Unirrigated. (viii) Weeding, interculturing (ix) 11.05" (4.10.50 to 19.2.51) (x) 19.2.1951.

2. TREATMENTS :

1.=No manure.

Other treatments 2 to 16 are :-

Amount of N Source	Period of application								
	once in 4 yrs.		once in 2 yrs.			once every year			
	30 lb.	20 lb.	30 lb.	20 lb.	10 lb.	30 lb.	20 lb.	10 lb.	
F.Y.M.	2	3	6	7	—	11	12	13	
G.N.C.	4	5	8	9	10	14	15	16	

1, 2, 3, 4, 5.....16 Indicate the treatment number. N in the form of G.N.C. & F.Y.M. applied through akkadi behind the seed drill before sowing in lines. 30 lb. N is supplied by 6,000 lb. F.Y.M. or 400 lb. G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 86'×18' (b) 74'×12' (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Grain yield data. (iv) (a) 1948—1955 (b) Two sets of expts. are tried. one lay out has the crop rotation—Cotton—Jowar—Cotton and the other has Jowar—Cotton—Jowar. The randomisation of the treatments is different for the two sets. (c) N.A. (v) (a) None (b) Jowar—Cotton. (vi) Nil (vii) Plot wise data N.A.

5. RESULTS :

- (i) 668 lb./ac.
 (ii) 93.0 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.	Treatment	Av. yield.
1.	712	9.	545
2.	616	10.	609
3.	619	11.	824
4.	538	12.	808
5.	634	13.	784
6.	798	14.	587
7.	681	15.	735
8.	617	16.	586

S.E./mean =46.5 lb./ac.

Crop :-Jowar.

Ref :-Ms. 52(15) 50 (55)/48 (22)

Site : Agri. Res. Stn. Hagari.

Type :- 'M'

Object :-To find out at what rate it will be possible to manure the dry land crop of Jowar and Cotton of this locality of very poor rainfall with G.N.C. in view of scarcity of C.M. to meet the local needs adequately.

1. BASAL CONDITIONS :

(i) (a) Jowar — Cotton (b) Cotton (Westerns I) (c) As per treatments (ii) (a) Deep black cotton soils of 3' depth (b) Refer soil analysis, Hagari. (iii) 17.10.1952 (iv) (a) Working blade harrow 3 times (b)

Drill sowing (c) 5 lb./ac. (d) 18" apart (e) N.A. (v) None (vi) M—47—3 Jowar ; (Early improved) (vii) Rainfed. (viii) When the crop was about one month, Danti was worked as an interculture and line weeding was also done. 2nd and third time the danti worked with in an interval of fortnight duration (ix) 1.05* (17.10.52 to 1.3.53) (x) 1.3.1953

2. TREATMENTS :

1 = No manure.

Other treatments from 2 to 16 are :—

Amount of N Source	Period of application								
	once in 4 yrs.		once in 2 yrs.			every year			
	30 lb.	20 lb.	30 lb.	20 lb.	10 lb.	30 lb.	20 lb.	10 lb.	
F.Y.M	2	3	6	7	—	11	12	13	
G.N.C.	4	5	8	9	10	14	15	16	

1, 2, 3, 4.....16 indicate the treatment numbers. N in the form of G.N.C. & F.Y.M applied through akkadi behind the seed drill before sowing in lines.

30 lb. N supplied from 6000 lb. F.Y.M. or 400 lb. G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 16 (b) 4 (iii) 4 (iv) (a) 80'×18' (b) 74'×12' (v) 2 rows on each side of each plot, (vi) Yes.

4. GENERAL :

(i) Growth poor and yields below average due to bad seasonal conditions. (ii) No pests and diseases. (iii) Germination, general stand of the crop, date of flowering and grain yield (iv) (a) 1948—49 to 1955—56. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Nil

5. RESULTS :

(i) 417.0 lb./ac.

(ii) 114.6 lb./ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	395.6	9.	395.6
2.	396.3	10.	303.2
3.	484.9	11.	518.0
4.	396.5	12.	486.4
5.	304.8	13.	397.1
6.	512.6	14.	337.1
7.	478.7	15.	484.1
8.	474.1	16.	334.0

S.E./mean

=57.3 lb./ac.

Crop :- Jowar

Site :- Agri. Res. Stn. Hagari.

Ref :- Ms.49 (7)

Type :- 'M'

Object :—To find out at what rate it will be possible to manure the dry land crop of Jowar and Cotton of the locality of very poor rainfall with G.N.C. in view of the scarcity of C.M. to meet local needs adequately.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar-Cotton (b) H₁—Cotton (c) As per treatments. (ii) (a) Black cotton soil (b) Refer soil analysis Hagari. (iit) 8.10.1949 (iv) (a) Working blade harrow three times. (b) Drill sowing. (c) 5 lb./ac. (d) 18" (e) One seed. (v) Nil. (vi) M-47-3 Jowar (early) (vii) Unirrigated. (viii) Weeding, interculturing- (ix) 4.39" (8.10.1949 to 23.2.1950) (v) 23.2.1950.

2. TREATMENTS :

1 = No manure.

Other treatments from 2 to 16 are :-

Amount of N Source	Period of application								
	once in 4 yrs.			once in 2 yrs.			once every year		
	30 lb.	20 lb.		30 lb.	20 lb.	10 lb.	30 lb.	20 lb.	10 lb.
F.Y.M.	2	3		6	7	—	11	12	13
G.N.C.	4	5		8	9	10	14	15	16

1, 2, 3, 4,.....16 indicate the treatment numbers. N in the form of G.N.C. & F.Y.M. applied through akkadi behind the seed drill before sowing in lines. 30 lb. N supplied from 6000 lb. F.Y.M. or 400 lb. G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 80'×18' (b) 74'×12' (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield data. (iv) (a) 1948-1965 (b) Yes. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 863 lb./ac.

(ii) 78.9 lb./ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. grain yield in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	787	9.	902
2.	918	10.	821
3.	854	11.	897
4.	881	12.	930
5.	861	13.	913
6.	807	14.	928
7.	797	15.	847
8.	863	16.	815
	S.E./mean		=39.5 lb./ac.

Crop :- Jowar.

Ref :- Ms. 51 (3)/49 (7)

Site :- Agri. Res. Stn. Hagari.

Type :- 'M'

Object :- To find-out the rate at which the dry crop of jowar and cotton be manured with G.N.C. in view of scarcity of C.M. in the locality.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar-Cotton. (b) Cotton. Western 1. (c) As per treatments. (ii) (a) Deep black cotton soil of 3' depth (b) Refer soil analysis; Hagari. (iii) 19.10.51. (iv) Working blade harrow 3 times (b) Drill sowing. (c) 5 lb./ac. (d) 18" (e) — (v) None. (vi) M-47-3 (Early improved). (vii) Rainfed. (viii) When the crop was about one month, danti was worked as an interculture and line weeding was done. 2nd and the 3rd time the danti was worked. (ix) 0.99" (19.10.51 to 18.3.52) (x) 18.3.1952.

2. TREATMENTS :

1 = No manure.

Other treatments from 2 to 16 are :-

Amount of N Source	Period of application								
	once in 4 yrs.			once in 2 yrs			once every year		
	30 lb.	20 lb.		30 lb.	20 lb.	10 lb.	30 lb.	20 lb.	10 lb.
F.Y.M.	2	3		6	7	—	11	12	13
G.N.C.	4	5		8	9	10	14	15	16

1, 2, 3, 4,.....16 indicate the treatment number. N in the form of G.N.C. & F.Y.M. applied through akkadi behind the seed drill before sowing in lines. 30 lb. N supplied 6000 lb. or F.Y.M. 400 lb. G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 80'×13' (b) 64'×12' (v) 2 rows on each side of each plot (vi) Yes.

4. GENERAL :

(i) Growth very modest. Heading very impressive. All manurial plots recorded abnormally higher yields over unmanured plots (ii) No pests and diseases (iii) Germination, general stand of the crop, date of flowering and grain yield. (iv) (a) 1948-49 to 1965-66. (b) Yes. (c) N.A. (v) (a) None (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 457 lb./ac.
 (ii) 125 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	319	9.	399
2.	441	10.	476
3.	458	11.	574
4.	387	12.	327
5.	426	13.	471
6.	510	14.	521
7.	584	15.	550
8.	442	16.	436
S.E./mean		=62.8 lb./ac	

Crop :-Jowar.

Ref :-Ms. 53 (11)/51 (3)/49 (7)

Site :-Agri. Res. Stn. Hagari.

Type :-'M'

Object :—To find at what rate it will be possible to manure the dry land crop of jowar and cotton with G.N.C. in view of scarcity of C.M. to meet the local needs adequately.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar-Cotton. (b) Cotton. (c) As per treatments. (ii) (a) Deep black soil. (b) Refer soil analysis Hagari. (iii) 11.10.53. (iv) (a) Working blade harrow 3 times and danties and hattikunti as an interculture. (b) Drill sowing. (c) 5 lb./ac. (d) 18" (e)—(v) None. (vi) M 47-3 jowar. (vii) Unirrigated. (viii) When crop was one month old, danti was worked as an interculture and line weeding was done. 2nd and 3rd time danti was worked within an interval of fortnight duration. (ix) 4.97" (11.10.53 to 28.2.54) (x) 28.2.54.

2. TREATMENTS :

1 = No manure.

Other treatments from 2 to 16 are :—

Amount of N Source	Period of application								
	once in 4 yrs.		once in 2 yrs.			once in every year			
	30 lb.	20 lb.	30 lb.	20 lbs	10 lb.	30 lb.	20 lbs	10 lb.	
F.Y.M.	2	3	6	7	—	11	12	13	
G.N.C.	4	5	8	9	10	14	15	16	

1, 2, 3, 4.....16 indicate the treatment number. N in the form of G.N.C. & F.Y.M. applied through akkadi behind the seed drill before sowing in lines. 30 lb. N supplied from 6000 lb. F.Y.M. or 400 lb. G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 80'×18' (b) 74'×12' (v) 2 rows on each side of the net plot. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Germination, stand, flowering and yield (grain and straw). (iv) (a) 1948-1966 (b) Yes. (c) N.A. (v) N.A. (vi) No. (vii) This is the 6th year of trial. Application of G.N.C. at 20 lb. N every alternate year gave the maximum yield.

5. RESULTS.

- (i) 722 lb./ac.
 (ii) 123.6 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	766	9.	867
2.	760	10.	628
3.	726	11.	723
4.	818	12.	527
5.	772	13.	572
6.	775	14.	703
7.	645	15.	742
8.	799	16.	732

S.E./mean = 61.3 lb./ac.

Crop :- Jowar.

Ref :- Ms. 48 (24)

Site :- Agri. Res. Stn. Hagari.

Type :- 'M'

Object :- To study the effect of application of Super in inducing the earliness in the maturity of the crop.

1. BASAL CONDITIONS :

- (i) (a) Jowar — Cotton. (b) N.A. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Hagari. (iii) 3.10.1948. (iv) (a) Working blade harrow three times. (b) Drill sowing. (c) 5 lb./ac. (d) 18" (e) 1 (v) Nil. (vi) M-47-3; Early. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 6.06" (3.10.1948 to 30.3.1949) (x) 30.3.1949.

2. TREATMENTS :

1. 30 lb. P₂O₅/ac. as Super
 2. 30 lb. N/ac. as F.Y.M.
 3. No manure.

F.Y.M. will be broadcast in the respective plots a month before sowing and junior hoe worked to incorporate the same. Super is drilled through akkadies behind the seed drill on the date of sowing. Later, sowings are taken up.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 8 (iv) (a) 80' × 18' (b) 74' × 12' (v) 3' all round. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain yield data. (iv) (a) 1948-1955 (b) Yes. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) S.E.'s. not furnished. Plot-wise yield data N.A. No reasons given for low yields.

5. RESULTS :

- (i) 122 lb./ac.
 (ii) N.A.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	133
2.	120
3.	112
S.E./mean	N.A.

Crop :- Jowar.

Ref :- Ms. 49 (6)/48(24).

Site :- Agri. Res. Stn. Hagari.

Type :- 'M'.

Object :- To study the effect of application of Super in inducing the earliness in the maturity of the crop.

1. BASAL CONDITIONS :

- (i) (a) Jowar — Cotton. (b) H₁ Cotton. (c) As per treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Hagari. (iii) 8.10.1949 (iv) (a) Working blade harrow three times. (b) Drill sowing. (c) 5 lb./ac. (d) 18" (e) 1 seed. (v) Nil (vi) M 47-3 jowar; Early. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 4.39" (8.10.1949 to 24.2.1950) (x) 24.2.1950.

2. TREATMENTS :

1. 30 lb. P_2O_5 /ac. as Super.
2. 30 lb. N/ac. as F.Y.M.
3. No manure.

F.Y.M. broadcast a month before sowing and junior hoe worked to incorporate the same. Super drilled through akkadies. behind the seed drill on the date of sowing.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 8 (iv) (a) 80' × 18' (b) 74' × 12' (v) 3' all round. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain yield data. (iv) (a) 1948-1956 (b) Yes. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 936 lb./ac.
 (ii) 107 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	904
2.	963
3.	942
S.E./mean	= 37.8 lb./ac.

Crop :- Jowar

Ref :- Ms. 50 (57)/49 (6)/48 (24)

Site :- Agri. Res. Stn. Hagari.

Type :- 'M'.

Object :- To study the effect of application of Super in inducing the earliness in the maturity of the crop.

1. BASAL CONDITIONS :

- (i) (a) Jowar-Cotton. (b) Cotton. (c) As per treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Hagari (iii) 5.10.1950. (iv) (a) Working blade harrow three times. (b) Drill sowing. (c) 5 lb./ac. (d) 18" (e) One seed/hole. (v) Nil. (vi) M-47-3; Early. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 11.05" (5.10.50 to 12.2.1951.) (x) 12.2.1951.

2. TREATMENTS :

1. 30 lb. P_2O_5 /ac. as Super.
2. 30 lb. N/ac. as F.Y.M.
3. No manure.

F.Y.M. broadcast in the respective plots a month before sowing and junior hoe worked to incorporate the same. Super drilled through akkadies behind the seed drill on the date of sowing, later sowings were taken up.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 8 (iv) (a) 80' × 18' (b) 74' × 12' (v) 3' all round. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain yield data. (iv) 1948-1955 (b) Yes. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) No reasons mentioned for low yield.

5. RESULTS :

- (i) 414 lb./ac.
 (ii) 61.4 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	469
2.	444
3.	329
S.E./mean	= 21.7 lb./ac.

Crop :- Jowar

Ref :- Ms. 51 (4)/50 (57)/49 (6)/48 (24)

Site :- Agri. Res. Stn. Hagari.

Type :- 'M'.

Object :—To find out whether the application of Super induces the earliness in maturity of cotton and jowar.

1. BASAL CONDITIONS :

(i) (a) Jowar—Cotton. (b) Cotton Western I. (c) As per treatments. (ii) (a) Deep black cotton soils of 3' depth. (b) Refer soil analysis, Hagari. (iii) 19.10.51 (iv) (a) Working blade harrow 3 times. (b) Drill sowing (c) 5 lb./ac. (d) 18" apart (e) N.A. (v) None. (vi) M-47-3 ; Early improved (vii) Rainfed (viii) When the crop was one month old danties were worked and line weeding was also done. 2nd and 3rd danties were worked within an interval of a fortnight (ix) 0.99" (19.10.51 to 17.3.52) (x) 17.3.1952.

2. TREATMENTS :

1. 30 lb. P₂O₅/ac. as Super.
2. 30 lb. N/ac. as F.Y.M.
3. No manure.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 8 (iv) (a) 80'×18'. (b) 74'×12' (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Growth very moderate. (ii) No pests and diseases. (iii) Germination ; general stand ; date of flowering and yield of grain (iv) (a) 1948-49 to 1956-57. (b) Yes. (c) N.A. (v) (a) None (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 297.9 lb./ac.
- (ii) 58.98 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. yield of grain in lb./ac.

Treatment.	Ay. yield.
1.	255.2
2.	377.6
3.	260.9
S.E./mean	=20.85 lb./ac.

Crop :- Jowar

Ref :- Ms. 52 (16)/51 (4)/50 (57)/49 (6)/48 (24)

Site :- Agri. Res. Stn. Hagari.

Type :- 'M'.

Object :—To find out whether the application of Super induces the earliness in maturity of cotton and jowar.

1. BASAL CONDITIONS :

(i) (a) Jowar — Cotton (b) Cotton (Western I) (c) As per treatments. (ii) (a) Deep black cotton soil of 3' depth. (b) Refer soil analysis, Hagari (iii) 16.10.52 (iv) (a) N.A. (b) Seed-drill. The blade harrow is worked to cover the seeds (c) 5 lb./ac. (d) 18" apart. (e) N.A. (v) None (vi) M-47-3 jowar ; Early improved (vii) Rainfed (viii) Working blade harrow 3 times. When the crop was one month old, danties were worked and line weeding was also done. 2nd and 3rd danties were worked within an interval of a fortnight (ix) 1.05" (16.10.52 to 28.2.53) (x) 28.2.1953.

2. TREATMENTS ;

1. 30 lb. P₂O₅/as Super.
2. 30 lb. N/ac. as F.Y.M.
3. No manure.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 8 (iv) (a) 80'×18' (b) 74'×12'. (v) 3' all round (vi) Yes.

4. GENERAL :

(i) Growth poor and yields about average due to bad seasonal conditions. (ii) No pests and diseases. (iii) Germination ; general stand of the crop ; date of flowering and yield of grain. (iv) (a) 1948-49 to 1956-57 ; (b) Yes. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 405 lb./ac.
 (ii) 51.6 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield.
1.	426
2.	431
3.	359
S.E./mean	= 18.3 lb./ac.

Crop :- Jowar

Ref :- Ms. 53(12)/52 (16)/51 (4)/50 (57) 49 (6)/48 (24)

Site :- Agri. Res. Stn. Hagari.

Type :- 'M'

Object :- To find out whether the application of Super induces the earliness in maturity of cotton and jowar.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton (b) Cotton. (c) As per treatments (ii) (a) Deep black cotton soils of 3' depth. (b) Refer soil analysis Hagari (iii) 11.10.53. (iv) (a) Working blade harrow 3 times (b) Drill sowing (c) 5 lb./ac. (d) 18" apart (e) N.A. (v) Nil (vi) M-47-3 Jowar (vii) Unirrigated. (viii) When the crop was one month old, danties were worked and line weeding was done. 2nd and 3rd danties were worked within an interval of a fortnight. (ix) 4.97" (11.10.53 to 26.2.54) (x) 26.2.1954

2. TREATMENTS :

- 30 lb. P_2O_5 /ac as Super.
- 30 lb. N/ac. as F.Y.M.
- No manure.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 8 (iv) (a) 80'×18' (b) 74'×12' (v) 3' all round (vi) Yes.

4. GENERAL :

(i) Fair (ii) Nil (iii) Germination, stand, date of flowering and grain yield. (iv) (a) 1948—1957 (b) Yes (c) N.A. (v) N.A. (vi) No. (vii) Out of the 6 seasons, P_2O_5 has induced earliness in the maturity of Jowar by about 3 days. In this tract of precarious and ill distributed rainfall, results may not be obtained uniformly.

5. RESULTS :

- (i) 570 lb./ac.
 (ii) 140 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	602
2.	641
3.	467
S.E./mean	=49.3 lb./ac.

Crop :- Jowar (Rabi).

Ref :- Ms. 51 (41).

Site :- Agri. Res. Stn. Kaladgi.

Type :- 'M'

Object :- To study the effect of different doses of N and P_2O_5 alone and in combination.

1. BASAL CONDITIONS :

(i) (a) Jowar—Cotton. (b) N.A. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis Kaladgi. (iii) 29.9.1951 (iv) (a) 2 blade harrowings. (b) Drilled, (c) 4 lb./ac. (d) 18" (e) N.A. (v) Nil. (vi) M-35-1 Medium. (vii) Unirrigated. (viii) Harrowing twice. (ix) 9.02" (29.9.1951 to 17.2.1952. (x) 17.2.1952

2. TREATMENTS :

All combinations of (1); (2)& (3).

- (1) 4 levels of N : $N_0=0$, $N_1=10$ lb./ac., $N_2=20$ lb./ac., $N_3=30$ lb./ac.
 (2) 4 levels of P_2O_5 : $P_0=0$, $P_1=10$ lb./ac., $P_2=20$ lb./ac., $P_3=30$ lb./ac.
 (3) 2 levels of F.Y.M. : $F_0=0$ C.L./ac., $F_1=5$ C.L./ac.

F.Y.M. applied on 30.8.1951.

N as G.N.C. applied on 17.9.1951.

P_2O_5 as Super applied on 29.9.1951.

3. DESIGN :

(i) $2 \times 4 \times 4$ Fact. in R.B.D. (ii) (a) 32 (b) N.A. (iii) 2 (iv) (a) $19\frac{1}{2}' \times 36'$ (b) $16\frac{1}{2}' \times 33'$ (v) $1\frac{1}{2}'$ all round
 (vi) Yes.

4. GENERAL :

(i) Germination satisfactory. Afterwards the crop was gappy due to grasshopper attack, borer troubles. scanty or no rainfall after sowing; crop was severely stunted. (ii) Grass hopper attack, borer attack. No control measures taken. (iii) Grain yield data. (iv) (a) 1951-1957 (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Bad seasonal conditions. (vii) Nil.

5. RESULTS :

- (i) 185 lb./ac.
 (ii) 54.7 lb./ac.
 (iii) Main effects and interactions are not significant.
 (iv) Av. yield of grain in lb/ac.

	N_0	N_1	N_2	N_3	Mean	P_0	P_1	P_2	P_3
F_0	201	173	176	118	185	170	211	163	194
F_1	200	178	178	185	185	157	206	197	181
Mean.	200	176	177	186	185	164	208	180	188
P_0	184	144	161	165					
P_1	204	184	238	207					
P_2	186	174	128	231					
P_3	228	201	180	142					

S.E. of F.Y.M. marginal mean = 9.7 lb./ac.

S.E. of N or P marginal mean = 13.7 lb./ac.

S.E. of body of (i) $N \times P$ table. = 27.4 lb./ac.

(ii) F.Y.M \times P (or N) table. = 19.4 lb./ac.

Crop :- Jowar (Rabi).

Site :- Agri. Res. Stn. Kaladgi.

Ref :- Ms. 52 (96).

Type :- 'M'.

Object :- To study the effect of different doses of N & P_2O_5 alone and in combination.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar. (b) N.A. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Kaladgi. (iii) 15.10.1952. (iv) (a) 2 harrowings. (b) Seed-drill. (c) 4 lb./ac. (d) 18". (e) N.A. (v) Nil. (vi) M-35-1 Jowar; Medium. (vii) Rainfed. (viii) Interculturing. (ix) 3.70" (15.10.1952 to 22.2.1953) (x) 22.2.1953.

2. TREATMENTS :

All combinations of (1), (2) & (3).

(1) 4 levels of N : $N_0=0$, $N_1=10$ lb./ac., $N_2=20$ lb./ac., $N_3=30$ lb./ac.

(2) 4 levels of P_2O_5 : $P_0=0$, $P_1=10$ lb./ac., $P_2=20$ lb./ac., $P_3=30$ lb./ac.

(3) 2 levels of F.Y.M. : $F_0=0$ C.L./ac., $F_1=5$ C.L./ac.

F.Y.M. on 12.10.1952.

N as G.N.C. on 1, 3.10.1952. broadcast.

P_2O_5 as Super on 1.10.1952.

3. DESIGN :

(i) $2 \times 4 \times 4$ Fact. in R.B.D. (ii) (a) 32. (b) N.A. (iii) 3 (iv) (a) $36' \times 36'$. (b) $33' \times 33'$ (v) $1\frac{1}{2}'$ all round. (vi) Yes.

4. GENERAL :

(i) Germination satisfactory. Death of seedlings due to some kind of worms. Crop growth not progressive due to borer attack. Scanty rainfall. (ii) Borer attack to a little extent. No control measures taken. (iii) Grain yield data. (iv) (a) 1951-1957. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 295 lb./ac.
 (ii) 52.8 lb./ac.
 (iii) Main effect of F.Y.M. and interaction NP are significant. Others are not significant.
 (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean.	P ₀	P ₁	P ₂	P ₃
F ₀	310	260	283	281	283	274	269	299	292
F ₁	291	305	310	318	306	303	304	309	308
Mean.	301	283	297	299	295	288	287	304	300
P ₀	275	287	281	311					
P ₁	277	295	245	330					
P ₂	331	275	322	290					
P ₃	319	274	339	267					

S.E. of N or P marginal mean. = 10.8 lb./ac.
 S.E. of F.Y.M. marginal mean. = 7.6 lb./ac.
 S.E. of F.Y.M. \times N (or P) table. = 15.2 lb./ac.
 S.E. of N \times P table. = 21.6 lb./ac.

Crop :- Jowar (Rabi).

Site :- Agri. Res. Stn. Kaladgi.

Ref :- Ms. 53 (147).

Type :- 'M'.

Object :- To study the effect of different doses of N & P₂O₅ alone & in combination.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar. (b) Cotton. (c) As per treatments. (ii) (a) Deep black soil. (b) Refer soil analysis, Kaladgi (iii) 20.10.1953. (iv) (a) 2 ploughings (b) Seed-drill (c) 4 lb./ac. (d) 18" (e) N.A. (v) Nil. (vi) M-35-1 Medium. (vii) Rainfed. (viii) Interculturing. (ix) 11.67" (20.10.53 to 19.3.1954). (x) 19.3.1954.

2. TREATMENTS :

All combinations of (1), (2) & (3).

(1) 4 levels of N : N=0, N₁=10 lb./ac., N₂=20 lb./ac., N₃=30 lb./ac.

(2) 4 levels of P₂O₅ : P₀=0, P₁=10 lb./ac., P₂=20 lb./ac., P₃=30 lb./ac.

(3) 2 levels of F.Y.M. : F₀=0 C.L./ac., F₁=5 C.L./ac.

F.Y.M. on 11.8.53.

'N' as G.N.C. on 26.9.53. broadcasted.

P₂O₅ as Super on 26.9.1953.

3. DESIGN :

(i) $2 \times 4 \times 4$ Fact. in R.B.D. (ii) (a) 32 (b) N.A. (iii) 2 (iv) (a) $19\frac{1}{2}' \times 36'$ (b) $16\frac{1}{2}' \times 33'$ (v) $1\frac{1}{2}'$ all round. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield data. (iv) (a) 1951-1957. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 901 lb./ac.
(ii) 123.8 lb./ac.
(iii) Main effect of F.Y.M. is highly significant. other effects and interactions are not significant.
(iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean.	P ₀	P ₁	P ₂	P ₃
F ₀	784	875	859	853	843	841	817	841	876
F ₁	985	990	966	896	959	897	903	971	1066
Mean.	884	933	913	874	901	869	860	905	
P ₀	785	920	945	827					
P ₁	783	900	817	940					
P ₂	970	883	960	813					
P ₃	1000	1027	927	917					

- S.E. of N or P marginal mean. =31.0 lb./ac.
S.E. of F.Y.M. marginal mean. =21.9 „
S.E. of F.Y.M. × N (or P) table. =43.8 „
S.E. of N × P table. =61.9 „

Crop :- Jowar (Rabi).

Site :- Agri. Res. Stn. Kaladgi.

Ref :- Ms. 51 (43).

Type :- 'M'.

Object :- To study the effect of rare elements on soil.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Kaladgi (iii) 29.9.1951. (iv) (a) 2 harrowings. (b) Seed-drill. (c) 4 lb./ac. (d) 18". (e) N.A. (v) Nil. (vi) M-35-1 ; Medium. (vii) Unirrigated. (viii) Two interculturings (ix) 9.02" (29.9.51 to 17.2.1952) (x) 17.2.1952.

2. TREATMENTS :

- No manure.
 - 10 lb. Zn. Sul./ac.
 - 20 lb. Zn. Sul./ac.
- Zn. sul. applied by spreading on 4.10.1951.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 8 (iv) (a) N.A. (b) $\frac{1}{2}$ gunta = 1/120 th ac. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Germination satisfactory. Afterwards crop became gappy. Grasshopper attack and borer attack. Scanty rainfall adversely affected the crop. Crop was much stunted. (ii) Grass hopper and borer attack. No control measures taken. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Bad seasonal conditions. (vii) Nil.

5. RESULTS :

- (i) 61.57 lb./ac.
(ii) 35.32 lb./ac.
(iii) The differences in yield due to treatments are not significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	59.53
2.	60.94
3.	64.22
S.E./mean.	=12.49 lb./ac.

Crop Jowar.

Ref :- Ms. 52 (116).

Site :- Agri. Res. Stn. Saundatti.

Type :- 'M'.

Object :- To study the N, P₂O₅ and F.Y.M. requirements of Jowar.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Saundatti. (iii) 19, 20.7.52. (iv) (a) Harrowing. (b) Drill sowing. (c) 6 lb./ac. (d) 12" between rows. 6"-8" between plants. (e) N.A. (v) Nil. (vi) Fulgar white ; Medium. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 17.74" (19.7.52 to 28.12.52) (x) 27, 28.12.52.

2. TREATMENTS :

All combinations of (1), (2) & (3)

- (1) 2 levels of F.Y.M. : F₀=0 C.L./ac., F₁=5 C.L./ac.
 (2) 4 levels of N. : N₀=0, N₁=10 lb./ac., N₂=20 lb./ac., N₃=30 lb./ac.
 (3) 4 levels of P₂O₅ : P₀=0, P₁=10 lb./ac., P₂=20 lb./ac., P₃=30 lb./ac.

F.Y.M. applied on 2.7.52.

N as G.N.C. and P₂O₅ as Super applied on 12,13.7.1952.

3. DESIGN :

- (i) 2×4×4 Fact in R.B.D. (ii) (a) 32 (b) N.A. (iii) 3 (iv) (a) N.A. (b) 51'-10"×21'. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Noticeable damage was done by grasshoppers and stem borers. No control measures taken. (iii) Grain yield data. (iv) (a) 1951-1956. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 519 lb./ac.
 (ii) 144 lb./ac.
 (iii) F.Y.M. effect is highly significant, while N, P₂O₅ effects are significant. Interactions are not significant.
 (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	P ₀	P ₁	P ₂	P ₃
F ₀	469	492	414	523	475	411	429	597	460
F ₁	489	490	597	677	564	513	572	552	617
Mean.	479	491	506	600	519	462	501	575	539
P ₀	433	443	434	537					
P ₁	532	479	453	539					
P ₂	539	539	512	709					
P ₃	513	505	624	614					

S.E. of the marginal mean :

- (1) N or P =29.50 lb./ac.
 (2) F.Y.M. =20.86 lb./ac.

S.E. of the body of the table :

- (1) F.Y.M.×N (or P) =41.73 lb./ac.
 (2) N×P =59.00 lb./ac.

Crop :- Jowar.

Ref :- Ms. 53(163).

Site :- Agri. Res. Stn. Saundatti.

Type :- 'M'

Object :- To study the N and P₂O₅ requirements of Kharif Jowar.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black (b) Refer soil analysis, Saundatti. (iii) 18, 19.7.1953. (iv) (a) Harrowing. (b) Drill sowing. (c) 6 lb./ac. (d) 12" between rows ; 6"-8" between plants. (e) N.A. (v) Nil. (vi) Fulgar white ; Medium. (vii) Rainfed. (viii) Weeding, interculturing. (ix) 27.66" (18.7.53 to 13.1.1954) (x) 13.1.54.

2. TREATMENTS :

All combinations of (1), (2) & (3)

- (1) 2 levels of F.Y.M. : $F_0=0, F_1=5$ C.L./ac.
 (2) 4 levels of N : $N_0=0, N_1=10$ lb./ac, $N_2=20$ lb./ac. & $N_3=30$ lb./ac,
 (3) 4 levels of P_2O_5 : $P_0=0, P_1=10$ lb./ac., $P_2=20$ lb./ac. & $P_3=30$ lb./ac.

F.Y.M. applied on 11,13.6.1953.

N as G N.C. and P_2O_5 as Super on 18,19.7.1953.

3. DESIGN :

- (i) $2 \times 4 \times 4$ Fact. in R.B.D. (ii) (a) 32 (b) N.A. (iii) 3 (iv) (a) N.A. (b) $51'-10'' \times 21'$. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Normal. Rainfall received this year was the heaviest ever received. The crop was slightly affected by the excess amount of moisture. (ii) Noticeable damage was done to this crop by grass hoppers and stem borers. No control measures taken. (iii) Grain yield data. (iv) (a) 1951-56. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 613 lb./ac.
 (ii) 291 lb./ac.
 (iii) F.Y.M. effect is highly significant. N effect is significant while all other effects are not significant.
 (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	Mean.	P_0	P_1	P_2	P_3
F_0	437	499	485	657	519	555	423	515	585
F_1	619	569	760	876	706	774	627	621	803
Mean.	528	534	623	765	613	665	525	568	694
P_0	437	496	415	729					
P_1	668	421	485	563					
P_2	613	532	576	771					
P_3	905	651	797	713					

S.E. of marginal mean :

- (i) N or P = 59.4 lb./ac.
 (ii) F.Y.M. = 42.0 lb./ac.

S.E. of the body of the table.

- (i) $N \times P$ = 118.8 lb./ac.
 (ii) F.Y.M. \times N(or P) = 84.0 lb./ac.

Crop :- Jowar.

Site :- Agri. Res. Stn. Saundatti.

Ref :- Ms. 53(164).

Type :- 'M'.

Object :- To study the response to trace elements.

1. BASAL CONDITIONS :

- (i) (a) Jowar-Groundnut. (b) N.A. (c) N.A. (ii) (a) Medium black soil. (b) Refer Soil analysis, Saundatti. (iii) July, 1953. (iv) (a) Harrowing. (b) Drill sowing. (c) 6 lb./ac. (d) Distance between rows 12", between plants 6"-8". (e) N.A. (v) Nil. (vi) Fulgar white ; Medium. (vii) Rainfed. (viii) Weeding. (ix) 28.36" (July 53 to Jan.54). (x) Jan.1954.

2. TREATMENTS :

Index Elements missing.

1. Control (all present)
2. Borax
3. Manganese
4. Magnesium

5. Copper
6. Zinc
7. Cobalt
8. Molybdenum
9. Silicon
10. Iron

Time & method of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 10 (b) N.A. (iii) 2 (iv) (a) N.A. (b) 20'×6' (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1953—1955. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 680 lb./ac.
- (ii) 264 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield
1.	759
2.	907
3.	555
4.	486
5.	691
6.	873
7.	975
8.	555
9.	510
10.	486
S.E./mean	= 187 lb /ac.

Crop :- Jowar.

Ref :- Ms. 49(35).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'M'.

Object :— To study the relative merits of Kulkarni method of manuring vs. local method on Jowar yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clay soil. (c) Refer soil analysis Siruguppa. (iii) 4.8.1949 (iv) (a) Ploughing, levelling, bund forming. (b) to (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated (viii) Weeding. (ix) 23.33" (4.8.1949 to 16.11.1949) (x) 16.11.1949.

2. TREATMENTS :

1. Kulkarni method of manuring.

Bone super at 4 bags/ac. spread on uncropped soil and mixed with surface. Earth was applied with cake at 4 bags/ac. to Jowar plants individually at the heading time.

2. Local method.

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 10 (iv) (a) 59'×36' (b) 47'×27'—6" (v) 6' along length and 4'—3" along breadth (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Crop affected by severe attack of shoot borer in which method (1) suffered very seriously. (iii) Grain yield. (iv) (a) No (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Low yield may be due to severe attack of borer. Raw data N.A.

5. RESULTS :

- (i) 242 lb./ac.
- (ii) 140 lb./ac.
- (iii) The difference in yield due to treatments is significant. The local method is superior
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	105
2.	378
S E. /mean.	=44.4 lb./ac.

Crop :- Jowar.

Ref :- Ms. 49(36).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'M'

Object :- To study the effect of radio active substance Alphanon on growth and yield of Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cotton. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) 2.6.1949. (vi) (a) Ploughing, levelling, bund forming. (b) to (e) N.A. (v) F.Y.M. at 10 C.L./ac. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) 27.77" (2.6.49 to 1.11.49) (x) 1.11.1949.

2. TREATMENTS :

1. Control (No Alphanon).
2. 5 lb./ac. Alphanon.
3. 10 lb./ac. Alphanon.
4. 20 lb./ac. Alphanon.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 40'×18' (b) 36½'×12' (v) 1'—10" along length and 3' along breadth (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Grain yield. (iv) (a) No (b) No (c) No. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS ;

- (i) 2027 lb./ac.
- (ii) 132.3 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2220
2.	1800
3.	2020
4.	2070
S.E./mean.	=54 lb./ac.

Crop :- Jowar.

Ref :- Ms. 53 (51)

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'M'

Object :- To find out the optimum dose of G.M. to cotton and Jowar when sown in rotation in Thungabhadra ayacut.

1. BASAL CONDITIONS :

(i) (a) Jowar—Cotton—Jowar (b) Cotton (c) As per treatment (ii) (a) Heavy black clayey soil (b) Refer soil analysis Siruguppa (iii) 10.10.53 (iv) (a) Ploughing, levelling, bund forming etc. (b) to (e) N.A. (v) As per treatments (vi) M. 21-2 (vii) Irrigated (viii) Weeding once (ix) 2.80" (10.10.53 to 12.3.1954) (x) 12.3.1954.

2. TREATMENTS :

1. Control.
2. In situ (Growing G.M. of Dhaincha and ploughing in situ)
3. 2500 lb./ac. G.M. of Dhaincha brought from outside
4. 5000 " " " "
5. 7500 " " " "
6. 10000 " " " "

Super at 200 lb./ac. was applied in the plots where G.M. of Dhaincha to be grown, by placement method on 23.5.53. Dhaincha sown in "situ" plots and out side on 25.5.53 at a seed rate of 40 lb./ac. G.M. crop was harvested on 11.8.53 both in "in situ" plots and out side. G.M. was brought from out side and ploughed in plots 3 to 6 as per treatments on 12.8.53. The average yield of G.M. in "in situ" plots was 12060 lb./ac. Super at 200 lb./ac. was applied in plough furrows to all the treatments including control and except "in situ" plots, on 29.9.1953.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a) 47'×28' (b) 44'×25' (v) 1½' all round. (vi) Yes.

4. GENERAL :

- (i) Crop in "in situ" plots was healthy and vigorous. The stand of crop in other plots was in general poor.
 (ii) Bird damage was during ripening stages of grain. (iii) Grain yield. (iv) (a) 1951-N.A. (b) Yes. (c) N.A.
 (v) (a) & (b) Nil. (vi, No (vii) Nil.

5. RESULTS :

- (i) 140 lb./ac.
 (ii) 61.8 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	86
2.	242
3.	97
4.	109
5.	148
6.	161
S.E /mean	=27.3 lb /ac.

Crop :- Jowar.

Site:- Agri. Res. Stn. Bailhongal.

Ref. :- Ms. 52 (146)

Type :- 'C'.

Object :-To study the economic seed-rate and spacing for milograin and fodder.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Medium black (b) Refer soil analysis, Bailhongal (iii) 20.7.1952
 (iv) (a) Once iron ploughing and 3 times harrowing. (b) Drilling. (c) & (d) As per treatments. (e) N.A.
 (v) 5 C.L. of F.Y.M./ac. broadcast. (vi) D.D. Milo (Early) (vii) Unirrigated. (viii) Interculturings and one weeding. (ix) N.A. (x) 13.12.52.

2. TREATMENTS :

Main plot treatments :

Spacings : $S_1=12''$; $S_2=18''$

Sub-plot treatments :

Seed rates : $R_1=6$ lb./ac. ; $R_2=8$ lb./ac.

3. DESIGN :

- (i) Split plot (ii) (a) 2 main plots/block, 2 sub plots/main plot. (b) N.A. (iii) 4 (iv) (a) $48' \times 12'$ & $48' \times 12\frac{1}{2}'$
 (b) $42' \times 10'$ (v) One row on each side and 3' at the ends. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Nil (iii) Grain yield data. (iv) (a) 1952—1954. (b) No (c) N.A. (v) (a), (b) N.A.
 (vi) & (vii) Nil.

5. RESULTS :

- (i) 1924 lb./ac.
 (ii) (a) 561.5 lb./ac.
 (b) 227.4 lb./ac.
 (iii) The differences in yield due to treatment(s) (spacing & seed-rate) are not significant. Interaction is not significant.
 (iv) Av. yield of grain in lb./ac.

	R_1	R_2	Mean
S_1	2284	1918	2101
S_2	1677	1816	1746
Mean	1980	1867	1924

S.E. of the differences between two

1. main-plot treatment means. =280.7 lb./ac.
 2. sub-plot treatment means. =113.7 lb./ac.
 3. sub-plot treatment means at the same level of main plot treatment =163.8 lb./ac.
 4. main-plot treatment means at the same level of sub-plot treatment. =302.9 lb./ac.

Crop :- Jowar.

Ref :- Ms. 53 (96)

Site :- Agri. Res. Stn. Bailhongal.

Type :- 'C'

Object :- To find out economic seedrate and spacing for jowar crop.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Groundnut (c) 4 C.L. of F.Y.M./ac. (ii) (a) Medium black. (b) Refer soil analysis Bailhongal (iii) 19.7.53 (iv) (a) One iron ploughing and three times harrowing (b) N.A. (c) & (d) As per treatments (e) N.A. (v) 5 C.L. of F.Y.M./ac. broadcast during May and June. (vi) D.D. Millo (Early) (vii) Unirrigated (viii) Two interculturings and one weeding (ix) 22.88" (19.7.53 to 21.12.1953) (x) 21.12.1953.

2. TREATMENTS :

Main plot treatments :-

Spacings : $S_1=12''$; $S_2=18''$

Sub-plot treatments :-

Seedrates : $R_1=6$ lb./ac. ; $R_2=8$ lb./ac.

3. DESIGN :

(i) Split plot (ii) (a) 2 main plots/block and 2 sub-plots/main plot. (b) N.A. (iii) 4 (iv) (a) $48' \times 12'$ and $48' \times 12\frac{1}{2}'$ (b) $42' \times 10'$ (v) 2 border rows on each side. (vi) Yes.

4. GENERAL :

(i) Normal (ii) Nil (iii) Height of plant, weight of grain per earhead, Dimensions of earhead etc. (iv) (a) 1952-1955 (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) No (vii) None.

5. RESULTS :

- (i) 638 lb./ac.
 (ii) (a) = 175.4 lb./ac.
 (b) = 92.3 lb./ac.
 (iii) Spacings, Seedrates and their interaction are not significant.
 (iv) Av. yield of grain in lb./ac.

	R_1	R_2	Mean
S_1	684	711	698
S_2	536	620	578
Mean	610	666	638

S.E. of the marginal mean of spacing = 62.0 lb./ac.
 " " " " of seedrate = 32.6 "
 S.E. of the diff. of two means in the same column = 99.0 "
 S.E. of the diff. of two means in the same row = 65.1 "

Crop :- Jowar (Rabi).

Ref :- Ms. 52 (127).

Site :- Agri. Res. Stn. Bijapur.

Type :- 'C'.

Object :- To find out a suitable spacing and an economic seed-rate to give increased yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) Nil. (ii) (a) Medium black soil. (b) Refer soil analysis, Bijapur. (iii) September 1952. (iv) (a) Ploughing once in three years. (b) Drilled. (c) & (d) As per treatments. (e)-(v) Nil. (vi) M-35-1 Jowar (Early) (vii) Unirrigated. (viii) Weeding, interculturings. (ix) 4.65" (September 52 to Feb., 1953) (x) February, 1953.

2. TREATMENTS :

Main plot treatments :-

Spacings : $S_1=12''$, $S_2=15''$, $S_3=18''$

Sub-plot treatments:-

Seed rates : $R_1=3$ lb./ac., $R_2=4$ lb./ac., $R_3=5$ lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) 36' × 19' or 20' or 21' according as the spacing is 12" or 15" or 18" (b) 30' × 15' (v) 3' along length, 2' or 2½' or 3' along breadth. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1948-1952. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) Nil. (vii) Low yields may be due to famine conditions.

5. RESULTS :

- (i) 413 lb./ac.
 (ii) (a) 265 lb./ac.
 (b) 190 lb./ac.
 (iii) None of the effects is significant.
 (iv) Av. grain yield in lb./ac.

	R ₁	R ₂	R ₃	Mean
S ₁	454	371	597	474
S ₂	258	354	319	310
S ₃	382	510	472	455
Mean	365	412	463	413

S.E. of the differences between two :

- main plot treatment means = 88.4 lb./ac.
- sub-plot treatment means = 63.4 lb./ac.
- sub-plot treatment means at the same level of main plot treatment = 109.8 lb./ac.
- main plot treatment means at the same level of sub-plot treatment = 125.9 lb./ac.

Crop :- Jowar (Kharif)
 Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 48(14)
 Type :- 'C'

Object :— To find out the most suitable distance between rows and seed-rates with a view to obtain maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cotton (c) N.A. (ii) (a) Medium black soil (b) Refer soil analysis Dharwar. (iii) 30.7.48 (iv) (a) Harrowing (b) Drilling (c) & (d) As per treatments. (e)— (v) F.Y.M. at 5 C.L./ac. on 26.6.1948 and harrowed to mix properly. (vi) Nandyal Jowar (Early) (vii) Unirrigated (viii) Weeding, interculturing. (ix) 26.68" (30.7.1948 to 23.12.1948) (x) 23.12.1948.

2. TREATMENTS :

3 Main plot treatments :—

Spacings : S₁=12", S₂=15", S₃=18"

3 Sub-plot treatments :—

Seed-rates : R₁=4 lb./ac, R₂=6 lb./ac, R₃=8 lb./ac.

3. DESIGN :

(i) Split plot (ii) (a) 3 main plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) 50' × 38' ; 50' × 40', 50' × 42' (b) 40' × 30'. (v) 5' along length and 4', 5' and 6' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Slight attack of Aphis (iii) Grain yield data (iv) (a) 1948—50 (b) No (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1377 lb./ac.
 (ii) (a) 165.0 lb./ac.
 (b) 90.2 lb./ac.
 (iii) None of the effects is significant.

(iv) Av. yield of grain in lb./ac. :-

	R ₁	R ₂	R ₃	Mean.
S ₁	1420	1310	1332	1354
S ₂	1472	1312	1347	1377
S ₃	1503	1468	1233	1401
Mean.	1465	1363	1304	1377

S.E. of the difference between two

- (1) main plot treatment means = 55.0 lb./ac.
 (2) sub plot treatment means = 63.4 lb./ac.
 (3) sub plot treatment means at the same level of main plot treatment = 109.8 lb./ac.
 (4) main plot treatment means at the same level of sub plot treatment = 105.2 lb./ac.

Crop :- Jowar (Kharif)
 Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 49(19).
 Type :- 'C'

Object :- To find out the most suitable distance between rows and seed-rates with a view to obtain maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cotton (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar (iii) 23.7.49 (iv) (a) Frequent harrowings (b) Drilling (c) & (d) As per treatments. (e) - (v) F.Y.M. at 5 C.L./ac. spread and harrowed. Time of application N.A. (vi) Nandyal Jowar (early). (vii) Unirrigated. (viii) Interculturing twice. (ix) 20.44" (23.7.1949 to 22.12.1949) (x) 21,22.12.1949.

2. TREATMENTS :

Main plot treatments :

3 Spacings :- S₁=12" ; S₂=15" , S₃=18".

Sub-plot treatments :

3 Seed-rates :- R₁=4 lb./ac., R₂=6 lb./ac, R₃=8 lb./ac.

3. DESIGN :

(i) Split plot (ii) (a) 3 mainplots/block, 3 sub-plots/main plot, (b) N.A. (iii) 6 (iv) (a) 50'×38', 50'×40', 50'×42' (b) 40'×30' (v) 5' along length ; 4', 5' and 6' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Height of earheads, grain yield. (iv) (a) 1948-1950 (b) No. (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1466 lb./ac.
 (ii) (a) 200.5 lb./ac.
 (b) 166.9 lb./ac.
 (iii) Only Seed-rate effect is highly significant.
 (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	Mean.
S ₁	1603	1567	1375	1515
S ₂	1531	1403	1289	1408
S ₃	1603	1504	1315	1474
Mean.	1579	1491	1326	1466

S.E. of the difference between two		
(1) main plot treatment means.	=	66.8 lb./ac.
(2) sub-plot treatment means	=	55.7 lb./ac.
(3) sub-plot treatment means at the same level of main plot treatment	=	96.4 „ „
(4) main plot treatment means at the same level of sub-plot treatment.	=	103.2 lb./ac.

Crop :- Jowar.(Kharif)
Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 50(42)
Type :- 'C'.

Object :- To find out the most suitable distance between rows combined with proper seed rate with a view to get maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cotton (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar (iii) 2.8.1950. (iv) (a) Harrowing. (b) to (e) N.A. (v) 5 C.L./ac. of F.Y.M. spread and mixed with soil, then harrowed on 11.6.1950. (vi) Nandyal Jowar (early) (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 37.14" (2.8.50 to 9.1.1951.) (x) 9.1.1951.

2. TREATMENTS :

Main plot treatments :-

3 Spacings :- $S_1 = 12''$; $S_2 = 15''$; $S_3 = 18''$

Sub-plot treatments :-

3 Seed rates :- $R_1 = 4$ lb/ac. ; $R_2 = 6$ lb/ac. ; $R_3 = 8$ lb/ac.

3. DESIGN :

(i) Split plot (ii) (a) 3 main plots/block, 3 sub-plots / main plot. (b) N.A. (iii) 6 (iv) (a) $50' \times 38'$, $50' \times 40'$ $50' \times 42'$ (b) $40' \times 30'$. (v) 5' along length, 4', 5' and 6' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1948—1950 (b) No (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 917 lb/ac.

(ii) (a) 107.2 lb/ac.

(b) 130.5 lb/ac.

(iii) Only seed rate effect is significant.

(iv) Av. yield of grain in lb/ac. :-

	R_1	R_2	R_3	Mean
S_1	955	906	908	923
S_2	1000	898	800	899
S_3	982	966	842	930
Mean	979	923	850	917

S.E. of the difference between two.

(1) main plot treatment means. = 35.7 lb/ac.

(2) sub-plot treatment means. = 43.5 lb/ac.

(3) sub-plot treatment means at the same level of main plot treatment = 75.3 lb/ac.

(4) main plot treatment means at the same level of sub-plot treatment = 71.2 lb/ac.

Crop :- Jowar. (Kharif).
Site : Agri. Res. Stn. Dharwar.

Ref :- Ms. 51 (63).
Type :- 'C'.

Object :- To find-out most suitable spacing and seed-rate combination that will give high yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 14.7.1951. (iv) (a) 4 harrowings. (b) Drilling. (c) & (d) As per treatments. (e)—(v) F.Y.M. was applied at 5 C.L./ac. on 10.6.1951. (vi) Nandyal Jowar (early) : (vii) Unirrigated. (viii) Two interculturings. (ix) 30.53" (14.7.51 to 21.12.1951.) (x) 21.12.1951.

2. TREATMENTS :

Main plot treatments :-

3 Spacings : $S_1=18''$, $S_2=24''$, $S_3=30''$.

Sub-plot treatments :-

3 Seed-rates : $R_1=4$ lb./ac., $R_2=6$ lb./ac., $R_3=8$ lb./ac.

3. DESIGN :

(i) Split plot (ii) (a) 3 main plots/block, 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) $50' \times 36'$ for spacing $18''$; $59' \times 38'$ for spacing $24''$; $50' \times 40'$ for spacing $30''$. (b) $40' \times 30'$ (v) 5' along length and 5' along breadth (vi) Yes.

4. GENERAL :

(i) Lodging was noticed on 16.11.1951. (ii) Nil. (iii) Grain yield data. (iv) (a) 1951—1954. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1666 lb./ac.
(ii) (a) 167.5 lb./ac.
(b) 114.4 lb./ac.
(iii) Only Seed rate effect is highly significant.
(iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean.
S_1	1727	1689	1634	1684
S_2	1838	1685	1614	1712
S_3	1778	1471	1559	1602
Mean.	1781	1615	1602	1666

S.E. of the difference between two

- (1) main plot treatment means = 55.8 lb./ac.
(2) sub-plot treatment means = 38.0 lb./ac.
(3) sub-plot treatment means at the same level of main plot treatment = 65.8 lb./ac.
(4) main-plot treatment means at the same level of sub-plot treatment = 77.5 lb./ac.

Crop :- Jowar (Kharif).
Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 52(89).
Type :- 'C'.

Object :- To find out the most suitable spacing and seed-rate combination that will give high yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cotton. (c) Nil. (ii) (a) Medium black soil. (b) Refer soil analysis Dharwar. (iii) 28.7.1952. (iv) (a) N.A. (b) Sowing by drilling, with different drills. (c) & (d) As per treatments. (e)—(v) F.Y.M. at 5 C.L./ac. was applied on 6-6-1952. (vi) Nandyal Jowar. (early) (vii) Unirrigated. (viii) Three interculturings. (ix) N.A. (x) 15.12.52.

2. TREATMENTS :

Main plot treatments :—

3 Spacings :— $S_1=18''$, $S_2=24''$, $S_3=30''$.

Sub-plot treatments :—

3 Seed-rates :— $R_1=4$ lb./ac., $R_2=6$ lb./ac., $R_3=8$ lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) $50' \times 36'$ for $18''$ spacing ; $50' \times 38'$ for $24''$ spacing ; $50' \times 40'$ for $30''$ spacing. (b) $40' \times 36'$. (v) $5'$ along length ; $3'$, $4'$ and $5'$ respectively along breadth. (vi) Yes.

4. GENERAL :

(i) Germination was excellent. The plants were thinner in wider spacings and higher seed rates. The growth on the whole was good. (ii) Nil. (iii) Grain yield data. (iv) (a) 1951-1955. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1659 lb./ac.

(ii) (a) 110.2 lb./ac.

(b) 124.0 lb./ac.

(iii) Spacings effect is highly significant and seed rate effect is significant, while their interaction (Seed rate \times Spacing) is not significant.

(iv) Av. grain yield in lb./ac.

	R_1	R_2	R_3	Mean
S_1	1762	1710	1658	1710
S_2	1720	1683	1679	1694
S_3	1647	1575	1501	1574
Mean	1710	1656	1613	1659

S.E. of the difference between two.

(1) main plot treatment means. = 36.7 lb./ac.

(2) sub-plot treatment means. = 41.3 lb./ac.

(3) sub-plot treatment means at the same level of main-plot treatment = 71.6 lb./ac.

(4) main plot treatment means at the same level of sub-plot treatment = 69.0 lb./ac.

Crop :-Jowar. (Kharif)

Site :-Agri. Res. Stn. Dharwar.

Ref :-Ms. 53(83)

Type :-'C'.

Object :—To find-out suitable spacing and seed rate combination so as to reap maximum yield.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton (b) Cotton (c) Nil (ii) (a) Medium black soil (b) Refer soil analysis, Dharwar. (iii) 20.7.53 (iv) (a) The plots received 2 harrowings and two interculturings. (b) N.A. (c) and (d) As per treatments. (e) N.A. (v) F.Y.M. at 5 C.L./ac. broadcast on 16-6-53. (vi) Nandyal Jowar (Early) (vii) unirrigated. (viii) Two interculturings. (ix) 36.29" (20.7.53 to 26.12.53) (x) 26.12.53.

2. TREATMENTS :

Main plot treatments :—

3 Spacings : $S_1=18''$, $S_2=24''$, $S_3=30''$.

Sub-plot treatments :—

3 Seed rates : $R_1=4$ lb./ac. ; $R_2=6$ lb./ac. ; $R_3=8$ lb./ac.

3. DESIGN :—

(i) Split plot (ii) (a) 3 main plots/block and 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) $50' \times 36'$,

50'×38' and 50'×40' respectively for 18", 24" and 30" spacings. (b) 40'×30'. (v) 5' along length while 3', 4' or 5' along breadth according to spacings.

4. GENERAL :

(i) Normal growth till flowering and then suffered due to excess of rains. This caused considerable loss of pollens (ii) Slight attack of army worms and stemborers. No control measures taken (iii) Height of the crop and weight of fodder plot (iv) (a) 1951-1956 (b) No (c) N.A. (v) (a), (b) N.A. (vi) No (vii) None.

5. RESULTS :—

- (i) 952 lb./ac.
 (ii) (a) =106.0 lb./ac.
 (b) =124.2 lb./ac.
 (iii) Only seed rate effect is highly significant.
 (iv) Av. grain yield in lb./ac. :—

	R ₁	R ₂	R ₃	Mean
S ₁	1057	932	817	935
S ₂	1222	945	767	978
S ₃	1142	870	814	942
Mean	1140	916	799	952

- S.E. of marginal mean of spacing =25.0 lb./ac.
 S.E. of marginal mean of seed rate =29.3 lb./ac.
 S.E. of difference of two means in the same row =68.1 lb./ac.
 S.E. of difference of two means in the same column =71.6 lb./ac.

Crop :- Jowar (Kharif)

Ref :- Ms. 50 (44).

Site :- Agri. Res. Stn. Dharwar.

Type :- 'C'.

Object :—To study the rotation of cotton and jowar with inter cropping of groundnut with and without super applied to groundnut.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar-Cotton. (b) Cotton. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 31.7.1950 (iv) (a) Ploughings, harrowing (b) Sulphur treated Jowar seeds drilled (c) 4 lb./ac. (d) 18" (e)—(v) 5 C.L. of F.Y.M./ac. was applied uniformly and harrowed on 31.7.1950. (vi) Nandyal Jowar (early) (vii) Unirrigated. (viii) Interculturing, weeding. (ix) 37.14" (31.7.50 to 1.1.1951.) (x) 1.1.1951.

2. TREATMENTS :

- Cotton alone (in 1949)
 - Cotton with one row of Groundnut (in 1949).
 - Cotton with one row of Groundnut (in 1949) with a dose of 50 lb./ac. of P₂O₅ between two cotton rows.
- The effect of these treatments were observed in 1950 on Jowar.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a) 62'×36' (b) 50'×24' (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield data. (iv) (a) 1948 (vitiating) 1950—continued. (b) No (c) N.A. (v) (a) No (b) No. (vi) & (vii) Nil.

5. RESULTS ;

- (i) 1007 lb./ac.
 (ii) 89.8 lb./ac.
 (iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	935
2.	1036
3.	1048
S.E./mean	= 36.7 lb./ac.

Crop :- Jowar. (Kharif).

Ref :- Ms. 51 (65).

Site :- Agri. Res. Stn. Dharwar.

Type :- 'C'.

Object :—To study the rotation of cotton and jowar with intercropping of groundnut with & without Super applied to groundnut.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar. (b) Cotton-Groundnut. (c) As per treatments. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 9.7.1951. (iv) (a) N.A. (b) 18", 3 coultured seed-drill. (c) 4 lb./ac. (d) 18" (e)—(v) F.Y.M. at 5 C.L./ac. applied on 20.6.1951. (vi) Nandyal (early). (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 30.53". (9.7.1951 to 20.12.1951). (x) 20.12.1951.

2. TREATMENTS:

1. Cotton alone.
2. Cotton with one row of Groundnut.
3. Cotton with one row of Groundnut with a dose of 50 lb. P_2O_5 /ac. as Super applied on 13.7.1950. These were the treatments in 1950. The effects of these observed on Jowar in 1951.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a) 62' × 36' (b) 50' × 24'. (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Leaf curl disease on groundnut. Aphis attack on cotton. (iii) Grain yield data. (iv) (a) 1948 (vitiated). 1950—continued. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2017 lb./ac.
- (ii) 235.5 lb./ac.
- (iii) The differences in yield due to treatments are significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1817
2.	2211
3.	2024
S.E./mean	= 96.2 lb./ac.

Crop :- Jowar (Kharif).

Ref :- Ms. 52 (107).

Site :- Agri. Res. Stn. Dharwar.

Type :- 'C'.

Object :—To study the cotton and jowar rotation with intercropping of groundnut in cotton, with and without Super applied to groundnut.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar-Cotton. (b) Cotton-Groundnut. (c) As per treatments. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 18.7.1952. (iv) (a) N.A. (b) Sown with 18"-3 coultured seed-drill. (c) 4 lb./ac. (d) 18" (e) N.A. (v) F.Y.M. applied at 5 C.L./ac. to Jowar. (vi) Jowar Nandyal (Early) (vii) Rainfed. (viii) Two interculturings. (ix) 29.04". (18.7.1952 to 13.11.1952) (x) 13.11.52.

2. TREATMENTS :

1. In 1951 entire cotton was grown.
2. " " cotton+Groundnut was grown.
3. " " " " " and manured with Super at 50 lb./ac. of P_2O_5 on 24.6.1951.

DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a) 62' × 36' (b) 50' × 24'. (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950—continued. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) In 1948 experiment vitiated. As such no experiment on jowar for 1949.

5. RESULTS :

- (i) 2318 lb./ac.
 (ii) 267.8 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2101
2.	2353
3.	2499
S.E./mean	= 109.3 lb./ac.

Crop :- Jowar. (Kharif)

Ref :- Ms. 53 (84).

Site :- Agri. Res. Stn. Dharwar.

Type :- "C".

Object :- To study the residual effect of rotation of cotton and jowar with intercropping of groundnut in cotton, with and without Super applied to groundnut.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar (b) As under treatments (c) Nil. (ii) (a) Medium black soil (b) Refer soil analysis, Dharwar. (iii) 26.7.53 (iv) (a) N.A. (b) Seeds drilled (c) 4 lb./ac. (d) 18" (e) N.A. (v) F.Y.M. at 5 C.L./ac (vi) Nandyal (vii) Unirrigated. (viii) The crop received two interculturings (ix) 36.29" (26.7.1953 to 15.12.1953) (x) 15.12.1953.

2. TREATMENTS :

- Entire cotton in previous season.
- Cotton intercropped in Groundnut in the previous season.
- Cotton+Groundnut+50 lb. P₂O₅/ac. in previous season.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a) 62' × 36' (b) 50' × 24' (v) 6' on all sides (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Slight attack of stemborer. No control measures taken. (iii) Bhusa & raing yield (iv) (a) 1949-continuing (b) Yes. (c) N.A. (v) (a) N.A. (b) Nil (vi) No (vii) Nil.

5. RESULTS :

- (i) 1309 lb./ac.
 (ii) 200.7 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	1273
2.	1328
3.	1325
S.E./mean	= 82.0 lb./ac.

Crop :- Jowar (Rabi).
Site :- Agri. Res. Stn. Kaladgi.

Ref :- Ms. 51(42)
Type :- 'C'.

Object :- To find the effect of different number of harrowings and interculturings.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) N.A. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Kaladgi. (iii) 29.9.51 and 11.10.1951. (iv) (a) As per treatments (b) N.A. (c) N.A. (d) 18". (e) N.A. (v) Nil. (vi) M-35-1 (vii) Unirrigated. (viii) As per treatments. (ix) 9.02" (29.9.1951 to 17.2.1952). (x) 17.2.1952.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 no. of Harrowings viz. $H_1=2$ times ; $H_2=3$ times and $H_3=4$ times.

(2) 4 no. of Interculturings viz. $I_1=Once$ $I_2=2$ times, $I_3=3$ times, $I_4=4$ times.

3. DESIGN :

(i) 3×4 Fact. in R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a) $36' \times 36'$. (b) $33' \times 33'$ (v) $1\frac{1}{2}'$ all round. (vi) Yes.

4. GENERAL :

(i) Germination was satisfactory. Afterwards crop became gappy due to grass-hoppers, scanty rainfall. Crop was much stunted. (ii) Grasshopper attack & borer attack. No control measures taken. (iii) Grain yield data. (iv) (a) 1951-1957. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Bad seasonal conditions. (vii) Nil.

5. RESULTS :

(i) 231 lb./ac.

(ii) 50.9 lb./ac.

(iii) Main effects and the interaction are not significant.

(iv) Av. yield of grain in lb./ac.

	H_1	H_2	H_3	Mean.
I_1	227	197	210	211
I_2	237	225	251	238
I_3	249	238	243	243
I_4	221	240	229	230
Mean	234	225	233	231

S.E. of marginal mean of

(1) Harrowing = 12.7 lb./ac.

(2) Interculturing = 14.7 lb./ac.

S.E. of body of table = 25.4 lb./ac.

Crop :- Jowar (Rabi)
Site :- Agri. Res. Stn. Kaladgi.

Ref :- Ms. 52(97)
Type :- 'C'.

Object :- To find the effect of number of harrowings and interculturings.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) N.A. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Kaladgi. (iii) 16.10.1952. (iv) (a) As per treatments. (b) Seed drilled. (c) 4 lb./ac. (d) 18". (e) N.A. (v) Nil. (vi) Rabi Jowar M-35-1 (vii) Unirrigated. (viii) As per treatments. (ix) 3.70" (16.10.1952 to 23.2.1953) (x) 23.2.1953.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 no. of Harrowings viz. $H_1=2$ times ; $H_2=3$ times ; $H_3=4$ times.

(2) 4 no. of Interculturings viz. $I_1=Once$; $I_2=2$ times ; $I_3=3$ times and $I_4=4$ times.

3. DESIGN :

(i) 3×4 Fact. in R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a) 36'×36' (b) 33'×33'. (v) 1½' all round (vi) Yes.

4. GENERAL :

(i) Germination satisfactory. Death of seedlings due to some kind of worm. Crop growth was not progressing due to scanty rainfall. (ii) Borer attack to a little extent. No control measures taken. (iii) Grain yield data. (iv) (a) 1951-1957. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 112 lb./ac.
 (ii) 47.3 lb./ac.
 (iii) Main effects and interaction are not significant.
 (iv) Av. yield of grain in lb./ac.

	H ₁	H ₂	H ₃	Mean
I ₁	125	94	102	107
I ₂	106	113	92	104
I ₃	133	117	128	126
I ₄	107	110	112	110
Mean	118	109	109	112

S.E. of marginal mean of

(1) Harrowings. =11.8 lb./ac.

(2) Interculturings. =13.6 lb./ac.

S.E. of the body of the table =23.6 lb./ac.

Crop :- Jowar (Rabi).

Site :- Agri. Res. Stn. Kaladgi.

Ref :- Ms. 53 (148).

Type :- 'C'.

Object :- To find the effect of number of harrowings and interculturings.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) Cotton (c) Nil. (ii) (a) Deep black soil. (b) Refer soil analysis Kaladgi (iii) 20.10.1953. (iv) (a) As per treatments. (b) Seed-drill. (c) 4 lb./ac. (d) 18". (e) N.A. (v) Nil. (vi) Rabi Jowar M-35-1. (vii) Rainfed. (viii) As per treatments. (ix) 11.67" (20.10.53 to 21.3.1954) (x) 21.3.1954.

2. TREATMENTS :

All possible combinations of (1) & (2).

(1) 3 no. of harrowings viz. H₁=2 times ; H₂=3 times and H₃=4 times.

(2) 4 no. of interculturings viz. I₁=once ; I₂=2 times ; I₃=3 times and I₄=4 times.

3. DESIGN :

(i) 3×4 Fact. in R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a) 36'×36'. (b) 33'×33'. (v) 1½' all round. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Chikla appeared in mild form in 2nd week of December. (iii) Grain yield data. (iv) (a) 1951-1957. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 630 lb./ac.
 (ii) 85.3 lb./ac.
 (iii) Main effects and interaction are not significant.

(iv) Av. yield of grain in lb./ac.

	H ₁	H ₂	H ₃	Mean.
I ₁	600	569	670	613
I ₂	637	627	574	613
I ₃	671	623	693	662
I ₄	580	645	670	631
Mean.	622	616	652	630

S.E. of marginal mean of

(1) Harrowings. =21.3 lb./ac.

(2) Interculturing. =24.6 lb./ac.

S.E. of the body of the table. =42.7 lb./ac.

Crop :- Jowar (Rabi).

Ref :- Ms. 48 (17).

Site :- Agri. Res. Stn. Nargund.

Type :- 'C'.

Object :-To find the suitable cultural methods for Jowar crop.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton-Wheat. (b) Wheat. (c) N.A. (ii) (a) Karl soil. (b) Refer soil analysis Nargund. (iii) 29, 30.10.1948. (iv) (a) Ploughing, harrowing, (b) Seed-drill. (c) & (d). As per treatments (e) N.A. (v) F.Y.M. @ 5 C.L./ac. time and method of application N.A. (vi) Jowar M. 35-1 (vii) Unirrigated. (viii) As per treatments. (ix) 4.97" (29.10.48 to 1.3.1949.) (x) 1.3.1949.

2. TREATMENTS :

Main plot treatments :-

All possible combinations of (1) & (2).

(1) 2 spacings viz. S₁=14", and S₂=18"(2) 3 interculturings viz. I₁=2 times ; I₂=3 times and I₃=4 times.

Sub plot treatments :-

3 seed rates viz. R₁=4 lb./ac., R₂=6 lb./ac. and R₃=8 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 6 main plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 4. (iv) (a), (b) 52.3'×21'. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) grain yield data. (iv) (a) 1947-1950. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) No reasons given for low yields.

5. RESULTS :

(i) .94 lb./ac.

(ii) (a) 80.14 lb./ac.

(b) 81.82 lb./ac.

(iii) None of the effects is significant.

(iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	Mean	R ₁	R ₂	R ₃
I ₁	166	174	170	156	187	168
I ₂	178	204	191	188	184	201
I ₃	201	243	222	227	183	255
Mean	181	207	194			
R ₁	165	215	190			
R ₂	162	206	184			
R ₃	216	200	208			

S.E. of marginal mean of spacing	=13.36 lb./ac.
S.E. of marginal mean of interculturing	=16.36 lb./ac.
S.E. of marginal mean of seed rate	=16.70 lb./ac.
S.E. of the body of (S×I) table	=23.13 lb./ac.
S.E. of difference of two	
1. R means at the same level of I.	=40.91 lb./ac.
2. I means at the same level of R.	=57.60 lb./ac.
3. R means at the same level of S.	=33.40 lb./ac.
4. S means at the same level of R.	=47.10 lb./ac.

Crop :-Jowar (Rabi).

Site :-Agri. Res. Stn. Nargund.

Ref :-Ms. 49(23).

Type :-'C'.

Object :-To find out the suitable cultural methods for Jowar crop.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton-Wheat. (b) Wheat (c) F.Y.M. at 2.5 ton/ac. (ii) (a) Karl Soil (b) Refer Soil analysis Nargund. (iii) 3.11.1949. (iv) (a) Ploughing, harrowing. (b) Seed drill (c) and (d) As per treatments (e)—(v) F.Y.M. at 5 C.L./ac. Time and method of application N.A. (vi) Jowar-M. 35-1 (vii) Unirrigated. (viii) As per treatments. (ix) 5.68" (3.11.1949 to 22.3.1950) (x) 22.3.1950.

2. TREATMENTS :

Main plot treatments :

All possible combinations of (1) and (2)

(1) 2 spacings viz S₁=14" and S₂=18".(2) 3 interculturings viz I₁=2 times ; I₂=3 times and I₃=4 times.

Sub-plot treatments :

3 seed rates viz. R₁=4 lb./ac. ; R₂=6 lb./ac. and R₃=8 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 6 main plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 4 (iv) (a) (b) 52.3'×21'. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1947-1950 (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) No reason available for low yields.

5. RESULTS :

(i) 172 lb./ac.

(ii) (a) 168.9 lb./ac.

(b) 94.6 lb./ac.

(iii) None of the effects is significant.

(iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	Mean	R ₁	R ₂	R ₃
I ₁	182	265	224	216	237	217
I ₂	147	100	124	99	127	144
I ₃	166	169	168	134	129	240
Mean	165	178	172			
R ₁	137	162	150			
R ₂	146	183	165			
R ₃	212	189	201			

S.E. of marginal mean of spacing = 28.16 lb./ac.

„ „ „ „ „ „ interculturings = 34.48 lb./ac.

„ „ „ „ „ „ seed rate = 19.31 lb./ac.

S.E. of body of (I×S) table = 38.76 lb./ac.

S.E. of difference of two

1. R means at the same level of I = 47.31 lb./ac.

2. I means at the same level of R = 62.21 lb./ac.

3. R means at the same level of S = 38.62 lb./ac.

4. S means at the same level of R = 50.79 lb./ac.

Crop :-Jowar (Rabi).

Site :-Agri. Res. Stn. Nargund.

Ref :-Ms. 51(68)

Type :-'C'

Object :—To find out the suitable cultural methods such as seedrate, spacing between two rows of crops and intensity of interculturing for Rabi Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Karl soil. (b) N.A. (iii) 23, 24.10.51. (iv) (a) One ploughing, 3 harrowings (b) to (e) N.A. (v) 5 C.L. of F.Y.M./ac. on 15, 16.9.1951. (vi) M—35—1. (vii) Unirrigated. (viii) As per treatments. (ix) N.A. (x) 12.2.1952.

2. TREATMENTS :

Main plot Treatments:

All possible combinations of (1) & (2)

(1) 2 spacings viz. S₁=14" and S₂=18".

(2) 3 interculturings viz. I₁=2, I₂=3 and I₃=4.

Sub-plot treatments :

3 seed-rates viz. R₁=6 lb./ac. ; R₂=8 lb./ac. and R₃=10 lb./ac

3. DESIGN :

(i) Split plot design. (ii) (a) 6 main plots/block; 3 sub-plots/main plot. (b) N.A. (iii) 4 (iv) (a) 55.3'×27' for 18" spacing, ; 55.3'×25.7' for 14" spacing. (b) 52.3'×21'. (v) 1½' along length, 3' or 2½' along breadth (vi) Yes.

4. GENERAL :

(i) There was no rainfall useful to the growth of the crop and hence the growth was not normal. The plants were stunted and lodging was very common. (ii) Nil. (iii) Grain yield data.(iv) (a) 1947-contd. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Experiment failed in the year 1950.

5. RESULTS :

- (i) 171 lb./ac.
 (ii) (a) 163.6 lb./ac.
 (b) 92.6 lb./ac.
 (iii) None of the effects is significant.
 (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	Mean	R ₁	R ₂	R ₃
I ₁	132	146	139	143	116	157
I ₂	205	175	190	166	200	203
I ₃	175	196	186	217	160	180
Mean	171	172	171			
R ₁	158	193	175			
R ₂	155	163	159			
R ₃	199	161	180			

- S.E. of the marginal. means of spacing = 27.27 lb./ac.
 " " " " " " " " interculturings = 33.39 lb./ac.
 " " " " " " " " seed rate = 18.90 lb./ac.
 S.E. for the body of (I×S) table = 47.22 lb./ac.
 1. R means at the same level of I = 46.30 lb./ac.
 2. I means at the same level of R = 60.49 lb./ac.
 3. R means at the same level of S = 37.80 lb./ac.
 4. S means at the same level of R = 49.39 lb./ac.

Crop :- Jowar.

Site :- Agri. Res. Stn. Nargund.

Ref :- Ms. 52(111)

Type :- 'C'.

Object :- To find out the suitable cultural method for Jowar.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Karl soil. (b) N.A. (iii) 23, 24.10.52. (iv) (a) Ploughing, harrowing (b) N.A. (c) & (d) As per treatments (e) N.A. (v) 2½ tons F.Y.M./ac. on 23.9.1952. (vi) Jowar M-35-1 (vii) Unirrigated. (viii) As per treatments. (ix) 4.85" (23.10.1952 to 19.2.1953) (x) 19.2.1953.

2. TREATMENTS :

Main plot treatments :-

All combinations of (1) & (2)

(1) 2 spacings viz. S₁=14" and S₂=18".

(2) 3 interculturings viz. I₁=2 times ; I₂=3 times and I₃=4 times.

Sub plot treatments :-

3 seed rates viz. R₁=6 lb./ac. ; R₂=8 lb./ac. and R₃=10 lb./ac.

3. DESIGN :

- (i) Split plot design. (ii) (a) 6 main plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 4 (iv) (a) 55.3'×27' for 18" spacing ; 55.3'×25.7' for 14" spacing. (b) 52.3'×21' (v) 1½' along length, 2½' or 3' along breadth. (vi) Yes.

4. GENERAL :

- (i) There was no rainfall for about 1½ months after sowing crop due to which the percentage of germination was low. The crop withered on ridge spots and further crop growth stunted. (ii) Nil. (iii) Grain yield data.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield data. (iv) (a) Yes, 1951 — 1953. (b) No (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 502 lb/ac.
 (ii) 112.7 lb/ac.
 (iii) None of the effects is significant.
 (iv) Av. yield of grain in lb/ac.

	H ₁	H ₂	H ₃	Mean.
I ₁	499	476	501	492
I ₂	436	547	613	532
I ₃	368	453	567	468
I ₄	511	530	524	522
Mean	453	502	551	502

S.E. of the marginal mean of

(1) harrowings. = 28.18 lb/ac.

(2) interculturings. = 32.54 lb/ac.

S.E. of the body of the table. = 56.37 lb/ac.

Crop :- Jowar.

Ref :- Ms. 53(162)

Site :- Agri. Res. Stn. Saundatti.

Type :- 'C'

Object :- To find out the preparatory tillage and intercultivation operations for Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis Saundatti. (iv) (a) ploughing and as per treatments also. (b) drill sowing. (c) 6 lb/ac. (b) 12" between rows, 6"—8" between plants. (e) N.A. (v) 5 C.L. of F.Y.M./ac. on 24.7.1953 (vi) M—3:—1. (vii) Rainfed. (viii) Weeding. (ix) 21.85" (24.10.1953. to 21.3.1954.) (x) 21.3.1954.

2. TREATMENTS :

All possible combinations of (1) & (2).

(1) 3 no. of harrowings viz. H₁= 2 times ; H₂= 2 times and H₃= 4 times,

(2) 4 no. of interculturings viz. I₁= once ; I₂= 2 times ; I₃= 3 times and I₄= 4 times.

3. DESIGN :

(i) 3×4 Fact. in R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a) N.A. (b) 66'×16.50' (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil (ii) Grain yield data. (iv) (a) Yes 1951—1955. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Reasons for low yield. N.A.

5. RESULTS ;

(i) 266 lb/ac.

(ii) 144.3 lb/ac.

(iii) "Harrowing" effect highly significant. Overall treatments effect is also significant.

(iv) Av. yield of grain in lb./ac.

	H ₁	H ₂	H ₃	Mean
I ₁	122	337	265	242
I ₂	242	341	300	294
I ₃	171	168	301	213
I ₄	109	404	434	316
Mean	161	313	325	266

S.E. of marginal mean

(1) Harrowings. =36.06 lb/ac.

(2) Interculturings. =41.64 lb/ac

S.E. of the body of the table. =72.13 lb/ac.

Crop :-Jowar.

Ref :- Ms. 49(34)

Site :-Agri. Res. Stn. Siruguppa.

Type :-'IM'.

Object :-To study the effect of manure—cum—irrigation on yield of Jowar.

1.3 BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut and Ragi. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis Siruguppa. (iii) 4.7.1949 (iv) (a) Ploughing, levelling, bund forming. (b) to (c) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) 23.33" (4.7.1949 to 14.11.1949). (x) 14.11.1949.

2. TREATMENTS ;

All combinations of (1), (2) and (3)

(1) 'N' at three levels, viz. N₀=0 lb./ac. ; N₁= 30 lb./ac. ; and N₃=60 lb./ac.(2) F.Y.M. at two levels viz. F₁=5 C.L./ac. and F₂=10 C.L./ac.(3) Irrigation at three depths viz. I₁=2" ; I₂=2.5" and I₃=3".**2. DESIGN :**

(i) 3×2×3 Fact. in R.B.D. (ii) (a) 18 (b) N.A. (iii) 6 (iv) (a) 52'×7.6" (b) 44'×5' (v) 4' along length and along 1'—3" breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) No (b) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

(i) to (iv)

Treatment	Av. grain yield (lb./ac.)
I. Nitrogen levels.	
N ₀	1646
N ₁	1546
N ₂	1648
II. Irrigation depth.	
I ₁	1460
I ₂	1600
I ₃	1760
III. F.Y.M. doses.	
F ₁	1580
F ₂	1540

The differences in yield due to treatments are not significant.

The above means do not give a general mean, suitable to all the sets.

Original files and records not traceable. Annual report of the Research Station consulted.

Crop :- Jowar.
Site :- Agri. Res. Stn. Bijapur.

Ref :- Ms. 53(119).
Type :- 'D'

Object :- To study the effect of hormone treatment of seed on the yield of Jowar.

1. BASAL CONDITIONS :

(i) (a) Cereals are usually rotated with pulses. (b) Tur (c) 5 C.L./ac. of F.Y.M. once in 3 years (ii) (a) Medium black soil (b) Refer soil analysis Bijapur. (iii) 16.10.53 (iv) (a) Ploughing once in 3 years, 2-3 harrowings (b) Drilling with 18" spaced 3 coultured drill. (c) 4 lb./ac. (d) Spacing between rows 18"; between plants uneven. (e) N.A. (v) 5 C.L. of F.Y.M./ac. spread at the time of harrowing. (vi) Maldandi-35-1 Jowar (late) (vii) Rainfed. (viii) 2 Interculturings. (ix) 6.08" (16.10.53 to 21.3.1954. (ix) 21.3.1954.

2. TREATMENTS :

1. Soaking in water for 2 hours.
2. " " 0.1 p.p.m. of 2-4—D for 2 hours.
3. " " 1.0 " " " " "
4. " " 1.0 " " I.A.A. " "
5. " " 10.0 " " " " "
6. " " 0.01 " " 2-4—D for 20 hours.
7. " " 0.1 " " " " "
8. " " 1.0 " " " " "
9. " " 1.0 " " I.A.A. " "
10. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 10 (b) N.A. (iii) 4. (iv) (a) 40'×18' (b) 36'×12'. (v) 2' along length, 3' along breadth. (vi) Yes.

4. GENERAL :

(i) Germination satisfactory. Crop did not attain the normal height. No visible difference between the treated plots and control plots. (ii) There was an attack of sugary disease. (iii) Grain yield. (iv) (a) 1952-54 (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 800 lb /ac.
- (ii) 223.6 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	679
2.	901
3.	821
4.	662
5.	988
6.	666
7.	808
8.	680
9.	961
10.	839
S.E./mean	=111.8 lb./ac.

Crop :- Jowar. (Kharif)
Site :- Agri. Res. Stn. Dharwar

Ref :- Ms. 48 (13)
Type :- 'D'

Object :- To find out the best method in the control of jowar-smut in relation with the yields.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Cotton (c) Nil (ii) (a) Medium black Soil (b) Refer soil analysis Dharwar. (iii) 27.7.48. (iv) (a) Harrowing. (b) N.A. (c) 8 lb./ac. (d) 15" (e) N.A. (v) F.Y.M. @ 5 C.L./ac. applied on 13.7.48 and spread uniformly and harrowed. (vi) Nandyal Jowar (Early) (vii) Unirrigated (viii) Weeding, interculturing. (ix) 26.68" (27.7.48 to 30.12.48) (x) 30.12.48.

2. TREATMENTS :

Seeds treated with :—

1. Sulphur.
2. Ceresan.
3. Tillantin.
4. Salt.
5. Urine.
6. Water.
7. Control (infected)
8. Farmer's control.

Details N.A. Time and method of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 8 (b) N.A. (iii) 3 (iv) (a) & (b) 130'×10' (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Red leaf disease to a very small extent. (iii) Grain yield (iv) (a) No (b) No (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2145 lb./ac.
- (ii) 298.0 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2627
2.	2411
3.	2482
4.	1293
5.	2024
6.	2161
7.	1837
8.	2324
S.E./mean	=172.0 lb./ac.

Crop :- Jowar.

Site :- Agri. Res. Stn. Hagari.

Ref :- Ms. 48(23).

Type :- 'D'.

Object :- To test the efficacy of sulphur dressing of Jowar seed with and without china clay in the control of smut disease.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Black cotton. (b) Refer soil analysis Hagari. (iii) 22.10.49. (iv) (a) Working blade harrow three times. (b) Drill sowing, (c) 5 lb./ac. (d) 18", (e) One (v) Nil. (vi) M-47-3 (Early) (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 4.73" (22.10.48 to 5.4.1949). (x) 5.4.1949.

2. TREATMENTS :

1. Fine sulphur.
2. Fine sulphur + Chinaclay (1 : 1 ratio).
3. Fine sulphur + Chinaclay (3 : 1 ratio).
4. Baluchistan sulphur.
5. Baluchistan sulphur + Chinaclay (1 : 1 ratio).
6. Baluchistan Sulphur + Chinaclay (3 : 1 ratio).
7. Control.

Dose :—One oz. of fungicide to 15 lb. seed.

Jowar seed mixed thoroughly with viable smut spores (at 2 grams per pound of seed) and thus artificially infected with spores was used in all treatments.

DESIGN :

(i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 6 (iv) (a) 100 links×27 links=2.70 cents. (b) 96 links×18 links=1.73 cents (v) 2 links along length ; 4½ links along breadth. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Smut attack. (iii) No. of smut-attacked plants, grain yield data. (iv) (a) 1945-1948. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) Nil. (vii) No reasons given for low yields. Plot-wise yield data N.A.

5. RESULTS :

- (i) 175 lb./ac.
 (ii) N.A.
 (iii) Treatment differences are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	183
2.	161
3.	181
4.	185
5.	167
6.	180
7.	167
S.E./mean.	= N.A.

Crop :-Jowar

Site :-Agri. Res. Stn. Hebbal.

Ref :-Ms. 52(27)

Type :-'D'.

Object :—To find the effect of seed treatment against Jowar smut.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy soil. (b) Refer soil analysis, Hebbal. (iii) 21.7.52. (iv) (a) 3. ploughings (b) Broadcast (c) N.A. (d) and (e) —(v) Nil. (vi) N.A. (vii) Rainfed. (viii) Weeding, passing chippangute (ix) 12.10" (21.7.52 to 28.1.53). (x) 28.1.1953.

2. TREATMENTS :

- Seeds soaked in 1% C/S solution for 15 minutes and dried in sun.
- Seeds soaked in 1% C/S solution for 15 minutes and then transferred to 1% lime solution for 5 minutes and dried in sun.
- Seeds treated with sulphur dust 0.2% by weight.
- Seeds treated with Arason 0.2% by weight.
- Seeds treated with Agrason G.N. 0.2% by weight.
- Seeds treated with Fermate 0.2% by weight.
- Seeds soaked in water for 4 hours at the room temperature and dried in sun.
- Seeds soaked in water for 8 hours at the room temperature and dried in shade.
- Seeds not treated (Control).

3. DESIGN :

(i) R.B.D. (ii) (a) 9 (b) N.A. (iii) For control plots 8 and for others 9. (iv) 52' x 9' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Count of smutted earheads (partially smutted earheads also counted) (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) None (vii) None.

5. RESULTS :

- (i) G.M. of (diseased earheads / healthy earheads) = 3.67 (80) percentage/plot.
 (ii) 2.56% per plot.
 (iii) The differences in percentage of diseased earheads / healthy earheads due to treatments are highly significant.
 (iv) Av. of diseased earheads / healthy earheads in percentage/plot.

Treatment	Average.
1.	0.94
2.	4.95
3.	0.73
4.	0.64
5.	0.74
6.	0.67
7.	6.55
8.	4.51
9.	14.51
S.E./mean	= 0.85

Crop :- Jowar.
Site :- Agri. Res. Stn. Hebbal.

Ref :- Ms. 53(56)
Type :- 'D'.

Object :- To study the effect of seed treatment against grain smut.

1. BASAL CONDITIONS :

(i) (a) No (b) N.A. (c) N.A. (ii) (a) Sandy soil (b) Refer soil analysis, Hebbal. (iii) 18.7.53. (iv) (a) Three ploughings (b) Broadcast (c) N.A. (d) and (e) — (v) Nil. (vi) Kaki Jola (vii) Unirrigated. (viii) Weeding once and passing chippagunte once. (ix) 26.58" (18.7.53 to 12.1.1954) (x) 12.1.1954.

2. TREATMENTS :

1. Seeds soaked in 1% C/S solution for 15 minutes and dried in sun.
2. Seeds soaked in 1% C/S solution for 15 minutes and then transferred to 1% lime solution for 5 minutes and dried in sun.
3. Seeds treated with sulphur dust 3.2% by weight.
4. Seeds treated with Agrason G.N. 0.2% by weight.
5. " " " Arasan " "
6. " " " Fermate " "
7. Seeds soaked in water for 12 hours at the room temperature and dried in shade.
8. Seeds soaked in water for 4 hours at the room temperature and dried in shade.
9. Seeds not treated. (control).

3. DESIGN :

(i) R.B.D. (ii) (a) 9 (b) N.A. (iii) 8 (iv) (a) and (b) 1.25 cents. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Count of smutted earheads (partially smutted earheads also counted) (iv) No (v) None. (vi) No (vii) Yield data was not collected.

5. RESULTS :

- (i) 3.40 %/plot.
- (ii) 1.76 percent/plot.
- (iii) The differences in percentage of diseased earheads / healthy earheads due to treatments are highly significant.
- (iv) Av. of diseased earheads : healthy earheads in percent/plot.

Treatments	Av. yield.
1.	1.21
2.	3.53
3.	0.37
4.	0.47
5.	0.57
6.	0.15
7.	5.08
8.	7.43
9.	11.80
S.E./mean	=0.62

Crop :- Ragi.
Site :- Agri. Res. Stn. Hebbal.

Ref :- Ms. 48 (5)
Type :- 'M'.

Object :- To study the comparative efficacy of catalysts, Pot. Permanganate and Ferrous Sulphate.

1. BASAL CONDITIONS :

(i) (a) Ragi is generally followed by Groundnut (b) N.A. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis, Hebbal. (iii) 28.8.1948 (iv) (a) 3 ploughings (b) to (e) N.A. (v) Nil (vi) R. 009 ; Duration N A. (vii) Unirrigated (viii) Weeding, interculturing. (ix) 11.27" (28.8.1948 to 31. 12.1948) (x) 31.12.1948.

2. TREATMENTS :

1. 40 lb./ac. Catalyst product.
2. 30 lb./ac. Catalyst product.
3. 16 lb./ac. of Pott. Permanganate.
4. 28 lb./ac. of Ferrous Sulphate.
5. Control.
Time and method of application N.A.

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) 27'×27' (b) 25'×25' (v) 1' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain yield data (iv) (a) 1948-49 (b) No. (c) N.A. (v) (a) N.A. (b) N. (vi) Nil (vii) Expt. failed in 1949.

5. RESULTS :

- (i) 400 lb./ac.
 (ii) 59.2 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	376
2.	404
3.	453
4.	413
5.	354
S.E.	= 6.5 lb./ac.

Crop :- Ragi.

Site :- Agri. Res. Stn. Hebbal.

Object :- To find the effect of Borax, Copper and Zinc on Ragi.

Ref :- Ms. 49 (11)

Type :- 'M'.

1. BASAL CONDITIONS :

(i) (a) Generally ragi is followed by pulses (b) N.A. (c) N.A. (ii) (a) Red loam (b) Refer soil analysis, Hebbal (iii) 1.8.1949 (iv) (a) 3 ploughings (b) N.A. (c) 8 seers/ac. (d) & (e) N.A. (v) Nil (vi) R. 0009 ; Duration N.A. (vii) Unirrigated. (viii) Weeding. (ix) 19.44" (1.8.49 to 23. 11. 1949) (x) 23.11.1949.

2. TREATMENTS :

1. Borax at 20 lb./ac.
 2. C/S at 5 lb./ac.
 3. Zn. Sul. at 5 lb./ac.
 4. Treat. 1+Treat. 2.
 5. Treat. 2+Treat. 3.
 6. Treat. 1+Treat. 3.
 7. Control.

Time and method of application N.A.

3. DESIGN :

(i) L.Sq. (ii) (a) 7 (b) N.A. (iii) 7 (iv) (a) (b) 12'×60.5' (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield data. (iv) (a) 1949-1953 (b) No (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 576 lb./ac.
 (ii) 157.7 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	487
2.	587
3.	642
4.	631
5.	551
6.	563
7.	573
S.E./mean	= 59.6 lb./ac.

Crop :- Ragi.
Site :- Agri. Res. Stn. Hebbal.

Ref :- Ms. 50 (32).
Type :- 'M'.

Object :—To find the effect of Borax, Zinc and Copper on monsoon Ragi.

1. BASAL CONDITIONS :

(i) (a) Generally ragi is followed by pulses. (b) Pulses (c) Nil (ii) (a) Red loam. (b) Refer soil analysis, Hebbal (iii) 18.8.1950 (iv) (a) 3 ploughings (b) N.A. (c) 8 seers/ac. (d) N.A. (e) N.A. (v) About 5 cwt./ac. of G.N.C, applied just before sowing. 2 ton of compost/ac. is ploughed in before sowing. (vi) R. 0833 Duration N.A. (vii) Unirrigated. (viii) Weeding. (ix) 22.10" (18.8.1950 to 19.12.1950). (x) 19.12.1950.

2. TREATMENTS :

1. Borax at 20 lb./ac.
 2. C/S at 5 lb./ac.
 3. Zn. Sul. at 5 lb./ac.
 4. Treat. 1+Treat. 2.
 5. Treat. 2+Treat. 3.
 6. Treat. 1+Treat. 3.
 7. Control.
- Time and method of application N.A.

3. DESIGN :

(i) L. Sq. (ii) (a) 7 (b) N.A. (iii) 7 (iv) (a) (b) 40½ Sq. yards (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield data. (iv) (a) 1948-1953. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 372 lb./ac.
- (ii) 118.3 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	394
2.	464
3.	379
4.	349
5.	313
6.	351
7.	352
S.E./mean	=44.7 lb./ac.

Crop :- Ragi.
Site :- Agri. Res. Stn. Hebbal.

Ref :- Ms. 51 (53).
Type :- 'M'.

Object :—To study the effect of minor elements on Ragi.

1. BASAL CONDITIONS :

(i) (a) Generally ragi is followed by groundnut or pulses. (b) Groundnut or pulses. (c) N.A. (ii) (a) Red loam. (b) Refer soil analysis, Hebbal. (iii) 22.7.1951. (iv) (a) 3 ploughings (b) N.A. (c) 8 seers/ac. (d) & (e) N.A. (v) Nil. (vi) R-0833 Duration N.A. (vii) Unirrigated. (viii) Usual thinning, weeding once, passing chippagunte once. (ix) 23.87" (22.7.1951 to 27.11.1951) (x) 27.11.1951.

2. TREATMENTS :

1. Borax at 20 lb./ac.
 2. C/S at 5 lb./ac.
 3. Zn-Sul. at 5 lb./ac.
 4. Treat. 1+Treat. 2.
 5. Treat. 2+Treat. 3.
 6. Treat. 1+Treat. 3.
 7. Control.
- Time and method of application N.A.

3. DESIGN :

(i) L. Sq. (ii) (a) 7 (b) N.A. (iii) 7 (iv) (a), (b) 1/50th ac. (28 links × 70 links). (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1949-1953 (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 401 lb./ac.
 (ii) 188.5 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	716
2.	290
3.	426
4.	413
5.	309
6.	299
7.	353
S.E./mean	=71.2 lb./ac.

Crop :- Ragi.

Site :- Agri. Res. Stn. Hebbal.

Ref :- Ms. 52(9)

Type :- 'M'.

Object :- To find the influence of application of minor elements on Ragi.

1. BASAL CONDITIONS :

(i) (a) Generally ragi is followed by groundnut or pulses. (b) Groundnut or pulses. (c) N.A. (ii) (a) Red loam. (b) Refer soil analysis, Hebbal. (iii) 16.8.52. (iv) (a) 3 ploughings (b) N.A. (c) 8 seers/ac. (d) N.A. (e) N.A. (v) 2 tons of F.Y.M. applied before 15—30 days of sowing. $\frac{1}{2}$ cwt of G.N.C. and $\frac{1}{2}$ cwt. of Super/ac. broadcast at the time of sowing. (vi) E.S. 11 ragi. (vii) Rainfed. (viii) Thinning cum earthing up by chippagunte 2 or 3 times after 15 days of sowing. Hand weeding after 1½ months of sowing. (ix) 14.90" (16.8. 52 to 22.12.52) (x) 22.12.1952.

2. TREATMENTS :

- Borax at 20 lb./ac.
- C/S at 5 lb./ac.
- Zn. Sul. at 5 lb./ac.
- Treat. 1+Treat. 2.
- Treat. 2+Treat. 3.
- Treat. 1+Treat. 3.
- Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 7 (iv) (a), (b) 44' × 17' (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield, straw yield. (iv) (a) 1949—1953. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) The layout is stated to be a L. Sq., but the randomisation necessary for a L. Sq. is not found in the layout. Hence it is analysed like a R.B.D.

5. RESULTS :

- (i) 253 lb./ac.
 (ii) 90.5 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatments	Av. yield.
1.	262
2.	253
3.	293
4.	228
5.	278
6.	212
7.	247
S.E./mean	=34.2 lb./ac.

Crop :-Ragi.

Ref :Ms. 53(14)

Site :-Agri. Res. Stn. Hebbal.

Type :-'M'.

Object :—To find the influence of application of minor elements on Ragi.

1. BASAL CONDITIONS :

(i) (a) Generally ragi is followed by groundnut or pulses. (b) Groundnut or pulses. (c) N.A. (ii) (a) Red loam. (b) Refer soil analysis, Hebbal. (iii) 7.7.53. (iv) (a) 3 ploughings. (b) N.A. (c) 8 seers/ac. (d) and (e) N.A. (v) 56 lb. of G₂N₂C. and 56 lb. of super over a basal dressing of 2—5 C.L. of F.Y.M./ac. was applied (vi) H. 22 (4½ to 5 months duration) (vii) unirrigated (viii) Usual thinning, weeding once, passing chip-pagunte once. (ix) 30.72" (7.7.53 to Dec. 1953). (x) December, 53. (Exact date N.A.)

2. TREATMENTS :

1. Borax at 20 lb./ac.
2. C/S at 5 lb./ac.
3. Zn. Sul. at 5 lb./ac.
4. Treat. 1+Treat. 2.
5. Treat. 2+Treat. 3.
6. Treat. 3+Treat. 1.
7. Control.

3. DESIGN :

(i) R.B.D. (Pl. see General (vii)) (ii) (a) 7 (b) N.A. (iii) 7 (iv) (a) and (b) 48'×17' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield (iv) (a) 1942—1953. (b) No (c) N.A. (v) Nil (vi) No (vii) The layout is stated to be L. Sq., but the randomisation necessary for a L. sq. is not found in the layout. Hence this is analysed as a R.B.D. experiment.

5. RESULTS :

- (i) 939 lb./ac.
 (ii) 1900 lb./ac.
 (ii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield.
1.	970
2.	1000
3.	907
4.	868
5.	1063
6.	828
7.	938
S.E./mean	=72.0 lb./ac.

Crop :-Ragi.

Ref :-Ms. 51(51)

Site :-Agri. Res. Stn. Hebbal.

Type :-'M'.

Object :—To study the effect of various doses of manures on Ragi.

1. BASAL CONDITIONS :

(i) (a) Generally groundnut or pulses followed by ragi. (b) Groundnut or pulses. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Hebbal. (iii) 11.7.1951. (iv) (a) 3 ploughings. (b) N.A. (c) 8 seers/ac. (d) and (e) N.A. (v) 4000 lb./ac. of F.Y.M. (vi) H—22 (4½ months duration). (vii) Unirrigated. (viii) Weeding. (ix) 24.47" (11.7.1951 to 26.11.1951). (x) 26.11.1951.

2. BASAL CONDITIONS :

1. Control.
2. N only at surface.
3. N+P broadcast at surface.
4. N+P at a depth of 3" to 4" below surface.

For application at depths, both A/S and Super should be mixed and drilled into rows at the required depth and ragi sown in rows. In the treatments where manures are to be applied at the surface, the manure should

be applied on the rows mixed well with soil so that the seed that will be subsequently put in does not come, into contact with it.

N=15 lb./ac. as A/S i.e. 80 lb. A/S.

P=10 lb./ac. as i.e. 60 lb. of Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 5 (iv) (a), (b) 50'×25' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1951— continued. (b) No (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 828 lb./ac.

(ii) 88.2 lb./ac.

(iii) The differences in yield due to treatments are highly significant.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1029
2.	720
3.	803
4.	760
S.E./mean	=39.5 lb./ac.

Crop :-Ragi.

Site :-Agri. Res. Stn. Hebbal.

Ref :-Ms. 52(8)

Type :-'M'.

Object:— To find the effect of chemical fertilizers for rainfed Ragi.

8. BASAL CONDITIONS :

(i) (a) Generally pulses or groundnut-fallow-ragi. (b) Groundnut or pulses. (c) N.A. (ii) (a) Red sandy loam (b) Refer soil analysis, Hebbal. (iii) 16.8.52 (iv) (a) 3 ploughings (b) N.A. (c) 8 seers/ac. (d) N.A. (e) N.A. (v) Farm compost at 3000 lb./ac. (vi) H. 22 Ragi (4½—5 months duration). (vii) Rainfed. (viii) Usual thinning, weeding once passing chippagunte once. (ix) 12.56" (16.8.52 to 1st week of December, 1952. (x) 1st week of December, 1952.

2. TREATMENTS :

1. No fertilizers.

2. N only at surface.

3. N+P₂O₅ broadcast applied at surface.

4. N+P₂O₅ broadcast applied at 3" depth through drills.

N=15 lb./ac. as A/S. P₂O₅=10 lb./ac. as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 5 (iv) (a) and (b) 62'×30' (v) Nil. (vi) Yes.

4. GENERAL ;

(i) N.A. (ii) N.A. (iii) Grain yield, straw yield. (iv) (a) 1951— continued. (b) No. (c) N.A. (v) (a) N.A.

(b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 165 lb./ac.

(ii) 54.0 lb./ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	116
2.	152
3.	185
4.	209
S.E./mean	=24.1 lb./ac.

5. RESULTS :

- (i) 1756 lb./ac.
- (ii) 162.6 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield
1.	1710
2.	1624
3.	1948
4.	1740
S.E./mean	= 81.3 lb./ac.

Crop :- Ragi.

Site :- Agri. Res. Stn. Hebbal.

Ref :- Ms. 51(56).

Type :- 'M'.

Object :- To the effect of Zn. Sul. on Ragi.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Turmeric. (c) Nil. (ii) (a) Clay mixed with sand. (b) Refer soil analysis, Hebbal. (iii) 17.4.1951 (iv) (a) Ploughing, levelling, etc. (b) to (e) N.A. (v) 2 C.L./ac. of F.Y.M. + 56 lb./ac. of G.N.C. and 28 lb./ac. of A/S. (vi) N.A. (vii) Irrigated. (viii) Weeding, interculturing. (ix) 16.51" (17.4.51 to 21.8.1951). (v) 7.8.51 and 21.8.1951.

2. TREATMENTS :

- 1. Control.
 - 2. Super at 56 lb./ac. at surface.
 - 3. " " " + 10 lb./ac. of Zn. Sul.
 - 4. " " " + 15 lb./ac. of Zn. Sul.
- Other details N.A.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 4 (iv) (a), (b) 1/40 th/ac. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain Yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 644 lb./ac.
- (ii) 121.8 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. grain yield in lb./ac.

Treatment.	Av. yield
1.	658
2.	671
3.	705
4.	543
S.E./mean	= 60.9 lb./ac.

Crop :- Ragi.

Site :- Agri. Res. Stn. Hebbal.

Ref :- Ms. 53 (15).

Type :- 'M'.

Object :- To find the effect of placement of Super on Ragi.

1. BASAL CONDITIONS :

- (i) (a) Groundnut or pulses-fallow-ragi. (b) Groundnut or pulses (c) N.A. (ii) (a) Red sandy loam (b) Refer soil analysis, Hebbal. (iii) 4.7.53 (iv) (a) 3 ploughings (b) N.A. (c) 8 seer/ac. (d) & (e) N.A. (v) 56 lb./ac. of G.N.C. over a basal dressing of 2 tons of F.Y.M./ac. (vi) H. 22 (4½ to 5 months duration) (vii) Unirrigated (viii) Usual thinning, weeding once, passing chippagunte once (ix) 31.07" (4.7.53 to 25.11.53) (x) 25.11.1953.

2. TREATMENTS :

1. 56 lb. of Super/ac. applied at surface.
2. " " " " " " " " 3" depth.

3. DESIGN :

- (i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 2 (iv) (a) & (b) 170' × 60' (v) Nil. (vi) Yes.

4. GENERAL :

- (i) N.A. (ii) N.A. (iii) Grain and straw yield (iv) (a) 1950—contd. (b) No (c) N.A. (v) (a) & (b) No. (vi) No. (vii) None.

5. RESULTS :

- (i) 759 lb./ac.
- (ii) 144.0 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	748
2.	770
S.E./mean.	=101.0 lb./ac.

Crop :-Ragi.

Site :-Agri. Res. Stn. Hebbal.

Ref. :-Ms. 53(18)

Type :-'M'

Object :-To find the effect of mixing Super with F.Y.M.

1. BASAL CONDITIONS :

- (i) (a) Ragi-groundnut or pulses. (b) 2 groundnut or pulses (c) N.A. (ii) (a) Red sandy loam (b) coarse sand 51.50%, fine sand 33.20%, silt 2.81% and clay 10.95%. (iii) 6.7.53. (iv) (a) 3 ploughings (b) N.A. (c) 8 seers/ac. (d) & (e) N.A. (v) F.Y.M. at 3000 lb./ac. (vi) H.22 (4½ to 5 months durations). (vii) Un-irrigated. (viii) Thinning, weeding once, passing chippagunte once. (ix) 30.87" (6.7.53 to 25.11.53). (x) 25.11.53.

2. TREATMENTS :

1. Control—F.Y.M. at 3000 lb./ac. only.
2. Super at ½ cwt./ac.
3. Super at ½ cwt./ac. intimately mixed with F.Y.M. and applied.
4. Super at ½ cwt./ac. intimately mixed with F.Y.M. one month prior to actual application, properly preserved and applied at the time of sowing as in other treatments.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 5. (iv) (a), (b) 36' × 30'. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) N.A. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1949—contd. (b) No (c) N.A. (v) (a) & (b) N.A. (vi) No. (vii) None.

5. RESULTS :

- (i) 678 lb./ac.
- (ii) 140.0 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Average yield of grain in lb./ac.

Treatment	Av. yield
1.	595
2.	728
3.	670
4.	719
S.E./mean	=63.0 lb./ac.

Crop :- Ragi.

Ref. :- Ms. 50(58)

Site :- Agri. Res. Stn. Hiriyyur.

Type :- 'M'.

Object :- To study the effect of placement of P fertilisers at different depths.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Gravel mixed with clay loam soil (b) Refer soil analysis, Hiriyyur. (iii) 18.5.1950. (iv) (a) Ploughing, levelling. (b) Sown in furrows. (c) to (e) N.A. (v) 3000 lb. of F.Y.M. and 2 cwts of G.M.C. uniformly applied to all plots. Time of application N.A. (vi) K. 1 Ragi. Duration 4 months (early). (vii) Irrigated. (viii) Weeding. (ix) 14.51" (18.5.1950 to 7.9.1950 (x) 7.9.1950.

2. TREATMENTS :

1. Super at $\frac{1}{2}$ cwt./ac. at surface.
2. " " " " " 3" depth.
3. " " " " " 6" "

Super drilled through a 6 row *sadde* at required depths. Time of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 8. (iv) (a) & (b) 1 guntha or 1/40th ac. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) No (b) No (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1168 lb./ac.
- (ii) 303.3 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1040
2.	1170
4.	1295
S.E./mean	=107.2 lb./ac.

Crop :- Ragi.

Ref :- Ms. 50(59)

Site :- Agri. Res. Stn. Hiriyyur.

Type :- 'M'

Object :- To study the combined effect of placement of Zn. Sul. and P on ragi.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (b) Refer soil analysis Hiriyyur. (iii) N.A. (iv) (a) 4 ploughings, levelling, puddlings. (b) to (e) N.A. (v) 100 lb./ac. of G.N.C. and 28 lb. of A/S applied to all plots just before transplanting. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) 14.51". (x) N.A.

2. TREATMENTS :

1. Zn. Sul. at 10 lb./ac. applied at surface.
2. " " " " " " 6" depth.
3. " " " " " " surface and Super at 56 lb./ac. at 6" depth.
4. " " " " " and super 56 lb./ac. both applied at 6" depth.
5. Control (no manure).

Time and method of application N.A.

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5. (iv) (a) & (b) 12' x 60'. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) No (b) No (c) N.A. (v) (a) With a little modification. conducted at Agri. Res. Stn. Hebbal. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 893 lb./ac.
 (ii) 245.9 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	852
2.	852
3.	816
4.	1026
5.	918
S.E./mean	=110.0 lb./ac.

Crop :- Ragi.

Ref :- Ms. 53(125)

Site :- Agri. Res. Stn. Hiriyur.

Type :- 'M'

Object :—To study the effect of application of Hyperphosphate mixed with F.Y.M. on Ragi.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (b) Refer soil analysis, Hebbal
 (iii) 18.5.53/18, 19.6.53. (iv) (a) 4 ploughings, levelling, puddling. (b) Transplanting. (c)—(d) to (e) N.A.
 (v) As per treatments. (vi) K.9—Ragi. Duration 4 months. (vii) Rainfed. (viii) Weeding. (ix) 7.97''
 (18.5.53 to 27.9.53). (x) 27.9.1953.

2. TREATMENTS :

- Control.
- Hyperphos. at 1 cwt./ac.
- „ „ ½ cwt./ac. mixed with F.Y.M. and applied.
- „ „ 1 cwt./ac. mixed with F.Y.M. and applied.

In treatments 1 & 2, F.Y.M. at 4000 lb./ac. is applied uniformly and in treatment 2, Hyperphosphate at 1 cwt./ac. broadcast afterwards. In treatments 3 & 4 the requisite quantities of F.Y.M. and Hyperphos are taken and thoroughly mixed (adding small quantities of P at a time to F.Y.M.) This mixture is applied in the usual manner and worked into the soil by passing Kunte and planting of ragi is done.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 5. (iv) (a), (b) 1/40th ac. Dimensions N.A. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil, (iii) Grain yield data. (iv) (a) No (b) No (c) N.A. (v) (a) Agri. Res. Stn ; Mandya.(b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 1048 lb./ac.
 (ii) 223.2 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1103
2.	1019
3.	1108
4.	963
S.E./mean	=99.6 lb./ac.

Crop :- Ragi.

Ref :- Ms. 48(1)

Site :- Agri. Res. Stn. Mandya.

Type :- 'M'.

Object :- To find the effect of placement of manures on the yield of Ragi.

1. BASAL CONDITIONS :

(i) (a) Ragi generally followed by groundnut or pulses (b) Groundnut or pulses. (c) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Mandya. (iii) 17.4.1948. (iv) (a) 3 ploughings, levelling, harrowing, opening furrows etc. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) Nil. (vi) K. ragi (vii) Irrigated (viii) Weeding. (ix) N.A. (x) 24.7.1948.

2. TREATMENTS :

1. Spreading of the manures.
2. Placement of manures at 3" depth.
3. Placement of manures at 6"

Manures consist of G.N.C. 6½md./ac., A/S. 1½ md./ac. and Super 2mds./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 2 (iv) (a) 1/40 th/ac. Dimensions N.A. (b) 1/40 th./ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Grain yield data. (iv) (a) No (b) No (c) N.A. (v) (a) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 677 lb/ac.
- (ii) 172.8 lb/ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb/ac.

Treatment	Av. yield.
1.	750
2.	610
3.	670
S.E./mean	= 122.0 lb/ac.

Crop :- Ragi.

Ref :- Ms. 53(47)

Site :- Agri. Res. Stn. Mandya.

Type :- 'M'

Object :- To study the effect of application of Hyperphosphate mixed with F.Y.M. for transplanted Ragi.

1 BASAL CONDITIONS :

(i) (a) No (b) Groundnut or pulses (b) N.A. (ii) (a) Sandy loam (b) Refer soil analysis Mandya. (iii) 4.9.53. (transplanting) (iv) (a) 3 ploughings, levelling, harrowing, opening furrows etc. (b) Transplanting. (c)--- (d) & (e) N.A. (v) F.Y.M. at 4000 lb/ac. and G.N.C. at 224 lb/ac. (vi) H. 22 (vii) Rainfed. (viii) Weeding twice. (ix) 22.21" (4.9.53 to 4.12.53) (x) 4.12.1953.

2. TREATMENTS :

1. Control.
2. Hyperphos. at ½ cwt/ac.
3. Hyperphos. at 1 cwt/ac.
4. Hyperphos. at 1 cwt/ac. with F.Y.M. mixed one month earlier.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 4 (iv) (a) & (b) 1/40th ac. (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) 4 (iii) Grain yield data (iv) (a) No (b) No (c) N.A. (v) None (vi) No (vii) None.

5. RESULTS :

- (i) 419 lb/ac.
- (ii) 92.0 lb/ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. grain yield in lb/ac.

Treatments	Av. yield.
1.	451
2.	379
3.	445
4.	402
S.E./mean.	= 46.0 lb/ac,

Crop :- Ragi.

Ref :- Ms. 50(52).

Site :- "Rama Krishna" Shala.

Type :- 'M'

Object :- To find the effect of application of artificial fertilizer on Ragi.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Red soil. (b) Refer soil analysis, Shala. (iii) N.A. (iv) Ploughing, harrowing. (b) to (e) N.A. (v) F.Y.M. at 3000 lb./ac. Time and method of application N.A. (vi) H. 22 (4½ months duration). (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

- Control.
- N only at surface.
- N+P broadcast at surface.
- N+P applied at depths of 3" to 4"
N=15 lb. of N as A/S.
P=10 lb./ac. of P₂O₅ as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 5 (iv) (a) & (b) 1/40th./ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) No (b) No (c) N.A. (v) (a) None (b) N.A. (vi) Nil. (vii) No particular reasons mentioned for low yield.

5. RESULTS :

- 263 lb./ac.
- 109.5 lb./ac.
- The differences in yield due to treatments are significant.
- Av. yield of grain in lb./ac.

Treatment.	Av. yield.
1.	154
2.	195
3.	364
4.	342
S.E./mean.	= 48.98 lb./ac.

Crop :- Ragi.

Ref :- Ms. 52(128).

Site :- "Rama Krishna" Shala.

Type :- 'M'.

Object :- To find out the effect of chemical fertilizers on Ragi.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Red soil. (b) Refer soil analysis, Shala. (iii) N.A. (iv) (a) Ploughing, harrowing. (b) to (e) N.A. (v) F.Y.M. at 4000 lb./ac. Time and method of application N.A. (vi) H. 22 (4½ months duration.) (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

- Control.
- N at surface.

3. $N+P_2O_5$ broadcast at surface.
 4. $N+P_2O_5$ applied at 3" depth.
 Doses of 'N' & ' P_2O_5 '
 15 lb./ac of N as A/S and 10 lb./ac of P_2O_5 as Super.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 5 (iv) (a) 1/40th ac. (b) 1/40th ac. (v) No. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) No (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 792 lb./ac.
 (ii) 179 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	732
2.	642
3.	880
4.	905
S.E./mean.	= 79.9 lb./ac.

Crop :- Ragi.

Ref :- Ms. 52(129)

Site :- "Rama. Krishna" Shala.

Type :- 'M'

Object ;—To find the effect of mixing Super with F.Y.M.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Red soil. (b) Refer soil analysis Shala. (iii) N.A. (iv) (a) Ploughing, harrowing. (b) to (e) N.A. (v) Nil. (vi) H. 22.4½ months duration. (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Control.
 2. Super at ½ cwt./ac.
 3. " " " " intimately mixed with F.Y.M. at the time of application.
 4. " " " " F.Y.M. mixed one month prior to application.
 F.Y.M. at 4000 lb./ac.
 Time & method of application N.A.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 5. (iv) (a) 1/40th ac. (b) 1/40th ac. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 679 lb./ac.
 (ii) 116 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	535
2.	617
3.	658
4.	905
S.E./mean	= 51.9 lb./ac.

Crop :- Ragi.

Ref :- Ms. 50(61)

Site :- Agri. Res. Stn. Hebbal.

Type :- 'D'

Object :—To study the influence of seed treatment of Ragi with solutions of boric acid on growth and yield of the crop (summer crop).

1. BASAL CONDITIONS :

(i) (a) Groundnut or pulses-Fallow-Ragi. (b) N.A. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis Hebbal. (iii) 17.1.1950. (iv) (a) 3 ploughings (b) N.A. (c) 8 seers/ac. (d) & (e) N.A. (v) 56 lb./ac. of G.N.C. and 28 lb./ac. of A/S and 56 lb./ac. of Super at 6" depth. A/S and Super applied on 2.3.1950. Method of application N.A. (vi) R. 0009 (early). (vii) Irrigated. (viii) Usual thinning, weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Seeds treated with boric acid solution at 1.0% by wt. of seed.
2. " " " " " " " 1.5% " " " "
3. " " " " " " " 2.0% " " " "
4. " " " " " " " 2.5% " " " "
5. Control (Soaked with distilled water only).
Soaking done on 16.1.1950, left over-night.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 6. (iv) (a) & (b) $16\frac{1}{2}' \times 16\frac{1}{2}'$. (v) No. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950-1952 (b) No (c) N.A. (v) (a) Not known (b) N.A. (vi) Nil. (vii) No reasons mentioned for low yields.

5. RESULTS :

- (i) 450 lb./ac.
- (ii) 189 lb./ac.
- (iii) The differences in yields due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac..

Treatment	Av. yield
1.	450
2.	567
3.	490
4.	428
5.	315
S.E./mean	=77.3 lb./ac.

Crop :- Ragi.

Ref :- Ms. 50 (34).

Site :- Agri. Res. Stn. Hebbal.

Type :- 'D'.

Object :—To study the influence of seed treatment with borax on Ragi.

8. BASAL CONDITIONS :

(i) (a) Generally pulses followed by Ragi. (b) Fodder jowar (c) Nil (ii) (a) Sandy loam (b) Refer soil analysis Hebbal (iii) 8.8.1950 (iv) (a) 3 ploughings. (b) in furrow. (c) 8 seer/ac. (d) N.A. (e)—(v) 2 mds. of G.N.C./ac. Time and method of application N.A. (vi) R. 0833. Duration N.A. (vii) Unirrigated. (viii) Usual thinning, weeding. (ix) 22.10" (8.8.1950 to 8.12.1950) (x) 8.12.1950.

2. TREATMENTS :

1. Seeds treated with 1.0% by wt. of boric acid.
2. " " " 1.5% " " " "
3. " " " 2.0% " " " "
4. " " " 2.5% " " " "
5. Control.

Time of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 6 (iv) (a), (b) $22\frac{1}{2}' \times 48'$ (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950-1952. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 886 lb./ac.
 (ii) 176.6 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	729
2.	942
3.	895
4.	965
5.	901
S.E./mean	= 72.1 lb./ac.

Crop :- Ragi.

Site :- Agri. Res. Stn. Hebbal.

Ref :- Ms. 51 (54).

Type :- 'D'.

Object :- To study the effect of soaking Ragi seed in boric acid.

1. BASAL CONDITIONS :

(i) (a) Groundnut or pulses-Fallow-Ragi. (b) Groundnut or pulses. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis Hebbal. (iii) 21.7.1951. (iv) (a) 3 ploughings (b) N.A. (c) 8 seers/ac. (d) N.A. (e) — (v) Nil. (vi) R-0833 (Duration N.A.) (vii) Unirrigated. (viii) Usual thinning, weeding once. (ix) 23.87" (21.7.51 to 28.11.1951) (x) 28.11.1951.

2. TREATMENTS :

1. Seeds treated with boric acid sol. 1.0% by wt. of seed.
 2. " " " " 1.5% " "
 3. " " " " 2.0% " "
 4. " " " " 2.5% " "
 5. Control.
 Time of application N.A.

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a); (b) 1/50th. ac. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950-1952. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 354 lb./ac.
 (ii) 127.9 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	329
2.	319
3.	237
4.	267
5.	617
S.E./mean	= 57.2 lb./ac.

Crop :- Ragi.

Ref :- Ms. 51 (55).

Site :- Agri. Res. Stn. Hebbal.

Type :- 'D'.

Object :—To study the effect of soaking Ragi seed in boric acid.

1. BASAL CONDITIONS :

(i) (a) Groundnut or pulses-Fallow-Ragi. (b) Groundnut or pulses. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis Hebbal. (iii) 21.7.1951. (iv) (a) 3 ploughings (b) N.A. (c) 8 seers/ac. (d) & (e) N.A. (v) Nil. (vi) R-0833 (vii) Unirrigated. (viii) Usual thinning, weeding once, passing chippagunte once. (ix) 23.87" (21.7.51 to 28.11.1951). (x) 28.11.1951.

2. TREATMENTS :

1. Seeds treated with boric acid soil. 1.0% by wt. of seed.
2. " " " " 1.5% " "
3. " " " " 2.0% " "
4. " " " " 2.5% " "
5. Control.

Time of application N.A.

3. DESIGN :

(i) L.Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a), (b) 1/50th ac. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950-1952 (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 453 lb./ac.
- (ii) 152 lb./ac.
- (iii) The differences in yield due to treatments are significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	309
2.	375
3.	386
4.	504
5.	689
S.E./mean	= 68.0 lb./ac.

Crop :- Ragi.

Ref :- Ms. 52(10)

Site :- Agri. Res. Stn. Hebbal.

Type :- 'D'.

Object :—To find the influence presoaking Ragi seed in boric acid.

1. BASAL CONDITIONS :

(i) (a) Groundnut or pulses-Fallow-Ragi. (b) Groundnut or pulses (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis, Hebbal. (iii) 18.8.52 (iv) (a) 3 ploughings (b) N.A. (c) 8 seers/ac. (d) N.A. (e) N.A. (v) 56 lb./ac. G.N.C. and 56 lb./ac. Super at sowing (vi) H. 22 Ragi (4½—5 months duration). (vii) Rainfed. (viii) Usual thinning, weeding once, passing chippagunte once (ix) 14.65" (18.8.1952 to 23.12.1952) (x) 23.12.1952.

2. TREATMENTS :

1. Seeds soaked with boric acid sol. 1.0% by weight of seed.
2. " " " " " " 1.5% " " " "
3. " " " " " " 2.0% " " " "
4. " " " " " " 2.5% " " " "
5. Control

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) and (b) 62'×25'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield, straw yield (iv) (a) 1950—52. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 115.0 lb./ac.

(ii) 31.89 lb./ac.

(iii) The differences in yield due to treatments are highly significant.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	75.9
2.	88.2
3.	97.7
4.	131.3
5.	179.9
S.E./mean	=14.26 lb./ac.

Crop :-Ragi.

Site :-Agri. Res. Stn. Hebbal.

Ref :-Ms. 48(4)

Type :-'D'.

Object :-To study the effect of treatment of seed with Nomersan and Agrosan.

1. BASAL CONDITIONS :

(i) (a) Ragi is generally followed by groundnut. (b) N.A. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis Hebbal. (iii) 28.8.1948 (iv) (a) 3 ploughings (b) Seeds drilled. (c) About 8 seer./ac. (d) N.A. (e) — (v) Nil. (vi) R. 0871 Duration N.A. (vii) Unirrigated (viii) Weeding, interculturing (ix) 11.27''(28.8.1948 to 3.1.1949) (x) 3.1.1949.

2. TREATMENTS :

1. Nomersan.

2. T.M.T.D.

3. Agrosan G.N.

4. 4% Agrosan G.N.

5. Control.

Time and method of application N.A.

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) and (b) 25'×30' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Grain yield data. (iv) (a) 1948—1949 (b) No (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 225 lb./ac.

(ii) 72.2 lb./ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	230
2.	236
3.	211
4.	253
5.	195
S.E./mean	=32.3 lb./ac.

Crop :- Ragi.

Ref :- Ms. 49 (12)

Site :- Agri. Res. Stn. Hebbal.

Type :- 'D'.

Object :—To find the effect of seed treatment against fungicides.

1. BASAL CONDITIONS :

(i) (a) Ragi generally followed by groundnut. (b) N.A. (c) N.A. (ii) (a) Red sandy loam. (b) Refere soil analysis, Hebbal. (iii) 2.8.1948 (iv) (a) 3 ploughings. (b) Seeds drilled. (c) about 8 seers/ac. (d) and (e) N.A. (v) Nil. (vi) R. 0324 (vii) Unirrigated. (viii) Weeding (ix) 19'44" (10.8.49 to 1.12.1949) (x) 1.12.1949.

2. TREATMENTS :

1. Nomersan 3 gm/plot.
2. T.M.T.D. 3 „ „
3. Agrosan 3 „ „
4. 4% Agrosan.
5. Control.

Time and method of application N.A.

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a) and (b) 25' × 31' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Grain yield data. (iv) (a) 1948—1949 (b) No. (c) N.A. (v) (a) and (b) N.A. (vi, and (vii) Nil.

5. RESULTS :

- (i) 336 lb./ac.
 (ii) 72.2 lb. ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	362
2.	355
3.	295
4.	309
5.	356
S.E./mean	=32.3 lb./ac.

Crop :- Ragi.

Ref :- Ms. 50(33)

Site :- Agri. Res. Stn. Hebbal.

Type :- 'D'

Object :—To find the effect of seeds treated with different fungicides.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cotton (c) Nil. (ii) (a) Red sandy loam. (b) Refer soil analysis Hebbal. (iii) 25.7.50. (iv) (a) 3 ploughings (b) Seed-drill (c) 8 seers/ac. (d) & (e) N.A. (v) Nil. (vi) R. 0870. (vii) Unirrigated. (viii) Usual thinning, weeding. (ix) 22.10" (25.7.50 to 4.12.1950). (x) 4.12.1950.

2. TREATMENTS :

1. Arasan.
2. Agrosan G.N.
3. Mergamma.
4. Fermate.
5. Control.

Time and method of application N.A.

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5. (iv) (a), (b) 36 links × 55½ links (1/50th ac.). (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950-1952 (b) No (c) N.A. (v) (a) N.A. (b) .A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 422 lb./ac.
 (ii) 146.6 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	428
2.	413
3.	483
4.	430
5.	355
S.E./mean	=65.6 lb./ac.

Crop :- Ragi.

Site :- Agri. Res. Stn. Hebbal.

Ref :- Ms. 51(52)

Type :- 'D'

Object :- To find the effect of seeds treated with different fungicides.

1. BASAL CONDITIONS;

- (i) (a) Nil. (b) Groundnut. (c) Nil. (ii) (a) Red sandy loam. (b) Refer soil analysis Hebbal. (iii) 23.7.1951. (iv) (a) 3 ploughings (b) Seed-drill (c) About 8 seers/ac. (d) & (e) N.A. (v) Nil. (vi) R.0870. (vii) Unirrigated. (viii) Usual thinning, weeding, passing of chippagunte. (ix) 24.47" (23.7.1951 to 29.11.1951) (x) 29.11.1951.

2. TREATMENTS :

- Control,
- Arasan.
- Agrosan G.N.
- Nomersan.
- Mergamma.
- Fermate.

Time and method of application N.A.

3. DESIGN :

- (i) L. Sq. (ii) (a) 6 (b) N.A. (iii) 6. (iv) (a), (b) 18' x 30'. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1950-1952. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 907 lb./ac.
 (ii) 205.3 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. grain yield in lb./ac.

Treatment	Av. yield
1.	968
2.	843
3.	906
4.	1023
5.	830
6.	871
S.E./mean	= 83.8 lb./ac.

Crop :- Ragi.

Ref :- Ms. 52(19).

Site :- Agri. Res. Stn. Hebbal.

Type :- 'D'

Object :—To find the effect of seeds treated with different fungicides.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis Hebbal. (iii) 16.8.52. (iv) (a) 3 ploughings (b) Sown in seed-drill (c) 8 srs./ac. (d) & (e) N.A. (v) Nil. (vi) R. 0870. (vii) Rainfed. (viii) Usual thinning, weeding once, passing chippagunte once. (ix) 14.90" (16.1.52 to 31.12.52) . (x) 31.12.52.

2. TREATMENTS :

The fungicides are taken at the rate of 2 ozs. for 30 srs. of seed.

1. Control.
2. Arason.
3. Mergamma.
4. Agrosan G.N.
5. Nomersan.
6. Fermate.

3. DESIGN :

(i) L. Sq. (ii) (a) 6 (b) N.A. (iii) 6. (iv) (a), (b) 31.5'×19'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Germination poor. The crop suffered to a great extent for want of timely rains. (ii) Disease was not in much evidence. (iii) Grain yield data. (iv) (a) No. (b) No. (c) No. (v) (a) & (b) No. (vi) No. (vii) Nil.

5. RESULTS :

- (i) 252.5 lb./ac.
- (ii) 72.6 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	289.5
2.	253.3
3.	253.3
4.	242.0
5.	244.8
6.	232.1
S.E./mean	= 29.11 lb./ac.

Crop :-Ragi.

Ref :-Ms. 49(14)

Site :-Agri. Res. Stn. Hebbal.

Type:-'D'.

Object :—To find the effect of steeping ragi seed in cattle urine.

1. BASAL CONDITIONS :

(i) (a) Generally ragi followed by groundnut or pulses. (b) N.A. (c) Nil. (ii) (a) Red loam. (b) Refer soil analysis Hebbal. (iii) 30.6.49/23.8.49. (iv) (a) 3 ploughings (b) N.A. (c) 10 seers/ac. (d) and (e) N.A. (v) Nil. (vi) E.S. 11 (vii) Unirrigated. (viii) Weeding (ix) 32.01" (30.6.49 to 5.11.1949 (x) 5.11.1949.

2. TREATMENTS :

1. Steeping in 1.0% cattle urine.
2. " " 10.0% " "
3. " " 25.0% " "
4. " " 100.0% " "
- . Control.

Ragi seed is steeped in different strengths of cattle urine for 12 hours.

3. DESIGN :

(i) R.B.D. (ii) (a) 5 (b) N.A (iii) 2 (iv) (a), (b) 30'×25' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1949—1950. (b) No (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 1081 lb./ac.
 (ii) 255.0 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1196
2.	1283
3.	1151
4.	900
5.	876
S.E./mean	=180.3 lb./ac.

Crop :-Ragi.

Site :- Agri.Res. Stn. Hebbal.

Ref :-Ms. 50(35)

Type 'D'.

Object :—To find the effect of steeping ragi seed in cattle urine.

1. BASAL CONDITIONS :

(i) (a) Generally ragi is followed by groundnut or pulses. (b) Groundnut. (c) Nil. (ii) (a) Red loam (b) Refer soil analysis Hebbal. (iii) 26.6.50 ; 10.8.1950. (iv) (a) 3 ploughings. (b) Transplanting. (c) 10 seers/ac. (d) and (e) N.A. (v) Nil. (vi) R—0009. (vii) Unirrigated. (viii) Weeding. (ix) 22.70" (26.6.1950 to 20.11.1950) (x) 20.11.1950.

2. TREATMENTS :

1. Steeping the seed in 1.0% of cattle urine.
2. " " " 10.0% " "
3. " " " 25.0% " "
4. " " " 100.0% " "
5. Control.

Ragi seeds are steeped in different strengths of cattle urine for 12 hours.

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a), (b) 24'×35½' (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1949—1950. (b) No (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 213 lb./ac.
 (ii) 38.9 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	242
2.	232
3.	175
4.	198
5.	219
S.E./mean	=17.4 lb./ac.

Crop :-Ragi.

Ref :-Ms. 53(55)

Site :-Agri. Res. Stn. Hebbal.

Type :-'D'.

Object :—To study the effect of seed dressing for controlling the root rot of Ragi.

1. BASAL CONDITIONS :

(i) (a) No (b) Generally groundnut (c) N.A. (ii) (a) Red sandy loam (b) Refer soil analysis Hebbal. (iii) 18.7.53. (iv) (a) 3 ploughings (b) to (e) N.A. (v) Nil. (vi) R—0870. (vii) Unirrigated (viii) Weeding once and passing chippanugte once. (ix) 26.58" (18.7.53 to 2.4.54) (x) 26.3.54, 27.3.54 and 2.4.1954.

2. TREATMENTS :

1. Agrosan G.N.
2. Ceresan.
3. Fermate.
4. Yellow cuproxide.
5. Control.

All chemicals applied at 0.2% by weight, just before sowing.

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) (a), (b) 34'×24' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. A number of earheads in the plots were damaged (ii) Nil. (iii) Grain yield data and a sample of one square yard considered for taking the count of the infected plants. (iv) (a) No (b) and (c)—(v) (a), (b) None (vi) No (vii) None.

5. RESULTS :

(i) 242 lb./ac.

(ii) 131.3 lb./ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	323
2.	214
3.	256
4.	195
5.	222
S.E./mean	=58.7 lb./ac.

Crop :-Ragi.

Ref :-Ms. 53(17)

Site :-Agri. Res. Stn. Hebbal.

Type :-'D'.

Object :—To find the influence of soaking ragi seeds in Zn. Sul. solution.

1. BASAL CONDITIONS :

(i) (a) Ragi. Groundnut or pulses. (b) Groundnut or pulses. (c) N.A. (ii) (a) Red loam (b) Refer soil analysis Hebbal. (iii) 4.7.53. (iv) (a) 3 ploughings. (b) N.A. (c) 8 seers/ac. (d), (e) N.A. (v) 56 lb./ac. of Super and 56 lb./ac. of G.N.C. over a basal dressing of 2 tons/ac. of F.Y.M. (vi) H. 22 (vii) Unirrigated (viii) Usual thinning, weeding once and passing chippagunte once (ix) 31.07" (4.7.53 to 25.11.53) (x) 25.11.53.

2. TREATMENTS :

1. Seeds treated with 0.5% Zn. Sul. sol.
2. " " " 1.0% " " "
3. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 2 (iv) (a), (b) 170'×40' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good (ii) Nil. (iii) Grain and straw yield (iv) (a) 1953—contd. (b) No (c) N.A. (v) Nil. (vi) No. (vii) Nil.

5. RESULTS :

- (i) 751 lb./ac.
 (ii) 181.0 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	591
2.	966
3.	696
S.E./mean	=128.0 lb./ac.

Crop :- Ragi.

Ref :- Ms. 49 (13).

Site :- Agri. Res. Stn. Hebbal.

Type :- 'D'.

Object :- To find out the effect of treating ragi seed with fungicides.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis, Hebbal. (iii) 10.8.49 (iv) (a) 3 ploughings. (b) Seed drilled. (c) 8 seers/ac. (d) & (e) N.A. (v) Nil. (vi) R. 0324 (vii) Unirrigated (viii) Weeding. (ix) 19.44" (10.8.1949 to 1.12.1949) (x) 1.12.1949.

2. TREATMENTS :

1. Control.
 2. Ceresan 1½ gms/plot.
 3. Sulphur dust 2½ gms/plot.
 4. Monohydrated C/S 3½ gms/plot.
 Time and method of application N.A.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 8 (iv) (a). (b) 30' × 12' (v) Nil (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 397 lb./ac.
 (ii) 109.4 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	381
2.	391
3.	435
4.	381
S.E./mean	=38.7 lb./ac.

Crop :- Ragi.

Ref :- Ms. 49 (15).

Site :- Agri. Res. Stn. Hebbal.

Type :- 'D'.

Object :- To study the effect of Fernoxone on weeds.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis, Hebbal. (iii) 2.8.49 (iv) (a) 3 ploughings. (b) Seed drilled (c) about 8 seers/ac. (d) & (e) N.A. (v) Nil. (vi) R. 0009 (vii) Unirrigated. (viii) Weeding. (ix) 19.44" (2.8.1949 to 24.11.1949) (x) 24.11.1949.

2. TREATMENTS :

1. Fernoxone : 2 lb./ac.
 2. „ : 3 lb./ac.
 3. „ : spray 2 lb. in 100 gallons.
 4. „ : spray 3 „ „ 100 „
 5. Control.
- Time and method of application N.A.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 6 (iv) (a) & (b) 60.5'×12' (v) Nil (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) No (b) No (c) N.A. (v) (a) & (b) N.A. (vi) Nil (vii) Nil (viii) Records do not furnish any reason for low yield.

5. RESULTS :

- (i) 191 lb./ac.
- (ii) 47.5 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of grain in lb./ac.

Treatment.	Av. yield.
1.	193
2.	206
3.	197
4.	173
5.	187
S.E./mean	= 19.4 lb./ac.

Crop :- Maize. (Kharif)

Ref :- Ms. 49 (4).

Site :- Agri School Farm, Arbhavi.

Type :- 'M'.

Object :- To study the manurial requirements of N and P_2O_5 for irrigated Maize.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Jowar. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Arbhavi. (iii) 4.7.1949 (iv) (a) Harrowed twice after ploughing. (b) N.A. (c) 20 lb./ac. (d) 18" (e) Two seeds, but one plant retained. (v) 5 C.L./ac. of F.Y.M. (vi) Hybrid maize (early) (vii) Irrigated. (viii) Interculturings and weeding twice. (ix) N.A. (x) 10.10.1949.

2. TREATMENTS :

All combinations of (1) & (2)

- (1) 4 levels of N : $N_0=0$, $N_1=32$, $N_2=54$ and $N_3=96$ lb./ac.

- (2) 4 levels of P_2O_5 : $P_0=0$, $P_1=32$, $P_2=64$ and $P_3=96$ lb./ac.

N as G.N.C. & P_2O_5 as Super.

Placement of P_2O_5 : 5" deep at the time of sowing with country drill ; G.N.C. broadcast.

3. DESIGN :

- (i) 4×4 Fact. in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 51'×21' (b) 40'×11' (v) 5½' along length and 5' along breadth (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1948—1952. (b) No (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1002 lb./ac.
- (ii) 418.9 lb./ac.
- (iii) Main effect of N highly significant. Linear component of N highly significant. P and interaction N×P not significant.

(iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean.
P ₀	594	718	1151	903	841
P ₁	767	1039	1398	1015	1055
P ₂	804	928	1349	1522	1151
P ₃	668	1027	928	1213	959
Mean.	738	928	1207	1163	1002

S.E. of marginal mean = 104.4 lb./ac.

S.E. of body of table = 208.8 lb./ac.

Crop :- Maize.

Ref :- Ms. 50(25).

Site :- Agri. School Farm, Arbhavi.

Type :- 'M'.

Object :- To study the manurial requirements of N and P₂O₅ on Maize (with basal manure.)

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) N.A. (iii) (a) Medium black (b) Refer soil analysis Arbhavi. (iii) 9.7.50. (iv) (a) Land ploughed, harrowed twice after crushing the clods. (b) Drilling. (c) 15 lb./ac. (d) 18"×9" (e) Two seeds per hill but only one plant retained. (v) F.Y.M. at 5 C.L./ac. applied as basal manure. (v) Hybrid maize (early) (vii) Irrigated (viii) Interculturings and weedings done twice. (ix) N.A. (x) 30.10.50.

2. TREATMENTS :

All combinations of (1) & (2).

(1) 4 levels of N : N₀=0, N₁=32, N₂=64 and N₃=96 lb./ac.(2) 4 levels of P₂O₅ : P₀=0 P₁=32, P₂=64 and P₃=96 lb./ac.N as G.N.C. and P₂O₅, as Super.Placement of P₂O₅ at the time of sowing with 3 coultered country drill with moghan attached to it. G.N.C. was broadcast and whole plot was harrowed.

3. DESIGN :

(i) 4×4 Fact. in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 52'×18' (b) 46'×12' (v) 3' all round (vi) Yes.

4. GENERAL :

(i) Lodged for about 25—30 days during Sept.—Oct., 1950. (ii) Nil. (iii) Grain yield (iv) (a) 1948—1952 (b) No (c) N.A. (v) (a) No (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 945 lb./ac.

(ii) 365.1 lb./ac.

(iii) Main effect of N alone is highly significant.

P and interaction N×P are not significant.

(iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean.
P ₀	730	789	1361	789	917
P ₁	789	730	1351	878	937
P ₂	464	1006	1006	1233	927
P ₃	957	819	1223	996	999
Mean.	735	836	1235	974	945

S.E. of marginal mean. = 91.3 lb./ac.

S.E. of body of table. = 182.6 lb./ac.

Crop :- Maize.

Ref :- Ms. 51(79).

Site :- Agri. School Farm, Arbhavi

Type :- 'M'.

Object :- To study the manurial requirements of N and P_2O_5 for Maize (with basal manure).

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize (in Kharif season) (c) N.A. (ii) (a) Black sandy soil. (b) Refer soil analysis, Arbhavi (iii) 27,28,& 29.10.1951. (iv) (a) Ploughing, harrowing. (b) Dibbling. (c) 15 lb./ac. (d) $18'' \times 12''$ (e) 2 to 3. Thinning later on. (v) 5 C.L./ac. F.Y.M. applied as basal dose, broadcast. (vi) N.A. (vii) Irrigated. (viii) Interculturing and weeding twice. (ix) N.A. (x) 9.10.2.1952.

2. TREATMENTS :

All combinations of (1) & (2).

(1) 4 levels of N : $N_0=0$, $N_1=32$, $N_2=64$ and $N_3=96$ lb./ac.(2) 4 level of P_2O_5 : $P_0=0$, $P_1=32$, $P_2=64$ and $P_3=96$ lb./ac.N as G.N.C. and P_2O_5 as super.

Placement of Super done by country wooden plough with moghan attached to it. G.N.C. broadcast and the whole plot harrowed.

3. DESIGN :

(i) 4×4 Fact. in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) $52' \times 18'$ (b) $46' \times 12'$ (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield (iv) (a) 1948—1952 (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 1969 lb./ac.
(ii) 834.9 lb./ac.
(iii) Main effects and interaction are not significant.
(iv) Av. yield of grain in lb/ac.

	N_0	N_1	N_2	N_3	Mean.
P_0	1855	1598	1401	2387	1810
P_1	2170	1953	2170	2091	2096
P_2	2052	2111	1637	1894	1923
P_3	2466	1874	1953	1894	2047
Mean.	2135	1884	1790	2066	1969

S.E. of marginal means. = 208.7 lb./ac.

S.E. of body of table. = 417.4 lb./ac.

Crop:- Maize.

Ref :- Ms. 52(71).

Site :- Agri. School Farm, Arbhavi.

Type :- 'M'.

Object :- To study the manurial requirements of N and P_2O_5 for irrigated Maize. (with basal manure).

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram and wheat (c) N.A. (ii) (a) Medium black (b) Refer soil analysis, Arbhavi (iii) 9.7.52. 10.7.52 (iv) (a) Ploughing, levelling, clod crushing etc. (b) Sowing with 3 coultered $18''$ seed-drill. (c) 15 lb./ac. (d) $18'' \times 12''$. (e) 2 to 3, thinned later on. (v) Basal manure of 5 C.L./ac. of F.Y.M. applied on 7.7.1952. (vi) Hybrid maize (3 to $3\frac{1}{2}$ months duration) (vii) Irrigated. (viii) 3 intercultures (ix) N.A. (x) 24,25.10.52.

2. TREATMENTS :

All combinations of (1) & (2).

(1) 4 levels of N : $N_0=0$, $N_1=32$, $N_2=64$ and $N_3=96$ lb./ac.(2) 4 levels of P_2O_5 : $P_0=0$, $P_1=32$, $P_2=64$ and $P_3=96$ lb./ac.N as G.N.C. and P_2O_5 as Super.

Super applied with seed-drill on 7,9 July. G.N.C. broadcast. Plots harrowed for mixing manure in the soil.

3. DESIGN :

(i) 4×4 Fact. in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 52'×18' (b) 46'×12' (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) The crop suffered from "Urgungi" disease. (iii) Grain yield (iv) (a) 1948-1952 (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 652 lb./ac.
 (ii) 296.5 lb./ac.
 (iii) Main effect of P is significant. Main effect of N and interaction N×P are not significant.
 (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	562	256	523	552	473
P ₁	582	592	474	691	585
P ₂	493	888	710	1065	789
P ₃	691	730	829	789	760
Mean.	582	617	634	774	652

S.E. of marginal means. = 74.2 lb./ac.
 S.E. of body of table. = 148.4 lb./ac.

Crop :- Maize.

Site :- Agri. School Farm, Arbhavi.

Ref :- Ms. 49 (5).

Type :- 'M'.

Object :- To study the manurial requirements of N and P₂O₅ for irrigated Maize (without basal manure).

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) N.A. (ii) (a) Medium black (b) Refer soil analysis, Arbhavi (iii) 4.7.49. (iv) (a) Harrowed twice after ploughing and again harrowed after sowing. (b) N.A. (c) 20 lb./ac. (d) 18" between rows. (e) 2 seeds, only one plant retained. (v) Nil (vi) Hybrid maize (early.) (vii) Irrigated, (viii) Interculturings and weeding done twice. (ix) N A. (x) 10.10.1949.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of N : N₀=0, N₁=32, N₂=64 and N₃=96 lb./ac.

(2) 4 levels of P₂O₅ : P₀=0, P₁=32, P₂=64 and P₃=96 lb./ac.

N as G.N.C. and P₂O₅/ac. as Super.

Placement of P₂O₅ : 5"-6" deep with 3 coultered country drill. G.N.C. broadcast.

3. DESIGN :

(i) 4×4 Fact. in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 51'×21' (b) 40'×11' (v) 5½' along length and 5' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain yield. (iv) (a) 1948-1952 (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) 625 lb./ac.
 (ii) 243.5 lb./ac.
 (iii) Main effect of N is highly significant. Main effect of P and interaction N×P are not significant.

(iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	569	309	433	829	535
P ₁	532	594	730	557	603
P ₂	396	681	854	594	631
P ₃	483	718	804	916	730
Mean	495	575	705	724	625

S.E. of marginal mean = 60.9 lb./ac.

S.E. of body of table. = 121.8

Crop :- Maize.

Ref :- Ms. 50 (26).

Site :- Agri. School Farm, Arbhavi.

Type :- 'M'.

Object :- To study the manurial requirements of N and P₂O₅ of Maize (without basal manure).

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar and Tur. (c) 5 C.L./ac. F.Y.M. and 163 lb./ac. of Manure mixture. (ii) (a) Medium black (b) Refer soil analysis, Arbhavi. (iii) 9.7.1950 (iv) (a) The land ploughed, harrowed twice after crushing clods. The land again harrowed after applying fertilizers. (b) Drilling. (c) 15 lb./ac. (d) 18" x 9". (e) 2 seeds, only one plant retained. (v) Nil (vi) Hybrid maize (early) (vii) Irrigated. (viii) Interculturings and weeding done twice. (ix) N.A. (x) 30.10. 1950.

2. TREATMENTS :

All combinations of (1) & (2).

(1) 4 levels of N : N₀=0, N₁=32, N₂=64 and N₃=96 lb./ac.(2) 4 levels of P₂O₅ : P₀=0, P₁=32, P₂=64 and P₃=96 lb./ac.N as G.N.C. and P₂O₅/ac. as Super.Placement of P₂O₅ done by sowing with 3 coultered country drill, with moghan attached to it. The G.N.C. broadcast and the whole plot harrowed.

3. DESIGN :

(i) 4x4 Fact. in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 52' x 18' (b) 46' x 12' (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Grain Yield. (iv) (a) 1948-1952. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1413 lb./ac.

(ii) 337.1 lb./ac.

(iii) Main effect of N is highly significant. Main effect of P and interaction N x P are not significant.

(iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	1154	1302	1874	1509	1460
P ₁	1213	1430	1480	1519	1411
P ₂	937	1036	1697	1480	1287
P ₃	1154	1332	1578	1904	1492
Mean.	1115	1275	1657	1603	1413

S.E. of marginal mean. = 84.3 lb./ac.

S.E. of body of table. = 168.6 lb./ac.

Crop :- Maize.

Ref :- Ms. 51 (78).

Site :- Agri. School Farm, Arbhavi.

Type :- 'M'.

Object :- To study the N and P_2O_5 requirements of Maize (without basal manure).

1. BASAL CONDITIONS :

(i) (a) Nil (b) Maize (kharif season) (c) N.A. (ii) (a) Black sandy soil. (b) Refer soil analysis, Arbhavi. (iii) 27, 28, 29.10.1951. (iv) (a) ploughing, harrowing. (b) Dibbling. (c) 15 lb./ac. (d) $18'' \times 12''$ (e) 2 seeds/hill, only one plant retained. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Interculturing and weeding twice. (ix) N.A. (x) 9, 10.2.1952.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N : $N_0=0$, $N_1=32$, $N_2=64$ and $N_3=96$ lb./ac.(2) 4 levels of P_2O_5 : $P_0=0$, $P_1=32$, $P_2=64$ and $P_3=96$ lb./ac.[N as G.N.C. and P_2O_5 as Super]

Super placed by country wooden plough and G.N.C. broadcast.

3. DESIGN :

(i) 4×4 Fact. in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) $52' \times 18'$ (b) $46' \times 12'$. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1948-1952. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1359 lb./ac.

(i) 442.3 lb./ac.

(iii) Main effects and interaction are not significant.

(iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	Mean.
P_0	1401	1480	1519	1065	1366
P_1	1637	1065	1302	1716	1430
P_2	1460	1322	1026	1519	1332
P_3	927	1637	1085	1578	1307
Mean.	1356	1376	1233	1470	1359

S.E. of marginal mean

=110.6 lb./ac.

S.E. of body of table

=221.2 lb./ac.

• Crop :- Maize.

Ref :- Ms. 52 (72).

Site :- Agri. School Farm, Arbhavi.

Type :- 'M'.

Object :- To study the manurial requirements of N and P_2O_5 for irrigated Maize. (without basal manure.)

1. BASAL CONDITIONS :

(i) (a) Nil (b) Maize and Sann (Kharif), Wheat (Rabi) (c) N.A. (ii) (a) Black medium (b) Refer soil analysis, Arbhavi (iii) 9,10.7.1952. (iv) (a) 6 ploughings, harrowing and clod crushing. (b) N.A. (c) 15 lb./ac. (d) $18'' \times 12''$ (e) 2 seeds, only one plant retained. (v) Nil. (vi) Hybrid maize (3 to $3\frac{1}{2}$ months duration). (vii) Irrigated. (viii) Interculturing and weeding done. (ix) N.A. (x) 24, 25.10.1952.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N : $N_0=0$, $N_1=32$, $N_2=64$ and $N_3=96$ lb./ac.(2) 4 levels of P_2O_5 : $P_0=0$, $P_1=32$, $P_2=64$ and $P_3=96$ lb./ac.N as G.N.C. and P_2O_5 as Super.

Super placed 6" below soil with 3 coultered drill and G.N.C. broadcast.

3. DESIGN :

(i) 4×4 Fact. in R.B D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 52'×18' (b) 46'×12' (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield (iv) (a) 1948-1952. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 581 lb./ac.

(ii) 231.4 lb./ac.

(iii) Main effect of P is significant. Main effect of N and interaction N×P are not significant.

(iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean.
P ₀	454	375	355	533	429
P ₁	691	612	730	543	644
P ₂	533	621	691	760	651
P ₃	651	631	523	602	632
Mean	582	560	575	609	581

S.E. of marginal mean. = 57.9 lb./ac.

S.E. of body of table. = 115.7 lb./ac.

Crop :- Maize.

Site :- Agri. School Farm, Arbhavi.

Ref :- Ms. 53(177)

Type :- 'M'

Object :- To find out the optimum dose of N for Maize crop.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil and analysis, Arbhavi. (iii) 19.10.53. (iv) (a) to (e) N.A. (v) Sann G.M. was applied. (vi) Maize—(medium.) (vii) Irrigated. (viii) Weeding. (ix) 5.19". (19.10.53 to 1.2.1954). (x) 1.2.1954.

2. TREATMENTS :

1. 0 lb.N/ac.

2. 30 lb.N/ac.

3. 60 lb.N/ac.

4. 90 lb.N/ac.

N applied as G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 4 (iv) (a) 46'×21' (b) 38'×15'. (v) 3' along breadth and 4' along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) No (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 973 lb./ac.

(ii) 205.9 lb./ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	983
2.	943
3.	1041
4.	923
S.E./mean	= 103.0 lb./ac.

Crop :- Maize.

Ref :- Ms. 51(40).

Site :- Agri. School Farm, Arbhavi.

Type :- 'C'

Object :- To find out the effect of spacing and seed-rate on the yield of Maize.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) Gram (c) N.A. (ii) (a) Black medium. (b) Refer soil analysis, Arbhavi. (iii) 5,6,7.1951. (iv) (a) Ploughing, levelling, clod crushing etc. (b) Dibbling. (c) & (d) As per treatments. (e) 2 seeds, only one plant retained. (v) 160 lb./ac. of manure mixture and 5 C.L. of F.Y.M./ac. during tillage operation. (vi) Hybrid maize, early. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 4.10.51.

2. TREATMENTS :

Main plot treatments :

3 spacings : 12", 18" and 24".

Sub plot treatments :

3 seed rates : 9 lb./ac., 12 lb./ac. and 15 lb./ac.

3. DESIGN :

- (i) Split plot. (ii) (a) 3 main plots/block, 3 sub-plots/main plot. (b) N.A. (iii) 6. (iv) (a) 30'×30' (b) 18'×24' (v) Border of 3' along breadth and 6' along length. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1951-55. (b) N.A. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2081 lb./ac.
 (ii) (a) 796.9 lb./ac.
 (b) 478.6 lb./ac.
 (iii) Sub-plot-treatments (seed-rates) are significant ; main plot treatments and interaction 'main×sub' are not significant.
 (iv) Av. yield of grain in lb./ac.

Seed rate	Spacing			Mean
	12"	18"	24"	
9	2075	1521	1773	1790
12	2269	2017	2128	2137
15	2109	2512	2327	2316
Mean	2151	2017	2075	2081

S.E. of difference of two

- (i) main plot treatment of means. =265.6 lb./ac.
 (ii) sub plot treatment means. =159.5 lb./ac.
 (iii) sub plot treatment means at the same level of main plot treatment. =276.3 lb./ac.
 (iv) main plot treatment means at the same level of sub plot treatment. =348.5 lb./ac.

Crop :- Maize.

Ref :- Ms. 52 (73).

Site :- Agri. School Farm, Arbhavi.

Type :- 'C'

Object :- To study the effect of spacing and seed-rate on the yield of Maize.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Maize (Rabi '51). (c) Refer Exp. Ms. 51 (78). (ii) (a) Black medium. (b) Refer soil analysis, Arbhavi. (iii) 17,18.6.52. (iv) (a) Ploughing, levelling, clod crushing etc. (b) Hand drilling. (c) & (d) As per treatments. (c) 2 seeds ; only one plant retained. (v) 7 C. L. of F.Y. M./ac. as basal manure and 160 lb./ac. of manure mixture as top dressing. (vi) Hybrid maize (3 to 3½ months duration). (vii) Irrigated. (viii) Weeding. (ix) N. A. (x) 3rd week of Sept. '52.

2. TREATMENTS :

Main plot treatments :—

3 spacings : 12", 18" and 24".

Sub plot treatments :—

3 seed-rates : 9 lb./ac., 12 lb./ac. and 15 lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main plots/block, 3 sub-plots/main plot. (b) N. A. (iii) 6 (iv) (a) 30'×30' (sub), 90'×30' (main). (b) 18'×24' (sub). (v) 3' along length and 6' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1951-1955. (b) No. (c) N. A. (v) (a) N. A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 2500 lb./ac.

(ii) (a) 555.5 lb/ac.

(b) 513.0 lb./ac.

(iii) Main treatments, sub treatments and interaction 'main sub' are not significant.

(iv) Av. yield of grain in lb./ac.

Seed-rate	12"	Spacing 18"	24"	Mean
9	2386	2689	2723	2599
12	2385	2369	2538	2431
15	2672	2403	2336	2470
Mean	2481	2487	2532	2500

S.E. of difference of two

1. main plot treatment means = 185.1 lb/ac.

2. sub plot treatment means = 171.0 lb/ac.

3. sub plot treatment means at the same level of main plot treatment = 296.2 lb/ac.

4. main plot treatment means at the same level of sub plot treatment = 304.6 lb/ac.

Crop :-Maize.

Ref :-Ms. 53(135)

Site :-Agri. School Farm, Arbhavi.

. Type :-'C'

Object :—To find out the effect of spacing and seed rate on the yield of Maize.

1. BASAL CONDITIONS:

(i) (a) Gram as rotational crop. (b) Gram (Rabi 1952—1953) (c) Nil. (ii) (a) Black medium (b) Refer soil analysis, Arbhavi. (iii) 28, 29.6.1953. (iv) (a) ploughing, levelling, clod crushing etc. (b) Hand dibbling. (c) and (d) As per treatments. (e) 2 seeds ; only one plant retained. (v) 10 C.L. of F.Y.M./ac. and 20 lb.N/ac. as A/S top dressed. (vi) Hybrid maize (3 to 3½ months duration). (vii) Irrigated. (viii) Weeding (ix) N.A. (x) Last week of Sept. and first week of Oct. 1953.

2. TREATMENTS :

Main plot treatments :—

3 spacings : 12", 18" and 24".

Sub plot treatments :—

3 seed rates : 9 lb /ac. 12 lb./ac. and 15 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots ; 3 sub-plots. (b) N.A. (iii) 6. (iv) (a) 30'×30' (sub) 90'×30' (main) (b) 18'×24'. (sub) (v) 3' along length and 6' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1951—1955. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 2538 lb./ac.
 (ii) (a) 454.3 lb./ac.
 (b) 512.0 lb./ac.
 (iii) Spacings and interaction "spacings \times seed-rate" are significant. Main effect of seed-rate is not significant.
 (iv) Av. yield of Grain in lb./ac.

Seed-rate	Spacing			Mean
	12"	18"	24"	
9 lb./ac.	2235	2361	3193	2595
12 lb./ac.	2017	3050	4926	2521
15 lb./ac.	2319	2378	2798	2498
Mean	2190	2596	2829	2538

S.E. of difference of two

1. main plot treatment means =151.4 lb./ac.
2. sub plot treatment means =170.7 lb./ac.
3. sub plot treatment means at the same level of main plot treatment =295.6 lb./ac.
4. main plot treatment means at the same level of sub plot treatment =285.0 lb./ac.

Crop :-Cotton.

Ref :-Ms. 49(21)

Site :-Agri. Res. Stn., Dharwar.

Type :- 'M'.

Object :—To find out how far manuring of Super in combination with N will help in obtaining the maximum yield.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) Jowar. (c) N.A. (ii) (a) Medium black soil (b) Refer soil analysis, Dharwar. (iii) 18.8.1949. (iv) (a) Ploughed with iron plough, 3 to 4 harrowings. The stubbles were collected and plots were harrowed. (b) Dibbled. (c) N.A. (d) 12" \times 24" (e) 2 seeds/hole (v) F.Y.M. at 5 C.L./ac. was applied and the plots were harrowed to mix the manure with soil. (vi) Jayadhar cotton, Medium (vii) Unirrigated (viii) Filling of the gaps, hand weeding, interculturing. (ix) 20.44" (18.8.49 to 26.3.1950) (x) 8.3.1950 and 26.3.19.1950.

2. TREATMENTS :

All Combinations of (1), (2) and (3)

- (1) 3 levels of N : $N_0=0$, $N_1=30$ and $N_2=60$ lb./ac.
- (2) 2 sources of N : G.N.C. and A/S.
- (3) 3 levels of P_2O_5 as Super :— $P_0=0$, $P_1=30$ and $P_2=60$ lb./ac.

G.N.C. and Super placed 4"—5" deep in the soil by seed drill on 17.8.49. A/S was applied on 24.9.1949 by hand.

3. DESIGN :

(i) 3 \times 3 \times 2 Fact. in R.B.D. (ii) (a) 18 (b) N.A. (iii) 4 (iv) (a) 48' \times 20' (b) 40' \times 12' (v) 4' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Kapas yield. (iv) (a) 1948—19.5 (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 562 lb./ac.
- (ii) 64.4 lb./ac.
- (iii) All effects, and interactions are not significant.

(iv) Av. yield of kapas in lb./ac.

P Av. over 'N₀' plots.P₀ = 542P₁ = 526P₂ = 527

	A/S		G.N.C.		Mean
	N ₁	N ₂	N ₁	N ₂	
P ₀	508	615	584	558	566
P ₁	561	578	554	606	574
P ₂	567	606	563	581	579
Mean	545	600	567	581	573

S.E. of the marginal mean of N = 18.60 lb./ac.

S.E. of the marginal mean of P = 16.13 lb./ac.

S.E. of the body of table = 32.21 lb./ac.

Crop :- Cotton.

Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 50(46)

Type :- 'M'.

Object :—To find out how far the manuring of Super in combination with N will help in obtaining maximum yield.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) Jowar. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 16.8.1950. (iv) (a) Harrowing. (b) Dibbled in furrows. (c) 6 lb./ac. (d) 2' in between lines and 1' in between two dibbles. (e) 2. (v) 5 C.L./ac. of F.Y.M. uniformly spread, mixed and harrowed. (vi) Jayadhar cotton (Medium) (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 37'14" (16.8.50 to 11.4. 1951) (x) 4.3.51, 17.3.51 and 11.4.51.

2. TREATMENTS:

All combinations of (1), (2) and (3)

(1) 3 levels of N :— N₀=0, N₁=30 and N₂=60 lb./ac.

(2) 2 sources of N :— G.N.C. and A/S.

(3) 3 levels of P₂O₅ :— P₀=0, P₁=30 and P₂=60 lb./ac.P₂O₅ as Super.

Super and G.N.C. drilled on 16.8.50, 4" to 5" deep.

3. DESIGN :

(i) 3×3×2 Fact. in R.B.D. (ii) (a) 18 (b) N.A. (iii) 4 (iv) (a) 48'×20', (b) 40'×12'. (v) 4' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Kapas yield data. (iv) (a) 1948—1955. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 722 lb./ac.

(ii) 82.3 lb./ac.

(iii) All effects and interactions are not significant.

(iv) Av. yield of kapas in lb./ac.

P	A/S		G.N.C.		Mean.
	N ₁	N ₂	N ₁	N ₂	
P ₀	624	748	669	706	686
P ₁	726	694	739	810	742
P ₂	740	714	780	737	742
Mean	696	718	729	751	724

S.E. of the marginal mean of N=23.75 lb./ac.

S.E. of the marginal mean of P=20.57 "

S.E. of the body of table =41.14 "

Crop :- Cotton.

Site :- Agri. Res. Stn., Dharwar.

Ref :- Ms. 51(66).

Type :- 'M'.

Object :- To find out how far manuring of Super in combination with N will help in obtaining the maximum yield.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) Jowar. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar, (iii) 16.8. 1951, (iv) (a) 4 harrowings. (b) Dibbled (c) 6 lb./ac. (d) 2' x 1'. (e) 2 seeds/dibble. (v) Nil. (vi) Jayadhar cotton (Medium). (vii) Unirrigated. (viii) 4 interculturings. (ix) 30.53" (16.8.51 to 26.3.52) (x) 14.3.1952, 26.3.1952.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N : N₀=0, N₁=30 and N₂=60 lb/ac.

(2) 2 sources of N :- G.N.C. and A/S.

(3) 3 levels of P₂O₅ : P₀=0, P₁=30 and P₂=60 lb/ac.P₂O₅ as Super applied on 12.8.51, A/S on 3.9.51 and G.N.C. on 7.9.51.

3. DESIGN :

(i) 3 x 2 x 3 Fact. in R.B.D. (ii) (a) 18 (b) N.A. (iii) 4 (iv) (a) 48' x 20' (b) 40' x 12'. (v) 4' all round (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Kapas yield data. (iv) (a) 1948-1955. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 511 lb./ac.

(ii) 56.75 lb./ac.

(iii) Main effect of N and "P averaged over N₀ vs others are significant. Others" are not significant.

(iv) Av. yield of kapas in lb./ac.

P	A/S		G.N.C.		Mean
	N ₁	N ₂	N ₁	N ₂	
P ₀	536	510	522	567	534
P ₁	502	578	542	530	538
P ₂	484	576	496	538	524
Mean	507	554	520	543	531

S.E. of the marginal mean of N=16.24 lb./ac.

S.E. of the " " of P=14.19 lb./ac.

S.E. of the body of table =28.38 lb./ac.

Crop :- Cotton.
Site :- Agri. Res. Stn., Dharwar.

Ref :- Ms. 52(92)
Type :- 'M'.

Object :—To find out how far manuring of Super in combination with N will help in obtaining the maximum yield.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) Jowar. (c) Nil. (ii) (a) Medium black soil (b) Refer soil analysis, Dharwar. (iii) 9.8.52. (iv) (a) N.A. (b) Dibbling (c) 5 lb./ac. (d) 24" between rows and 12" between plants. (e) N.A. (v) F.Y.M. was applied at 5 C.L./ac. on 3.6.1952 (broadcast). (vi) Jayadhar cotton; Medium (vii) Rainfed. (viii) Four interculturings. (ix) N.A. (x) 2.3.53 1st picking and 19.3.53 2nd picking.

2. TREATMENTS :

All combinations of (1) (2) and (3)

(1) 3 levels of : $N_0=0$, $N_1=30$ and $N_2=60$ lb/ac.

(2) 2 sources of N :—G.N.C. and A/S.

(3) 3 levels of P_1O_5 as Super :— $P_0=0$, $P_1=30$ and $P_2=60$ lb/ac.

Super applied on 2.8.52, G.N.C. on 6.8.52 and A/S on 29.8.52.

3. DESIGN :

(i) $3 \times 2 \times 3$ Fact. in R.B.D. (ii) (a) 18 (b) N.A. (iii) 4 (iv) (a) $48' \times 20'$ (b) $40' \times 12'$ (v) 4' all Count. (vi) Yes.

4. GENERAL :

(i) The germination was good. (ii) Nil. (iii) Kapas yield data. (iv) (a) 1949—1955 (b) No (c) N.A. (v) (a) None (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 790 lb./ac.

(ii) 82.1 lb./ac.

(iii) All effects and interactions are not significant.

(iv) Av. yield of kapas in lb./ac.

P	Av. over N_0 of plots
P_0	=746
P_1	=738
P_2	=804

	A/S		G.N.C.		Mean
	N_1	N_2	N_1	N_2	
P_0	800	837	789	842	817
P_1	752	862	792	820	804
P_2	808	741	768	834	788
Mean	786	813	783	832	803

S.E. of the marginal mean of N =23.71 lb./ac.

S.E. of the marginal mean of P =20.53 „

S.E. of the body of table =41.06 „

Crop :- Cotton.
Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 53 (89).
Type :- 'M'.

Object :—To find out how far manuring of Super with N will help in obtaining the maximum yield.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton (b) Jowar (c) Nil (ii) (a) Medium black (b) N.A. (iii) 10.8.53 (iv) (a) Ploughing, harrowing, etc. (b) Cotton seeds dibbled (c) 5 lb./ac. (d) $2' \times 1'$ (e) N.A. (v) 5 C.L./ac. of F.Y.M. broadcast on 4.7.53 (vi) Jayadhar (vii) Unirrigated (viii) The crop received 4 interculturings and one hand weeding. (ix) 36.35" (10.8.53 to 2.4.1954) (x) 16.3.1954 and 2.4.54.

2. TREATMENTS :

All combinations of (1), (2) & (3).

- (1) 3 levels of N : $N_0=0$, $N_1=30$ and $N_2=60$ lb./ac.
 (2) 2 sources of N : A/S & G.N.C.
 (3) 3 levels of P_2O_5 : $P_0=0$, $P_1=30$ and $P_2=60$ lb./ac.
 P_2O_5 as Super.

3. DESIGN :

(i) $3 \times 2 \times 3$ Fact. in R.B.D. (ii) (a) 18. (b) N.A. (iii) 4 (iv) (a) $48' \times 20'$ (b) $40' \times 12'$ (v) 4' along the row on either side and 2 rows on both the sides (vi) Yes.

4. GENERAL :

(i) Growth was normal upto October and thereafter, it was checked owing to heavy rains. The crop growth in plots receiving treatment N was vigorous. (ii) Leaf-eating caterpillars, jassids and gray downy mildew appeared on the crop. No control measures taken (iii) Kapas yield (iv) (a) 1949-1956 (b) No (c) N.A. (v) (a) & (b) N.A. (vi) No (vii) None.

5. RESULTS :

- (i) 654 lb./ac.
 (ii) 77.2 lb./ac.
 (iii) All effects and interactions are not significant.
 (iv) Av. yield of kapas in lb./ac.

P	Av. over N_0 plots
P_0	625
P_1	621
P_2	628

	A/S.		G.N.C.		Mean
	N_1	N_2	N_1	N_2	
P_0	607	694	746	695	686
P_1	672	700	692	624	672
P_2	676	681	632	629	654
Mean	652	692	690	649	671

S.E. of the marginal mean of N = 22.3 lb./ac.
 S.E. of the " of P = 19.3 "
 S.E. of the body of table = 38.6 "

Crop :- Cotton (Kharif).

Ref :- Ms. 51 (62)

Site :- Agri. Res. Stn. Dharwar.

Type :- 'M'.

Object :- To study the residual effect of application of N and P_2O_5 applied to Jowar on Cotton.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) Jowar. (c) As per treatments. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 16.8.1951. (iv) (a) 4 harrowings, (b) Dibbled. (c) 5 lb./ac. (d) $24'' \times 12''$. (e)-(v) Nil. (vi) Jayadhar cotton (Medium). (vii) Unirrigated. (viii) 4 interculturings. (ix) 30.53" (16.8.51 to 28.3.52). (x) 13.3.52 1st Picking., 28.3.52 2nd picking.

2. TREATMENTS :

All combinations of (1) & (2).

- (1) 4 levels of N : $N_0=0$, $N_1=20$, $N_2=40$ and $N_3=60$ lb./ac.
 (2) 4 levels of P_2O_5 : $P_0=0$, $P_1=20$, $P_2=40$ and $P_3=60$ lb./ac.
 N as G.N.C. and P_2O_5 as Super.
 Applied to previous crop Jowar.

3. DESIGN :

(i) 4×4 Fact. in R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) $54' \times 21'$ (b) $30' \times 14'$. (v) 12' at the ends and 3' along the sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Kapas yield. (iv) (a) 1951-1952. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 501 lb./ac.
 (ii) 60.3 lb./ac.
 (iii) Main effects of N and P and interaction NP are not significant.
 (iv) Av. yield of kapas in lb /ac.

	N ₀	N ₁	N ₂	N ₃	Mean.
P ₀	496	496	471	549	503
P ₁	509	538	489	522	514
P ₂	492	502	450	499	486
P ₃	531	486	489	499	501
Mean.	507	505	475	517	501

S.E. of body of table. = 30.1 lb./ac.

S.E. of marginal mean. = 15.1 lb./ac.

Crop :- Cotton.

Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 52 (93).

Type :- 'M'.

Object :- To study the residual effect of application of N and P₂O₅ to Jowar on Cotton.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton-Jowar. (b) Jowar. (c) As per treatments. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 14.8.1952. (iv) (a) N.A. (b) Dibbling. (c) 5 lb./ac. (d) 24" between rows & 12" between plants. (e) N.A. (v) Nil. (vi) Jayadhar cotton ; Medium (vii) Rainfed. (viii) Four interculturings. (ix) N.A. (x) 4.3.53 1st picking. ; 20.3.53. 2nd picking .

2. TREATMENTS :

All combinations of (1) & (2)

(1) Four levels of N : N₀=0, N₁=20, N₂=40 and N₃=60 lb./ac.

(2) Four levels of P₂O₅ : P₀=0, P₁=20, P₂=40 and P₃=60 lb./ac.

N as A/S and P₂O₅ as Super.

Manures applied to previous crop Jowar.

3. DESIGN :

(i) 4×4 Fact. in R.B.D. (ii)(a) 16 (b) N.A. (iii) 4 (iv)(a) 54'×21' (b) 30'×14' (v) 7' along length and 3½' along breadth. (vi) Yes., in previous year.

4. GENERAL :

(i) The crop growth was good all over the expt. The yield of the second picking] was less. (ii) Cotton red bugs were observed. But there was no damage by pest or disease. (iii) Kapas yield (iv) (a) 1951-1952 (b) No (c) N. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 684 lb./ac.
 (ii) 76.2 lb./ac.
 (iii) Main effects and interaction are not significant.

(iv) Av. yield of kapas in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean.
P ₀	671	638	691	674	669
P ₁	755	655	687	710	702
P ₂	665	713	716	675	692
P ₃	687	652	665	690	673
Mean.	695	665	690	687	684

S.E. of the body of the table = 38.1 lb./ac.

S.E. of marginal mean = 19.1 lb./ac.

Crop :- Cotton.

Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 53 (81).

Type :- 'M'.

Object :- To study the residual effect of P₂O₅, N and F.Y.M. applied to Jowar on Cotton.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar (b) Jowar (c) As under treatments (ii) (a) Medium black (b) Refer soil analysis, Dharwar (iii) 8.8.53 (iv) (a) Tractor ploughed and harrowed 3 times. (b) Seeds dibbled (c) 5 lb./ac. (d) 2' x 2' (e) N.A. (v) No (vi) Jayadhar (vii) Unirrigated (viii) Intercultured 4 times (ix) 36.25" (8.8.53 to 3.4.54), (x) 19.3.54 and 3.4.54.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N : N₁=40, N₂=60 and N₃=80 lb./ac.(2) 2 levels of P₂O₅ : P₁=20 and P₂=40 lb./ac.(3) 2 levels of F.Y.M. : F₁=5 and F₂=10 C.L./ac.N as A/S ; P₂O₅ as super.

Manures applied to previous crop jowar.

3. DESIGN :

(i) 3 x 2 x 2 Fact. in R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a) 42' x 18' (b) 36' x 12' (v) 3' ring round the net plot (vi) Yes.

4. GENERAL :

(i) The crop with higher doses of N and P₂O₅ was better in stand and growth as compared to the rest. (ii) Nil. (iii) Kapas yield (iv) (a) No. (b) & (c) — (v) (a), (b) N.A. (vi) No. (vii) None.

5. RESULTS :

(i) 624.2 lb./ac.

(ii) 26.92 lb./ac.

(iii) Main effects of P₂O₅ and F.Y.M. are significant. Others are not significant.

(iv) Av. yield of kapas in lb./ac.

	N ₁	N ₂	N ₃	Mean	F ₁	F ₂
P ₁	612.4	615.8	614.1	614.1	611.0	617.3
P ₂	622.1	630.1	650.5	634.2	620.6	647.9
Mean.	617.3	623.0	632.3	624.2	615.8	632.6
F ₁	606.3	628.4	612.7	615.8		
F ₂	628.3	617.5	651.9	632.6		

S.E. of marginal mean of P or F	=5.50 lb./ac.
S.E. of marginal mean of N	=6.73 "
S.E. of mean in body of N×P or N×F table	=9.52 "
S.E. of mean in body of P×F table	=7.78 "

Crop :- Cotton.

Ref :- Ms. 53(92).

Site :- Agri. Res. Stn. Dharwar.

Type :- 'M'.

Object :- To find out whether there is any difference in yield of Cotton, when P_2O_5 is applied as Dicalcium phosphate or Super to previous crop Jowar.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton (b) Jowar (c) As usual treatments (ii) (a) Medium black. (b) Refer Soil analysis, Dharwar. (iii) 8.8.53 (iv) (a) N.A. (b) Seeds dibbled (c) 5 lb./ac. (d) 2'×1' (e) N.A. (v) Nil. (vi) Jayadhar (vii) Unirrigated (viii) 4 interculturings given to the crop. (ix) 36.35" (8.8.53 to 15.4.1954) (v) 21.3.54 & 15.4.1954.

2. TREATMENTS :

1. Dicalcium phosphate at 20 lb. P_2O_5 /ac.

2. Super at 20 lb. P_2O_5 /ac.

Treatments applied to previous crop jowar.

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 12 (iv) (a) 42'×21' (b) 30'×9' (v) 6' on either side along the row and 6' on either side across the row. (vi) No.

4. DESIGN :

(i) Growth normal up to October and then] it suffered due to excess of moisture. (ii) No (iii) Kapas yield (iv) (a) 1952—1955 (b) No (c) N.A. (v) N.A. (vi) No (vii) None.

5. RESULTS :

(i) 462 lb./ac.

(ii) 71.0 lb./ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. kapas yield in lb./ac.

Treatment.	Av. yield.
1.	450
2.	474
S.E/mean.	= 21.0 lb./ac.

Crop :- Cotton.

Ref :- Ms. 53(93).

Site :- Agri. Res. Stn., Dharwar.

Type :- 'M'

Object :- To study the effect of manurial treatments on Cotton yield of.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton (b) Jowar (c) 5 C.L. of F.Y.M./ac. (ii) (a) Black soil. (b) Refer soil analysis, Dharwar. (iii) 7.8.53 (iv) (a) Ploughings with iron plough after jowar crop, harrowing 4 times (b) to (e) N.A. (v) Nil. (vi) Jayadhar (vii) Unirrigated. (viii) Weeding two times and interculturing six times, (ix) 36.35" (7.8.53 to April 54) (x) March and April 1954.

2. TREATMENTS :

1. 6—x common salt.

2. 7—x common salt.

3. " " " +A/S coating.

4. " " " +Cowdung coating

5. 8—x " "

6. A/S smeared.
7. Cowdung.
8. Cowdung and A/S coating.
9. Diluted urine.
10. Control.

Common salt solution is prepared as follows :—

A saturated solution of common salt is first prepared.

- (i) 1 c.c. of this solution made to 1000 c.c. by diluting with water is 1—x.
- (ii) 1 c.c. of 1—x made to 1000 c.c. by diluting with water is 2—x and this process repeated till 8—x.

3. DESIGN :

- (i) R.B.D. (ii) (a) 10 (b) N.A. (iii) 6 (iv) (a) 27'×8' (b) 25'×8' (v) 2 rows on all sides (vi) Yes.

4. GENERAL :

- (i) Growth stunted due to heavy and continuous rainfall in October and subsequent bright weather improved the crop (ii) Nil. (iii) Yield of kapas and bolls produced per plant (iv) (a) 1951—1954 (b) No (c) N.A. (v) (a), (b) N.A. (vi) No (vii) None.

5. RESULTS :

- (i) 763.6 lb./ac.
- (ii) 89.14 lb./ac.
- (iii) The difference in yield due to treatments is highly significant.
- (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield.
1.	830.8
2.	778.6
3.	603.4
4.	699.2
5.	755.9
6.	812.7
7.	767.3
8.	749.1
9.	821.2
10.	817.2
S.E./mean	= 36.34 lb./ac.

Crop :- Cotton.

Site :- College of Agri., Dharwar.

Ref :- Ms. 53(109).

Type :- 'M'

Object :- To study the effect of sulphur fertilization at different times of application on the growth and yield of Cotton and its effect on following crop Jowar.

1. BASAL CONDITIONS :

- (i) (a) Jowar—Cotton (b) Jowar (c) 5 C.L./ac. of F.Y.M. (ii) (a) Medium black. (b) N.A. (iii) 23.8.53 (iv) (a) Ploughing, harrowing (b) Drilled with 2 coultured seed drill. (c) 8 lb./ac. (d) 24" between rows and 9" to 12" within rows (e) N.A. (v) Nil. (vi) Jayadhar (medium) (vii) Unirrigated (viii) Weeding (ix) 42.80" (x) N.A.

2. TREATMENTS :

Sulphur fertilization of cotton at the rate of 100 lb./ac. during.

1. Last week of April.
2. " " May.
3. " " June.
4. Control (no manure).

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 24'×45' (b) 20'×40' (v) 2½' along length and 2' along breadth (vi) Yes.

4. GENERAL :

- (i) Fair (ii) Nil. (iii) Grain yield (iv) (a) 1953—1955 (b) No (c) N.A. (v) (a), (b) N.A. (vi) No (viii) None.

5. RESULTS :

- (i) 276 lb./ac.
 (ii) 56.6 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield.
1.	279
2.	285
3.	264
4.	277
S.E./mean.	= 22.9 lb./ac.

Crop :- Cotton.

Ref :- Ms. 48(27).

Site :- Cotton Improvement Scheme, Gadag.

Type :- 'M'.

Object :— To study the best time of application of N along with different sources and levels of N.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy soil (b) Refer soil analysis, Gadag. (iii) 22.9.1948, (iv) (a) Ploughing once, harrowing thrice, (b) Dibbling. (c) 6 to 10 lb./ac. (d) 2' (e) 1 seed/dibble (v) Nil. (vi) Laxmi cotton (early) (vii) Unirrigated. (viii) Interculturing and weeding. (ix) 16.17' (22.9.48 to 13.4.1949) (x) 9.3.49 and 13.4.49.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N :— 0, 40 and 80 lb./ac.

(2) 2 sources of N :— G.N.C. and A/S.

(3) 3 times of application of N :— T_0 = 15 days before sowing, T_1 = at sowing and T_2 = 15 days after sowing.

3. DESIGN :

- (i) $2 \times 3 \times 3$ Fact. in R.B.D. (ii) (a) 18 (b) N.A. (iii) 4 (iv) (a) $61' \times 24'$ (b) $55' \times 20'$. (v) 2' along breadth and 3' along length (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil. (iii) Kapas yield (iv) (a) 1947—1949 (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Expt. analysed taking into consideration dummy treatments. Number of distinct treatments are 12 + control (6 plots/block).

5. RESULTS :

- (i) 587 lb./ac.
 (ii) 141.2 lb./ac.
 (iii) Only control vs others is highly significant. Others are not significant.
 (iv) Av. yield of kapas in lb./ac.
 Control = 523 lb./ac.

Time of application	A/S		G.N.C		Mean.
	40	80	40	80	
T_0	538	612	660	553	590
T_1	564	616	750	628	640
T_2	622	684	560	637	626
Mean.	574	637	656	606	518

S.E. of the marginal mean of N = 40.8 lb.
 „ time of application = 35.6 „
 S.E. of the body of table. = 70.6 „

Crop :- Cotton

Ref. :- Ms. 49(42)

Site :- Cotton Improvement Scheme, Gadag.

Type :- 'M'

Object :—To study the best time of application of N along with different sources and levels of N.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Sandy soil (b) Refer soil analysis Gadag. (iii) 17.9.1949. (iv) (a) Ploughing once, harrowing thrice. (b) Dibbling (c) 6—10 lb./ac. (d) 2' (e) Generally one seed. (v) Nil. (vi) Laxmi cotton, early. (vii) Unirrigated. (viii) Interculturing, weeding. (ix) 8.91" (17.9.1949 to 20.3.1950) (x) 13.2.1950 to 20.3.1950.

2. TREATMENTS :

All combinations of (1), 2) and (3)

(1) 3 levels of N :— 0, 40 and 80 lb./ac.

(2) 2 sources of N :— G.N.C. and A/S.

(3) 3 times of application of N :— $T_0=15$ days before sowing, $T_1=$ at sowing and $T_2=15$ days after sowing.

3. DESIGN :

(i) $2 \times 3 \times 3$ Fact. in R.B.D. (ii) (a) 18 (b) N.A. (iii) 4. (iv) (a) $61' \times 24'$ (b) $55' \times 20'$. (v) 2' along breadth 3' along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Kapas yield. (iv) (a) 1947-1949 (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) Expt. analysed taking into consideration dummy treatments.

5. RESULTS :

(i) 590 lb./ac.

(ii) 133.3 lb./ac.

(iii) Main effects, interaction and control vs. others are not significant.

(iv) Av. yield of kapas in lb./ac.

Control = 573 lb./ac.

Time of application	A/S		G.N.C.		Mean
	40	80	40	80	
T_0	558	750	580	624	628
T_1	529	598	509	680	579
T_2	498	629	556	680	591
Mean	528	659	548	661	599

S.E. of the marginal mean of time of application = 33.3 lb./ac.

S.E. „ „ „ „ „ N = 38.5 lb./ac.

S.E. of body of table = 66.6 lb./ac.

Crop :- Cotton.

Ref :- Ms. 50(62)

Site :- Cotton Improvement Scheme, Gadag.

Type :- 'M'.

Object :—To study the best time of application of N along with sources and levels of N.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Sandy soil (b) Refer soil analysis, Gadag. (iii) 18.9.50. (iv) (a) Ploughing once, harrowing thrice. (b) Dibbling. (c) 6 to 10 lb./ac. (d) 2' (e) Generally one seed/dibble. (v) Nil. (vi) Laxmi Cotton, (Early). (vii) Unirrigated. (viii) Weeding and interculturing. (ix) 10.24" (18.9.50 to 27.3.1951). (x) 14.2.1951 to 27.3.1951.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N :— 0, 40 and 80 lb./ac.

(2) 3 sources of N :— G.N.C., A/S and Manure mixture.

(3) 3 times of application of N :— $T_0=15$ days before sowing, $T_1=$ at sowing and $T_2=15$ days after sowing.

3. DESIGN :

(i) 3^3 fact. in R.B.D. (ii) (a) 27 (b) N.A. (iii) 4. (iv) (a) $61' \times 24'$ (b) $55' \times 20'$. (v) 2' along breadth and 3' along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Kapas yield. (iv) (a) No (b) No (c) N.A. (v) (a) N.A. (b) N.A.

(vi) Nil. (vii) The expt. analysed taking into consideration dummy treatments. Number of distinct treatments 18+control (9 plots/block).

5. RESULTS :

(i) 468 lb./ac.

(ii) 118.9 lb./ac.

(iii) Main effects, interactions and control vs. others are not significant.

(iv) Av. yield of kapas in lb./ac.

Control=394.

Time of application	A/S		G.N.C.		Mixture		Mean
	40	80	40	80	40	80	
T_0	511	572	516	498	446	571	519
T_1	437	608	495	529	544	514	521
T_2	447	530	468	412	518	488	477
Mean	466	570	493	480	503	524	506

S.E. of the marginal mean of time of application =24.3 lb./ac.

„ „ „ „ „ „ N =34.3 „

S.E. of body of table =59.5 „

Crop :- Cotton.

Ref :- Ms. 51(81)

Site :- Cotton Improvement Scheme , Gadag.

Type :- 'M'

Object :—To study the best time of application of N along with sources and levels of N.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Sandy soil (b) Refer soil analysis, Gadag (iii) 23.9.51 (iv) (a) Ploughing once, harrowing thrice. (b) Dibbling (c) 6 to 10 lb./ac. (d) 2' (e) Generally 1 seed/dibble (v) Nil (vi) Laxmi Cotton (Early). (vii) Unirrigated (viii) Weeding, interculturing. (ix) N.A. (x) 11.2.52 to 10.3.1952.

2. TREATMENTS :

All Combinations of (1), (2) and (3)

(1) 3 levels of N :- 0, 40 and 80 lb/ac.

(2) 3 sources of N :- G.N.C., A/S and Manure mixture.

(3) 3 times of application of N :- $T_0=15$ days before sowing, $T_1=$ at sowing and $T_2=15$ days after sowing.

3. DESIGN :

(i) 3^3 Fact in R.B.D. (ii) (a) 27 (b) N.A. (iii) 6 (iv) (a) $61' \times 24'$ (b) $55' \times 20'$. (v) 2' along breadth and 3' along length (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil (iii) Kapas yield (iv) (a) No (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil (vii) The expt. analysed taking into consideration dummy treatments.

5. RESULTS :

- (i) 598 lb./ac.
 (ii) 118.0 lb./ac.
 (iii) Source of N and control vs. others are significant while time of application is highly significant. Others are not significant.
 (iv) Av. yield of kapas in lb./ac.

Time of application	Control=530 lb./ac.						Mean
	A/S		G.N.C.		Mixture		
	40	80	40	80	40	80	
T ₀	706	742	607	674	650	752	689
T ₁	658	704	653	607	574	529	621
T ₂	656	613	492	607	605	566	590
Mean	673	686	584	629	610	616	633

S.E. of the marginal mean of N =27.8 lb./ac.
 " " of time of application. =19.7 "
 S.E. of body of table. =48.2 "

Crop :- Cotton

Ref :- Ms. 48(21)

Site :- Agri. Res. Stn. Hagari.

Type :- 'M'

Object :- To find-out the suitable dose of G.N.C. for dry-land crop of Jowar and Cotton under poor rain-fall in view of the scarcity of C.M.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar. (b) N.A. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Hagari (iii) 26.9.1948. (iv) (a) Working blade harrow three times. (b) Drill sowing, (c) 10 lb./ac. (d) 36" apart (e) one seed. (v) Nil. (vi) H₁-Cotton (Medium). (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 7.21" (26.9.1948 to 11.5.1949). (x) 25.3.49 ; 8.4.49 ; 11.5.1949.

2. TREATMENTS.

1—No manure.

Period of application.

N in lb./ac. Source	once in 4 yrs.		once in two yrs.			once every yr.		
	30	20	30	20	10	30	20	10
F.Y.M.	2	3	6	7	—	11	12	13
G.N.C.	4	5	8	9	10	14	15	16

1, 2, 3, 4,...16 indicate the treatment numbers. N in the form of G.N.C. & F.Y. M. applied through akkadi behind the seed drill before sowing in lines. 30 lb. N supplied through 6000 lb. of F.Y.M. or 400 lb of G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 80'×18' (b) 74'×12'. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Kapas yield data. (iv) (a) 1948 contd. (b) Two sets of the expt. are tried. One layout has the crop rotation Cotton-Jowar and the other has Jowar-Cotton-Jowar. The randomisation of the treatments is different for the two sets. (c) N.A. (v) (a) None (b) N.A. (vi) Nil. (vii) Plot wise data not available.

5. RESULTS :

- (i) 266 lb./ac.
 (ii) N.A.
 (iii) N.A.

(iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	224	9.	204
2.	210	10.	263
3.	341	11.	223
4.	326	12.	269
5.	293	13.	308
6.	322	14.	226
7.	283	15.	216
8.	291	16.	253
S.E./mean	=N.A.		

Crop :- Cotton.

Ref :- Ms. 50(54)/48(21)

Site :- Agri. Res. Stn. Hagari.

Type :- 'M'.

Object :- To find out suitable dose of G.N.C. for dry land crop of Jowar and Cotton under poor rainfall in view of the scarcity of C.M.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar. (b) M—47—3 Jowar. (c) As per treatments (ii) (a) Black cotton soil (b) Refer soil analysis Hagari. (iii) 1.9.50. (iv) (a) Working blade harrows three times. (b) Drill sowing. (c) 10 lb./ac. (d) 36" apart. (e) One. (v) Nil. (vi) H₁—Cotton (Medium). (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 13.12* (1.9.50 to 16.4.1951) (x) 30.1.51 ; 8.7.2.51 ; 3.3.51 ; 16.4.1951.

2. TREATMENTS :

N in lb./ac. Source	Period of application								
	once in 4 yrs.		once in 2 yrs.			once every yr.			
	30	20	30	20	10	30	20	10	
F.Y.M.	2	3	6	7	—	11	12	13	
G.N.C.	4	5	8	9	10	14	15	16	

1—No manure.

1, 2, 3, 4...16 indicate the treatment numbers. N in the form of G.N.C. and F.Y.M. applied through akkadi behind the seed drill before sowing in lines.

30 lbs. N. supplied through 6000 lb. F.Y.M. or 400 lb. G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 4. (iv) (a) 18' × 80' (b) 12' × 74'. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Kapas yield data. (iv) 1948—contd. (b) Two sets of expts. are tried. one layout has the crop rotation Cotton—Jowar—Cotton and the other has Jowar—Cotton. The randomisation of the treatments is different for the two sets. (c) N.A. (v) (a) None (b) N.A. (vi) Nil (vii) Plot wise yield not available.

5. RESULTS :

(i) 348 lb./ac.

(ii) 69.8 lb./ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	295	9.	361
2.	312	10.	314
3.	301	11.	350
4.	329	12.	359
5.	287	13.	318
6.	367	14.	415
7.	356	15.	434
8.	394	16.	366
S.E./mean		=34.9 lb./ac.	

Crop :-Cotton.

Ref :-Ms. 52(14)/50(54)/48(21)

Site :-Agri. Res. Stn. Hagari.

Type :-'M'.

Object :-To find out suitable dose of G.N.C. for dry land crop of Jowar and Cotton under poor rainfall in view of the scarcity of C.M.

1. BASAL CONDITIONS ;

(i) (a) Cotton and Jowar (b) Jowar (c) As under treatments (ii) (a) Deep black cotton soils of 3' depth (b) Refer soil analysis Hagari. (iii) 29.9.52. (iv) (a) Working blade harrow 3 times (b) Drill sowing (c) 10 lb./ac. (d) 36" apart (e) One (v) None. (vi) Western 1 (vii) Rainfed. (viii) When the crop is one month old, danti was worked as interculture and line weeding was done ; danti was worked 2nd time and finally hattikunte worked. (ix) 6.73" (29.9.52 to 27.3.53). (x) 20.2.53, 8.3.53, 21.3.53 and 27.3.1953.

2. TREATMENTS :

N in lb./ac. Source	Period of application.								
	Once in 4 years		Once in 2 years			Once every year			
	30	20	30	20	10	30	20	10	
F.Y.M.	2	3	6	7	—	11	12	13	
G.N.C.	4	5	8	9	10	14	15	16	

1—No manure

1, 2, 3, 4—16 indicate the treatment numbers. N in the form of G.N.C. and F.Y.M. applied through akkadi behind the seed drill before sowing in lines.
30 lb. N supplied through 6000 lb. F.Y.M. or 400 lb. G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 4. (iv) (a) 18'×80'. (b) 12'×74'. (v) 3' all round net plot. (vi) Yes.

4. GENERAL :

(i) The growth was poor and yield below average. Bad seasonal condition. (ii) No pests and diseases. (iii) Germination, general stand of the crop and date of flowering. (iv) (a) 1948—49 to 1965—66. (b) Yes. (c) N.A. (v) (a) None (b) N.A. (vi) Nil. (vii) None.

5. RESULTS :

(i) 287 lb./ac.

(ii) 47.8 lb./ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	236	9.	306
2.	300	10.	260
3.	273	11.	339
4.	300	12.	288
5.	262	13.	280
6.	296	14.	274
7.	308	15.	310
8.	263	16.	292
S.E./mean		=23.6 lb./ac.	

Crop :- Cotton.

Ref :- Ms. 49(27)

Site :- Agri. Res. Stn., Hagari.

Type :- 'M'.

Object :- To find out suitable dose of G.N.C. for the dry land crop of Jowar and Cotton under poor rainfall in view of the scarcity of C.M.

1. BASAL CONDITIONS :

(i) Jowar-Cotton. (b) M—47—3—Jowar. (c) As per treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Hagari. (iii) 17.9.1949. (iv) (a) Working blade harrow three times. (b) Drill sowing (c) 10 lb./ac. (d) 36" apart (e) One seed. (v) Nil. (vi) H₁—Cotton Medium. (vii) Unirrigated. (viii) Weeding, inter-culturing. (ix) 9.30" (17.9.49 to 26.3.50). (x) 28.2.50 ; 12, 18, 26.3.1950.

2. TREATMENTS :

N in lb./ac. Source	Period of application							
	Once in 4 years		Once in 2 years			Once every year		
	30	20	30	20	10	30	20	10
F.Y.M.	2	3	6	7	—	11	12	13
G.N.C.	4	5	8	9	10	14	15	16

1—No manure

1, 2, 3, 4,.....16 indicate the treatment numbers. N in the form of G.N.C. and F.Y.M. applied through akkadi behind the seed drill before sowing in lines.

30 lb. N supplied through 6000 lb. F.Y.M. or 400 lb. G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 80'×18'. (b) 74'×12'. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Kapas yield data. (iv) (a) 1948—contd. (b) Two sets of expts. are tried. One layout has the crop rotation Cotton-Jowar-Cotton and the other has Jowar-Cotton-Jowar. The randomisation of the treatments is different for the two sets. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Plot-wise data not available.

5. RESULTS :

(i) 422 lb./ac.

(ii) 101.8 lb./ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	424	9.	427
2.	370	10.	340
3.	294	11.	450
4.	424	12.	474
5.	447	13.	408
6.	490	14.	518
7.	392	15.	383
8.	423	16.	480

S.E./mean = 50.9 lb./ac.

Crop :- Cotton.

Ref :- Ms. 51(2)/49(27)

Site :- Agri. Res. Stn., Hagari.

Type : 'M'

Object :- To find-out the rate at which the dry land crops of Jowar and Cotton be manured with G.N.C. in view of scarcity of C.M. in the locality.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton (b) M—47—3. Jowar (c) As per treatments (ii) (a) Deep black cotton soils of 3' depth. (b) Refer soil analysis Hagari. (iii) 12.9.51 (iv) (a) Working blade harrow 3 times (b) Drill sowing (c) 80 lb./ac. (d) 36" (e) one (v) None (vi) Cotton-Westerns I. (vii) Rainfed (viii) When the crop is about one month, "Danti" worked as interculture and line weeding is done ; Danti worked 2nd time and finally "hattikunte" worked (ix) 8.71" (12.9.51 to 1.3.1952) (x) 16.2.52 ; 4.3.52 ; 11.3.52.

2. TREATMENTS

N in lb./ac. Source	1—No manure Period of application.								
	Once in 4 years.		Once in 2 years.			Once every year.			
	30	20	30	20	10	30	20	10	
F.Y.M.	2	3	6	7	—	11	12	13	
G.N.C.	4	5	8	9	10	14	15	16	

1,2,3,4...16 indicate the treatment numbers. N in the form of G.N.C. & F.Y.M. applied through akkadi behind the seed drill before sowing in lines.
30 lb. N supplied through 6000 lb. F.Y.M. or 400 lb. G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 80' × 18' (b) 74' × 12' (v) One row on each side. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) No pests and disease. (iii) Germination, general stand of the crop and date of flowering. (iv) (a) 1948—1949 to contd. (b) Yes. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 369 lb./ac.
(ii) 59.1 lb./ac.
(iii) The differences in yield due to treatments are significant.
(iv) Av. yield of kapas in lb./ac.

Treatment.	Av. yield.	Treatment.	Av. yield.
1.	333	9.	330
2.	335	10.	314
3.	319	11.	413
4.	321	12.	413
5.	327	13.	362
6.	436	14.	360
7.	383	15.	423
8.	460	16.	383

S.E./mean = 29.6 lb./ac.

Crop :- Cotton.

Ref :- Ms. 53 (10)/51 (2)/49(27)

Site : Agri. Res. Stn., Hagari.

Type :- 'M'.

Object :— To find at what rate it will be possible to manure the dry land crop of Jowar and Cotton with G.N.C. in view of scarcity of C.M. to meet the local needs.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) Jowar. (c) As under treatments. (ii) (a) Deep black soil. (b) Refer soil analysis, Hagari (iii) 22.9.53. (iv) (a) Working blade harrow 3 times and danti and hattikunte as an interculture. (b) Drill sowing. (c) 10 lb./ac. (d) 36" (e) 1 (v) None. (vi) Western 1 (vii) Unirrigated. (viii) When the crop was about one month, danti worked as an interculture and line weeding was done; danti was worked 2nd time and finally hattikunte was worked. (ix) 13.42" (22.9.53 to 21.4.54) (x) 21,23.3.54; 9,21.4.54.

2. TREATMENTS :

N in lb./ac. Source	1—No manure. Period of application								
	Once in 4 years.		Once in 2 years.			Once every year.			
	30	20	30	20	10	30	20	10	
F.Y.M.	2	3	6	7	—	11	12	13	
G.N.C.	4	5	8	9	10	14	15	16	

1,2,3,4...16 indicate the treatment numbers. N in the form of G.N.C. & F.Y.M. applied through akkadi behind the seed drill before sowing. 30lb. N would be supplied through 6000lb. of F.Y.M. or 400lb. of G.N.C.

3. DESIGN :

(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 4 (iv) (a) 80'×18' (b) 74'×12' (v) One row on each side. (vi) Yes.

4. GENERAL :

(i) Fair (ii) Nil. (iii) Germination, stand, flowering and yield. (iv) (a) 1948—control. (b) Yes. (c) N.A. (v) (a) & (b) N.A. (vi) No. (vii) This is the 6th year of the trial. Indications during this season show that application of F.Y.M. at 30 lb. N every year gave more yield but the economic dose found was in the application of G.N.C. at 20 lb. N once in two years.

5. RESULTS :

(i) 391 lb./ac.

(ii) 63.5 lb./ac.

(iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	356	9.	419
2.	398	10.	389
3.	343	11.	427
4.	379	12.	403
5.	413	13.	430
6.	365	14.	383
7.	429	15.	374
8.	373	16.	380
S.E./mean = 32.0 lb./ac.			

Crop :- Cotton.

Site :- Agri. Res. Stn., Hagari.

Ref :- Ms. 48(25)

Type :- 'M'.

Object :— To study the effect of application of Super in inducing the maturity of the crop.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) N.A. (c) N.A. (ii) (a) Black cotton soil. (b) N.A. (iii) 26.9.1948. (iv) (a) Working blade harrow 3 times. (b) Drill sowing, (c) 10 lb./ac. (d) 36" (e) One seed (v) Nil. (vi) H₁ Cotton, medium. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 7.26" (26.9.48 to 25.4.49). (x) 17,28,30.3.49 ; 25.4.1949.

2. TREATMENTS :

1. F.Y.M. to supply 30 lb. N/ac.

2. Super to supply 30 lb. P₂O₅/ac.

3. No manure.

F.Y.M. is broadcast in the respective plots a month before sowing and junior-hoe worked to incorporate the same. Super is drilled through akkadies behind the seed drill on the date of sowing. Later, sowings are taken up.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 8 (iv) (a) 80'×18' (b) 74'×12' (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Kapas yield data. (iv) (a) 1948—1952. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) S.E. not given. Plot wise yield data not available.

5. RESULTS :

(i) 227 lb./ac.

(ii) N.A.

(iii) N.A.

(iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	229
2.	261
3.	191
S.E./mean.	= N.A.

Crop :- Cotton.

Ref :- Ms. 49(26)/48(25).

Site :- Agri. Res. Stn., Hagari.

Type :- 'M'.

Object :- To study the effect of application of Super in inducing the earliness in maturity of the crop.

1. BASAL CONDITIONS :

- (i) (a) Jowar-Cotton. (b) Jowar. (c) As per treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Hagari. (iii) 17.9.1949. (iv) (a) Working blade harrow three times. (b) Drill sowing. (c) 10 lb./ac. (d) 36" (e) One seed. (v) Nil. (vi) H₁ Cotton-Medium. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 9.30". (17.9.1949 to 25.4.1950.) (x) 21.3.50 ; 3,25.4.1950.

2. TREATMENTS :

1. F.Y.M. to supply 30 lb. N/ac.
2. Super to supply 30 lb. P₂O₅/ac.
3. No manure.

F.Y.M. broadcast in the respective plots a month before sowing and "junior-hoe" worked to incorporate the same. Super is drilled through "akkadies" behind the seed drill on the date of sowing. Later, sowings are taken up.

3. GENERAL :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 80'×18' (b) 74'×12' (v) 3' all round (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Kapas Yield data. (iv) (a) 1948—1952. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Plot wise data not available.

5. RESULTS :

- (i) 357 lb./ac.
 (ii) 33.5 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	370
2.	351
3.	349
S.E./mean.	= 11.9 lb./ac.

Crop :- Cotton.

Ref :- Ms. 50 (56)/49 (26)/48 (25).

Site :- Agri. Res. Stn. Hagari.

Type :- 'M'.

Object :- To study the effect of application of Super in inducing the earliness in maturity of the crop.

1. BASAL CONDITIONS :

- (i) (a) Jowar-Cotton. (b) Jowar. (c) As per treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis Hagari. (iii) 2.9.1950 (iv) (a) working blade-harrow 3 times. (b) Drill sowing. (c) 10 lb./ac. (d) 36". (e) one seed/hole. (v) Nil. (vi) H₁-Cotton (Medium). (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 13.12". (2.9.50 to 18.3.1951) (x) 5, 13, 20. 28.2.51 and 18.3.951.

2. TREATMENTS :

1. F.Y.M. to supply 30 lb. N/ac.
2. Super to supply 30 lb. P₂O₅/ac.
3. No manure (control).

F.Y.M. broadcast in the respective plots a month before sowing and "junior hoe" worked to incorporate the same. Super is drilled through akkadies behind the seed drill on the date of sowing. Later sowings are taken up.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 80'×18'. (b) 74'×12'. (v) 3' all round. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Nil (iii) Kapas yield data. (iv) (a) 1948-1952. (b) Yes (c) N.A. (v) (a) No (b) N.A. (vi) Nil. (vii) Plot-wise yield data not available. No reasons mentioned in the files for low yield.

5. RESULTS :

- (i) 258 lb./ac.
 (ii) 29.1 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	257
2.	260
3.	256
S.E./mean	= 10.3 lb./ac.

Crop :- Cotton.

Ref :- Ms. 51 (44)/50 (56)/49 (26)/48 (25).

Site :- Agri. Res. Stn., Hagari.

Type :- 'M'.

Object :- To find out the effect of application of Super in inducing the earliness in maturity of the crop.

1. BASAL CONDITIONS :

- (i) (a) Jowar-Cotton. (b) Jowar. (c) As per treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Hagari (iii) 11.9.1951. (iv) (a) working blade harrow three times. (b) Drill sowing. (c) 10 lb./ac. (d) 36". (e) one. (v) Nil. (vi) H₁ Cotton-Medium. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 9.27" (11.9.51 to 29.3.1952). (x) 17, 29.2.52 ; 10, 17 and 29.3.1952.

2. TREATMENTS :

1. F.Y.M. to supply 30 lb. N/ac.
 2. Super to supply 30 lb. P₂O₅/ac.
 3. Control. (no manure).

F.Y.M. broadcast a month before sowing and "Junior-hoe" worked to incorporate the same. Super is drilled through' akkadies behind the seed drill on the date of sowing.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 8 (iv) (a) 80' × 18' (b) 74' × 12'. (v) 3' all round. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Kapas yield data. (iv) (a) 1948-1952. (b) Yes (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Super did not induce any earliness in the maturity of cotton but gave a 6% increase in the yield of kapas over no manure.

5. RESULTS :

- (i) 329 lb./ac.
 (ii) 22.1 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	339
2.	333
3.	314
S.E./mean	= 7.8 lb./ac.

Crop :- Cotton.

Ref :- Ms. 52 (100)/51 (44)/50 (56)/49 (26)/48 (25).

Site :- Agri. Res. Stn., Hagari.

Type :- 'M'.

Object :- To find out the effect of application of Super in inducing the earliness in maturity of the crop.

1. BASAL CONDITIONS :

- (i) (a) Jowar-Cotton. (b) Jowar. (c) As per treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Hagari. (iii) 2.10.1952. (iv) (a) Working blade harrow three times. (b) Drill sowing. (c) 10 lb./ac. (d) 36" (e) one seed/ hole. (v) Nil. (vi) H₁-Cotton-Medium. (vii) Rainfed. (viii) Weeding, interculturing. (ix) 6.75" (2.10.52 to 214.3.1953) (x) 92.53.; 3. 12. 24.3.1953.

2. TREATMENTS :

1. F.Y.M. to supply 30 lb./ac.
2. Super to supply 30 lb. P_2O_5 /ac.
3. Control (No manure).

F.Y.M. broadcast a month before sowing and junior-hoe worked to incorporate the same. Super was drilled through akkadies behind the seed-drill on the date of sowing.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) $80' \times 18'$. (b) $74' \times 12'$. (v) 3' all round. (vi) Yes.

4. GENERAL :

- (i) The growth was stunted due to meagre rainfall but the crop was healthy. (ii) Nil. (iii) Yield of kapas (iv) (a) 1948-1952. (b) Yes. (c) N.A. (v) (a)&(b) N.A. (vi) N.A. (vii) Application of Super to cotton did not result in early maturity of the crop or in increased yield.

RESULTS :

- (i) 300 lb./ac.
 (ii) 32.5 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	309
2.	295
3.	295
S.E./mean	=11.5 lb./ac.

Crop :- Cotton.

Site :- Agri. Res. Stn., Hagari.

Ref :- Ms. 53 (8)

Type :- 'M'.

Object :- To study the results of application of G.N.C. and A/S individually and in combination over a basal dressing of F.Y.M.

1. BASAL CONDITIONS :

- (i) (a) Cotton-Jowar. (b) Navane. (c) Nil. (ii) (a) Deep black. (b) Refer soil analysis, Hagari. (iii) 19.9.53. (iv) (a) During summer country blade harrow was worked 3-4 times. Junior-hoe was worked to incorporate F.Y.M. (b) Seed sown through akkadi behind the seed drill. (c) 10 lb./ac. (d) 36". (e) N.A. (v) $2\frac{1}{2}$ ton of F.Y.M. was applied and spread one month prior to sowing. (vi) Western I. (vii) Unirrigated. (viii) N.A. (ix) 14.19" (19.9.53 to 27.4. 1954) (x) 13.3.54 ; 27.4.1954.

2. TREATMENTS :

1. F.Y.M. $2\frac{1}{2}$ ton /ac.
2. " " +30 lb. N/ac. as A/S
3. " " + " " as G.N.C.
4. " " + " " half as A/S and half as G.N.C.
5. Control (no manure).

3. DESIGN :

- (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) $40' 4" \times 18'$. (b) $36' - 4" \times 12'$. (v) 2' along length and 3' along breadth left as border rows. (vi) Yes.

4. GENERAL :

- (i) Fair. (ii) Nil. (iii) Germination, stand, flowering, maturity and kapas yield. (iv) (a) 1953-1957 (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) No. (vii) None.

5. RESULTS :

- (i) 305 lb./ac.
 (ii) 44.0 lb./ac.
 (iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	308
2.	280
3.	329
4.	316
5.	291
S.E./mean	= 18.0 lb./ac.

Crop :- Cotton.

Ref :- Ms. 52(98)

Site :- Agri. Res. Stn. Kaladgi.

Type :- 'M'

Object :- To study the residual effects of manures applied in previous year to Jowar.

1. BASAL CONDITIONS :

(i) (a) Jowar—Cotton. (b) Jowar. (c) As per treatments. (ii) (a) Deep black soil. (b) Refer soil analysis, Kaladgi (iii) 5.10.1952. (iv) (a) 2 harrowings (b) Sowing done by "moghan" or bamboo pole arrangement behind the drill. (c) 9 lb./ac. (d) 18" (e) N.A. (v) Nil. (vi) Laxmi—Medium. (vii) Rainfed. (viii) Interculturing (ix) 3.70". (5.10.1952. to 9.3.1953). (x) 9.3.53.

2. TREATMENTS :

All combinations of (1), (2) & (3).

(1) 2 levels of F.Y.M. : $F_0=0$ and $F_1=5$ C.L./ac.(2) 4 levels of N : $N_0=0$, $N_1=10$, $N_2=20$, and $N_3=30$ lb/ac.(3) 4 levels of P_2O_5 ; $P_0=0$, $P_1=10$, $P_2=20$, and $P_3=30$ lb/ac.N as 'A/S' and ' P_2O_5 ' as Super ; Treatment applied to previous crop, jowar.

3. DESIGN :

(i) $2 \times 4 \times 4$ Fact. in R.B.D. (ii) (a) 32. (b) N.A. (iii) 2. (iv) (a) $19\frac{1}{2}' \times 36'$. (b) $16\frac{1}{2}' \times 33'$. (v) $1\frac{1}{2}'$ all round. (vi) Yes.

4. GENERAL :

(i) Germination satisfactory. There was no rain throughout the growing period and the crop was seriously stunted. (ii) Nil. (iii) Yield data. (iv) (a) 1952—1957. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 259 lb./ac.

(ii) 78.3 lb./ac.

(iii) Only the interaction $N \times F.Y.M.$ is significant. Others are not significant.

(iv) Av. yield of kapas in lb/ac.

	N_0	N_1	N_2	N_3	Mean	P_0	P_1	P_2	P_3
F_0	339	242	216	283	270	238	269	297	276
F_1	219	256	264	251	247	210	256	256	267
Mean	279	249	240	267	259	224	263	276	271
P_0	225	187	203	281					
P_1	295	245	231	280					
P_2	323	263	233	287					
P_3	274	300	294	219					

S.E. of N or P Means. = 19.6 lb/ac.

S.E. of F.Y.M means. = 13.8 lb/ac.

S.E. of F.Y.M \times N (or P) table. = 27.7 lb/ac.S.E. of N \times P table. = 39.2 lb/ac.

Crop :- Cotton.

Ref :- Ms. 53(150).

Site :- Agri. Res. Stn. Kaladgi.

Type :- 'M'.

Object :- To study the residual effects of manures applied in previous year.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) Jowar. (c) As per treatments. (ii) (a) Deep black soil. (b) Refer soil analysis. Kaladgi. (iii) 19.9.53. (iv) (a) 2 harrowings. (b) Sowing done by moghan or bamboo pole arrangement behind the drill. (c) 9 lb./ac. (d) 18". (e) N.A. (v) Nil. (vi) Laxmi-Medium. (vii) Rainfed. (viii) Interculturing. (ix) 16.84". (19.9.53 to 14.4.1954). (x) 15, 24.3.54 ; 7, 14.4.1954.

2. TREATMENTS :

All the combinations of (1), (2) and (3)

(1) 2 levels of F.Y.M. : $F_0=0$ and $F_1=5$ C.L./ac.
 (2) 4 levels of N : $N_0=0$, $N_1=10$ and $N_2=20$, and $N_3=30$ lb./ac.
 (3) 4 levels of P_2O_5 : $P_0=0$, $P_1=10$, $P_2=20$ and $P_3=30$ lb./ac.

N as A/S and P_2O_5 as Super.

Treatments applied to previous crop Jowar. Residual effect studied here.

3. DESIGN :

(i) $2 \times 4 \times 4$ Fact. in R.B.D. (ii) (a) 32. (b) N.A. (iii) 3. (iv) (a) $36' \times 36'$. (b) $33' \times 33'$. (v) $1\frac{1}{2}'$ all round. (vi) Yes.

4. GENERAL :

(i) Due to continuous rain during October soon after sowing, crop did not progress well in the beginning. Gradual improvement later on. In general satisfactory. (ii) Nil. (iii) Grain yield data. (iv) (a) 1952-1957. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 597 lb./ac.
 (ii) 59.0 lb./ac.
 (iii) Main effects and interactions are not significant.
 (iv) Av. yield of kapas in lb./ac.

	N_0	N_1	N_2	N_3	Mean	P_0	P_1	P_2	P_3
F_0	566	585	621	587	590	583	589	597	591
F_1	575	616	614	608	603	579	620	585	628
Mean	571	601	618	598	597	581	605	591	609
P_0	502	600	632	593					
P_1	605	599	603	610					
P_2	599	585	614	566					
P_3	577	618	621	622					

S.E. of N or P means. = 12.0 lb./ac.

S.E. of F.Y.M. means. = 8.5 lb./ac.

S.E. of F.Y.M. \times N (or P) table = 17.0 lb./ac.S.E. of N \times P table. = 24.1 lb./ac.

Crop :- Cotton.
Site :- Agri. Res. Stn. Mandya.

Ref :- Ms. 50(2)
Type :- 'M'.

Object :—To study the effect of A/S and Super on the yield of cotton.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mandya. (iii) 6.7.1950. (iv) (a) 3 ploughings, levelling, harrowing, opening furrows, etc. (b) N.A. (c) and (d) N.A. (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Intercultural operations, weeding. (ix) N.A. (x) 12.12.1950.

2. TREATMENTS :

1. Control.
 2. 200 lb./ac. of A/S.
 3. 300 lb./ac. of A/S.
 4. 200 lb./ac. of A/S+100 lb./ac. of Super.
 5. 300 lb./ac. of A/S+200 lb./ac. of Super.
- Manures applied on 4.9.50.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a), (b) 1/40th ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Kapas yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 205 lb./ac.
- (ii) 35.6 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield.
1.	206
2.	225
3.	193
4.	197
5.	203
S.E./mean	=14.4 lb./ac.

Crop :- Cotton.
Site :- Agri. Res. Stn., Mandya.

Ref :- Ms. 51 (6).
Type :- 'M'.

Object :—To find out the effect of varying doses of N in combination with different doses of P_2O_5 at different timings and at different depths.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mandya (iii) 28.3.51 (iv) (a) 3 ploughings, levelling, harrowing, opening furrows, etc. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) Nil. (vi) M.A.5. (vii) Irrigated. (viii) Interculturing operations, weeding, (ix) N.A. (x) 1.8.51 ; 11.8.51 ; 19.8.51 and 26.8.1951.

2. TREATMENTS :

- All combinations of (1), (2), (3) & (4)
- (1) 2 levels of N :- $N_1=30$ and $N_2=60$ lb./ac. as 'A/S'. (N)
 - (2) 2 levels of P_2O_5 :- $P_1=30$ and $P_2=60$ lb./ac ; as 'Super'. (P)
 - (3) 2 timings :- T_1 =Application of N at sowing ; and T_2 =Application of N, 1/3 at sowing, 1/3 after 12 weeks from sowing and 1/3 just before flowering.
 - (4) 2 Depths ; D_1 =Application of Super 3" below surface ; and D_2 =Application of Super 6" below surface. (D)

3. DESIGN :

(i) 2^4 factorial design with the interaction NPTD confounded in all the replications (ii) (a) 8 plots/block ; 2 blocks/replication. (b) N.A. (iii) 4. (iv) (a) & (b) 1/40 ac. (v) Nil. (vi) Yes

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) kapas yield data. (iv) (a) No. (b) & (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 394 lb./ac.
 (ii) 74.7 lb./ac.
 (iii) The main effects are not significant. Only the 'PT' interaction is significant.
 (iv) Av. yield of kapas in lb./ac.

Mean and differential response table

Factor	Mean response	Differential response							
		N		P		T		D	
		+	-	+	-	+	-	+	-
N	-9.50	-	-	-30.00	+11.00	-30.00	+11.00	-14.88	-4.13
P	-1.00	-21.50	+19.50	-	-	-41.00	+39.00	-1.50	-0.50
T	-29.00	-49.50	-8.50	-27.50	-30.50	-	-	-69.00	+11.00
D	+13.50	+8.13	+18.88	+13.00	+14.00	+15.00	+12.00	-	-
S.E.	26.5	37.4							

Crop :- Cotton.

Ref :- Ms. 52 (41).

Site :- Agri. Res. Stn., Mandya.

Type :- 'M'.

Object :--To study the effect of varying doses of N in combination with different doses of P_2O_5 at different timings.

1. BASAL CONDITIONS :

(i) (a), (b) & (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mandya (iii) 13.4.52. (iv) (a) Ploughing, levelling, harrowing, etc. (b) to (e) N.A. (v) C.L. of compost/ac. ploughed into the soil two weeks before sowing. (vi) M.A. 5 Medium. (vii) Rainfed. (viii) Weeding etc. (ix) 18.66". (13.4.52 to 22.9.52). (x) 9.8.52 ; 22.8.52 ; 6.9.52 ; 22.9.1952.

2. TREATMENTS :

All combinations of (1), (2) and (3)

- (1) 2 levels of N : $N_1=30$ lb./ac. and $N_2=60$ lb./ac.
 (2) 2 levels of P_2O_5 : $P_1=30$ lb./ac. and $P_2=60$ lb./ac.
 (3) 2 timings :- T_1 =Application of N at sowing and T_2 =Application of N in two equal doses $\frac{1}{2}$ at sowing, $\frac{1}{2}$ at flowering. Date of manuring 1st dose :- 20.4.1952, 2nd dose :- 20.6.52.
 Placement of 'P' at average depths of plough furrow 3" to 6".

3. DESIGN :

(i) 2^3 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/60th ac. (v) One row on either side and 3' at the ends. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of kapas. (iv) (a) No. (b) No. (c) N.A. (v) (a) None (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 750 lb./ac.
 (ii) 124 lb./ac.
 (iii) Main effects and interactions are not significant.

(iv) Av. yield of kapas in lb./ac.

	N ₁	N ₂	Mean	T ₁	T ₂
P ₁	764	714	739	748	729
P ₂	784	740	762	740	784
Mean	774	727	750	744	757
T ₁	751	738			
T ₂	797	716			

S.E. of marginal mean = 25.3 lb./ac.

S.E. of body of table = 35.8 lb./ac.

Crop :- Cotton.

Ref :- Ms. 52(42).

Site :- Agri. Res. Stn., Mandya.

Type :- 'M'.

Object :- To study the effect of varying doses of N in combination with different doses of P₂O₅.

1. BASAL CONDITIONS :

(i) (a), (b) & (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mandya (iii) 12.4.52. (iv) (a) Ploughing, levelling, harrowing, etc. (b) to (e) N.A. (v) 5 C.L. of compost/ac. ploughed into the soil about two weeks before sowing. (vi) M.A. 5. Medium. (vii) Rainfed. (viii) Weeding etc. (ix) 18.88". (12.4.52 to 22.9.1952). (x) 9.8.52 ; 22.8.52 ; 6.9.52 ; 22.9.1952.

2. TREATMENTS :

All combinations of (1) & (2).

(1) 3 levels of N : N₀=0, N₁=30 and N₂=50 lb/ac.(2) 3 levels of P₂O₅ : P₀=0, P₁=30 and P₂=60 lb/ac.[N as A/S and P₂O₅ as Super.]

Time of application of 'N' & 'P' just before sowing, All 'P' treatments involve placement at an average depth of plough furrows, 3" to 6". Date of application of manures 2.4.1952.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/60th ac. (v) One row on either side and 3' at the ends. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of kapas. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1067 lb./ac.

(ii) 315.0 lb./ac.

(iii) Main effects and interaction are not significant.

(iv) Av. yield of kapas in lb./ac.

	P ₀	P ₁	P ₂	Mean
N ₀	896	930	945	924
N ₁	1001	1390	1030	1140
N ₂	949	1189	1275	1138
Mean.	949	1170	1083	1067

S.E. of marginal mean. = 74.3 lb./ac.

S.E. of body of the table = 128.6 lb./ac.

Crop :- Cotton.

Ref :- Ms. 50(50).

Site :- Agri. Res. Stn. Nargund.

Type :- 'M'.

Object :- To find out the doses of sulphur application for reclamation of *Karl* soil.

1. BASAL CONDITIONS :

(i) (a) Wheat—Jowar-Cotton. (b) Fallow. (c) As per treatments. (ii) (a) *Karl* soil. (b) Refer soil analysis, Nargund (iii) 26.9.1950. (iv) (a) Ploughing: (b) Dibbling by hands, (c) 10 lb./ac. (d) 24", (e) N.A. (v) Nil. (vi) Cotton-Jayadhar (medium). (vii) Unirrigated. (viii) Hand weedings. (ix) 7.56". (26.9.50 to 6.3.51). (x) 6.3.1951

2. TREATMENTS :

All combinations of (1) & (2).

(1) 3 levels of Sulphur : 0, $\frac{1}{4}$ and $\frac{1}{2}$, ton/ac.(2) 3 levels of F.Y.M. : 0, 2 $\frac{1}{2}$ and 5 ton/ac.

Treatments were given continuously for 3 years i.e. upto-1949—50. Afterwards treatments are not applied but only the residual effects were being considered.

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 3. (iv) (a), (b) 16.5'×16.5' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) yield of kapas. (iv) (a) 1947—1953. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) For the first three years i.e. upto 1949—1950, plots were only manured, no crop was taken, hence no yield data for three years. From 1950, residual effects were observed. But in 1951 drains were removed, and the results considered not trust worthy. Hence no records kept for 1951 to 1953, Hence only one out of seven expts. is reported.

5. RESULTS :

- (i) 570 lb./ac.
 (ii) 225.8 lb./ac.
 (iii) Main effects and interactions are not significant.
 (iv) Av. yield of kapas in lb./ac.

F.Y.M.	Sulphur			Mean.
	0	$\frac{1}{4}$	$\frac{1}{2}$	
0	627	473	570	557
2 $\frac{1}{2}$	553	489	549	531
5	747	396	723	622
Mean.	642	453	614	570

S.E. of marginal mean. = 75.3 lb./ac.

S.E. of the body of table. = 130.4 lb./ac.

Crop :- Cotton.

Ref : Ms. 50(51).

Site :- Agri. Res. Stn., Nargund.

Type :- 'M'.

Object :- To find-out the best dose of F.Y.M. for reclamation of *Karl* soil.

1. BASAL CONDITIONS :

(i) (a) Wheat-Jowar-Cotton. (b) Fallow. (c) As per treatments. (ii) (a) *Karl* soil. (b) Refer soil analysis, Nargund (iii) 26.9.1950. (iv) (a) Ploughing. (b) Dibbling by hand. (c) 10 lb./ac. (d) Between rows. 24". (e) N.A. (v) Nil (vi) Jayadha (Medium). (vii) Unirrigated. (viii) Hand weeding. (ix) 7.56". (26.9.50 to 5.3.51). (x) 5.3.51.

2. TREATMENTS :

1. Control.
2. F.Y.M. at 10 C.L./ac.
3. " " 20 "
4. " " 30 "

No application of F.Y.M. was made since 1950-51, only the residual effects of treatments were studied.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) (b) 16.5' × 16.5' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of kapas. (iv) (a) 1947-1953. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) For the first three years *i.e.* upto 49-50, plots were only manured, no crop was taken. Hence no yield data for 3 years. From 1950, residual effect was observed. But in 1951 the drains were removed and results considered not trustworthy. Hence no record kept for 1951 to 1953. Hence only one out of seven expts. is reported.

5. RESULTS :

- (i) 762 lb./ac.
 (ii) 213.9 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of kapas in lb./ac.

Treatment.	Av. yield
1.	728
2.	698
3.	787
4.	833
S.E/mean	= 87.3 lb./ac.

Crop :- Cotton.

Ref :- Ms. 52(121)

Site :- Agri. Res. Stn. Siruguppa

Type :- 'M'

Object :- To find out the optimum dose of G.M. for getting maximum yield.

1. BASAL CONDITIONS :

(i) (a) Jowar — Cotton. (b) Rabi Jowar. (c) As per treatments. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) 28.8.1952. (iv) (a) Ploughing, ridges and furrows opened. (b) Sowing by hand dibbling at the sides of ridges. (c) 10lb./ac. (d) 2'-3" × 9" (e) 2-3 seeds—hole. (v) A basal dressing of 200 lb. of Super applied to all plots in plough furrows. (vi) Laxmi, Medium. (vii) Irrigated (viii) Intercultivation with junior-hoe when the crop was about 1½ months old, weeding twice, (ix) 7.18" (28.8.1952 to 11.4.1953) (x) 26.2.53 ; 26.4.53 & 11.4.53.

2. TREATMENTS :

- No manure
- In "situ" (growing daincha and ploughing it in "situ")
- 2500 lb./ac. G.L.
- 5000 "
- 7500 "
- 10000 "

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a) 47' × 28' (b) 41' × 25'. (v) 1.5' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Kapas yield (iv) (a) 1951—continued. (b) Yes (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 607 lb./ac.
 (ii) 96.4 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. yield of kapas in lb./ac.

Treatment.	Av. yield.
1.	319
2.	1055
3.	394
4.	508
5.	629
6.	734
S.E/mean	= 43.1 lb./ac.

Crop :- Cotton.

Ref :- Ms. 53(127).

Site :- Agri. Res. Stn., Bagalkote.

Type :- 'C'.

Object :- To find out the optimum seed-rate and spacing for *Jayadhar* and *Laxmi* varieties.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cotton. (c) Nil. (ii) (a) Medium black. (b) Refer soil analysis, Bagalkote. (iii) 20.9.53. (iv) (a), (b) The land is prepared after ploughing twice in April, and harrowing in August. The seed bed prepared in September for dibbling cotton. (c), (d) As per treatments. (e) 2 seeds; only one healthy plant kept at thinning. (v) Nil. (vi) *Jayadhar* and *Laxmi* (Medium). (vii) Rainfed. (viii) 4 intercultures and 2 weedings. (ix) 11.99" (20.9.53 to 8.4.1954. (x) 25.3.54 to 8.4.1954.

2. TREATMENTS :

Main plot treatments :

2 varieties viz. *Jayadhar* and *Laxmi*.

Sub plot treatments :

4 spacings.—15", 18", 21" and 24".

Sub-sub plot treatments :

3 seed-rates.—6, 8 and 10 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main plots. replication 4 sub-plots/main plot 3 sub-sub plots/sub-plot (b) N.A. (iii) 4. (iv) (a) 17.6' × 36' for 15" and 18" spacing. 18' × 36' for 21" and 24" spacing. (b) 15' × 30' for 15" and 18" spacing, 14' × 32' for 21" and 24" spacing. (v) 1.5' along breadth and 3' along length for 15" and 18" spacing; 2' all round for 21" and 24" spacings. (vi) Yes.

4. GENERAL :

(i) and (ii) Due to excess rainfall in the first fortnight of October, there was lot of moisture in the soil with the result root rot appeared. *Laxmi* variety suffered heavily and 80% of the plants died. (iii) No. of bolls/plant, plant height and kapas yield. (iv) (a) 1953—1954. (b) Yes. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) As the variety *Laxmi* completely failed, the expt. has been analysed as a split plot design with *Jayadhar* variety only.

5. RESULTS :

(i) 178 lb./ac.

(ii) (a) 13.6 lb./ac.

(b) 28.6 lb./ac.

(iii) Spacings, seed-rates and interaction "spacing × seed-rate" are not significant.

(iv) Av. yield of kapas in lb./ac.

Seed-rate	Spacing				Mean
	24"	21"	18"	15"	
6	171	191	164	205	183
8	176	178	171	172	174
10	191	133	232	149	176
Mean	179	167	189	175	178

S.E. of difference of two

1. main plot treatment means.

=13.6 lb./ac.

2. sub-plot treatment means.

=28.6 lb./ac.

3. sub-plot treatment means at the same level of main plot treatment=57.3 lb./ac.

4. main plot treatment means at the same level of sub-plot treatment=48.7 lb./ac.

Crop :- Cotton.

Ref :- Ms. 48(12)

Site :- Agri. Res. Stn. Dharwar.

Type :- 'C'.

Object :- To find out the most suitable distance between the rows and seed-rate with a view to obtain maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fulgar yellow Jowar. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 21.8.48. (iv) (a) Harrowing. (b) Dibbling. (c), (d) As per treatments. (e) 2 seeds

per dibble. (v) Nil. (vi) Jayawant medium. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 26.68'' (21.8.48 to 1.4.1949). (x) 1.4.1949.

2. TREATMENTS :

Main plot treatments :—

3 Spacings :— 18", 24" and 36".

Sub-plot treatments :—

3 Seed-rates :— 8, 10 and 12 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/block ; 3 sub-plots/main—plot. (b) N.A. (iii) 6. (iv) (a) 51.4'×13.5', 51.4'×14'0' ; 51.4'×15'0'. (b) 45.4'×12'0'. (v) 3' along length and $\frac{3}{4}$ ', 1' or 1½' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Red spots in leaves, powdery mildew attack, severe attack of Jassids and Aphids (iii) Kapas yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 289 lb./ac.

(ii) (a) 56.0 lb./ac.

(b) 49.8 lb./ac.

(iii) Spacings, Seed-rates and interaction are not significant.

(iv) Av. yield of Kapas in lb./ac.

Seed-rate	Spacing			Mean
	18"	24"	36"	
8	305	302	317	308
10	289	305	264	286
12	275	286	263	275
Mean.	289	297	281	

S.E. of difference of two

1. main plot treatment means.

=18.7 lb./ac.

2. sub-plot treatment means.

=16.6 lb./ac.

3. sub-plot treatment means at the same level of main plot treatment=28.8 lb./ac.

4. main plot treatment means at the same level of sub-plot treatment=30.0 lb./ac.

Crop :-Cotton.

Ref :-Ms. 53(182)

Site :-College of Agri., Dharwar.

Type :-'C'.

Object :-To find out the suitable date for sowing Cotton.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) Chillies. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) As per treatments. (iv) (a) Ploughing, harrowing. (b) Dibbling. (c) 8 lb./ac. (d) 24" between lines, 9" between plants. (e) 2 seeds/hole. (v) Nil. (vi) Lakshmi early. (vii) Unirrigated. (viii) Weeding, mulching. (ix) 33.77%. (x) N.A.

2. TREATMENTS :

1. Sowing in 2nd week of August 53.

2. " " 4th " " "

3. " " 2nd " Sept. "

4. " " 4th " " "

5. " " 2nd " Oct. 53.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 36'×30'. (b) 32'×26'. (v) 2' all round. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, spread, yield of kapas. (iv) (a) 1953—1956. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) Nil. (vii) No reason has been mentioned in records for low yields of treatments 4 and 5 ; may be

due to late sowing. Actual sowing in the last week of August was not taken up as there was continuous rain and conditions were not favourable.

5. RESULTS.

- (i) 281 lb./ac.
- (ii) 57.3 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. yield of kapas in lb./ac.

Treatment.	Av. yield.
1.	855
2.	222
3.	280
4.	42
5.	6
S.E./mean	=25.6 lb./ac.

Crop :- Cotton.

Ref :- Ms. 53 (183)

Site :- College of Agri., Dharwar.

Type :- 'C'

Object :- To study the possibility of taking Cotton after a Kharif leguminous crop.

1. BASAL CONDITIONS :

- (i) (a) Jowar—Cotton. (b) Jowar. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Medium black. (b) Refer. soil analysis, Dharwar. (iii) Legumes 16.7.53 ; Cotton. 21.8.53. (iv) (a) Ploughing, harrowing. (b) Seeds dibbled (c) 8 lb./ac. (d) between rows 24". (e) —. (v) Nil. (vi) Lakshmi, early. (vii) Unirrigated. (viii) Hoeings, last hoeing was given deep. (ix) 33.77" (x) N.A.

2. TREATMENTS :

Growing Lakshmi cotton after sowing of

- (1) Alasandi.
- (2) Udid.
- (3) Chinamug.
- (4) Groundnut.
- (5) Sowing Lakshmi cotton along with sowing of legume.
- (6) Sowing Lakshmi cotton on normal date.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 39'×28'. (b) 35'×24'. (v) 2' all round. (vi) Yes.

4. GENERAL :

- (i) Not satisfactory. (ii) Nil. (iii) Height, spread, yield of kapas. (iv) (a) 1953—1955. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) No reasons given for low yields.

5. RESULTS :

- (i) 46.15 lb./ac.
- (ii) 42.98 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	31.88
2.	30.59
3.	27.48
4.	29.98
5.	28.68
6.	128.39
S.E./mean	=17.55 lb./ac.

Crop :- Cotton.
Site:- Cotton Improvement Scheme, Gadag.

Ref. :- Ms. 53 (145)
Type :- 'C'.

Object :-To study the possibility of increasing the yield with different spacings and seed rates.

1. BASAL CONDITIONS :

(i) (a) Jowar—Cotton. (b) Jowar. (c) Nil. (ii) (a) Sandy soil. (b) Refer soil analysis, Gadag. (iii) 18-9-1953. (iv) (a) ploughing once, harrowing thrice. (b) Dibbling. (c) & (d) As per treatments. (e) Generally one seed/hole. (v) 5 C.L., ac. of F.Y.M., applied before sowing, spreading evenly by hand. (vi) Laxmi, early. (vii) Rainfed. (viii) 4 intercultivation, 2 weeding. (ix) 18.27'' (18.9.53 to April 1954). (x) 18th March to April 1954.

2. TREATMENTS :-

Main plot treatments :-

3 Spacings : 1½', 2' and 2½' between lines.

Sub-plot treatments :-

3 Seed rates : 6, 8 and 10 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots ; 3 sub-plots. (b) N.A. (iii) 6. (iv) (a) 24'×33' for 1½' spacing, 24'×34' for 2' spacing & 24'×35' for 2½' spacing. (b) 29'×30'. (v) One row on either side. 2' along breadth. ; 1½', 2', or 2½' respectively for 1½', 2' and 2½' spacings along length. (vi) Yes.

4. GENERAL :

(i) Germination satisfactory. Heavy continuous showers immediately after sowing caused heavy infection of blackarm and red leaf blight which hindered growth. Harvesting was late by a month and 3rd and 4th pickings were caught in rain. Yield low. (ii) Black-arm disease and Red leaf blight. No control measures taken. (iii) Height, node number, position of fruiting branch, kapas yield. (iv) (a) 1953-1954. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 303 lb./ac.
(ii) (a) 94.2 lb./ac.
(b) 53.3 lb./ac.
(iii) Main treatments, sub treatments and interaction are not significant.
(iv) Av. yield of kapas in lb./ac.

Seedrate	Spacing			Mean.
	1½'	2'	2½'	
6	297	315	259	290
8	310	325	253	296
10	341	364	264	323
Mean.	316	334	259	303

S.E. of difference of two

- (1) main plot treatment means =31.4 lb./ac.
(2) sub-plot treatment means =17.8 lb./ac.
(3) Sub-plot treatment means at the same level of main plot treatment =30.8 lb./ac.
(4) main plot treatment means at the same level of sub-plot treatment =40.2 lb./ac.

Crop :- Cotton.
Site :- Cotton Improvement Scheme, Gadag.

Ref :- Ms. 53(151)
Type :- 'C'

Object :- To study the possibility of increasing the yield by pruning.

1. BASAL CONDITIONS :

(i) (a) Jowar—Cotton. (b) N.A. (c) N.A. (ii) (a) Sandy soil. (b) Refer soil analysis, Gadag. (iii) 17.9.53. (iv) (a) Ploughing once, harrowing thrice. (b) Dibbling. (c) 6—10 lb/ac. (d) 2'. (e) Generally one seed/hole, (v) Nil. (vi) Laxmi early. (vii) Rainfed. (viii) Hand weeding, interculturing. (ix) 18.27'. (17.9.53. to Feb., March 1954.) (x) Feb., March 1954.

2. TREATMENTS:

1. Pruned Laxmi.
2. Unpruned Laxmi.

In pruned plots, plants are to be nipped off their shoots just before flowerphase, while in the unpruned plots, normal plants are allowed to develop.

3. DESIGN :

- (i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 12'×4' (b) 8'×4'. (v) 2' along length. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Kapas yield. (iv) (a) 1953—1954. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 351 lb./ac.
 (ii) 78.6 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	311
2.	390
S.E./mean	= 22.7 lb./ac.

Crop :- Cotton.

Ref :- Ms. 52(11).

Site :- Agri. Res. Stn. Hiriyur.

Type :- 'C'

Object :- To find out suitable spacing between rows and plants for Cotton.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Generally fallow. (c) N.A. (ii) (a) Gravel mixed clay loam. (b) N.A. (iii) 28.12.1952.
 (iv) (a) 2 ploughings and one cross ploughing and one passing cultivator, line marker and opening furrows.
 (b) N.A. (c) to (e) N.A. (v) 4 ton/ac. of F.Y.M. (vi) Giza 12. (vii) Irrigated. (viii) 4 intercultural operations, 3—4 weedings. (ix) N.A. (x) 29.6.53. ; 14.7.1953 ; 12.8.53 ; 8.9.1953.

2. TREATMENTS ;

All combinations of (1) & (2)

- (1) Row spacing :— $S_1 = 1\frac{1}{2}'$; $S_2 = 2'$ and $S_3 = 2\frac{1}{2}'$.
 (2) Plant spacing :— $S'_1 = 9''$ and $S'_2 = 15''$.

3. DESIGN :

- (i) Strip plot. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 30'×45'. (b) 22.5' × 37.5' (v) 3.75'. all round.
 (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Cotton yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil.
 (vii) Nil.

5. RESULTS :

- (i) = 421.9 lb./ac.
 (ii) S.E. for rows. = 108.93 lb./ac.
 S.E. for plants = 142.49 lb./ac.
 S.E. for rows × plants = 48.01 lb./ac.

- (iii) Main effects and interaction are not significant.

(iv) Av. yield of Kapas in lb/ac.

	S ₁	S ₂	S ₃	Mean
S' ₁	512.1	464.6	482.3	486.4
S' ₂	405.9	334.7	331.6	357.4
Mean	459.0	399.7	406.9	421.9

S.E. of difference of two

1. row spacing means = 54.20 lb./ac.
2. plant spacing means = 58.33 lb./ac.
3. row spacing means at a level of plant spacing = 59.37 lb./ac.
4. plant spacing means at a level of row spacing = 64.53 lb./ac.

Crop :- Cotton.

Site :- Agri. Res. Stn., Hiriyyur.

Ref :- Ms. 52(12).

Type :- 'C'.

Object :- To find out the best spacing and sowing date for Cotton.

2. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Gravel mixed clay loam. (b) N.A. (iii) As under treatments. (iv) (a) 2 ploughings, one cross ploughing and pushing cultivator and line marker and opening furrows. (b) N.A. (c) to (e) N.A. (v) 4 ton/ac. of F.Y.M. (vi) Giza 12. (vii) Irrigated. (viii) 4 intercultural operations, 3-4 weeding. (ix) N.A. (x) 29.6.53 ; 15.7.53 ; 14.8.53 ; 9.9.53.

2. TREATMENTS :

Main-plot treatments :-

- 2 dates of sowing :-
 $D_1=30.11.52.$
 $D_2=31.12.52.$

Sub-plot treatments :- All combinations of (1) and (2)

- (1) 3 row spacings :-
 $S_1=1\frac{1}{2}'$
 $S_2=2'$ and
 $S_3=2\frac{1}{2}'.$
- (2) 2 plant spacings :-
 $S'_1=9''.$
 $S'_2=15''.$

3. DESIGN :

(i) Split plot. (ii) (a) 2 main plots/block ; 6 sub plots/main plot. (b) N.A. (iii) 4. (iv) Main plot size N.A. For sub-plot. (a) 12' x 60.5'. (b) 6' x 54.5'. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Kapas yield, number of plants. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 407.3 lb./ac.
- (ii) (a) 227.8 lb./ac.
(b) 82.6 lb./ac.
- (iii) None of the effects and interactions is significant.

(iv) Av. yield of kapas in lb./ac.

	D ₁	D ₂	Mean.	S ₁ '	S ₂ '
S ₁	398.8	350.8	374.8	421.5	328.0
S ₂	423.7	465.2	444.4	482.0	406.7
S ₃	400.8	404.8	402.8	390.2	415.2
Mean.	407.7	406.9	407.3	431.3	383.3
S ₁ '	423.3	439.2			
S ₂ '	392.1	374.6			

S.E. of difference of two

- (1) D means = 65.26 lb./ac.
- (2) S means = 29.20 „
- (3) S means at the same level of D = 41.29 lb./ac.
- (4) D mean at the same level of S = 59.34 lb./ac.
- (5) S' means = 23.83 „
- (6) S' means at the same levels of D = 33.71 lb./ac.
- (7) D means at the same levels of S' = 48.87 lb./ac.
- (8) means in S × S' table = 41.29 lb./ac.

Crop :- Cotton.

Site :- Agri. Res. Stn., Hiriyur.

Ref :- Ms. 53(36).

Type :- 'C'.

Object — To find out the best spacing and sowing date for Cotton.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Fallow. (c) N.A. (ii) (a) Gravel mixed with clay loam. (b) N.A. (iii) As under treatments.
- (iv) (a) Two ploughings and one cross ploughing and passing cultivator and line marker. (b); (c) N.A. (d) As under treatments. (e) N.A. (v) 4 ton/ac. of F.Y.M. (vi) N.A. (vii) Irrigated. (viii) 4 intercultural operations and 3—4 weedings. (ix) N.A. (x) 5.5.54 ; 25.6.54 ; 17.7.54 13.8.54 ; and 9.9.54.

2. TREATMENTS :

All combinations of (1), (2) & (3)

- (1) 2 dates of sowing :— D₁=30.11.53, and D₂=30.12.1953.
- (2) 2 row spacings :— S₁=2', and S₂=2½'
- (3) 2 plant spacings :— S'₁=9" and S'₂=15".

4. DESIGN :

- (i) 2³ Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 30'×45' (b) 22.5'×37.5' (v) 3.75' all round the net plot. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Number of plants/plot, cotton yield. (iv) No. (v) No. (vi) No. (vii) The layout of the experiment is R.B.D. but the analysis had been conducted as in the case of a split-plot design. Hence recalculated.

5. RESULTS :

- (i) 568.3 lb./ac.
- (ii) 87.31 lb./ac.
- (iii) Dates of sowing alone is highly significant. Others are not significant.

(iv) Av. yield of kapas in lb./ac.

	D ₁	D ₂	Mean.	S ₁ '	S ₂ '
S ₁	637.7	526.8	582.2	618.2	546.1
S ₂	611.1	497.7	554.3	565.4	543.2
Mean.	624.4	512.2	568.3	591.9	544.7
S ₁ '	645.7	538.0			
S ₂ '	602.9	486.4			

S.E. of any marginal mean. = 21.83 lb./ac.

S.E. of any mean in the body of table = 30.85 lb./ac.

Crop :- Cotton.

Ref :- Ms. 52 (99)

Site :- Agri. Res. Stn., Kaladgi.

Type :- 'C'.

Object :- To find the residual effect of number of harrowings and interculturings.

1. BASAL CONDITIONS :

- (i) (a) Jowar-Cotton. (b) Jowar. (c) Nil. (ii) (a) Deep black soil. (b) Refer soil analysis, Kaladgi. (iii) 5.10.1952. (iv) (a) N.A. (b) Sowing done by moghan or bamboo pole arrangements behind the drill. (c) 9 lb./ac. (d) 18". (e) N.A. (v) Nil. (vi) Laxmi, Medium. (vii) Rainfed. (viii) Nil. (ix) 3.70" (5.10.1952 to 3.3.1953). (x) 3.3.1953.

2. TREATMENTS:

All combinations of (1) & (2)

(1) Harrowings viz. 2, 3 & 4 times.

(2) Interculturings viz. 1, 2, 3, 4 times.

Residual effect of the previous year.

3. DESIGN :

- (i) 3×4 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 36'×36'. (b) 33'×33'. (v) 1½' all round. (vi) Yes.

4. GENERAL :

- (i) Germination was satisfactory. There was no rain throughout the growing period. Crop was seriously stunted. (ii) Nil. (iii) Grain yield data. (iv) (a) 1952-1957. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 172 lb./ac.

(ii) 67.6 lb./ac.

(iii) Main effects and interaction are not significant.

(iv) Av. yield of Kapas in lb./ac.

Interculturing.	Harrowing.			Mean.
	2	3	4	
1	177	187	171	178
2	142	151	217	172
3	123	213	156	164
4	157	177	183	172
Mean.	151	182	182	172

S.E. of marginal means. of harrowings = 16.9 lb./ac.

S.E. of marginal means of Interculturing. = 19.5 lb./ac.

S.E. of body of the table = 33.8 lb./ac.

Crop :- Cotton.

Ref :- Ms. 53 (149).

Site :- Agri. Res. Stn., Kaladgi.

Type :- 'C'.

Object :- To find the residual effect of number of harrowings and interculturings.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton (b) Jowar. (c) Nil. (ii) (a) Deep black soil. (b) Refer soil analysis, Kaladgi. (iii) 24.9.1953. (iv) (a) N.A. (b) Sowing done by moghan or bamboo pole arrangements behind the drill. (c) 9 lb./ac. (d) 18". (e) N.A. (v) Nil. (vi) Laxmi-Medium. (vii) Rainfed. (viii) Nil. (ix) 16.84". (24.9.53 fo 14.4.1954). (x) 15, 24.3.1954 ; 7, 14.4.1954.

2. TREATMENTS :

All combinations of (1) & (2).

1. Interculturings viz. 1, 2, 3, and 4 times.
2. Harrowings viz. 2, 3, and 4 times.

Treatments applied to previous crop Jowar.

3. DESIGN :

(i) 3×4 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 36'×36'. (b) 33'×33' (v) 1½' All round. (vi) Yes.

4. GENERAL :

(i) Due to continuous rain during October soon after sowing, crop did not progress well in the beginning, gradual improvement later on ; in general, satisfactory. (ii) Nil. (iii) Kapas yield data. (iv) (a) 1952-1957. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 456 lb./ac.
- (ii) 53.0 lb./ac.
- (iii) Main effects and interaction are not significant.
- (iv) Av. yield of kapas in lb./ac.

Harrowing	Interculturing.				Mean.
	1	2	3	4	
2	446	416	460	463	446
3	444	459	413	493	457
4	492	506	443	424	466
Mean.	467	460	439	460	456

S.E. of marginal mean of Harrowing = 13.24 lb./ac.
 S.E. of marginal mean of interculturing = 15.2 lb./ac.
 S.E. of body of the table = 26.5 lb./ac.

Crop :- Cotton.

Ref :- Ms. 48 (29).

Site :- Agri. Res. Stn., Dharwar.

Type :- 'CM'.

Object :- To find out the best time of application of different doses of N obtained from three different sources and also to find the best spacing for Cotton.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cotton. (c) As per treatments. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) N.A. (iv) (a) N.A. (b) Dibbled by hand. (c) N.A. (d) between two rows 2'. (e) 2 seeds/dibble. (v) Nil. (vi) Jayadhar (Medium). (vii) Unirrigated. (viii) Gap filling, thinning, etc. (ix) 26.68". (x) N.A.

2. TREATMENTS :

Main plot treatments : All combinations of (1) and (2)

- (1) 3 types of manures : G.N.C., A/S and Mixture of G.N.C. & A/S in the ratio 1 : 1
 (2) 3 spacings between plants : $S_1=1'$, $S_2=2'$ and $S_3=3'$.

Sub-plot treatments : All combinations of (1) and (2)

- (1) 3 levels of N : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.
 (2) 2 times of application of N : $T_0=10$ days before sowing and $T_1=$ at sowing time.

3. DESIGN :

- (i) Split plot (ii) (a) 9 main plots/block, 6 sub-plots/main plot (b) N.A. (iii) 4. (iv) (a) $28' \times 14'$. (b) $18 \times 10'$ (Main plot size N.A.) (v) 2' along the sides and 5' at the ends. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Kapas yield (iv) (a) 1947-1949 (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 621 lb./ac.
 (ii) (a)=241.9 lb./ac.
 (b)=82.4 „
 (ii) The levels of N differ significantly and "N vs. other combinations of sub plot treatments" is highly significant.
 (iv) Av. yield of kapas in lb./ac.
 S Averaged over N_0 plots :—
 $S_1=643$; $S_2=604$ and $S_3=573$ lb./ac.
 S.E./mean =49.4 lb./ac.

	A/S	G.N.C	Mixture	N_1	N_2	T_0	T_1	Mean
S_1	625	646	566	633	591	598	627	612
S_2	707	565	601	639	611	646	636	641
S_3	672	696	576	667	630	634	662	648
Mean	668	636	581	646	611	626	642	
T_0	652	636	591	647	605			
T_1	684	636	572	645	616			
N_1	693	646	620					
N_2	663	626	543					

- S.E. of marginal mean of sources or 'S' =34.9 lb./ac.
- S.E. of body of source \times 'S' table =60.5 „
- S.E. of marginal mean of N or T = 9.7 „
- S.E. of body of $N \times T$ table. =13.7 „
 S.E. of difference of two.
- N. or T means at the same level of S or Source =23.8 „
- S or source means at the same level of N or T =43.9 „

Crop :- Cotton.

Ref :- Ms. 49 (44)/48 (29).

Site :- Agri. Res. Stn. Dharwar.

Type :- 'CM'.

Object :—To find out the best time of application for different doses of N from different sources and also to find the best spacing for Cotton.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Cotton. (c) As per treatments. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) N.A. (iv) (a) N.A. (b) Seeds dibbled by hand. (c) N.A. (d) Between two rows 2'. (e) 2 seeds/dibble. (v) Nil. (vi) Jayadhar (Medium). (vii) Unirrigated. (viii) Gap filling, thinning. (ix) and (x) N.A.

2. TREATMENTS :

Main plot treatments :- All combinations of (1) and (2)

- (1) 3 types of manures :- G.N.C., A/S and Mixture of G.N.C. & A/S in the ratio 1 : 1
(2) 3 spacings between plants : $S_1=1'$, $S_2=2'$ and $S_3=3'$.

Sub-plot treatments :- All combinations of (1) and (2)

- (1) 3 levels of N : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.
(2) 2 times of application of N : $T_0=10$ days before sowing and $T_1=$ at sowing time.

3. DESIGN :

- (i) Split plot. (ii) (a) 9 main plots/block ; 6 sub plots/main plot. (b) N.A. (iii) 4. (iv) (a) $28' \times 14'$ (b) $18' \times 10'$; Main plot size N.A. (v) 2' along the sides and 5' at the ends. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Kapas yield. (iv) (a) 1947-1949. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 641 lb./ac.
(ii) (a)=138.4 lb./ac.
(b)=214.4 lb./ac.
(iii) Spacings are significant. All other effects and interactions are not significant.
(iv) Av. yield of Kapas in lb./ac.

S averaged over N_0 plots :

$$S_1=632, S_2=651 \text{ \& } S_3=656 \text{ lb./ac.}$$

S.E./mean =28.21 lb./ac.

	A/S	G.N.C.	Mixture	N_1	N_2	T_0	T_1	Mean
S_1	633	635	645	622	654	636	639	638
S_2	594	623	682	637	629	646	622	633
S_3	549	624	711	629	627	644	613	628
Mean	592	627	679	629	637	642	624	633
T_0	591	639	697	643	642			
T_1	593	616	662	616	632			
N_1	591	610	687					
N_2	593	645	672					

1. S.E. of marginal mean of source or S =20.0 lb./ac.
2. S.E. of the body of source \times S table =34.6 lb./ac.
3. S.E. of marginal mean of Nor T =25.3 lb./ac.
4. S.E. of the body of $N \times T$ table =35.7 lb./ac.
S.E. of the difference of two :—
5. Nor T means at the same level of source or S =61.9 lb./ac.
6. Source or S means at the same level of N or T =55.6 lb./ac.

Crop :- Cotton.
Site :- Agri. Res. Stn. Hiriyyur.

Ref:- Ms. 52(21).
Type :- 'CM'.

Object :- To study the effect of levels of N and different spacings on the yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) No. (b) Generally fallow. (c) N.A. (ii) (a) Gravel mixed with clayey loam. (b) pH. 8 to 8.5. (iii) 31.7.52. (iv) (a) 2 ploughings, one cross ploughing and passing cultivator, passing line marker and opening plough furrows. (b) to (e) N.A. (v) 4 ton/ac. of F.Y.M. (vi) Giza 12. (vii) Irrigated. (viii) 4 intercultural operations, 3-4 weedings. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Main plot treatments :-

2 spacings between rows :- $S_1=1\frac{1}{2}'$ and $S_2=2'$.

2. Sub plot treatments :

4 levels of N :- N_0 =No manure, $N_1=33.3$, $N_2=66.6$ and $N_3=100.0$ lb./ac. of N.

N applied as A/S, half at sowing, half at thinning.

3. Sub-Sub-plot treatments :-

2 spacings between plants :- $S_1'=9''$ and $S_2'=15''$.

4. Sub-Sub Sub plot treatments :-

plants per hole :- P_1 =one plant and P_2 =two plants.

3. DESIGN :

(i) Split-split-split plot (ii) (a) 2 main plots/replication; 4 sub plots/main plot; 2 sub-sub plots subplot; 2 sub-sub-sub plots/sub-sub-plot. (b) N.A. (iii) 4 (iv) (a) 1/60th ac. (b) $26' \times 15'$ (v) Yes, details N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Kapas yield data, stand, final height, total number of nodes, total number of flowers produced, total number of bolls harvested. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 332 lb./ac.

(ii) (a) 402.7 lb./ac.

(b) 175.9 lb./ac.

(c) 118.7 lb./ac.

(d) 101.9 lb./ac.

(iii) The differences in yield due to levels of N are significant. Further the increase in yield due to the application of N is proportional to the increase in dosage.

(iv) Av. yield of kapas in lb./ac.

	S_1	S_2	Mean	S_1'	S_2'	P_1	P_2
N_0	246	296	271	278	265	274	268
N_1	264	296	280	295	264	268	292
N_2	332	401	366	352	380	358	374
N_3	358	430	409	425	393	411	407
Mean	307	356	332	337	326	328	335
P_1	308	348	328	332	324		
P_2	307	363	335	343	327		
S_1'	309	366	337				
S_2'	306	346	326				

S-E of difference of two

1. S means (marginal)	=71.20 lb./ac.
2. N means (marginal)	=43.97 lb./ac.
3. N means at the same level of S	=€2.12 lb./ac.
4. S means at the same levels of N	=89.34 lb./ac.
5. S' means (marginal)	=20.94 lb./ac.
6. S' means at the same levels of N	=41.88 lb./ac.
7. N means at the same level of S'	=53.05 lb./ac.
8. P means (marginal)	=18.15 lb./ac.
9. P means at the same level of S	=25.13 lb./ac.
10. S means at the same level of P	=73.29 lb./ac.
11. P means at the same level of S'	=25.13 lb./ac.
12. S' means at the same level of P	=27.22 lb./ac.
13. S' means at the same level of S	=30.01 lb./ac.
14. S means at the same level of S'	=74.00 lb./ac.
15. P means at the same level of N	=35.60 lb./ac.
16. N means at the same level of P	=50.95 lb./ac.

Crop :-Cotton.

Ref :-Ms. 52(20)

Site :-Agri. Res. Stn., Mandya.

Type :-'CM'.

Object :—To study the effect of N in combination with sowing date and spacing.

1. BASAL CONDITIONS :

(i) (a) No. (b) Generally fallow. (c) N.A. (ii) (a) Sandy loam. (b) pH 5.5 to 7. (iii) As under treatments, (iv) (a) 2 ploughings, one cross ploughing and passing cultivator, passing line marker and opening plough furrows. (b) to (e) N.A. (v) 4 ton/ac. of F.Y.M. (vi) Giza 12 late. (vii) Irrigated. (viii) 4 intercultural operations, 3-4 weedings. (ix) 10.39" (31.10.52 to 18.6.53). (x) 24.4.53; 5.5.53; 18.6.53.

2. TREATMENTS :

Main plot treatments :—

2 dates of sowing :— $D_1=31.10.52$ and $D_2=30.11.52$.

Sub-plot treatments :—

4 levels of N :— $N_0=0$, $N_1=33.3$, $N_2=66.6$, and $N_3=100.0$ lb./ac. of N 'N' applied as A/S, half at sowing, half at thinning.

Sub-sub plot treatments :—

3 row spacings :— $S_1=1\frac{1}{2}'$, $S_2=2'$ and $S_3=2\frac{1}{2}'$.

Sub-sub-sub plot treatments :—

2 plant spacings— $S'_1=9"$ and $S'_2=15"$.

3. DESIGN :

(i) Split—split—split plot (ii) (a) 2 main plots/block; 4 sub. plots/main plot; 3 sub-sub-plots/sub-plot; 2 sub-sub-sub plots/sub-sub plot. (b) N.A. (iii) 4. (iv) (a) $40.3' \times 18'$. (b) $32.5' \times 10.5'$, (v) $3.75'$ all round. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Kapas yield data, total number of plants/plot. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) None.

5. RESULTS :

(i) 92 lb./ac.

(ii) (a) 206.48 lb./ac.

(b) 64.64 lb./ac.

(c) 40.70 lb./ac.

(d) 28.73 lb./ac.

(iii) The differences in yield due to any of the main effects are not significant. Only the interaction 'plant spacing \times dates of sowing' is significant.

(iv) Av. yield of Kapas in lb./ac.

	D ₁	D ₂	Mean	S' ₁	S' ₂	S ₁	S ₂	S ₃
N ₀	101	90	96	102	89	104	97	85
N ₁	89	79	84	89	79	66	95	91
N ₂	84	102	93	95	90	78	91	110
N ₃	109	81	96	96	96	96	102	90
Mean	96	88	92	96	89	86	96	94
S ₁	82	90	86	88	84			
S ₂	103	89	96	99	93			
S ₃	102	86	94	99	89			
S' ₁	95	96	96					
S' ₂	96	81	89					

S.E. of difference of two

1. D means (marginal) = 29.52 lb./ac.
2. N means (marginal) = 12.76 lb./ac.
3. N means at the same level of D = 18.35 lb./ac.
4. D means at the same level of N = 33.51 lb./ac.
5. S means (marginal) = 7.18 lb./ac.
6. S means at the same level of N = 14.36 lb./ac.
7. N means at the same level of S = 17.55 lb./ac.
8. S' means (marginal) = 3.99 lb./ac.
9. S' means at the same level of D = 5.58 lb./ac.
10. D means at the same level of S' = 30.32 lb./ac.
11. S' means at the same level of S = 7.18 lb./ac.
12. S means at the same level of S' = 8.78 lb./ac.
13. S mean at the same level of D = 10.37 lb./ac.
14. D means at the same level of S = 31.11 lb./ac.
15. S' means at the same level of N = 7.98 lb./ac.
16. N means at the same level of S' = 14.36 lb./ac.

Crop :- Cotton.

Site :- Agri. Res. Stn. Mandya.

Ref :- Ms. 49(45).

Type :- 'CV'.

Object :- To find out the best spacing for two varieties of Cotton.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis Mandya. (iii) Nov. 1949. Exact dates N.A. (iv) (a) 3 ploughings, levelling, harrowing, opening furrows. (b) and (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main plot treatments :

All combinations of (1) and (2)

- (1) 2 row spacing :- 2.0' and 2.5'.
- (2) 2 plant spacing :- 9" and 18".

Sub-plot treatments :

varieties. viz (i) Giza 7 (late) and (ii) Giza 12 (late).

3. DESIGN :

- (i) Split plot (main plot treatments in L. Sq.). (ii) (a) 4 main plots/block. 2 sub-plots/main plot. (b) N.A. (iii) 4. (iv) (a) and (b) 1/60th. ac. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Kapas yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 503 lb./ac.
 (ii) (a) = 36.68 lb./ac.
 (b) = 56.96 lb./ac.
 (iii) The differences in yield due to main plot treatments are significant. Further, effect of plant spacing on yield was highly significant. Varieties significant Interaction is not significant.
 (iv) Av. yield of Kapas in lb./ac.

Plant spacing	Row spacing		Mean	Variety	
	2'	2.5'		G.7	G.12
9"	509	550	529	505	553
18"	478	475	476	451	502
Mean	493	512	503		
G.7	470	485			
G.12	516	540			

- S.E. of marginal mean of row or plant spacing = 9.17 lb./ac.
- S.E. of body of 'row × plant' spacings table = 12.97 lb./ac.
S.E. of difference of two
- Variety means = 20.14 lb./ac.
- Variety means at the same row or plant spacing = 28.50 lb./ac.
- Row or plant spacing means at the same variety = 23.90 lb./ac.

Crop :- Cotton.

Site :- Agri. Res. Stn. Mandya.

Ref :- Ms. 50(71).

Type :- 'CV'.

Object :- To find out the best spacing for two varieties of Cotton.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam (b) N.A. (iii) June 1950. (iv) (a) 3 ploughings, levelling harrowing, opening the furrows. (b), (c) N.A. (d) As per treatments (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main plot treatments :-

Combinations of (1) and (2)

(1) 2 row spacings :- 2.0' and 2.5'.

(2) 2 plant spacings :- 9" and 18".

Sub plot treatments :-

2 Varieties :- Giza 7 (late) and Giza 12 (late)

3. DESIGN :

- (i) Split plot (Main plot treatments in L. Sq.) (ii) (a) 4 main plots/block ; 2 sub plots/main plot. (b) N.A. (iii) 4. (iv) (a), (b) 1/60th of an ac. Dimensions N.A. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Kapas yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 619 lb./ac.
 (ii) (a) 67.25 lb./ac.
 (b) 53.16 lb./ac.
 (iii) The differences in yield due to spacings or varieties are not significant. The interaction row spacing and plant spacing alone is significant. Other interaction is not significant.
 (iv) Av. yield of Kapas in lb./ac.

Plant Spacing	Row Spacing		Mean	Variety	
	2'	2.5'		G. 7	G.12
9"	593	675	634	670	598
18"	632	575	603	607	600
Mean	612	625	619		
G. 7	65	625	638		
G. 12	573	625	599		

1. S.E. of marginal mean of row or plant spacing = 16.81 lb./ac.
 2. S.E. of body of 'row or plant' spacings table = 23.77 lb./ac.
 S.E. of difference of two
 3. Variety means = 18.79 lb./ac.
 4. Variety means at the same row or plant spacing = 26.58 lb./ac.
 5. row or plant spacing means at the same variety = 30.31 lb./ac.

Crop :- Cotton.

Site :- Agri. Res. Stn., Mandya.

Ref :- 50(72).

Type :- 'CV'.

Object :- To find out the best spacing for two varieties of Cotton.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mandya. (iii) May 50. (iv) (a) 3 ploughings, levelling, harrowing, opening furrows. (b), (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) As per treatments (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main plot treatments :-

All combinations of (1) and (2)

(1) 2 row spacings :- 2.0' and 2.5'.

(2) 2 plant spacings :- 9" and 18".

Sub-plot treatments :-

2 varieties : Giza 7 (late) and Giza 12 (late).

3. DESIGN :

- (i) Split plot (main plot treatments in L. Sq.) (ii) (a) 4 main plots/block ; 2 sub-plots/main plot. (b) N.A. (iii) 4. (iv) (a), (b) 1/60th ac. Main plot size N.A. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Kapas yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 640 lb./ac
 (ii) (a) 55.12 lb./ac.
 (b) 52.50 lb./ac.
 (iii) The differences in yield due to main plot treatments are significant. The interaction effect row spacing \times plant spacing is highly significant. The sub-plot treatments and interaction are not significant.

(iv) Av. yield of kapas in lb./ac.

Av. yield of kapas in lb./ac. (vi)

Plant Spacing	Row Spacing		Mean	Variety	
	2'	2.5'		G. 7	G. 12
9"	603	696	650	660	640
18"	658	602	630	633	626
Mean	630	649	640		
G. 7	644	650	647		
G. 12	617	649	633		

- S.E. of marginal means of row or plant spacing = 13.78 lb./ac.
- S.E. of body of row \times plant spacings table = 19.49 lb./ac.
- S.E. of difference of two variety means = 18.56 lb./ac.
- variety means at the same row or plant spacing = 26.25 lb./ac.
- row or plant spacing means at the same variety = 26.91 lb./ac.

Crop :- Cotton.

Ref :- Ms. 50(70).

Site :- Agri. Res. Stn., Mandya.

Type 'CV'.

Object :- To find out the best spacing for two varieties of cotton.

1. BASAL CONDITIONS :

- (i) (a) No. (b) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mandya (iii) 15:11:50. (iv) (a) 3 ploughings, levelling, harrowing, opening furrows etc. (b) (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Interculturing. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main plot treatments :-

All combinations of (1) and (2)

(1) 2 row spacings :- 2' and 2½'.

(2) 2 plant spacings :- 9" and 18".

Sub-plot treatments :-

2 Varieties : Giza 7 (late) and Giza 12 (late).

3. DESIGN :

- (i) Split-plot (main plot treatments in L. sq). (ii) (a) 4 main plots/block ; 2 sub-plots/main plot. (b) N.A. (iii) 4. (iv) (a), (b) 1/60th ac. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Kapas yield. (iv) (a) No. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 532 lb./ac.

(ii) (a) 54.32 lb./ac.
(b) 27.45 lb./ac.

(iii) The differences in yield due to main plot treatments are not significant. Differences due to plant spacings are significant. The main effect of sub-plot treatments and interaction not significant.

(iv) Av. yield of kapas in lb./ac.

Plant spacing	Row spacing		Mean.	Variety.	
	2'	2.5'		G. 7	G. 12
9"	547	577	562	555	568
18"	512	493	502	493	512
Mean.	529	535	532	524	540
G. 7	520	528			
G. 12	538	542			

1. S.E. of marginal means of row or plant spacing = 13.58 lb./ac.
2. S.E. of body of 'row × plant' spacings table = 19.20 lb./ac.
S.E. of difference of two
3. variety means = 9.70 lb./ac.
4. variety means at the same row or plant spacing = 13.72 lb./ac.
5. row or plant spacing means at the same variety = 21.48 lb./ac.

Crop :- Cotton.

Ref :- Ms. 48(19).

Site :- Agri. Res. Stn., Nargund.

Type :- 'CV'.

Object :- To find out the suitable cultural methods for Cotton crop.

1. BASAL CONDITIONS :

(i) (a) Wheat-Jowar-Cotton, (b) Rabi Jowar, (c) F.Y.M. at 2.5 ton/ac. (ii) (a) Karl soil. (b) Refer soil analysis Nargund. (iii) 28, 29.9.1948. (iv) (a) N.A. (b) Sowing by moghan behind seed drill. (c) 10 lb./ac. (d) and (e) N.A. (v) F.Y.M. at 5 C.L./ac. (vi) As per treatments (Medium). (vii) Unirrigated. (viii) Interculturing. (ix) 6.53" (28.9.48 to 24.2.1949). (x) 24.2.1949.

2. TREATMENTS :

Main plot treatments :

3 spacings :- 18", 24" and 30".

Sub-plot treatments :

2 varieties :- Jayawant and Gadag.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/block ; 2 sub-plots/mainplot. (b) N.A. (iii) 8. (iv) (a), (b) 36.3' × 30' (v) No. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Kapas yield data. (iv) (a) 1947—1950. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 89 lb./ac.

(ii) (a) = 61.67 lb./ac.

(b) = 59.15 lb./ac.

(iii) The differences in yield due to different spacings, varieties are not significant. The interaction is not significant.

(iv) Av. yield of kapas in lb./ac.

Spacing	Variety		Mean.
	Jayawant.	Gadag	
18"	87	123	105
24"	74	81	78
30"	92	75	83
Mean.	84	93	89

S.E of difference of two

1. main plot treatment means. =21.81 lb./ac.
2. sub-plot treatment means. =17.07 lb./ac.
3. sub-plot treatment means at the same level of main plot treatment. =29.57 lb./ac.
4. main plot treatment means at the same level of sub-plot treatment. =30.21 lb./ac.

Crop :- Cotton.

Site :- Agri. Res. Stn., Nar gund.

Ref :- Ms. 49(22).

Type :- 'CV'.

Object :- To find out the suitable cultural methods for Cotton crop.

1. BASAL CONDITIONS :

(i) (a) Wheat-Jowar-Cotton. (b) Rabi Jowar. (c) F.Y.M. at 2.5 ton/ac. (ii) (a) Karl soil. (b) Refer soil analysis, Nargund. (iii) 7.9.1949. (iv) (a) N.A. (b) Sowing by moghan behind the seed-drill. (c) 10 lb./ac. (d) and (e) N.A. (v) F.Y.M. at 5 C.L/ac. (vi) As per treatments (medium). (vii) Unirrigated. (viii) Inter-culturing. (ix) 12.96" (7.9.49 to 7.2.1950). (x) 7.2.1950.

2. TREATMENTS :

Main plot treatments :-

3 Spacings. 18", 24" and 30".

Sub-plot treatments :-

2 varieties : Jayawant (medium) and Gadag (medium).

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/block ; 2 sub-plots/main plot. (b) N.A. (iii) 8. (iv) (a), (b) 36.3' x 30'. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Kapas yield data. (iv) (a) 1947-1950. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 264 lb./ac.

(ii) (a) =89.94 lb./ac.

(b) =92.64 lb./ac.

(iii) The effect of spacings is not significant. The differences in yield due to varieties are highly significant. Interaction is not significant.

(iv) Av. yield of kapas in lb./ac.

Spacing	Variety		Mean.
	Jayawant	Gadag	
18"	304	198	251
24"	390	174	282
30"	291	227	259
Mean.	328	200	264

S.E. of difference of two

1. main plot treatment means =31.80 lb./ac.
2. sub-plot treatment means =26.74 lb./ac.
3. sub-plot treatment means at the same level of a main plot treatment. =46.32 lb./ac.
4. main plot treatment means at the same level of a sub-plot treatment. =45.60 lb./ac.

Crop :- Cotton.

Ref :- Ms. 50(49).

Site :- Agri. Res. Stn., Nargund.

Type :- 'CV'.

Object :- To find out the suitable cultural methods for Cotton crop.

1. BASAL CONDITIONS :

(i) (a) Wheat-Jowar-Cotton. (b) Rabi Jowar. (c) F.Y.M at 2.5 ton/ac. (ii) (a) Karl soil. (b) Refer soil analysis, Nargund (iii) 7.9.1950. (iv) (a) N.A. (b) Sowing by moghan behind the seed-drill. (c) 10 lb./ac. (d) & (e) N.A. (v) F.Y.M. at 5 C.L./ac. spread on 4.9.1950. (vi) As per treatments (medium). (vii) Unirrigated. (viii) Interculturing. (ix) 7.56" (7.9.1950 to 26.1.1951. (x) 26.1951.

2. TREATMENTS :

Main-plot treatments :-

3 Spacings viz. 18", 24" and 30".

Sub-plot treatments :-

2 varieties viz. Jayadhar and Laxmi. (medium).

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main plots/block ; 2 sub-plots/main plot. (b) N.A. (iii) 8. (iv) (a), (b) 36.3" x 30". (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) kapas yield data. (iv) (a) 1947-1950. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) No reasons mentioned in the file for low yields.

5. RESULTS :

- (i) 132 lb./ac.
- (ii) (a) 85.98 lb./ac.
(b) 68.65 lb./ac.
- (iii) The differences in the yield due to spacing & variety are not significant. The interaction is not significant.
- (iv) Av. yield of kapas in lb./ac.

Spacing	Variety		Mean.
	Jayadhar	Laxmi	
18"	120	123	121
24"	125	105	115
30"	157	165	161
Mean.	134	131	132

S.E. of difference of two.

1. main plot treatment means =30.40 lb./ac.
2. sub-plot treatment means. =19.82 lb./ac.
3. sub-plot treatment means at the same level of a main plot treatment. =34.32 lb./ac.
4. main plot treatment means at the same level of a sub-slot treatment. =38.90 lb./ac.

Crop :- Cotton.

Ref :- Ms. 51(73).

Site :- Agri. Res. Stn., Nargund.

Type :- 'CV'.

Object :- To find out the suitable cultural methods for Cotton crop.

1. BASAL CONDITIONS :

(i) (a) Wheat-Jowar-Cotton. (b) Jowar (rabi). (c) F.Y.M. at 2.5 ton/ac. (ii) (a) Karl soil. (b) Refer soil analysis, Nargund. (iii) 11.9.1951. (iv) (a) N.A. (b) Sowing by moghan behind the seed drill. (c) 10 lb./ac. (d) & (e) N.A. (v) F.Y.M. at 5 C.L./ac. (vi) As per treatments (medium). (vii) Unirrigated. (viii) Interculturing. (ix) 8.2" (11.9.19.1 to 9.2.1952. (x) 9.2.1952.

2. TREATMENTS :

4. Main-plot treatments :-

All combinations of (1) and (2)

(1) 2 varieties : Laxmi and Jayadhar.

(2) 2 spacings : 24" and 30".

3. Sub-plot treatments :-

3 seed-rates : 8, 10 and 12 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 4 main plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 6. (iv) (a), (b) 36.3' x 30' (v) No. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Kapas yield data. (iv) 1951-continued: (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) No reasons mentioned for low yield.

5. RESULTS :

(i) 269 lb./ac.

(a) 112.3 lb./ac.

(d) 119.5 lb./ac.

(iii) The difference in yield due to varieties alone is significant. Main effects of spacing and seed-rate and interactions are not significant.

(iv) Av. yield of kapas in lb./ac.

Spacing	Variety		Mean	Seed-rate		
	Lami	Jayaphar		8	10	12
24"	225	268	247	232	257	251
30"	238	344	291	267	310	297
Mean	232	306	269			
Seed-rate						
8	256	243	250			
10	315	251	283			
12	346	201	274			

1. S.E. of marginal mean of variety or spacing = 18.7 lb./ac.

2. S.E. of body of spacing x variety table = 26.6 lb./ac.
S.E. of difference of two

3. seed-rate means = 34.5 lb./ac.

4. seed-rate means at the same level of variety or spacing = 48.8 lb./ac.

5. variety or spacing means at the same level of seed rate = 47.8 lb./ac.

Crop :-Cotton.

Ref :-Ms. 52(112).

Site :-Agri. Res. Stn., Nargund.

Type :-'CV'.

Object :-To find out suitable cultural methods for Cotton crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Karl soil. (b) Refer soil analysis, Nargund. (ii) 5, 7.10.1952. (iv) (a) 3 harrowings. (b) N.A. (c) & (d) As per treatments. (e) N.A. (v) 2½ ton/ac. F.Y.M. on 8.8.52. (vi) As per treatments (medium) (vii) Rainfed. (viii) Interculturing. (ix) 4.85" (5.10.52 to 28.2.1953). (x) 28.2.1953.

2. TREATMENTS :

Main-plot treatments :-

All combinations of (1) and (2)

(1) 2 varieties : Laxmi and Jayadhar.

(2) 2 spacings : 24" and 30".

Sub-plot treatments :-

3 seed-rates : 8, 10 and 12 lb./ac.

3. DESIGN :

(i) Split plot design. (ii) (a) 4 main plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 6. (iv) (a) 39.3' × 40' for 30" spacing ; 39.3' × 36' for 24" spacing). (b) 36.3' × 30'. (v) 1½' along length, 4' or 5' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Kapas yield data. (iv) 1951—continued. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 213 lb./ac.

(ii) (a) 111.0 lb./ac.

(b) 97.6 lb./ac.

(iii) None of the effects and interactions is significant.

(iv) Av. yield of kapas in lb./ac.

Spacing	Variety			Seed-rate		
	Laxmi	Jayadhar	Mean	8	10	12
24"	164	217	190	194	197	179
30"	222	249	235	240	230	236
Mean	193	233	213			
Seed-rate						
8	217	216	217			
10	198	229	213			
12	162	253	208			

1. S.E. of marginal mean of variety or spacing = 18.5 lb./ac.
2. S.E. of body of variety × spacing table = 26.2 lb./ac.
- S.E. of difference of two
3. seed rate means = 28.1 lb./ac.
4. seed-rate means at the same level of variety or spacing = 39.8 lb./ac.
5. variety or spacing means at the same level of seed-rate = 41.7 lb./ac.

Crop :- Cotton.

Ref :- Ms. 53(157)

Site :- Agri. Res. Stn. Nargund.

Type :- 'CV'.

Object :- To find out the suitable cultural methods for Cotton crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Karl soil. (b) Refer soil analysis, Nargund. (iii) 26.9.53. (iv) (a) Harrowing. (b) N.A. (c) and (d) As per treatments. (e) N.A. (v) 2½ ton/ac. F.Y.M. on 26.8.53. (vi) As per treatments (medium). (v) Rainfed. (viii) Interculturing. (ix) 19.06" (26.9.53 to 23.2.1954). (x) 23.2.1958.

2. TREATMENTS :

Main-plot treatments :-

All combinations of (1) and (2)

(1) 2 varieties : Laxmi and Jayadhar.

(2) 2 spacings : 24" and 30".

Sub-plot treatments :-

3 seed-rates. : 8, 10 and 12 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 4 main plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 6. (vi) (a) 39.3'×40' for 30" spacing ; 39.3'×38' for 24" spacing. (b) 36.3'×30'. (v) 1½' along length, 4' or 5' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Kapas yield data. (iv) (a) 1951—continued. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 334 lb./ac.

(ii) (a) 117.8 lb./ac.

(b) 97.8 lb./ac.

(iii) Main effect of varieties is highly significant. Other effects and interactions are not significant.

(iv) Av. yield of kapas in lb./ac.

Spacing	Variety		Mean	Seedrate		
	Laxmi	Jayadhar		8	10	12
24"	251	393	322	319	319	330
30"	288	403	345	313	361	364
Mean	270	398	334			
Seedrate						
8	237	395	316			
10	256	424	340			
12	317	377	347			

1. S.E. of marginal mean of variety or spacing

=19.6 lb./ac.

2. S.E. of body of spacing×variety table

=27.8 lb./ac.

S.E. of difference of two

3. seed-rate means

=27.3 lb./ac.

4. seed-rate means at the same level of variety or spacing

=38.7 lb./ac.

5. variety or spacing means at the same level of seedrate

=42.0 lb./ac.

Crop :- Cotton.

Ref :- Ms. 53(37).

Site :- Agri. Res. Stn., Hiriyyur.

Type :- 'CMV'.

Object :- To study the effect of N in combination with sowing dates and spacings on two different varieties of Cotton.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) N.A. (ii) (a) Gravel mixed clay loam. (b) Refer soil analysis, Hiriyyur. (iii) As under treatments. (iv) (a) 2 ploughing and one cross ploughing ; passing cultivator and line marker, and opening furrows. (b), (c) N.A. (d) As under treatments. (e) N.A. (v) 4 ton/ac. of F.Y.M. (vi) As under treatments. (vii) Irrigated. (viii) 4 intercultural operations and 3-4 weedings. (ix) 21.87'. (x) 19.10.53; 12.11.53 ; 1.1.1954 and 21.3.1954.

2. TREATMENTS :

All combination of (1), (2), (3), (4) and (5).

1. 2 dates of sowing :- $D_1=25.53$, $D_2=25.6.53$.
2. 2 row spacings :- $S_1=2'$, $S_2=2\frac{1}{2}'$.
3. 2 plant spacings :- $S_1'=9"$, $S_2'=15"$.
4. 2 n levels :- $N_0=$ No manure, $N_1=50$ lb./ac. as A/S.
5. 2 varieties :- $V_1=Giza$ 12, $V_2=M A-V$.

3. DESIGN :

(i) 2⁵ Fact. confd. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 25'×43.6' (b) 19'×36'. (v) 3' along breadth and 3.75' along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) The variety V_1 completely failed for the sowing date D_2 . The plants were attacked by fusarium, (iii) No. of plants ; cotton yield. (iv) No. (v) (a) Agri. Res. Stn. Mandya. (b) N.A. (vi) No. (vii) As V_1 in D_1 completely failed, an attempt has been made to treat this design as R.B.D., retaining only D_1 and ignoring the D_2 's.

5. RESULTS :

- (i) 934 lb./ac.
- (ii) 209.9 lb./ac.
- (iii) The differences in yield due to treatments are highly significant. Main effect of varieties is highly significant and of N levels, plant spacings and the interaction of varieties and levels of N are significant.
- (iv) Av. yield of kapas in lb./ac.

Mean Response		Differential Response							
		N		S		S'		V	
		Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher
N	+ 108	...	...	+ 154	+ 62	+ 69	+ 148	- 110	+326
S	+ 28	+ 74	- 18	...	...	+ 127	- 70	- 41	+ 98
S'	- 107	-147	- 68	- 9	- 206	...	...	- 105	-110
V	+1176	+958	+1246	+1107	+1246	+1179	+1174	...	...
S.E.	52.4	70.09 lb.							

Av. yield in lb./ac. C.D. in lb./ac.
 $V_1=346$ $V_2=1522$ 141.9 (1%)
 $N_0=880$ $N_1= 988$ 106.1 (5%)
 $S_1'=987$ $S_1'= 880$ 106.1 (5%)

Crop :- Cotton.

Ref :- Ms. 53(38).

Site :- Agri. Res. Stn., Mandya.

Type :- 'CMV'.

Object :- To study the effect of N in combination with sowing dates and spacings on two different varieties of cotton.

1. BASAL CONDITIONS :

(i) (a) No. (b) Nil. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mandya. (iii) As per treatments. (iv) (a) Two ploughing, one cross-ploughing, passing cultivators, line marker and opening furrows. (b), (c) N.A. (d) As per treatments. (e) N.A. (v) 4 ton/ac. of F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) 4. interculturings and 3-4 weedings. (ix) 38.37'. (17.11.53 to 12.8.54) (x) 13.3.54 ; 1.6.54 and 12.8.54.

2. TREATMENTS :

All combinations of (1), (2), (3), (4) and (5).

- (1) 2 dates of sowing : $D_1=17.11.53$, $D_2=16.12.1953$. (D)
 (2) 2 row spacings : $S_1=2'$; $S_2=2\frac{1}{2}'$ (S)
 (3) 2 plant spacings : $S_1'=9''$; $S_2'=15''$ (S')
 (4) 2 levels of N : N_0 =No manure ; $N_1=50$ lb.N/ac. as A/S. (N)
 (5) 2 varieties : V_1 =Giza 12, V_2 =M.A.V. (V)

3. DESIGN :

(i) C.R.D. (ii) (a) 128. (b) N.A. (iii)— (iv) (a) $25' \times 43.6'$. (b) $19' \times 36'$. (v) 3' along breadth and 3.75' along length. (vi) Yes.

4. GENERAL :

4. (i) Satisfactory. (ii) Nil. (iii) No. of plants per plot, cotton yield. (iv) (a) 1953—1954. (b) No. (c) N.A. (v) (a) Agri. Res. Stn. Hiriyur. (b) N.A. (vi) No. (vii) The layout is supposed to be R.B.D. But it is found that the distribution of treatments in replications are not proportional. As such it is analysed like C.R.D.

5. RESULTS :

- (i) 366.5 lb./ac.
 (ii) 112.7 lb./ac.
 (iii) The difference in yield due to varieties alone is highly significant.
 (iv) Av. yield of kapas in lb./ac.

		Differential responses					
		D		S		S'	
Factors	Mean response	Lower	Higher	Lower	Higher	Lower	Higher
	lb./ac.						
D	- 17.0	-	-	- 37.7	+ 3.7	- 64.4	+ 30.4
S	- 27.2	- 47.9	- 6.5	-	-	- 5.4	- 49.0
S'	- 12.9	- 60.3	+ 34.5	+ 8.9	- 34.7	-	-
N	- 24.1	- 5.3	- 42.8	- 34.9	- 83.5	- 42.0	- 6.1
V	+408.9	+383.1	+434.8	+436.9	+381.0	+425.8	+392.1
		N		V			
Factors	Lower	Higher	Lower	Higher			
D	+ 1.7	-35.8	-42.9	+ 8.8			
S	- 38.0	-16.4	+ 0.7	-55.2			
S'	- 30.9	+ 5.0	+ 3.9	-29.8			
N	-	-	-17.3	-30.8			
V	+415.7	+402.2	-	-			

S.E. of mean response = 19.81 lb./ac.
 S.E. of differential response = 27.91 lb./ac.

Crop :-Cotton.

Ref :-Ms. 51(80).

Site :-Cotton Improvement Scheme, Gadag.

Type :-'D'.

Object :-To study the effect of pre-sowing soaking treatment of seed on the yield of Laxmi cotton.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (ii) (a) Sandy soil. (b) Refer soil analysis, Gadag. (iii) 22.9.1951. (iv) (a) Ploughing once, harrowing thrice. (b) Dibbling. (c) 6—10 lb./ac. (d) 2'. (e) Generally one seed/hole. (v) Nil. (vi) Laxmi cotton (Early). (vii) Unirrigated. (viii) Weeding, interculturing. (ix) N.A. (x) 14.2.52 to 11.3.19.52

2. TREATMENTS :

1. A/S.
2. Ammo. phos.
3. Cow dung.
4. Cow dung+urine.
5. Water.
6. Dry seed (Control).
Soaking seeds in Molar solution of each as above for 24 hours prior to sowing.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 28'×6'. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Kapas yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) N.A.

5. RESULTS :

- (i) 629 lb./ac.
 (ii) N.A.
 (iii) Treatments do not differ significantly.
 (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	653
2.	678
3.	560
4.	599
5.	628
6.	647
S.E./mean	=N.A.

Crop :-Cotton.

Site :-Cotton Improvement Scheme, Gadag.

Ref :-Ms. 52(101).

Type :-'D'.

Object :-To study the effect of pre-sowing soaking treatment of seed on the yield of Laxmi Cotton.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy soil. (b) Refer soil analysis, Gadag. (iii) 1.10.52. (iv) (a) Ploughing once, harrowing thrice. (b) Dibbling. (c) 6—10 lb./ac (d) 2'. (e) Generally 1 seed/hole. (v) Nil. (vi) Laxmi, (Early). (vii) Rainfed. (viii) Weeding, interculturing. (ix) N.A. (x) Feb., March 1953.

2. TREATMENTS :

1. A/S (132 gms to 1,000 c.c. of water).
2. Wheat flour.
3. Cowdung
4. Cowdung+urine.
5. Water.
6. Dry seed (control).
Soaking seeds in Molar solution of each as above for 24 hours prior to sowing.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 26'×20'. (b) 22'×16'. (v) 2' all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Kapas yield. (iv) (a) 1951—1952. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 379 lb /ac.
 (ii) 50.1 lb /ac
 (iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	411
2.	353
3.	409
4.	371
5.	371
6.	358
S.E./mean	=25.1 lb./ac.

Crop :-Cotton.

Ref :-Ms. 52(144).

Site :-Cotton Improvement Scheme, Gadag.

Type :-'D'.

Object :—To study the effect of pre-treatment of seed on yield of Cotton.

1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) Jowar. (c) Nil. (ii) (a) Sandy soil. (b) Refer soil analysis, Gadag. (iii) 17.9.1953. (iv) (a) Ploughing once, harrowing thrice. (b) Dibbling. (c) 6, 10 lb /ac. (d) 2'. (e) Generally 1 seed/hole. (v) 5 C.L./ac. of F.Y.M. as basal dose applied before sowing and spreading evenly by hand. (vi) Laxmi cotton, (early). (vii) Rainfed. (viii) 4 times interculturing, weeding twice. (ix) 18.27" (17.9.53 18-26.4.54). (x) 18,26.4.54.

2. TREATMENTS :

1. Soaking overnight in water and plastering with cowdung early next morning.
2. Dipping in water and plastering with cowdung early morning.
3. Soaking overnight in water and plastering with cowdung and A/S at 2 lb./ac. early morning.
4. No soaking but only plastering with cowdung and A/S at 2 lb./ac. early morning.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 26'×10'. (b) 22'×6'. (v) 2' all round. (vi) Yes.

4. GENERAL :

(i) Germination quite satisfactory. Heavy continuous rainfall immediately after germination caused heavy infection of blackarm and red leaf blight which adversely affected vegetative growth. Harvesting was late by a month. 3rd and 4th pickings were caught in rain. Yield low due to adverse climatic conditions. (ii) Nil. (iii) Height, node number, position of fruiting branch, boll load per plant, kapas yield. (iv) (a) 1953—1954. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 366 lb./ac.
- (ii) 82.3 lb./ac.
- (iii) The differences in yield due to treatments are significant.
- (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	336
2.	259
3.	413
4.	457
S.E./mean	=41.1 lb./ac.

Crop :-Cotton.

Ref :-Ms. 53(152)

Site :-Cotton Improvement Scheme, Gadag.

Type :-'D'.

Object :—To study the effect of pre-treatment of seed with Perenox aganst infection of blackarm of Cotton.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy soil. (b) Refer soil analysis, Gadag. (iii) 17.9.1953. (iv) (a) Ploughing once, harrowing thrice. (b) Dibbling. (c) 6—10 lb./ac. (d) 2 (e) Generally 1 seed/hole. (v) Nil. (vi) Laxmi (early.) (vii) Rainfed. (viii) Weeding, interculturing. (ix) 18.27" (17.9.53 to Feb., March 1954.) (x) Feb., March 1954.

2 TREATMENTS :

1. Treated seed (treated with Perenox).
2. Untreated seed.

3. DESIGN :

- (i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 12'×4'. (b) 8'×4'. (v) 2' all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Kapas yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 347 lb./ac.
- (ii) 106.2 lb./ac
- (iii) The difference in yield due to treatments is not significant.
- (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	368
2.	326
S.E./mean	=30.7 lb./ac.

Crop :- Cotton.

Ref :- Ms. 53 (153).

Site :- Cotton Improvement Scheme, Gadag.

Type :- 'D'.

Object :—To study whether cowdung smearing will reduce the effect of Perenox on the primary infection of blackarm.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy soil. (b) Refer soil analysis, Gadag. (iii) 25.9.53. (iv) (a) Ploughing once, harrowing thrice, (b) Dibbling. (c) 6—10 lb./ac. (d) 2'. (e) Generally one seed/hole. (v) Nil. (vi) Laxmi, early. (vii) Rainfed. (viii) Weeding, interculturing. (ix) 18.27" (25.9.53 to Feb., March. 54). (x) Feb., March 1954.

2. TREATMENTS :

1. Delinting with 1% sulphuric acid and dry dusting with Perenox 1 : 10.
2. Cultivator's method of cowdung pasting only.
3. Dry dusting with perenox 1 : 10 with fuzz on, one week before sowing and then cowdung pasting.
4. Perenox suspension on seed with fuzz on and usual cowdung pasting.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 26'×6'. (b) 22'×6'. (v) 2' all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Kapas yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 498 lb./ac.
- (ii) 92.7 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield
1.	414
2.	613
3.	493
4.	472
S.E./mean	= 46.4 lb./ac.

Crop :- Cotton

Res : Ms. 52(139).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'D'

Object :- To find out the effective control measure against cotton boll-worms.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Bengalgram (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa (iii) 16.8. 1952. (iv) (a) Ploughing, levelling etc. (b) to (e) N.A. (v) 100 lb. of A.P. (vi) H.A-11 (Medium) (vii) Irrigated. (viii) Weeding. (ix) 7.67" (16.8.52. to 9.4.1953). (x) 19.2.53. ; 11.3.1953. ; 9.4.1953.

2. TREATMENTS :

1. B.H.C. 0.05 % Spray
 2. D.D.T. 0.10 % Spray
 3. B.H.C. 5.00 % Dust
 4. B.H.C. 10.00 % Dust
 5. D.D.T 5.00 % Dust
 6. D.D.T. 10.00 % Dust
 7. D.D.T. 5 % +Sulphur (1:1)
 8. D.D.T. 10 % +Sulphur (1:1)
 9. 3:10:20 mixture of B.H.C. 5%, D.D.T. 5%, Sulphur.
 10. 3:10:20 mixture of B.H.C. 10%, D.D.T. 10%, Sulphur.
 11. Agrocide cotton dust.
 12. Control (no insecticide)
- Treatments applied on 30.10.52. ; 20.11.52 ; 11.12.52 ; 1.1.1953 ; 22.1.1953.

3. DESIGN :

(i) R.B.D. (ii) (a) 12 (b) N.A. (iii) 4 (iv) (a) 0.97 cent (b) 0.50 cent. Dimentions N.A. (v) Yes. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Kapas yield. (iv) (a) No (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 566 lb./ac.
- (ii) 70.8 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield.	% of bolls. Attacked	Total No. of bolls shed due to attack.
1.	548	20.1	812
2.	609	18.6	891
3.	563	24.0	882
4.	490	19.7	806
5.	581	25.8	922
6.	569	17.8	856
7.	547	27.7	842
8.	619	20.9	825
9.	598	23.0	792
10.	564	22.5	751
11.	581	20.7	754
12	519	33.5	960
S.E./mean	=35.4 lb./ac.		

Crop :- Cotton.

Ref :- Ms. 53 (184).

Site :- Agri. Res. Stn., Siruguppa.

Type :- 'D'

Object :- To find out effective control measures against cotton boll-worms.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) 18.8.1953. (vi) (a) Ploughing, levelling etc. (b) to (e) N.A. (v) Nil. (vi) Laxmi. (Medium.) (vii) Irrigated. (viii) Weeding. (ix) A bout 17" (18.8.53 to 6.4.1954). (x) 17, 18.3.53 ; 6.4.1954.

2. TREATMENTS :

Three rounds of insecticidal treatments were given commencing from 9.1.54 at 15 days intervals. To assess the efficacy of the treatments, counts of flowers and square shed due to boll worm attack were recorded 10 days after each treatment. Counts of total number of bolls of ten plants in each plot were taken and number of attacked bolls were recorded to find percentage attack.

Treatment			
1.	B.H.C.	0.05 %	spray.
2.	DDT.	0.10 %	spray.
3.	BHC.	5 %	dust.
4.	BHC.	10 %	dust.
5.	DDT.	5 %	dust.
6.	DDT.	10 %	dust.
7.	DDT.	5 %	+Sulphur (1 : 1)
8.	DDT.	10 %	+Sulphur. (1 : 1)
9.	Mixture of 3 : 10 : 20 of BHC 5%, DDT 5%, Sulphur.		
10.	Mixture of 3 : 10 : 20 of BHC 10%, DDT 10%, Sulphur.		
11.	Agroicide cotton dust.		
12.	Control.		

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A (iii) 4. (iv) (a), (b) 0.38 cents. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Kapas yield. (iv) (a) No. (b) and (c) No. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 1591 lb./ac.
 (ii) 212.3 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield	% of bolls attacked
1.	1842	22.5
2.	1545	21.3
3.	1501	26.3
4.	1657	25.0
5.	1570	27.5
6.	1423	22.5
7.	1529	21.3
8.	1624	22.5
9.	1563	22.5
10.	1545	25.0
11.	1838	22.5
12.	1455	32.5
S.E./mean	=106.1 lb./ac.	

Crop :- Cotton.

Site :- Agri. Res. Stn., Siruguppa.

Ref :- Ms. 53 (185).

Type :- 'D'

Object :- To find out of effective control measures for cotton aphids with D.D.T. and B.H.C. insecticides both as sprays and dusts.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) 18.8.1953. (iv) (a) Ploughing, levelling etc. (b) to (e) N.A. (v) 'A/S' 40 N/ac. (vi) Laxmi, (Medium.) (vii) Irrigated. (viii) Weeding. (ix) 10.38" (18 8.53 to 6.4.54). (x) 17, 18.3.54 ; 6.4.54.

2. TREATMENTS :

To assess the efficacy of insecticides, counts of aphids on 20 leaves in each treatment were taken prior to insecticidal treatment and 24 and 48 hours after treatment. Insecticidal treatment was given on 17.12.53 and counts of aphids were taken on 16.12.53 and 19.12.1953.

Treatments (contd.)

1. D.D.T 0.05 % spray.
2. „ 0.10 % spray.
3. „ 5.00 % dust.
4. B.H.C 0.05 % spray.
5. „ 0.10 % spray.
6. „ 5.00 % dust.
7. Tobacco spray.
8. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) and (b) 9' x 19' (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Kapas yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 822 lb./ac.
- (ii) 113.2 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of kapas in lb./ac.

Treatment	Av. yield	% reduction in aphids after	
		24 hrs.	48 hrs.
1.	824	8	9
2.	713	6	9
3.	776	7	8
4.	783	44	44
5.	887	69	74
6.	856	18	12
7.	931	38	44
8.	808	—	—
S.E./mean	= 56.6 lb./ac.		

Crop :- Cotton.

Ref :- Ms. 53(186).

Site :- Agri. Res. Stn, Siruguppa.

Type :- 'D'

Object :- To find out economical and effective control measures against cotton jassids.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis Siruguppa (iii) 18.8.53. (iv) (a) Ploughing, levelling etc. (b) to (e) N.A. (v) 'A/S' 100 lb./ac. (vi) Laxmi; medium. (vii) Irrigated. (viii) Weeding. (ix) 10.38" (18.8.53 to 6.4.54). (x) 17, 18.3.54; 6.4.1954.

2. TREATMENTS :

1. D.D.T 0.05% spray.
2. D.D.T 0.10% spray.
3. D.D.T 5.00% dust.
4. Control.

To assess the efficacy of insecticides, count of jassid-nymphs was taken on 60 leaves on 10 plants in each treatment prior to and 24 hours, 48 hours and 72 hours after treatment. The insecticidal treatment was given on 20.11.53. Jassid nymphs were counted on 19, 21, 22 and 23.11.1953.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 4 (iv) (a), (b) 9' x 19' (v) No. (vi) Yes.

9. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Kapas yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 866 lb./ac.
 (ii) 114.7 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of kapas in lb./ac.

Treatment.	Av. yield	% reduction of Jassids after		
		24hrs.	48 hrs.	72 hrs.
1.	935	83	92	93
2.	776	88	97	98
3.	939	88	88	90
4.	816	—	—	—
S.E./mean	=57.4 lb./ac.			

Crop :- Sugarcane.
 Site :- Agri. Res. Stn., Alnawar.

Ref :- Ms. 50(17).
 Type :- 'M'.

Object :- To find the effect of application of A/S and G.N.C. in different proportions.

1. BASAL CONDITIONS :

(i) (a) Plantcane—Ratoon—Paddy. (b) Paddy. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Alnawar. (iii) 4.2.1950. (iv) (a) One ploughing, one deep ploughing, 3 times clod crushing, harrowing once. (b) Planting in furrows. (c) N.A. (d) 9" × 12". (e) N.A. (v) Nil. (vi) Co. 419 (early). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 6.3.1951.

2. TREATMENTS :

All combinations of (1) & (2).

- (1) 2 levels of F.Y.M. : $F_0=0$ and $F_1=10$ C.L./ac.
 (2) 3 ratios of A/s. and G.N.C. : $R_1=0:1$, $R_2=1:2$ and $R_3=1:1$.
 (Each ratio to give 150 lb./ac. of N. applied in three doses).

3. DESIGN :

(i) 2 × 3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 38' × 18'. (b) 30' × 12'. (v) 4' along length, 3' along breadth. (vi) Yes.

4. GENERAL ;

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1950—1954. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 28.19 ton/ac.
 (ii) 4.06 " "
 (iii) Main effect of F.Y.M. is highly significant. Main effect of ratio of N and interaction : 'Ratio of N × F.Y.M.' are not significant.
 (iv) Av. yield of cane in ton/ac.

	F_0	F_1	Mean.
R_1	28.03	30.00	29.02
R_2	24.22	33.02	28.62
R_3	25.18	28.70	26.94
Mean.	25.81	30.57	28.19
S.E. of F.Y.M. means	=0.96 ton/ac.		
S.E. of Ratio means	=1.17 " "		
S.E. of body of table	=1.66 " "		

Crop :- Sugarcane.

Site :- Agri. Res. Stn. Alnawar.

Ref :- Ms. 51 (22)

Type :- 'M'.

Object :- To find the effect of application of A/S and G.N.C. in different proportions on plant-cane.

1. BASAL CONDITIONS :

(i) (a) Plant cane-Ratoon-Paddy. (b) Paddy. (c) N.A. (ii) (a) Medium black soil (b) Refer soil analysis, Alnawar. (iii) 21.2.1951. (iv) (a) One light ploughing, one deep ploughing, 3 times clod crushing & harrowing once. (b) Planting in furrows. (c) N.A. (d) 9" x 12". (e) N.A. (v) Nil. (vi) C₀ 419, (Early.) (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 6.3.1952.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of F.Y.M. : F₀=0 and F₁=10 C. L./ac.(2) 3 ratios of A/S and G.N.C. : R₁=0 : 1, R₂=1 : 2 and R₃=1 : 1

(Each ratio to give 150 lb./ac. of N. applied in three doses)

3. DESIGN :

(i) 2 x 3 Fact. in R.B.D. (ii) (a) 6 (b) N.A. (iii) 5. (iv) (a) 38' x 18'. (b) 30' x 12'. (v) 4' along length and 3' along breadth (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield (iv) (a) 1950-1954. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 23.65 ton/ac.

(ii) 3.61 ton/ac.

(iii) Main effects and interaction are not significant.

(iv) Av. yield of cane in ton/ac.

	F ₀	F ₁	Mean
R ₁	21.08	25.61	23.34
R ₂	21.78	24.32	23.05
R ₃	26.04	23.07	24.55
Mean.	22.97	24.33	23.65

S.E. of Ratio means = 1.14 ton/ac.

S.E. of F.Y.M. means = 0.93 " "

S.E. of body of table. = 1.61 " "

Crop :- Sugarcane.

Site :- Agri. Res. Stn, Alnawar.

Ref :- Ms. 52 (68),

Type :- 'M'.

Object :- To find the effect of application of A/S and G.N.C. in different proportions on plant cane.

1. BASAL CONDITIONS :

(i) (a) Plant cane-Ratoon-Paddy. (b) Paddy. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis Alnawar. (iii) 23.1.1952. (iv) (a) One light ploughing, one deep ploughing, 3 times clod crushing & harrowing once. (b) Planting in furrows ; dry planting. (c) N.A. (d) 9" x 12". (e) N.A. (v) Nil. (vi) Co. 419. (Early). (vii) Irrigated (viii) Weeding. (ix) N.A. (x) 22-27.2.1953.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of F.Y.M. : $F_0=0$ and $F_1=10$ C. L./ac.

(2) 3 Ratios of A/S and G.N.C. : $R_1=0 : 1$, $R_2=1 : 2$ and $R_3=1 : 1$

(Each ratio to give 150 lb./ac. of N. applied in three doses.)

3. DESIGN :

(i) 2×3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) $38' \times 18'$. (b) $30' \times 12'$. (v) 4' along length, 3' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield (iv) (a) 1950-1954. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 22.92 tons/ac.

(ii) 1.96 „ „

(iii) Main effect of Ratio of N is highly significant. Main effect of F.Y.M. and interaction F.Y.M. \times Ratio of N are not significant.

(iv) Av. yield of cane in ton/ac.

	F_0	F_1	Mean
R_1	23.76	25.31	24.53
R_2	21.94	23.95	22.94
R_3	21.46	21.08	21.27
Mean	22.39	23.45	22.92

S.E. of Ratio means = 0.62 ton/ac.

S.E. of 'F.Y.M. means = 0.51 „ „

S.E. of body of table = 0.88 „ „

Crop :- Sugarcane.

Ref :- Ms. 53(131)

Site :- Agri. Res. Stn., Alnawar.

Type :- 'M'.

Object :- To find the effect of application of A/S and G.N.C. in different proportions on plant-cane.

1. BASAL CONDITIONS :

(i) (a) Plant cane-Ratoon-Paddy. (b) Paddy. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Alnawar. (iii) 5.3.1953. (iv) (a) One light ploughing ; one deep ploughing ; 3 times clod crushing, & harrowing once. (b) Planting in furrows ; dry planting. (c) N.A. (d) $9' \times 12'$. (e) N.A. (v) Nil. (vi) C 0.419, (early). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 7, 8, and 9.3.1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of F.Y.M. : $F_0=0$ and $F_1=10$ C.L./ac.

(2) 3 ratios of A/S and G.N.C. : $R_1=0 : 1$, $R_2=1 : 2$ and $R_3=1 : 1$.

(Each ratio to give 150 lb./ac. of N applied in three doses.)

3. DESIGN :

(i) 2×3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) $38' \times 18'$. (b) $30' \times 12'$. (v) 4' along length, 3' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1950-1954. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 15.22 ton/ac.
 (ii) 3.70 " "
 (iii) None of the main effects nor the interaction is significant.
 (iv) Av. yield of cane in ton/ac.

	F ₀	F ₁	Mean
R ₁	16.72	17.71	17.21
R ₂	13.15	15.01	14.08
R ₃	13.88	14.88	14.38
Mean.	14.58	15.87	15.22

S.E. of 'Ratio' means. =1.07 ton/ac.
 S.E. of 'F.Y.M.' means. =0.87 " "
 S.E. of body of table. =1.51 " "

Crop :- Sugarcane. (Ratoon)
 Site :- Agri. Res. Stn., Alnawar.

Ref :- Ms. 51(23).
 Type :- 'M'.

Object :- To find the effect of application of 'A/S' and G.N.C. in different proportions on ratoon crop.

1. BASAL CONDITIONS :

- (i) (a) Ratoon-Paddy-Plant cane. (b) Plant cane. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Alnawar. (iii) 15.3.1951. (iv) (a) One light ploughing, one deep ploughing, 3-4 times clod crushing. (b) to (e) N.A. (v) Nil. (vi) Co. 419, (early). (vii) Irrigated. (viii) Weeding, (ix) N.A. (x) 18.3.1952.

5. TREATMENTS

All combination of (1) and (2).

(1) 2 levels of F.Y.M. : F₀=0 and F₁=10 C.L./ac.

(2) 3 ratios of A/S and G.N.C. : R₁=0 : 1, R₂=1 : 2 and R₃=1 : 1.

(Each ratio to give 100 lb./ac. of N applied in two doses at 1st irrigation and at earthing up).

3. DESIGN :

- (i) 2x3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 38'x18'. (b) 30'x12'. (v) 4' along length, 3' along breadth. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1951-1955. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 21.77 ton/ac.
 (ii) 2.75 " "
 (iii) None of the main effects nor the interaction is significant.
 (iv) Av. yield of cane in ton/ac.

	F ₀	F ₁	Mean
R ₁	22.94	21.53	22.23
R ₂	21.78	22.34	22.06
R ₃	20.58	21.47	21.03
Mean	21.77	21.78	21.77

S.E. of 'F.Y.M.' means. =0.65 ton/ac.
 S.E. of 'Ratio' means. =0.80 " "
 S.E. of body of table. =1.12 " "

Crop :- Sugarcane (Ratoon).
Site :- Agri, Res. Stn. Alnawar.

Ref :- Ms. 52 (69)
Type :- 'M'

Object :—To find the effect of application of A/S and G.N.C. in different proportions on Ratoon crop.

1. BASAL CONDITIONS :

(i) (a) Ratoon-Paddy-Plantcane. (b) Plantcane (c) N.A. (ii) (a) Medium black soil (b) Refer soil analysis, Alnawar. (iii) 15-3-1952. (iv) (a) One light ploughing, one deep ploughing, 3-4 times clod crushing. (b) to (e) N.A. (v) Nil. (vi) CO. 419 ; (early). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 17-2-1953.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of F.Y.M. : $F_0=0$ and $F_1=10$ C.L./ac.

(2) 3 ratios of A/S and G.N.C. : $R_1=0:1$, $R_2=1:2$ and $R_3=1:1$

(Each ratio to give 100 lb/ac of N applied in two doses at 1st irrigation and at earthing up)

3. DESIGN :

(i) 2×3 Fact in R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) $38' \times 18'$ (b) $30' \times 12'$. (v) 4' along length 3', along breadth. (vi) Yes.

4. DESIGN :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1951—1955. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 22.27 ton/ac.

(ii) 3.18 „ „

(iii) Main effects and interaction are not significant.

(iv) Av. yield of cane in ton/ac.

	F_0	F_1	Mean.
R_1	21.19	23.04	22.12
R_2	21.57	21.28	21.42
R_3	22.59	23.95	23.27
Mean.	21.78	22.76	22.27

S.E. of 'Ratio' means. = 1.01 ton/ac.

S.E. of 'F.Y.M' means. = 0.82 „ „

S.E. of body of table. = 1.43 „ „

Crop :- Sugarcane. (Ratoon)
Site :- Agri, Res. Stn. Alnawar.

Ref :- Ms. 53 (132)
Type :- 'M'

Object :—To find the effect of application of A/S and G.N.C. in different proportions on Ratoon crop.

1. BASAL CONDITIONS :

(i) (a) Ratoon-Paddy-Plant cane. (b) Plant cane. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Alnawar. (iii) 1-3-1953. (iv) (a) One light ploughing, one deep ploughing. 3—4 times clod crushing. (b) to. (e) N.A. (v) Nil. (vi) CO. 419, (early). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 16-18.1..1954

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of F.Y.M. : $F_0=0$ and $F_1=10$ C.L./ac.

(2) 3 ratios of A/S. and G.N.C. : $R_1=0:1$ $R_2=1:2$ and $R_3=1:1$

(Each ratio to give 100 lb/ac. of N applied in two doses at 1st irrigation and at earthing up).

3. DESIGN :

(i) 2×3 Fact. in R.B.D. (ii) (a) 6 (b) N.A. (iii) 5 (iv) (a) $38' \times 18'$ (b) $30' \times 12'$ (v) 4' along length, 3' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield data. (iv) (a) 1951-1955. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Fifth replication was damaged much by jackals, hence it was rejected.

5. RESULTS :

(i) 14.95 ton/ac.

(ii) 1.94 " "

(iii) Main effects and interaction are not significant.

(iv) Av. yield of cane in ton/ac.

	F_0	F_1	Mean.
R_1	14.06	16.74	15.40
R_2	15.00	14.15	14.57
R_3	15.54	14.22	14.88
Mean.	14.87	15.04	14.95

S.E. of 'ratio' means. = 0.69 ton/ac.

S.E. of 'FYM' means. = 0.56 " "

S.E. of body of table. = 0.97 " "

Crop :- Sugarcane.

Site :- Agri. Res. Stn. Alnawar.

Ref :- Ms. 50(18).

Type :- 'M'.

Object :- To find the effect of different levels of N top dressed.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black (b) Refer soil analysis, Alnawar. (iii) 6.2.50. (iv) (a) One light ploughing, one deep ploughing, 3-4 times clod crushing. (b) Dry planting in furrows. (c) N.A. (d) $9' \times 12'$ (e) N.A. (v) 10 C.L./ac. of F.Y.M. at planting. (vi) C-0.419. (early). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 8.2.51.

2. TREATMENTS :

1. 150 lb. N/ac.

2. 225 lb. N/ac.

Method of application : top dressing N in the form of A/S and G.N.C. in equal ratio.

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 5 (iv) (a) $38' \times 18'$ (b) $30' \times 12'$ (v) 4' along length, 3' along breadth. (vi) Yes.

GENERAL

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv). (a) 1950—1952. (b) No. (c) N.A. (v) (a) None (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 27.58 ton/ac.
 (ii) 3.31 „
 (iii) The difference in yield due to treatments is not significant.
 (iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	25.15
2.	30.01
S.E./mean	=1.48 ton/ac.

Crop :- Sugarcane.

Ref. :-Ms. 51(24).

Site :- Agri. Res. Stn. Alwar.

Type :- 'M'.

Object :- To find the effect of different levels of N top dressed.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black soil (b) Refer soil analysis, Alwar. (iii) 24.2.51. (iv) (a) One light ploughing, one deep ploughing, 3-4 times clod crushing. (b) Dry planting in furrows (c) N.A. (d) 9' x 12". (e) N.A. (v) 10 C.L./ac. of F.Y.M. at planting. (vi) Co-419, early. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 15.3.1952.

2. TREATMENTS :

1. 150 lb. N/ac.
 2. 225 lb. N/ac.

N in the form of 'A/S' and G.N.C. in equal ratio in three doses. Time of application N.A. Method of application : top dressed.

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 5 (iv) (a) 38' x 18' (b) 30' x 12'. (v) 4' along length, 3' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a). 1950-1952. (b) No (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 27.65 ton/ac.
 (ii) 5.31 „
 (iii) The difference in yield due to treatments is not significant.
 (iv) Av. yield of cane in ton /ac.

Treatment	Av. yield
1.	27.13
2.	28.18
S.E./mean	=2.38 ton/ac.

Crop :- Sugarcane.

Ref :- Ms. 52(70).

Site :- Agri. Res. Stn. Alnawar,

Type :- 'M'

Object :- To find out the effect of different levels of N as top dressed.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis Alnawar. (iii) 28.2. 1952. (iv) (a) One light ploughing ; one deep ploughing ; 3—4 times clod crushing. (b) Dry planting in furrows (c) N.A. (d) 9" × 12" (e) N.A. (v) 10 C.L./ac. of F.Y.M. at planting. (vi) CO. (b) 419, early (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 27, 28.1.1953.

2. TREATMENTS :

1. 150 lb N/ac.
2. 225 lb. N/ac.

N in the form of A/S and G.N.C. in equal ratio.

Time of application N.A. Method of application ; top dressed.

DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 5 (iv) (a) 38' × 18' (b) 30' × 12'. (v) 4' along length, 3' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. data. (iv) (a) 1950—1952. (b) No. (c) N.A. (v) (a) None. (b) Nil. (vi) & (vii) Nil.

5. RESULTS :

- (i) 26.20 ton/ac.
 (ii) 6.04 ton/ac.
 (iii) The difference in yields due to treatments is not significant.
 (iv) Av. cane yield in ton/ac.

Treatment	Av. yield
1	25.78
2	26.62
S.E./mean	= 2.70 ton/ac.

Crop :- Sugarcane.

Ref :- Ms. 53(133)

Site :- Agri. Res. Stn. Alnawar.

Type :- 'M'

Object :- To find the effect of application of N and P₂O₅ in different combinations.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Alnawar. (iii) 23.2.1953. (iv) (a) One light ploughing ; one deep ploughing & 3-4 times clod crushing. (b) Dry planting in furrows. (c) N.A. (d) 9" × 12" (e) N.A. (v) 10,000 lb/ac. F.Y.M. at planting in furrows. (vi) CO. 419 (early) (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 5,6.3.1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of P₂O₅ : P₀=0 and P₁=100 lb./ac.(2) 3 levels of N : N₀=150, N₁=225, and N₂=300 lb./ac.P₂O₅ as Dicalcium phosphate in one dose at planting in furrows 3" deep,

N as A/S+G.N.C. in equal ratio (in two doses : 1st at planting in 1st week of May and 2nd in 1st week of June).

3. DESIGN :

(i) 2 × 3 Fact. in R.B.D. (ii) (a) 6 (b) N.A. (iii) 4 (iv) (a) 38' × 18' (b) 30' × 12'. (v) 4' along length. 3' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1953-1955. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 19.35 tons/ac.
 (ii) 3.33 „ „
 (iii) Main effect of P is highly significant. Main effect of N and interaction NP are not significant.
 (iv) Av. yield of cane in ton/ac.

	N ₀	N ₁	N ₂	Mean
P ₀	14.53	14.66	16.00	15.06
P ₁	22.66	22.99	25.27	23.64
Mean.	18.59	18.82	20.63	19.35

S.E. of 'P' means = 0.96 ton/ac.
 S.E. of 'N' means = 1.18 ton/ac.
 S.E. of body of table = 1.67 ton/ac.

Crop :- Sugarcane.

Ref :- Ms. 50(27).

Site :- Agri. School farm, Arbhavi.

Type :- 'M'.

Object :- To determine which of the basic manurial dose would be economical and suitable to Gokak canal tract.

1. BASAL CONDITIONS :

(i) (a) Sann-Sugarcane. (b) Sann. (c) N.A. (ii) (a) Medium. black (b) Refer soil analysis, Arbhavi. (iii) Jan. 1950. (iv) (a) Ploughing and levelling. (b) N.A. (c) 10,000 Sett/ac. (d) 3'. (e) N.A. (v) Nil. (vi) C 0. 419 ; (early). (vii) Irrigated. (viii) Weeding. (ix) 26.96" (Jan. 1950 to Feb. 1951). (x) Feb. 1951.

2. TREATMENTS :

- 25 C.L./ac. of F.Y.M.
- Sann G.M. only.
- Sann G.M.+5 C.L./ac. of F.Y.M. while sowing sann.
- Sann G.M.+5 C.L./ac. of F.Y.M. while burying sann.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 181.5'×24'. (b) 181.5'×12'. (v) 6' along breadth (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1940—1950. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 24.71 ton/ac.
 (ii) 3.03 „ „
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	24.41
2.	23.27
3.	24.05
4.	27.10
S.E./mean	=1.51 ton/ac.

Crop :- Sugarcane.

Ref :- Ms. 50(28)

Site :- Agri. School farm, Arbhavi.

Type :- 'M'.

Object :- To see which of the G.M. is giving better results in case of gur and cane yield in *Karl* soil.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Arbhavi. (iii) Jan. 1950. (iv) (a) Ploughing and levelling. (b) N.A. (c) 10,000 sett/ac. (d) 3'. (e) N.A. (v) Nil. (vi) C 0, 419 ;-(early.) (vii) Irrigated. (viii) Weeding. (ix) 26.96" (Jan. 1950 to Feb. 1951). (x) Feb. 1951.

2. TREATMENTS :

1. Dhaincha.
2. Sann.
Other details N.A.

3. DESIGN :

(i) Paired plot. (ii) (a) 2. (b) N.A. (iii) 8. (iv) 44.3' x 27'. (b) 36.3' x 15'. (v) 4' along length, 6' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1946-1950. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 32.36 ton/ac.
(ii) 5.20 ton/ac.
(iii) The difference in the yield due to treatments is not significant.
(iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	30.10
2.	34.63
S.E./mean	= 1.84 ton/ac.

Crop :- Sugarcane.

Ref :- Ms. 52(137)

Site :- Agri. School Farm, Arbhavi.

Type :- 'M'.

Object :- To find out the best ratio of A/S and G.N.C. as top dressing for cane crop with different basal manures.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Black medium. (b) Refer soil analysis, Arbhavi. (iii) 10.2.52. (iv) (a) to (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) Jan. 1953.

2. TREATMENTS :

All combinations of (1) & (2) :
(1) 5 ratios of G.N.C. and A/S: $R_1=1:0$, $R_2=0:1$, $R_3=1:1$, $R_4=1:2$ and $R_5=2:1$
(Each ratio to give 150 lb./ac. of N).
(2) 3 levels of F.Y.M: $F_0=0$, $F_1=20,000$, $F_2=40,000$ in lb/ac.
F.Y.M. as basal dressing and A/S+G.N.C. as topdressing.

3. DESIGN :

(i) 3x5 Fact in R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) (a) 27' x 45'. (b) 21' x 39'. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane Yield. (iv) (a) 1952-1955. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 30.71 ton/ac.
 (ii) 6.96 „
 (iii) Main effect of F.Y.M. is highly significant. Main effect of N and interaction N×F.Y.M. are not significant.
 (iv) Av. yield of cane in ton./ac.

	F ₀	F ₁	F ₂	Mean
R ₁	26.73	31.05	31.95	29.91
R ₂	24.45	32.15	35.00	30.53
R ₃	28.81	32.66	32.21	31.23
R ₄	24.64	32.54	35.57	30.92
R ₅	28.01	33.89	30.96	30.95
Mean	26.53	32.46	33.14	30.71

S.E. of marginal of means of ratio N. =2.01 ton/ac.

S.E. of marginal means F.Y.M =1.56 „

S.E. of body of table =3.48 „

Crop :- Sugarcane.

Ref :- Ms. 53(138).

Site :- Agri. School, Farm, Arbhavi.

Type :- 'M'.

Object :— To find out the suitable ratio of A/S and G.N.C. as top dressing for cane crop with different basal manures.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Generally Paddy. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Arbhavi. (iii) Feb. 1953. (iv) (a) Ploughing, levelling, clod crushing etc. (b) to (e) N.A. (v) Nil (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) January 1954.

2. TREATMENTS :

All combinations of (1) & (2)

- (1) 5 ratios of G.N.C. and A/S :—R₁=1:0, R₂=0:1, R₃=1:1, R₄=1:2 and R₅=2:1 (Each ratio to give 150 lb./ac. of N.)
 (2) 3 levels of F.Y.M. : F₀= 0, F₁=20,000 lb./ac. and F₂=40,000 lb./ac.
 F.Y.M. as basal dressing and A/S+G.N.C. as top dressing,

3. DESIGN :

- (i) 3×5 Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) (a) 24'×48' (b) 18'×42'. (v) 3' all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1952—1955. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 24.17 ton/ac.
 (ii) 4.97 „
 (iii) Main effect of F.Y.M. is significant. Main effect of N and interaction N×F.Y.M. are not significant.

(iv) Av. yield of sugarcane in ton/ac.

	F ₀	F ₁	F ₂	Mean
R ₁	21.52	26.56	21.12	23.07
R ₂	21.71	27.59	26.85	25.38
R ₃	25.35	26.78	22.92	25.02
R ₄	20.98	27.73	28.36	25.69
R ₅	19.65	22.44	23.14	21.74
Mean	21.84	26.22	24.48	24.18

S.E. of marginal means of F.Y.M. = 1.10 ton/ac.

" of ratios = 1.42 "

S.E. of body of table. = 2.49 "

Crop :- Sugarcane.

Ref :- Ms. 52 (74).

Site :- Agri. School Farm, Arbhavi

Type :- 'M'.

Object :- To ascertain the manurial requirements of Sugarcane and to find out the proper method of application of P manure.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Generally paddy. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Arbhavi. (iii) 15.2.1952. (iv) (a) Ploughing, levelling, clod crushing, etc. (b) to (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated (viii) Weeding. (ix) N.A. (x) Jan. 1953.

2. TREATMENTS :

All combinations of (1), (2) & (3)

(1) 2 levels of N : N₀ = 100 lb./ac. and N₁ = 150 lb./ac.(2) 2 levels of P₂O₅ : P₀ = 0 and P₁ = 100 lb./ac.(3) 3 methods of placement of P₂O₅ : M₁ = in furrows, M₂ = half-way ridge and M₃ = at the base of the ridge. N as G.N.C. ; P₂O₅ as Super.

3. DESIGN :

(i) 2 × 2 × 3 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 53.44' × 30'. (b) 47.44' × 24'. (v) 3'. all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1952-1955. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 23.62 ton/ac.

(ii) 4.69 "

(iii) All main effects and interactions are not significant.

(iv) Av. yield of cane in ton/ac.

N₀ only = 22.40 ton/ac.
 N₁ only = 22.89 "
 S.E. of mean = 1.56 "

	N ₀	N ₁	Mean
M ₁	24.68	21.62	23.15
M ₂	23.85	24.79	24.32
M ₃	26.39	26.27	26.33
Mean	24.97	24.23	24.60

S.E. of marginal mean of N = 1.56 ton/ac.

S.E. of marginal mean of Methods = 1.91 "

S.E. of body of table = 2.71 "

Crop :- Sugarcane.

Ref :- Ms. 53 (137).

Site :- Agri. School Farm, Arbhavi.

Type :- 'M'.

Object :—To ascertain the manurial requirements of Sugarcane and to find out the proper method of application of P manure.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Generally paddy. (c) N.A. (ii) (a) Black medium. (b) Refer soil analysis, Arbhavi. (iii) 3.1.1953. (iv) (a) Ploughing, levelling, clod crushing (b) to (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) Jan. 54.

2. TREATMENTS :

All combinations of (1), (2) & (3)

(1) 2 levels of N : $N_0=100$ lb./ac. and $N_1=150$ lb./ac.

(2) 2 levels of P_2O_5 : $P_0=0$ lb./ac. and $P_1=100$ lb./ac.

(3) 3 methods of placement of P_2O_5 : M_1 =in furrows, M_2 =halfway ridge and M_3 =at the base of ridge.

N as G.N.C. & P_2O_5 as Super.

3. DESIGN :

(i) $2 \times 2 \times 3$ Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) $53.44' \times 30'$. (b) $47.44' \times 24'$. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1952-1955. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 34.88 ton/ac.

(ii) 9.79 „

(iii) All effects and interactions are not significant.

(iv) Av. cane yield in ton/ac.

N_0 only = 32.95 ton/ac.

N_1 only = 33.21 „

S.E. of mean = 3.26 „

	N_0	N_1	Mean
M_1	37.41	33.23	35.32
M_2	39.86	38.46	39.16
M_3	33.80	37.41	35.60
Mean	37.02	36.37	36.69

S.E. of marginal mean of N = 3.26 ton/ac.

S.E. of marginal mean of methods = 4.00 „

S.E. of body of table = 5.65 „

Crop :- Sugarcane.

Ref :- Ms. 48(6)

Site :- Agri. Res. Stn., Hebbal.

Type :- 'M'.

Object :—To study the effect of manures on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Clay mixed with sand. (b) Refer soil analysis, Hebbal. (iii) 6.3.48. (iv) (a) 3 ploughings. (b) and (c) N.A. (d) The distance between rows generally 2' to 3'. (e) One sett per hole. (v) Nil. (vi) H.M. 320 (Medium.) (vii) Irrigated. (viii) Weeding. (ix) About 25". (x) 1949. (dates N.A.)

2. TREATMENTS :

All combinations of (1) and (2)

(1) $P_0=0$ and $P_1=25$ lb. of P_2O_5 /ac. as B.M. (at planting)

(2) $T_1=250$ lb./ac. of N in as G.N.C., $T_2=250$ lb./ac. of N as $\frac{2}{3}$ G.N.C. + $\frac{1}{3}$ A/S. and $T_3=250$ lb./ac. of N as $\frac{1}{3}$ G.N.C. + $\frac{2}{3}$ A/S.

N applied in two doses of 125 lb./ac. each

(i) at plating.

(ii) at earthing i.e. on 30.6.48.

3. DESIGN :

(i) 2×3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 18 rows of 24' (1.25 guntha). (b) 16 rows of 21' (0.92 guntha). (v) One row on either side $1\frac{1}{2}'$ at ends. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1947—1948. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 28.73 ton/ac.

(ii) 7.24 ton/ac.

(iii) Main effects and interaction are not significant.

(iv) Av. yield of cane in ton/ac.

	T_1	T_2	T_3	Mean
P_0	31.44	28.47	28.73	29.54
P_1	22.55	29.75	31.44	27.91
Mean	27.00	29.11	30.09	28.73

S.E. of marginal mean of 'T' = 2.29 ton/ac.

S.E. of marginal mean of 'P' = 1.87 "

S.E. of body of table. = 3.24 "

Crop :- Sugarcane.

Site :- Agri. Res Stn. Hebbal.

Ref :- Ms. 49(41).

Type :- 'M'.

Object :- To study the effect of P_2O_5 applied at different levels below the surface of the soil, on cane yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Clay mixed sandy loam. (b) Refer soil analysis, Hebbal. (iii) N.A. (iv) (a) 3 ploughings. (b) and (c) N.A. (d) Distance between rows generally 2'—3'. (e) One sett per hole. (v) 10 tons of compost, 7 cwts. of A/S and 1 ton of G.N.C. Time and method of application N.A. (vi) H.M. 320 (Medium). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. 2 cwt./ac. of Super 9" below surface.

2. " " 12" " "

3. " " 15" " "

4. No Super.

* Time of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a), (b) $48' \times 24'$ (16 rows). (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948—1954. (b) No. (c) N.A. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

- (i) 24.82 ton/ac.
 (ii) 2.61 " "
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. yield of cane in ton/ac.

Treatment	Av. yield.
1.	29.08
2.	26.02
3.	22.99
4.	21.20
S.E./mean	=1.06 ton/ac.

Crop :- Sugarcane.

Ref :- Ms. 50(36).

Site :- Agri. Res. Stn. Hebbal.

Type :- 'M'

Object :-To study the effect of P_2O_5 applied at different levels below the surface of the soil, on cane yield.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Clay mixed sandy loam. (b) Refer soil analysis Hebbal. (iii) 10.2.1950.
 (iv) (a) 3 ploughings. (b), (c) N.A. (d) The distance between the rows is generally 2' to 3'. (e) One. (v) 10 tons of compost, +7 cwts of A/S+1 ton of G.N.C. as per bulk crop. Time and method of application N.A. (vi) H.M. 320 cane (Medium). (vii) Irrigated. (viii) Weeding and interculturing. (ix) 24.85"(10-2-1950 to 16-4-1951). (x) 10-1-1951 to 16-4-1951.

2. TREATMENTS :

- (1) 2 cwt./ac. of Super at 6" below surface.
 (2) " " " 9" " "
 (3) " " " surface.
 (4) No Super
 Time of application N.A.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 54'×30' (b) 48'×24'. (v) 3' all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1949-1954. But treatments vary from year to year.
 (b) No. (c) N.A. (v) (a) Not known. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 25.72 ton/ac.
 (ii) 3.25 " "
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of cane in ton/ac.

Treatment.	Av. yield
1.	23.33
2.	26.33
3.	27.04
4.	26.17
S.E./man	=1.33 ton/ac.

Crop :- Sugarcane.

Ref :- Ms. 51(57).

Site :- Agri. Res. Stn. Hebbal.

Type :- 'M'

Object :-To study the effect of P_2O_5 applied at different levels below the surface of the soil, on cane yield.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Maize, Sunnhemp. (c) Nil. (ii) (a) Clay mixed sandy loam. (b) Refer soil analysis, Hebbal. (iii) 10.2.1951. (iv) (a) 3 ploughings. (b) & (c) N.A. (d) 2' to 3' (e) One sett per hole. (v) 10 ton/ac. of compost.+7 cwt./ac. of A/S+1 ton of G.N.C. in two doses as for bulk crop. Time and method of application N.A. (vi) H.M.—320 Medium. (vii) Irrigated. (viii) Weeding, interculturing. (ix) 33.62". (10.2.1951 to 3.4.1952) (x) 5.3.52 to 3.4.52.

2. TREATMENTS :

- (1) 2 cwt./ac. of Super at 6" below surface
 (2) " " " 9" "
 (3) " " " surface
 (4) No Super
 Time of application N.A.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 54'×30' (b) 48'×24'. (v) 3' all round. (vi) Yes,

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1949-1954 ; expt. was conducted in 1954 also, but the treatments vary from year to year. (b) No. (c) N.A. (v) (a) Not known. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 33.01 ton/ac.
 (ii) 3.33 "
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	33.34
2.	33.41
3.	33.66
4.	31.63
S.E./mean	=1.36 ton/ac.

Crop :- Sugarcane.

Site :- Agri. Res Stn. Hebbal.

Ref :- Ms. 52(2).

Type :- 'M'.

Object :- To find the effect of P_2O_5 applied at different levels below the surface of soil, on the cane yield.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Generally fallow or some leguminous crop. (c) N.A. (ii) (a) Clay mixed with sand. (b) Refer soil analysis, Hebbal. (iii) 18.3.52. (iv) (a) 3 Ploughings. (b) N.A. (c) N.A. (d) Between rows generally 2' to 3'. (e) One. (v) 40 C.L./ac. of compost+3 cwts/ac. of A/S (2 cwt. at planting & 1 cwt. at light earthing up) +1 ton/ac. of G.N.C. ($\frac{1}{2}$ at light earthing up and $\frac{1}{2}$ at final earthing up) (vi) H.M. 320 (late). (vii) Irrigated. (viii) Weeding once, passing chippagunte once. (ix) 25.64" (18.3.51 to 18, 26 3.1953). (x) 18—26.3.1953.

2. TREATMENTS :

1. 2 cwt./ac. of Super at surface in furrows.
 2. " " " 3" below the furrow depth.
 3. " " " 6" " " "
 4. No Super.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a), (b) 1/40thac. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) N.A. (ii) N.A. (iii) Cane yield. (iv) (a) 1949—1954. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

RESULTS :

- (i) 14.42 ton/ac.
 (ii) 1.77 " "
 (iii) The differences in yield due to treatments are not significant.
 (vi) Av. yield of cane in ton/ac.

Treatment	Av. yield.
1.	14.03
2.	14.79
3.	15.51
4.	13.35
S.E./mean	=0.79 ton/ac.

Crop :- Sugarcane.
Site :- Agri. Res. Stn. Hebbal.

Ref :- Ms. 53(1).
Type :- 'M'.

Object :- To find the effect of P_2O_5 applied at different levels below the surface of soil, on cane yield.

1. BASAL CONDITIONS :

(i) (a) No. (b) Turmeric, potato, onions. (c) N.A. (ii) (a) Clay mixed with sandy loam. (b) Refer soil analysis, Hebbal. (iii) 29.4.53. (iv) (a) 3 ploughings. (b) and (c) N.A. (d) Between rows 2' to 3'. (e) 1. (b) 4 C.L./ac. of compost/ac. + 3 cwt. of A/S (2 cwt. at planting + 1 cwt. at light earthing up) + 1 ton/ac. of G.N.C. ($\frac{1}{2}$ at light earthing up + $\frac{1}{2}$ at final earthing up). (vi) H.M. 320. (vii) Irrigated. (viii) Weeding once and passing chippagunte once. (ix) 37.63" (29.4.53 to 2.4.1954). (x) 12, 16, 18 and 24.3.54; 1 and 2.4.1954.

2. TREATMENTS :

1. $1\frac{1}{2}$ cwt./ac. of Super on the surface.
2. " " " at 3" below surface.
3. " " " " 6" " " at planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a), (b) 1 gunta = 1/40thac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) (a) N.A. (ii) N.A. (iii) Cane yield. (iv) (a) 1949—1954. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) As there was no sufficient water in tank during March, the planting had to be delayed considerably. The crop though suffered in early stages. picked up later.

5. RESULTS :

- (i) 29.01 ton/ac.
- (ii) 5.68 " "
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	24.28
2.	32.21
3.	30.53
S.E./mean	=2.84 ton/ac.

Crop :- Sugarcane.
Site :- Agri. Res. Stn. Hiriyyur.

Ref :- Ms. 51(75).
Type :- 'M'.

Object :- To compare the effect of A/N and A/S with G.N.C.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (b) Refer soil analysis, Hiriyyur. (iii) 1st & 2nd Jan., 1951. (iv) (a) Ploughing generally. (b) & (c) N.A. (d) The distance between rows is generally 2' to 3'. (e) One sett/hole. (v) Nil. (vi) H.M. 661. (Medium). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 9th to 14th January, 1952.

2. TREATMENTS :

1. A/N at $2\frac{1}{2}$ cwt/ac, (100 lb./ac. of N)
 2. " " 5 " (200 " ")
 3. A/S " $4\frac{1}{2}$ " (100 " ")
 4. " " 9 " (200 " ")
 5. G.N.C. at $\frac{1}{2}$ ton/ac (100 " ")
- Time and method of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 42' x 33'. (b) 35' x 27'. (v) 3' all round. (vi) Yes.

GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 17.92 ton/ac.
 (ii) 7.81 „
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	14.78
2.	21.91
3.	17.30
4.	17.45
5.	18.14
S.E./mean.	= 3.90 ton/ac.

Crop :- Sugarcane.

Ref :- Ms. 52(132).

Site :- Agri. Res. Stn. Hiriyur.

Type :- 'M'.

Object :— To study the effect of placement of P manure.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (ii) Refer soil analysis, Hiriyur. (iii) N.A. (iv) (a) Ploughing. (b) & (c) N.A. (d) The distance between rows is generally 2' to 3' (e) Generally one sett/hole. (v) Compost or F.Y.M. at 10 ton/ac. + A/S at $4\frac{1}{2}$ cwt/ac. + G.N.C. at $\frac{1}{2}$ ton/ac. applied in three stages :— $\frac{1}{3}$ at planting, $\frac{1}{3}$ at light earthing up & $\frac{1}{3}$ at final earthing up. (iv) H.M. 661 ; (Medium). (vii) Irrigated. (viii) Weeding. (ix) N.A (x) 1952—1953. (Exact dates N.A. This expt. was found in the original records of the office of Agricultural Chemist, Dept. of Agriculture).

2. TREATMENTS :

1. Super on the surface.
 2. „ placed at 3" below surface.
 3. „ „ 6" „ „
 4. Control.
- Super at 1 cwt./ac. Time of application N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 48'×33' (b) 48'×27' (v) 3' along breadth. (vi) Yes.

GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 15.17 ton/ac.
 (ii) 2.58 ton/ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	14.95
2.	16.04
3.	15.37
4.	14.30
S.E./mean.	= 1.15 ton/ac.

Crop :- Sugarcane.
Site :- Agri. Res. Stn. Hiriyyur.

Ref :- Ms. 53 (175).
Type :- 'M'.

Object :—To find the effect of placement of P manure.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (b) Refer soil analysis, Hiriyyur. (iii) 1953 ; exact dates N.A. (iv) (a) Ploughing. (b) & (c) N.A. (d) Between rows is generally 2' to 3'. (e) Generally one sett/hole. (v) Compost or F.Y.M. at 10 tons./ac. applied two weeks before planting + A/S at 6 cwt./ac. + G.N.C. at 12 cwt./ac. applied in three stages as follows : 3 cwt. of A/S at planting ; 3 cwt. at light earthing up + 12 cwt./ac. of G.N.C. at final earthing up only. (vi) H.M. 661. (Medium) (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 1954.

2. TREATMENTS :

1. Super at 1 cwt./ac. applied at surface.
2. " " " " 3" below surface.
3. " " " " 6" " "
4. Control—No Super.
Time of application—N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 42' × 32'. (b) 36' × 26'. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) Not known. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 7.89 ton/ac.
- (ii) 4.59 ton/ac.
- (iii) The treatment differences are not significant.
- (iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	8.34
2.	6.43
3.	8.11
4.	8.67
S.E./mean	=2.05 ton/ac.

Crop :- Sugarcane.
Site :- Agri. Res. Stn. Hiriyyur.

Ref :- Ms. 52 (133).
Type :- 'M'.

Object :—To study the effect of application of A/S, C/N and Gypsum.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (b) Refer soil analysis, Hiriyyur. (iii) N.A. (iv) (a) Ploughing. (b), (c) N.A. (d) The distance between rows is generally 2' to 3' (e) Generally 1 sett/hole (v) Compost manure at 10 ton/ac. + 2 cwt./ac. of Super to be applied at planting. (vi) H.M. 661. (Medium). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 1952-1953. (The exact dates N.A. This expt. was found in the original records of the office of the Agricultural Chemist, Dept. of Agriculture.)

2. TREATMENTS :

- All combinations of (1) & (2) + a Control
- (1) 2 levels of Gypsum : $G_0=0$ and $G_1=550$ lb./ac.
 - (2) 2 sources of N : A/S and C/N to give 150 lb./ac. of N.
- Note :—1. Gypsum is applied just before planting.
2. Nitrogenous manures *i.e.* A/S and C/N applied to the respective plots in three equal doses.
(a) $\frac{1}{3}$ at planting. (b) $\frac{1}{3}$ at light earthing up. (c) $\frac{1}{3}$ at final earthing up.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 48' × 33'. (b) 48' × 27' (v) 3' along breadth. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Cane yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) Nil. (vii) Records do not furnish reasons for low yields.

5. RESULTS :

- (i) 11.07 ton/ac.
 (ii) 3.03 ton/ac.
 (iii) Main effects, interaction and control vs. others are not significant.
 (iv) Av. yield of cane in ton/ac.

Control = 10.00 ton/ac.

Source	Control = 10.00 ton/ac.		Mean
	G ₀	G ₁	
A/S	12.10	10.25	11.17
C/N	9.83	13.19	11.51
Mean	10.96	11.72	11.34

S.E. of marginal mean = 0.96 ton/ac.
 S.E. of the body of table = 1.36 "

Crop :- Sugarcane.

Ref :- Ms. 53(172)

Site :- Agri. Res. Stn. Hiriyyur.

Type :- 'M'.

Object :— To study the comparative effects of application of C/N and A/S with and without Gypsum.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Gravel mixed with clay loam soil. (b) Refer soil analysis, Hiriyyur. (iii) 9.1.1953. (iv) (a) Ploughing. (b), (c). N.A. (d) The distance between rows is generally 2' to 3'. (e) Generally one sett/hole. (v) Usual dose of 10 ton/ac. of compost ploughed in two or three weeks before planting, as per bulk crop + 2 cwt./ac. of Super applied at planting + 2 cwt./ac. of A/S at planting + 5 cwt./ac. of G.N.C. applied only at final earthing up. (vi) H.M. 6610 Medium. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 8, 9.1.1954.

2. TREATMENTS :

All combinations of (1) & (2) + a Control.

(1) 2 levels of Gypsum : G₀=0 and G₁=560 cwt/ac.

(2) 2 sources of N : A/S and C/N ; each to give 120 lb./ac. of N.

N applied in two doses one at 4 weeks after planting and second at 10 weeks after planting.

3. DESIGN :

- (i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 42'×32'. (b) 36'×26'. (v) 3' all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 11.95 ton/ac.
 (ii) 2.97 ton/ac.
 (iii) Only control vs. others is significant. Others are not significant.
 (iv) Av. cane yield in ton/ac.

Control. = 8.96 tons/ac

Source	Control. = 8.96 tons/ac		Mean
	G ₀	G ₁	
A/S	14.85	12.46	13.66
C/N	11.68	11.81	11.74
Mean	13.26	12.14	12.70

S.E. of marginal mean = 0.94 ton/ac.
 S.E. of the body of table = 1.33 "

Crop :- Sugarcane.
Site :- S. L.F., Hospet.

Ref :- Ms. 53(52).
Type :- 'M'.

Object :- To study the effect of application of G.L.

1. BASAL CONDITIONS :

(i) (a) No. (b) Sugarcane or fallow. (c) N.A. (ii) (a) Clayey loam. (b) Refer soil analysis, Hospet. (iii) 28.2.53. (iv) (a) Ploughing, ridging, forming furrows, etc. (b) N.A. (c) 15,000, three budded setts/ac. (d) 2'-8" apart. (e) N.A. (v) 20 C.L./ac. F.Y.M. and the rest as under treatments. (vi) Co. 419. Medium. (vii) Irrigated. (viii) Weeding, tying up cane etc. (ix) 16.90" (28.2.53 to 27.2.54). (x) 20,21,24,25,26,27.2.1954.

2. TREATMENTS :

1. 200 lb./ac. of N : $\frac{1}{2}$ as G.N.C. and $\frac{1}{2}$ as A/S.
2. 150 " " + Sunnhemp grown along lines of cane (up to 5000 lb./ac.)
3. 150 " " + Sesbania grown along lines of cane (up to 5000 lb./ac.)
4. 150 " " + 5000 lb./ac. of G.M.

N applied $\frac{1}{2}$ as A/S and $\frac{1}{2}$ as G.N.C. in two doses :- first dose on 30.4.1953 and second dose on 15.6.53. Sesbania sown on 14.4.53. Sunnhemp sown on 29.6.1953. G.M. harvested on 15.6.53 and applied.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 3.5 cents (b) 1.5 cents. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Juice content, germination count, tiller count and cane yield. (iv) No. (v) None. (vi) No. (vii) None.

5. RESULTS :

- (i) 39.03 ton/ac.
- (ii) 5.68 ton/ac.
- (iii) The differences in yield due to treatments are significant.
- (iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	44.02
2.	40.75
3.	33.70
4.	37.45
S.E./mean	= 2.32 ton/ac.

Crop :- Sugarcane.
Site :- S.L.F., Hospet.

Ref :- Ms. 53(53)
Type 'M'

Object :- To find the effect of A/S and C/N alone and in combination.

1. BASAL CONDITIONS :

(i) (a) No. (b) Sugarcane or fallow. (c) N.A. (ii) (a) Clayey loam. (b) Refer soil analysis, Hospet. (iii) 11, 12.2.53. (iv) (a) Ploughing, opening furrows etc. (b) N.A. (c) 1200, three budded setts/ac. (d) 3'-4" between rows. (e) —. (v) Nil. (vi) Co 419. (Medium). (vii) Irrigated. (viii) Weeding, interculturing tying up cane etc. (ix) 16.90" (11.2.53 to 29.1.54). (x) 17 to 20 & 23 to 29.1.1954.

2. TREATMENTS :

All combinations of (1), (2) & (3)+One extra treatment.

- (1) 2 levels of N : $N_1=100$ and $N_2=150$ lb./ac.
 - (2) 2 sources of N : A/S and C/N.
 - (3) 2 basal dressings : $B_0=$ No basal dressing and $B_1=100$ lb./ac. of Lime+ 60 lb./ac. of P_2O_5 as Super+60 lb./ac. of K_2O as Pot. Sul.+5 tons/ac. of F.Y.M.
- One extra treatment= B_1 alone. A/S & G/N applied $\frac{1}{2}$ dose 40 days after planting and the other half at the time of earthing up.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 5. (iv) (a) 55'×20'. (b) 48'×13'—4". (v) One row on all sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Juice content, germination count, tiller count and cane yield. (iv) (a) 1952-1955 (b) No. (c) N.A. (v) None. (vi) No. (vii) None.

5. RESULTS :

- (i) 37.49 ton/ac.
 (ii) 3.98 ton/ac.
 (iii) The main effect of sources of N is highly significant.
 The extra treatment vs. others is highly significant.
 All the other main effects and interactions are not significant.
 (iv) Av. yield of cane in ton/ac.

Extra treatment = 32.37 ton/ac.

	B ₀	B ₁	Mean
N ₁ as A/S	38.65	38.34	38.50
„ „ C/N	35.68	33.63	34.66
N ₂ as A/S	41.53	38.97	40.25
„ „ C/N	37.65	37.87	37.76
Mean	38.38	37.20	37.49

S.E. of the marginal mean of N = 1.411 ton/ac.
 S.E. of the marginal mean of B = 0.892 „
 S.E. of body of table = 1.780 „

Crop :- Sugarcane.

Site :- Agri. Res. Stn. Mandya.

Ref :- Ms. 53(174).

Type :- 'M'.

Object :- To compare the effect of three levels of P₂O₅ applied in three different ways.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mandya. (iii) 30.11.1953.
 (iv) (a) Ploughing. (b) & (c) N.A. (d) Between rows is generally 2' or 3'. (e) Generally one sett/hole.
 (v) 25 lb./ac. of N as G.M. (sown in *situ*) + 75 lb./ac. of N as compost + 150 lb./ac. of N as A/S in three equal doses applied at planting, after 4 weeks, and 8 weeks. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) March 1955.

2. TREATMENTS :

Main-plot treatments :-

3 levels of P₂O₅ : P₀=0, P₁=25 and P₂=50 lb./ac.
 P₂O₅ as Super.

Sub-plot treatments :-

3 methods of application of Super. T₁=Broadcast at the time of planting. T₂=Applied in furrows at the time of planting and T₃=Applied 6" below furrow bottom at the time of planting.

3. DESIGN :

(i) Split plot design. (ii) (a) 3 main-plots/block; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a), (b) 57'×18' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 25.08 ton/ac.
 (ii) (a) 26.52 ton/ac.
 (b) 1.18 ton/ac.
 (iii) None of the effects is significant.
 (iv) Av. yield of cane in ton/ac.

	P ₀	P ₁	P ₂	Mean
T ₁	--	20.40	36.99	28.70
T ₂	--	29.90	31.80	30.85
T ₃	--	24.72	30.05	27.38
Mean	17.26	25.01	32.94	--

S.E. for the difference between two.

- (1) main-plot treatment means = 10.83 ton/ac.
 (2) sub-plot treatment means = 3.34 " "
 (3) sub-plot treatment means at the same level of main-plot treatment = 5.78 " "
 (4) main-plot treatment means at the same level of sub-plot treatment = 11.50 " "

Crop :-Sugarcane.

Ref :-Ms. 53(134).

Site :-Agri. Res. Stn. Alnawar.

Type :-'C'.

Object :-To find the effect of soaking seeds of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane and Paddy. (b) Paddy. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Alnawar. (iii) 25.2.1953. (iv) (a) One light ploughing, one deep ploughing, 3—4 times clod crushing, dry planting in furrows. (b) N.A. (c) N.A. (d) 9°—12°. (e) N.A. (v) 10,000 lb./ac. of F.Y.M.+150 lb./ac. of N in the form of A/S and G.N.C. in 1 : 1 ratio at planting in furrows. (vi) Co. 419 (early). (vii) As per treatments. (viii) Weeding. (ix) N.A. (x) 20, 21.1.1954.

2. TREATMENTS :

All combinations of (1) and (2)

- (1) 2 periods of soaking : H₀=0 and H₁=12 hours of soaking.
 (2) 2 intervals of irrigation : I₁=21 and I₂=42 days.

3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 2. (iv) (a) 30'×18'. (b) 24'×12'. (c) N.A. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane yield. (iv) (a) 1953—1954. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 24.65 ton/ac.
 (ii) 2.66 ton/ac.
 (iii) Main effects and interaction are not significant.
 (iv) Av. yield of cane in ton/ac.

	I ₁	I ₂	Mean
H ₀	22.90	27.55	25.23
H ₁	22.28	25.87	24.07
Mean	22.59	26.71	24.65

S.E. of marginal mean = 1.33 ton/ac.
 S.E. of body of table = 1.88 ton/ac.

Crop :- Sugarcane.
Site :- S.L.F., Hospet.

Ref :- Ms. 53(54)
Type :- 'C'

Object :- To compare the suitability of rayungans as planting material in place of setts.

1. BASAL CONDITIONS :

(i) (a) No. (b) Sugarcane or fallow. (c) N.A. (ii) (a) Clayey loam. (b) Refer soil analysis, Hospet. (iii) 15 to 20.3.53. (iv) (a) Ploughing, ridging, opening furrows, etc. (b), (c), (d), and (e) N.A. (v) Nil. (vi) CO 419; (Medium). (vii) Irrigated. (viii) Weeding, earthing up, tying up cane etc. (ix) 16.90" (15.3.53 to 17.3.54) (x) 9, 12, 13, 14, 16 and 17.3.1954.

2. TREATMENTS :

Main-plot treatments :

2 seed materials : A = Rayungans and B = Top setts.

Sub-plot treatments :

3 spacings : $S_1 = 6''$, $S_2 = 12''$ and $S_3 = 18''$.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block and 3 sub-plots/main plot. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 2 cents (sub-plot size) (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Juice content, germination count, tiller count and yield data. (iv) (a) 1952—1955 (b) No. (c) N.A. (v) (a) None. (b) No. (vi) No. (vii) None.

5. RESULTS :

(i) 41.03 ton/ac.

(ii) (a) 6.07 ton/ac.

(b) 4.25 ton/ac.

(iii) Main effects of seed materials and spacings and their interaction are not significant.

(iv) Av. yield of cane in ton/ac.

	S_1	S_2	S_3	Mean
A	41.72	37.20	39.43	39.42
B	42.62	43.29	42.15	42.66
Mean	42.13	40.20	40.75	41.03

S.E. for the difference between any two.

1. main-plot treatment means = 2.02 ton/ac.
2. sub-plot treatment means = 1.73 " "
3. sub-plot treatment means at the same level of main-plot-treatment = 2.45 " "
4. main plot treatment means at the same level of sub-plot treatment = 2.85 " "

Crop :- Tobacco.
Site :- Tobacco Breeding Centre, Nipani.

Ref :- Ms. 48(34).
Type :- 'C'

Object :- To study the effect of nipping of different numbers of leaves of Tobacco, on its growth, when it is grown at different spacings.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) Bidi Tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main plot treatments :—

3 spacings : $S_1=42'' \times 42''$, $S_2=42'' \times 35''$ and $S_3=42'' \times 30''$

Sub-plot treatments :—

 L_1 =Nipping 10 leaves, L_2 =Nipping 12 leaves and L_3 =Nipping 14 leaves.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/replication ; 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) 183.75 sq. ft. ; dimensions N.A. (v) One row along the sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tobacco leaf yield data. (iv) (a) Yes ; 1948-1949. (b) No. (c) N.A. (v) (a) Not known (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 683.1 lb./ac.

(ii) (a) 152.9 lb./ac.

(b) 54.1 lb./ac.

(iii) The main effect of spacing is highly significant. The effect of nipping different numbers of leaves is also highly significant. Interaction is not significant.

(iv) Av. yield of tobacco in lb./ac.

	S_1	S_2	S_3	Mean
L_1	535.0	628.6	758.2	640.6
L_2	604.5	678.8	781.5	688.3
L_3	608.5	740.8	812.3	720.5
Mean	582.6	682.7	784.3	683.1

S.E. of difference of two

1. main-plot treatment means = 50.98 lb./ac.
2. sub-plot treatment means = 18.02 " "
3. sub-plot treatment means at the same level of main plot treatment. = 31.20 " "
4. main-plot treatment means at the same level of sub-plot treatment. = 56.99 " "

Crop :-Tobacco

Ref :-Ms. 49(49).

Site :-Tobacco Breeding Centre, Nipani.

Type :-'C'.

Object :—To find out the minimum spacing without adverse effect on yield and quality of Tobacco and number of leaves to be nipped to obtain better yield.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Medium black (b) Refer soil analysis, Nipani. (iii) Exact dates N.A. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) Nipani, Bidi Tobacco (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Exact dates N.A. ; found in 1949-50 file.

2. TREATMENTS :

Main-plot treatments :—

3 spacings : $S_1=42'' \times 42''$, $S_2=42'' \times 35''$ and $S_3=44'' \times 30''$

Sub-plot treatments :—

 L_1 =Nipping 10 leaves, L_2 =Nipping 12 leaves and L_3 =Nipping 14 leaves.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/replication ; 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) N.A. (b) 183.75 sq. ft. (dimensions N.A.) (v) One row each side. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Tobacco leaf yield data (iv) (a) Yes ; 1945-1950 (b) No (c) N.A. (v) (a) Not known (b) N.A. (vi) Nil (vii) Nipping 10 leaves and 12 leaves produced good and very thick quality leaves, while nipping 14 leaves, the quality was thinner and inferior.

5. RESULTS:

- (i) 868 lb./ac.
 (ii) (a) 103.8 lb./ac.
 (b) 94.1 lb./ac.
 (iii) The main effects of spacing and nipping different nos. of leaves are highly significant and their interaction is not significant.
 (iv) Av. yield of dry leaf in lb./ac

	S ₁	S ₂	S ₃	Mean
L ₁	784	793	941	839
L ₂	721	906	883	837
L ₃	852	913	1018	928
Mean	786	871	947	868

S.E. for the difference of two

1. main-plot treatment means = 34.59 lb./ac.
 2. sub-plot treatment means = 31.36 " "
 3. sub-plot treatment means at the same level of main plot treatment = 54.31 " "
 4. main plot treatment means at the same level of sub plot treatment = 56.23 " "

Crop :- Tobacco.

Site :- Tobacco Breeding Stn., Nipani.

Ref :- Ms. 50(77).

Type :- 'C'.

Object :- To find out the minimum spacing without adverse effect on yield and quality of Tobacco and number of leaves to be nipped to obtain better yield.

1. BASAL CONDITIONS :

- (i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Medium black (b) Refer soil analysis, Nipani. (ii) N.A. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) Nipani Bidi Tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Exact dates N.A. Found in 1950-1951 file.

2. TREATMENTS :

Main plot treatments :-

3 spacings : S₁=42"×42", S₂=42"×35" and S₃=42"×30"

Sub-plot treatments :-

L₁=Nipping 10 leaves, L₂=Nipping 12 leaves and L₃=Nipping 14 leaves.

3. DESIGN :

- (i) Split plot. (ii) (a) 3 main plots/replication ; 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) N.A. (b) 183.75 sq. ft. dimensions N.A. Main plot size N.A. (v) One row each side. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Tobacco leaf yield data. (iv) (a) Yes. 1945-1950 (b) No (c) N.A. (v) (a) Not known. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :-

- (i) 687 lb./ac.
 (ii) (a) 144.0 lb./ac.
 (b) 103.4 lb./ac.
 (iii) The main effect of spacing [is significant while that of nipping different nos. of leaves and their interaction are not significant.
 (iv) Av. yield of dry leaf in lb./ac.

	S ₁	S ₂	S ₃	Mean
L ₁	571	691	713	658
L ₂	584	723	837	715
L ₃	677	624	689	687
Mean	611	703	746	687

S.E. for the differences between two

1. main-plot treatment means = 48.00 lb./ac.
 2. sub-plot treatment means = 34.45 " "
 3. sub-plot treatment means at the same level of main-plot treatment = 59.69 " "
 4. main-plot treatment means at the same level of sub-plot treatment = 68.39 " "

Crop :- Tobacco.
Site :- Tobacco Breeding Stn., Nipani.

Ref :- Ms. 48(35).
Type :- 'C'.

Object :- To find the effect of spacing and topping on cigarette Tobacco.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A.
 (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated.
 (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main-plot treatments :-

3 spacings : $S_1=36'' \times 36''$, $S_2=36'' \times 30''$ and $S_3=36'' \times 24''$

Sub-plot treatments :-

4 stages of topping :- T_1 =No topping, T_2 =Topping at bud stage, T_3 =Topping at 1st priming and
 T_4 =Topping at inflorescence.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/replication, 4 sub-plots/main plot (b) N.A. (iii) 4 (iv) (a) N.A. (b) 180 sq. ft. (dimensions N.A.) (v) One row all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tobacco leaf yield data. (iv) (a) Yes ; 1948-1949. (b) No. (c) N.A.
 (v) (a) Not known. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 4568 lb./ac.
 (ii) (a) 391.0 lb./ac.
 (b) 920.6 lb./ac
 (iii) The main effect of spacing is highly significant. The main effect of topping and interaction are not significant.
 (iv) Av. yield of tobacco in lb./ac.

	T_1	T_2	T_3	T_4	Mean.
S_1	4284	4738	4273	3589	4221
S_2	4277	4750	4182	4735	4486
S_3	4557	4606	5998	5902	5266
Mean.	4373	4698	4818	4742	4658

S.E. of difference of two

1. main-plot treatment means = 138.2 lb./ac.
 2. sub-plot treatment means = 400.3 "
 3. sub-plot treatment means at the same level of main-plot treatment = 693.4 "
 4. main-plot treatment means at the same level of sub-plot treatment = 616.2 "

Crop:- Tobacco.
Site:- Tobacco Breeding Stn., Nipani.

Ref:- Ms. 49 (51).
Type:- 'C'.

Object:- To find out the minimum spacing without adverse effect on yield and quality of tobacco and to study the effect of topping.

1. BASAL CONDITIONS;

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Medium black (b) Refer soil analysis, Nipani (iv) (a) to (c) N.A. (d) As per treatments (e) N.A. (v) Nil (vi) Cigarette tobacco (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main plot treatments:

3 spacings : $S_1 = 36'' \times 36''$, $S_2 = 36'' \times 30''$ and $S_3 = 36'' \times 24''$

Sub-plot treatments :

4 times of topping :

 T_1 =No topping, T_2 =Topping at bud stage, T_3 =Topping at 1st priming and T_4 =Topping at in florescence.

3. DESIGN :

(i) Split plot (ii) (a) 3 main plots/replication; 4 sub-plots/main plot. (b) N.A. (iii) 4 (iv) (a) N.A. (b) 180 sq. ft. (dimensions N.A.). (v) One row all round. (vi) Yes.

4. GENERAL .

(i) Satisfactory. (ii) Nil. (iii) Tobacco leaf yield data. (iv) (a) Yes, 1948—1951. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Bud-stage leaves were thick and difficult to cure and developed uneven green and yellow colour, not suitable for cigarette.

5. RESULTS :

(i) 7937 lb./ac.

(ii) (a) 1121 lb./ac.

(b) 857.1 lb./ac.

(iii) Topping treatments differ significantly. Interaction between spacing and topping and main effect of spacing are not significant.

(iv) Av. yield of green leaf in lb./ac.

	T_1	T_2	T_3	T_4	Mean
S_0	7857	8096	7839	7881	7768
S_1	7503	8887	7222	7525	7784
S_2	7645	8757	8156	8481	8260
Mean	7468	8580	7739	7962	7937

S.E. for the difference between two

1. main plot treatment means

= 396.6 lb./ac.

2. sub-plot treatment means

= 349.9 „ „

3. sub-plot treatment means at the same level of main plot treatment

= 606.0 „ „

4. main plot treatment means at the same level of sub-plot treatment

= 657.8 „ „

Crop :- Tobacco.

Ref :- Ms. 50(76).

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'C'

Object :- To find out the minimum spacing without adverse effect on yield and quality of tobacco and to study the effect of topping.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) Exact dates N.A. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Exact dates N.A.

2. TREATMENTS :

Main-plot treatments :-

3 spacings : $S_1 = 36'' \times 36''$, $S_2 = 36'' \times 30''$ and $S_3 = 36'' \times 24''$.

Sub-plot treatments :-

4 stages of topping :

 T_1 =No topping, T_2 =Topping at bud stage, T_3 =Topping at 1st priming, and T_4 =Topping at in florescence.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/replication ; 4 sub-plots/main plot. (b) N.A. (iii) 4 (iv) (a) N.A. (b) 180 sq. ft. (dimensions N.A.) (v) One row all round (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tobacco leaf yield data. (iv) (a) Yes. 1943—1951. (b) No. (c) N.A. (v) (a) Not known. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 4662 lb./ac.
 (ii) (a) 409.5 lb./ac.
 (b) 666.6 lb./ac.
 (iii) None of the effects is significant.
 (iv) Av. yield of green leaf in lb./ac.

	T ₁	T ₂	T ₃	T ₄	Mean.
S ₁	4462	4379	4682	4372	4474
S ₂	4893	5173	4334	4697	4774
S ₃	4568	4591	4946	4848	4738
Mean	4641	4715	4654	4639	4662

S.E. of the difference of two

- main-plot treatment means =144.8 lb./ac.
- sub-plot treatment means =272.1 „ „
- sub-plot treatment means at the same level of main-plot treatment =471.3 „ „
- main-plot treatment means at the same level of sub-plot treatment =433.1 „ „

Crop :- Tobacco.

Ref :- Ms. 51(86).

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'C'

Object :—To find out the minimum spacing without adverse effect on yield and quality of Tobacco and to study the effect of topping.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main-plot treatments :—

3 spacings : S₁=36"×36", S₂=36"×30" and S₃=36"×24".

Sub-plot treatments :—

4 stages of topping :

T₁=No topping, T₂=Topping at bud stage, T₃=Topping at 1st priming, and T₄=Topping at inflorescence.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/replication ; 4 sub-plots/main plot. (b) N.A. (iii) 4 (iv) (a) N.A. (b) 180 sq. ft. (dimensions N.A.) (v) One row all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tobacco leaf yield data. (iv) (a) Yes. 1948—1951. (b) No. (c) N.A. (v) (a) Not known. (b) N.A. (vi) Nil. (vii) With "no topping" treatment the quality of leaves was of lower grade than others.

RESULTS :

- (i) 8533 lb./ac.
 (ii) (a) 1672 lb./ac.
 (b) 1052 lb./ac.
 (iii) The effect of topping on the yield is highly significant. The spacing effect and the interaction are not significant.

(iv) Av. yield of green leaf in lb./ac.

	T ₁	T ₂	T ₃	T ₄	Mean
S ₁	6799	8701	7990	7760	7813
S ₂	7861	9374	8539	9605	8845
S ₃	7843	9326	9469	9423	8940
Mean	7501	9034	8666	8929	8533

S.E. of difference of two.

1. main-plot treatment means = 591.2 lb./ac.
2. sub-plot treatment means = 429.6 " "
3. sub-plot treatment means at the same level of main-plot treatment = 744.1 " "
4. main-plot treatment means at the same level of sub-plot treatments = 874.5 " "

Crop :- Tobacco.

Ref :- Ms. 48 (36).

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'C'.

Object :—To study the effect of nipping different number of leaves at a time & at an interval of a week, on the yield of Tobacco.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A. (iv) (a) to (c) N.A. (d) 42" × 42". (e) N.A. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Nipping 4 leaves at a time and with an interval of a week 3 times (total 12 leaves)
2. " 6 " " " " " 2 times (")
3. " 12 " all at a time

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) 24'-6" × 24'-6". (7 rows). (b) 17'-6" × 17'-6" (5 rows). (v) 3'-6" all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tobacco leaf yield data. (iv) (a) 1948-1949. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 492 lb./ac.
- (ii) 34.6 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of tobacco (dry leaf) in lb./ac.

Treatment	Av. yield
1.	493
2.	461
3.	521
S.E./mean	= 15.5 lb./ac.

Crop :- Tobacco.

Ref :- Ms. 49 (48).

Site :- Tobacco Breeding Stn, Nipani.

Type :- 'C'.

Object ---To study the effect of nipping different number of leaves at a time and at an interval of a week on the yield of Tobacco.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani (iii) N.A. (iv) (a) to (c) N.A. (d) $3\frac{1}{2}' \times 3\frac{1}{2}'$. (e) N.A. (v) Nil. (vi) Bidi tobacco (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Nipping 4 leaves at a time and with an interval of a week 3 times (total 12 leaves)
2. " 6 " " " " " " " 2 times (")
3. " 12 " all at a time

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) & (b) 588 sq. ft. Dimension N.A. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tobacco leaf yield data. (dry leaf). (iv) (a) No. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 770 lb./ac.
- (ii) 74.6 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of tobacco (dry leaf) in lb./ac.

Treatment	Av. yield
1.	799
2.	724
3.	788
S.E./mean	= 26.4 lb./ac.

Crop :- Tobacco.

Ref :- Ms. 48 (44).

Site :- Tobacco Breeding Stn, Nipani.

Type :- 'C'.

Object :-To find the best time for transplanting bidi tobacco crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani (iii) As per treatments. (iv) (a) to (c) N.A. (d) $42" \times 42"$. (e) N.A. (v) Nil. (vi) Tobacco 3-20 (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Dates of transplanting :-

1. 16th July, 48.
2. 23rd " "
3. 30th " "
4. 6th Aug., 48.
5. 13th " "
6. 20th " "
7. 27th " "
8. 3rd Sept., 48.
9. 10th " "
10. 17th " "

Treatments (3) and (4) were dropped due to the failure of crop in seed-bed.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (2 treatments dropped). (b) N.A. (iii) 4. (iv) (a) & (b) 294 sq. ft. (dimensions N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tobacco leaf yield data (dry leaf). (iv) (a) No. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 658 lb./ac.
 (ii) 117.1 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. yield of tobacco (dry leaf) in lb./ac.

Treatment	Av. yield
1.	743
2.	775
5.	780
6.	588
7.	669
8.	656
9.	564
10.	484
S.E./mean	= 58.6 lb./ac.

Crop :- Tobacco.

Ref :- Ms. 49(47).

Site :- Tobacco Breeding Stn, Nipani.

Type :- 'C'.

Object :— To find the best time for transplanting of tobacco crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) As per treatments. (iv) (a) to (e) N.A. (v) Nil. (vi) Bidi tobacco. (vii) Unirrigated: (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Dates of transplanting.

- 23rd July 1949.
- 30th " "
- 6th Aug.
- 13th " "
- 20th " "
- 27th " "
- 3rd Sept. "
- 10th " "
- 17th " "

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) & (b) 252 sq. ft. Dimensions N.A. 3 rows with 7 plants in each row. (v) Common ring row. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tobacco leaf yield data (dry leaf). (iv) (a) No. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 762 lb./ac.
 (ii) 117.8 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. yield of tobacco (dry leaf) in lb./ac.

Treatment	Av. yield.
1.	956
2.	967
3.	962
4.	884
5.	792
6.	713
7.	767
8.	516
9.	303
S.E./mean.	= 58.4 lb./ac.

Crop :- Tobacco.

Ref :- Ms. 50(73).

Site :- Tobacco Breeding Stn, Nipani.

Type :- 'C'.

Object :- To find the best time for transplanting tobacco crop.

1. BASAL CONDITIONS :-

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) As per treatments. (iv) (a) to (e) N.A. (v) Nil. (vi) Bidi tobacco, (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Dates of Transplanting :-

1. 23rd July 1950.
2. 6th August "
3. 13th " "
4. 20th " "
5. 27th " "
6. 3rd Sept. 1950.
7. 10th " "

30th July, not planted for want of seedlings.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) & (b) 257 Sq. ft, Dimension N.A. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. The early plantings were most vigorous and early to mature. (ii) Nil. (iii) Tobacco leaf yield data (dry leaf). (iv) (a) No. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 612 lb./ac.
- (ii) 96.7 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of tobacco (dry leaf) in lb./ac.

Treatment.	Av. yield.
1.	704
2.	654
3.	635
4.	580
5.	625
6.	511
7.	572
S.E./mean.	= 48.3 lb./ac.

Crop :- Tobacco.

Ref :- Ms. 51(83).

Site :- Tobacco Breeding Stn. Nipani.

Type :- 'C'.

Object :- To find suitable transplanting date for cigarette tobacco.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) As per treatments. (iv) (a) to (c) N.A. (d) 30" x 24". (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Dates of transplanting.

1. 23rd July. 1951.
2. 30th " "
3. 6th August. "
4. 13th " "
5. 20th " "
6. 27th " "
7. 3rd Sept. "
8. 10th " "

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a), (b) 26 Sq. ft. (dimensions N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data (green leaf) (iv) (a) No. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 4091 lb./ac.
 (ii) 800.0 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. yield of tobacco (green leaf) in lb./ac.

Treatment	Av. yield.
1.	4564
2.	4796
3.	4829
4.	4869
5.	3801
6.	3320
7.	2988
8.	3562
S.E./mean	= 326.6 lb./ac.

Crop :- Tobacco.

Site :- Tobacco Breeding Stn., Nipani.

Ref :- Ms, 52 (140)

Type :- 'C'.

Object :—To find a suitable transplanting date for cigarette Tobacco.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) As per treatments. (iv) (a) to (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

TREATMENTS :

Dates of transplanting.

- 23rd July 1952.
- 30th „ „
- 6th August „
- 13th „ „
- 20th „ „
- 27th „ „
- 3rd Sept. „
- 10th „ „

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a), (b) 320 Sq. ft. (dimensions N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (green leaf). (iv) (a) No. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 6643 lb./ac.
 (ii) 761.4 lb./ac.
 (iii) The differences in yield due to treatments are not significant

(iv) Av. yield of tobacco (green leaf) in lb./ac.

Treatment	Av. yield
1.	5972
2.	6101
3.	6538
4.	6930
5.	6898
6.	6924
7.	7357
8.	6421
S.E./mean	=380.7 lb./ac.

Crop :- Tobacco.

Ref :-Ms. 53(192)

Site :-Tobacco Breeding Stn. Nipani.

Type :-'C'.

Object:—To find a suitable date of transplanting for cigarette Tobacco.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) As per treatments. (iv) (a) to (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Dates of transplanting :

1. 6th Aug. 1953.
2. 13th " "
3. 20th " "
4. 27th " "
5. 3rd Sept. 1953.
6. 10th " "
7. 17th " "
8. 30th " "

3. DESIGN :

(i) R B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a), (b) 320 sq. ft. (dimensions N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (green leaf). (iv) (a) No. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 1979 lb./ac.
- (ii) 363.9 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. yield of tobacco (green leaf) in lb./ac.

Treatment	Av. yield.
1.	1574
2.	1436
3.	1657
4.	2195
5.	2397
6.	2548
7.	2183
8.	1223
S.E./mean	= 182.0 lb./ac.

Crop :- Tobacco.

Ref :- Ms. 49(46).

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'C'.

Object :- To find the best age of seedings for transplanting so as to give better yield.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A.
 (iv) (a) N.A. (b) & (c) N.A. (d) $3\frac{1}{2}' \times 3\frac{1}{2}'$. (e) N.A. (v) Nil. (vi) Bidi tobacco. (vii) Unirrigated.
 (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Age of seedings at transplanting :-

1. 4 weeks old.
2. 5 " "
3. 6 " "
4. 7 " "
5. 8 " "
6. 9 " "
7. 10 " "

3. DESIGN :

- (i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 4 (iv) (a), (b) 367 sq. ft. (dimensions N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield data (dry leaf) (iv) (a) No. (b) No (c) N.A. (v) (a) None
 (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 719 lb./ac.
 (ii) 159 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. yield of tobacco (dry leaf) in lb./ac.

Treatment	Av. yield.
1.	853
2.	849
3.	849
4.	669
5.	710
6.	623
7.	479
S.E./mean	= 79.5 lb /ac.

Crop :- Tobacco.

Ref :- Ms. 50(75).

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'C'.

Object :- To find the best age of seedings for transplanting so as to give better yield.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A.
 (iv) (a) to (e) N.A. (v) Nil. (vi) Bidi tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Age of seedlings at transplanting :-

1. 4 weeks old.
2. 5 " "
3. 6 " "
4. 7 " "
5. 8 " "
6. 9 " "

3. DESIGN :

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 4 (iv) (a), (b) 367 sq. ft. (dimensions N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data (dry leaf). (iv) (a) No (b) No (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 522 lb./ac.
 (ii) 131.6 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of tobacco (dry leaf) in lb./ac.

Treatment	Av. yield.
1.	54)
2.	579
3.	525
4.	527
5.	504
6.	460
S.E./mean	= 65.8 lb./ac.

Crop :- Tobacco:

Ref :- Ms. 50(74).

Site :- Tobacco Breeding Stn, Nipani.

Type :- 'C'.

Object :- To find the effect of partial harvesting and whole plant harvesting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) 1950. (exact dates N.A.) (iv) (a) to (e) N.A. (v) Nil. (vi) Bidi tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) (exact dates N.A.).

2. TREATMENTS :

- Whole plant harvested.
- Partial harvesting of picking lower grand leaves and afterwards cutting the plant at normal time.

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 8 (iv) (a) and (b) 1223 sq. ft. Dimensions N.A. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (ii) Yield data (dry leaf). (iv) (a) No. (b) No (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 481 lb./ac.
 (ii) 57.7 lb./ac.
 (iii) The difference in yield due to treatments is not significant.
 (iv) Av. yield of tobacco (dry leaf) in lb./ac.

Treatment	Av. yield.
1.	481
2.	481
S.E /mean	= 20.4 lb./ac.

Crop :- Tobacco.

Ref :- Ms 51(84).

Site :- Tobacco Breeding Stn. Nipani.

Type :- 'C'.

Object :- To compare the farmers' method of bidi tobacco cultivation with the improved method.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) As per treatments. (iv) (a) to (c) N.A. (d) As per treatments (e) N.A. (v) Nil. (vi) Bidi tobacco (local variety) (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Improved method or Farm method.

Planting early by 23rd July or 1st week of August, close spacing 42"×30" and topping at 10 leaves.

2. Farmer's method.

Planting on 20th August, wider spacing 42"×42" and nipping at 12 leaves.

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 2 (iv) (a) & (b) 1960 sq. ft. (dimensions N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data (dry leaf). (iv) (a) No. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 709 lb./ac.

(ii) 85.5 lb./ac.

(iii) The difference in yield due to treatments is highly significant.

(iv) Av. yield of tobacco (dry leaf) in lb./ac.

Treatment	Av. yield
1.	858
2.	559
S.E./mean	=24.7 lb./ac.

Crop :- Tobacco.

Site :- Tobacco Breeding Stn., Nipani.

Ref :- Ms. 52(141).

Type :- 'C'.

Object :- To compare the farmers' method of bidi tobacco cultivation with the improved method.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani (iii) As per treatments. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) N.A. (vi) Bidi tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Improved method.

Planting early by 23rd July or 1st week of August and close spacing 42"×30" & topping at 10 leaves.

2. Farmer's method.

Planting on 20th August, widerspacing 42"×42" and nipping at 12 leaves.

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 12 (iv) (a), (b) 1838 sq. ft. (dimensions N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (dry leaves). (iv) (a) No. (b) No. (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 328 lb./ac.

(ii) 29.6 lb./ac.

(iii) The difference in yield due to treatments is highly significant.

(iv) Av. yield of tobacco (dry leaf) in lb./ac.

Treatment	Av. yield
1.	373
2.	283
S.E./mean	=8.5 lb./ac.

Crop :- Tobacco.

Ref :- Ms. 53(193).

Site :- Tobacco Breeding Stn. Nipani.

Type :- 'C'.

Object :—To compare the farmers' method of bidi tobacco cultivation with improved method.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) As per treatments. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) Bidi tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Improved method or Farm method.

Planting early by 23rd July or 1st week of August, close spacing 42" × 30" and topping at 10 leaves.

2. Farmer's method.

Planting on 20th August, wider spacing 42" × 42" and nipping at 12 leaves.

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 12 (iv) (a) & (b) 919 sq. ft. (dimensions N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Yield data (dry leaf). (iv) (a) No, (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) The farm method has grown less yield in contrast to last two years. This may be due to abnormal rainfall of 50" which affected the farm method which was sown earlier.

5. RESULTS :

(i) 270 lb./ac.

(ii) 83.8 lb./ac.

(iii) The difference in yield due to treatments is not significant.

(iv) Av. yield of tobacco (dry leaf) in lb./ac.

Treatment	Av. yield
1.	252
2.	288
S.E./mean	=24.0 lb./ac.

Crop :- Tobacco.

Ref :- Ms. 51(85)

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'CM'

Object :—To find out the effect of N and topping on yield & quality of Tobacco.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A. (iv) (a) to (c) N.A. (c) 30" × 24" (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main plot treatments :—

3 levels of N : $N_0=0$, $N_1=10$ and $N_2=20$ lb./ac.

Sub plot treatments :—

2 levels of topping : T_1 =No topping and T_2 =Topping.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/replication, 2 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) & (b) 360 sq. ft. (dimensions N.A.) (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1951—1954. (b) No. (c) N.A. (v) (a) Not known. (b) N.A. (vi) & (vii) Nil.

5. RESULTS:

- (i) 6447 lb./ac.
 (ii) (a) 733.2 lb./ac.
 (b) 732.0 lb./ac.
 (iii) Main effect of topping alone is highly significant. Others are not significant.
 (iv) Av. yield of green leaf in lb./ac.

	T ₁	T ₂	Mean.
N ₀	5998	6741	6370
N ₁	6154	6954	6554
N ₂	5817	7018	6418
Mean	5990	6904	6447

S.E. of difference of two

1. main-plot treatment means =299.3 lb./ac.
 2. sub-plot treatment means =244.0 „ „
 3. sub-plot treatment means at the same level of main-plot treatment. =422.6 „ „
 4. main-plot treatment means at the same level of sub-plot treatment. =423.0 „ „

Crop :- Tobacco.

Ref :- Ms. 52 (142).

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'CM'.

Object :—To find out the effect of N and topping on yield and quality of tobacco.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium Black. (b) N.A. (iii) N.A. (iv) (a) to (c) N.A. (d) 30"×24".
 (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main-plot treatments :-

3 levels of N : N₀=0, N₁=10 and N₂=20 lb./ac.

Sub-plot treatments :-

2 levels of topping : T₁=No topping and T₂=Topping.

Time & method of application N.A.

3. DESIGN :

- (i) Split plot. (ii) (a) 3 main plots/repli. ; 2 sub-plots/main plot. (b) N.A. (iii) 6. (iv) (a) and (b) 480 Sq. ft. exact dimensions N.A. main plot size N.A. (v) No. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1952-1954. (b) No. (c) N.A. [(v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 5425 lb./ac.
 (ii) (a) 772.6 lb./ac.
 (b) 595.6 lb./ac.
 (iii) The main effects of N & T are highly significant. Interaction is not significant.

(iv) Av. yield of grain leaf in lb./ac.

	T ₁	T ₂	Mean
N ₀	4341	5092	4716
N ₁	5458	5918	5688
N ₂	5261	6483	5872
Mean	5020	5831	5425

S.E. of the difference of two

1. main-plot treatment means =315.4 lb./ac.
2. sub-plot treatment means =198.5 "
3. sub-plot treatment means at the same level of main-plot treatment =343.8 "
4. main-plot treatment means at the same level of sub-plot treatment =398.2 "

Crop :- Tobacco.

Ref :- Ms. 53 (194).

Site :- Tobacco Breeding Stn. Nipani.

Type :- 'CM'.

Object :—To find out the effect of N and topping on quality & yield of tobacco.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A. (iv) (a) to (c) N.A. (d) 30"×24". (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Main-plot treatments :-

3 levels of N : N₀=0, N₁=10 and N₂=20 lb./ac.

Sub-plot treatments :-

2 levels of topping : T₁=No topping and T₂=topping.

Time & method of application N.A.

3. DESIGN :

(i) Split plot (ii) (a) 3 main plots/replication 2 sub-plots/main plot ; (b) N.A. (iii) 6. (iv) (a) and (b) 480 sq. ft. ; dimensions N.A. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1952-1954. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 4643 lb./ac.
- (ii) (a) 578.8 lb. ac.
(b) 421.4 lb./ac.
- (iii) Only the main effect of topping is significant.
- (iv) Av. yield of green leaf in lb./ac.

	T ₁	T ₂	Mean.
N ₀	4973	4557	4765
N ₁	4534	5012	4773
N ₂	4030	4752	4391
Mean.	4512	4774	4643

S.E. of difference of two

1. main-plot treatment means	=236.3 lb./ac.
2. sub-plot treatment means	=140.5 "
3. sub-plot treatment means at the same level of main plot treatment	=243.3 "
4. main-plot treatment means at the same level of sub-plot treatment	=292.3 "

Crop :- Tobacco.

Ref :- Ms. 48 (33).

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'C'.

Object :—To find out the best rotation for cigarette tobacco.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A. (iv) (a) to (c) N.A. (d) $3' \times 2\frac{1}{2}'$. (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Rotations as follows :-

1. Tobacco after Jowar.
2. " " Groundnut.
3. " " Gram.
4. " " Tobacco.
5. " " Chillies.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (of these, in 5 plots tobacco was grown. & in the remaining 4 plots, jowar, Groundnut, gram and chillies were sown). (b) N.A. (iii) 4. (iv) (a), (b) $45' \times 24'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Yield data. (iv) (a) 1948-1949. (b) As per layout. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) N.A.

5. RESULTS :

- (i) 2275 lb./ac.
(ii) 306.3 lb./ac.
(iii) The differences in yield due to treatments are highly significant.
(iv) Av. yield of tobacco green leaf in lb./ac.

Treatment	Av. yield
1.	2012
2.	2422
3.	2157
4.	1904
5.	2881
S.E./mean	= 153.2 lb./ac.

Crop :- Tobacco.

Ref :- Ms. 49 (50)/48(33)

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'C'.

Object :—To find out the best rotation for cigarette tobacco.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) Nil. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A. (iv) (a) to (c) N.A. (d) $3' \times 2'$. (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Crop rotations as follows ;—

1. Tobacco after Jowar.
2. " " Groundnut.
3. " " Gram.
4. " " Tobacco.
5. " " Chillies.

3. DESIGN :

(i) R.B.D. (ii) (a) 9, of these in 5 plots tobacco was grown & in the remaining plots jowar, groundnut, gram and chillies were sown. (b) N.A. (iii) 4. (iv) (a) 45'×24'. (b) 3/4 of a Guntha. exact dimensions N.A. (v) Dimensions N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948-1952. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Tobacco grown after gram and after chillies was early to mature.

5. RESULTS :

(i) 3897 lb./ac.
 (ii) 334.3 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. yield of tobacco green leaves in lb./ac.

Treatment	Av. yield.
1.	3465
2.	4747
3.	4027
4.	3687
5.	3560
S.E./mean	= 167.2 lb./ac.

Crop :- Tobacco.

Ref :- Ms. 50(78)/49(50)/48(33)

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'C'.

Object :— To find out the best rotation for cigarette tobacco.

1. BASAL CONDITIONS :

(i)(a) As per treatments. (b) As per treatments. (c) Nil. (ii) (b) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A. (iv) (a) to (c) N.A. (d) 3'×2'. (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated (viii) N.A. (ix) N.A. (x) Exact dates N.A. (found in 1950—51 records.)

2. TREATMENTS :

Crop rotations as follows :—

1. Tobacco after Jowar.
2. " " Groundnut.
3. " " Gram.
4. " " Tobacco.
5. " " Chillies.

3. DESIGN :

(i) R.B.D. (ii) (a) 9 (of these, in 5 plots tobacco was grown ; in the remaining 4 plots jowar, groundnut, gram and chillies were sown). (b) N.A. (iii) 4. (iv) (a) 45'×24'. (b) 3/4 of a guntha, exact dimensions. N.A. (v) Dimension N.A. (vi) Yes.

4. GENERAL

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948—52. (b) As per rotation. (c) N.A. (v) (a) Not known. (b) N.A. (vi) Nil. (vii) Tobacco after groundnut and chillies was early to mature. In blue curing test, they were found to be of very good quality, giving 70% top grade.

5. RESULTS :

(i) 2507 lb./ac.
 (ii) 411.3 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. yield of tobacco green leaves in lb./ac.

Treatment	Av. yield
1.	2454
2.	3077
3.	2124
4.	2054
5.	2827
S.E./mean	= 205.6 lb./ac.

Crop :- Tobacco.

Ref :- Ms. 51(87)/50(78)/49(50)/48(33).

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'C'.

Object :- To find the best rotation for cigarette tobacco.

1. BASAL CONDITIONS :

(i)(a) As per treatments. (b) As per treatments. (c) Nil. (iv) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A. (iv) (a) to (c) N.A. (d) 2'x3'. (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Crop rotations as follows :-

1. Tobacco after Jowar.
2. " " Groundnut.
3. " " Gram.
4. " " Tobacco.
5. " " Chillies.

3. DESIGN :

(i) R.B.D. (ii) (a) 9 (of these, in 5 plots, tobacco was grown and the remaining 4 plots, jowar, groundnut gram and chillies were sown.) (b) N.A. (iii) 4. (iv) (a) 45'x24'. (b) 3/4 of a guntha, exact dimensions N.A. (v) Dimensions N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948-1952. (b) As per rotations. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 4477 lb./ac.
 (ii) 793.4 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of tobacco green leaves in lb./ac.

Treatment	Av. yield
1.	4942
2.	4419
3.	4384
4.	3561
5.	5078
S.E./mean	= 396.7 lb./ac.

Crop :- Tobacco.

Ref :- Ms. 52(143)51(87)/50(78)/49(50)/48(33)

Site :- Tobacco Breeding Stn, Nipani.

Type :- 'C'

Object :- To find out the best rotation for cigarette tobacco.

1. BASAL CONDITIONS :

(i)(a) As per treatments. (b) As per treatments. (c) Nil. (ii) (a) Medium black. (b) Refer soil analysis, Nipani. (iii) N.A. (iv) (a) to (c) N.A. (d) 3'x2' (e) N.A. (v) Nil. (vi) Cigarette tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Crop rotations, as follows :-

1. Tobacco after Jowar.
2. " " Groundnut.
3. " " Gram.
4. " " Tobacco.
5. " " Chillies.

3. DESIGN :

(i) R.B.D. (ii) (a) 9 (of these, in 5 plots tobacco was grown and in the remaining 4 plots, jowar, groundnut, gram and chillies were sown.) (b) N.A. (iii) 4 (iv) (a) N.A. (b) 20'x40'. (v) Dimensions not known. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948-1952. (b) As per rotation. (c) N.A. (v) (a) Not known. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 3955 lb./ac.

(ii) 526.0 lb./ac.

(iii) The differences in yield due to treatments are highly significant.

(iv) Av. yield of tobacco green leaves in lb./ac.

Treatment	Av. yield
1.	3127
2.	4827
3.	3879
4.	3461
5.	4487
S.E./mean	= 262.0 lb./ac.

Crop :- Tobacco

Ref:-Ms. 49(52).

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'C'.

Object :- To find the effect of various crops grown in this tract on the yield and quality of bidi tobacco.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) Nil (ii) (a) Medium black (b) Refer soil analysis, Nipani. (iii) N.A. (iv) (a) to (c) N.A. (d) $3\frac{1}{2}' \times 3\frac{1}{2}'$ (e) N.A. (v) Nil. (vi) Bidi tobacco. (vii) Irrigated ; (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

Crop rotations as follows :-

1. Tobacco after Chillies.
2. " " Onions.
3. " " Turmeric.
4. " " Sugarcane.

3. DESIGN :

(i) R.B.D. (ii) (a) 8 (of these, in 4 plots tobacco was planted, in the remaining 4 plots, chillies, turmeric and sugarcane were grown.) (b) N.A. (iii) 4 (iv) (a) $70' \times 24\frac{1}{2}'$ (b) $63' \times 17\frac{1}{2}'$ (v) $3\frac{1}{2}'$ all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Yield data. (iv) (a) 1944-1949. (b) As per layout. (c) N.A. (v) (a), (b) Not known (vi) & (vii) Nil.

5. RESULTS :

(i) 897 lb./ac.

(ii) 115.7 lb./ac.

(iii) The differences in yield due to treatments are significant.

(iv) Av. yield of tobacco dry leaf in lb./ac.

Treatment.	Av. yield
1.	886
2.	739
3.	912
4.	1021
S.E./mean	= 57.9 lb./ac.

Crop :- Tobacco

Ref :- Ms. 48(45).

Site :- Tobacco Breeding Stn., Nipani.

Type :- 'C'.

Object :- To find the effect of various dry crops of the tract on the yield and quality of bidi tobacco.

1. BASAL CONDITIONS :

(i) (a) As per treatment. (b) As per treatment. (c) Nil. (ii) (a) Medium black (b) Refer soil analysis, Nipani. (iii) N.A. (iv) (a) to (c) N.A. (d) $3\frac{1}{2}' \times 3\frac{1}{2}'$ (e) N.A. (v) Nil. (vi) Bidi Tobacco. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Exact dates N.A. ; found in the files of 1944 to 1948.

2. TREATMENTS :

Crop Rotations.

1. Tobacco after Jowar.
2. " " Groundnut.
3. " " Gram.
4. " " Tobacco.

3. DESIGN :

(i) R.B.D. (ii) (a) 7 (of these, in 4 plots tobacco was grown and in the remaining 3 plots jowar, groundnut and gram were sown). (b) N.A. (iii) 8 (iv) (a) $70' \times 24\frac{1}{2}'$ (b) $63 \times 17\frac{1}{2}'$ (v) $3\frac{1}{2}'$ all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Yield data. (iv) (a) 1943-1948. (b) As per lay out (c) N.A. (v) (a), (b) Not known (vi) & (vii) Nil.

5. RESULTS :

- (i) 458 lb./ac.
- (ii) 113.0 " "
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of tobacco (dry leaf) in lb./ac.

Treatment	Av. yield
1.	397
2.	495
3.	461
4.	478
S.E./mean	= 40.0 lb./ac.

Crop :- Chillies.

Ref :- Ms. 49(3).

Site :- Chillies Breeding Stn. Devihosur.

Type :- 'M'.

Object :- To study the effect of N, P and K and their combinations on chilli crop.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Light red to medium black. (b) Refer soil analysis, Devihosur (iii) 2nd week of June 1949. (iv) (a) Ploughing, levelling etc. (b) N.A. (c) 1 lb./ac. (d) Between rows $2\frac{1}{2}'$; between plants $2\frac{1}{2}'$. (e) N.A. (v) F.Y.M. at 5 C.L./ac. (vi) N.A. (vii) Rainfed. (viii) Interculturing, weeding. (ix) N.A. (x) Feb. 1950.

2. TREATMENTS :

All combinations of (1), (2) and (3)

- (1) 3 levels of N : $N_0=0$, $N_1=15$ and $N_2=30$ lb./ac.
- (2) 3 levels of P_2O_5 : $P_0=0$, $P_1=15$ and $P_2=30$ lb./ac.
- (3) 3 levels of K_2O : $K_0=0$, $K_1=15$ and $K_2=30$ lb./ac.

N as A/S ; P_2O_5 as Super and K_2O as Pot. Sul.

Time and method of application : N.A.

3. DESIGN :

(i) 3^3 Fact. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 4. (iv) (a) $40' \times 25'$. (b) $30' \times 15'$. (v) 5' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Crop suffered from bacterial leaf spot disease, intensity of which was almost the same throughout the area. (iii) Yield of chilli. (iv) (a) 1949-1953. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 309 lb./ac.
 (ii) 73.6 lb./ac.
 (iii) Main effects of N and interaction NK, PK are significant. Others are not significant.
 (iv) Av. yield of dry chillies in lb./ac.

	N ₀	N ₁	N ₂	Mean	K ₀	K ₁	K ₂
P ₀	250	319	318	296	271	309	308
P ₁	282	323	338	314	290	358	295
P ₂	305	310	341	319	330	277	348
Mean	279	317	332	309	297	315	317
K ₀	277	301	314				
K ₁	253	307	384				
K ₂	308	344	298				

S E. of marginal mean = 12.3 lb./ac.

S.E. of body of table = 21.3 „ „

Crop :-Chilli.

Site :-Chillies Breeding Stn., Devihosur.

Ref :-Ms. 50(16).

Type :-'M'.

Object :-To study the effect of N, P and K in varying doses on chilli crop.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Light red to medium black. (b) Refer soil analysis, Devihosur. (iii) 17, 18, 21 to 23.7.1950. (iv) (a) Ploughing, levelling, etc. (b) N.A. (c) One lb./ac. (d) Between rows 2½' and between plants 2½'. (e) N.A. (v) Nil. (vi) N.A. (vii) Rainfed. (viii) 5 interculturings, gap filling, weeding, supporting lodged plants. (ix) N.A. (x) Nov., Dec., 1950 ; Feb., April 1951.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N : N₀=0, N₁=15 and N₂=30 lb./ac.

(2) 3 levels of P₂O₅ : P₀=0, P₁=15 and P₂=30 lb./ac.

(3) 3 levels of K₂O : K₀=0, K₁=15 and K₂=30 lb./ac.

*N' as 'A/S' on 25.8.1950 ; K₂O as Pot. Sul. on 18.10.1950.

P₂O₅ as 'Super' top dressed on 13, 14, 15th July 1950 and on 9.8.50.

3. DESIGN :

- (i) 3³ Fact. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 4. (iv) (a) 40'×25'. (b) 30'×15'. (v) 5' all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Chillies yield. (iv) (a) 1949—1953. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) Rainy season was rather peculiar. Total amount of rainfall for this year was 47.51" whereas normal rainfall is 27.00". (vii) Nil

5. RESULTS :

(i) 825 lb./ac.

(ii) 173.3 lb./ac.

(iii) Main effects of N, K and interaction NP are significant. Other main effect and interactions are not significant.

(iv) Av. yield of dry chilli in lb./ac.

	N ₀	N ₁	N ₂	Mean	K ₀	K ₁	K ₂
P ₀	578	649	893	707	635	736	750
P ₁	724	845	827	799	686	819	891
P ₂	614	792	757	720	674	664	826
Mean	639	761	825	742	665	740	821
K ₀	566	705	724				
K ₁	646	735	838				
K ₂	705	845	918				

S.E. of marginal mean = 28.9 lb./ac.

S.E. of body of table = 49.4 lb./ac.

Crop :- Chilli.

Ref :- Ms. 51(21)

Site :- Chillies Breeding Stn. Devihosur.

Type :- 'M'.

Object :- To find-out the effect of N, P and K in varying doses on chilli crop

1. BASAL CONDITIONS :

(i) (a) Nil (b) Ragi, Rala, Kulthi (c) Nil (ii) (a) Light red to medium black. (b) Refer soil analysis, Devihosur. (iii) 5.6.6.1951/22, 28.7.1951. (iv) (a) Ploughing, levelling etc., (b) N.A. (c) 1 lb./ac. (d) 2½' each between rows and plants (e) N.A. (v) 5 C.L. of F.Y.M./ac. applied in June 1951. (vi) N.A. (vii) Rainfed. (viii) Interculturing, gap filling, weeding. (ix) N.A. (x) 17.11.51 ; 30.12.51 ; 14.2.1952.

2. TREATMENTS :

All combinations of (1), (2) & (3)

(1) 3 levels of N : N₀=0, N₁=15 and N₂=30 lb./ac.(2) 3 levels of P₂O₅ : P₀=0, P₁=15 and P₂=30 lb./ac.(3) 3 levels of K₂O : K₀=0, K₁=15 and K₂=30 lb./ac.N as A/S top dressed on 17.9.51 ; P₂O₅ as Super applied on 26.9.51 and K₂O as Pot. Sul. on 16.9.51.

3. DESIGN :

(i) 3³ Fact. in R.B.D. (ii) (a) 27 (b) N.A. (iii) 4 (iv) (a) 40'×25' (b) 30'×15' (v) 5' all round (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Chillies yield. (iv) (a) 1949-53 (b) No. (c) N.A. (v) (a) None (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

(i) 378 lb./ac.

(ii) 119.1 lb./ac.

(iii) Main effects and interactions are not significant.

(iv) Av. yield of dry chillies in lb./ac.

	N ₀	N ₁	N ₂	Mean	K ₀	K ₁	K ₂
P ₀	412	385	425	407	438	381	403
P ₁	397	333	351	360	334	373	375
P ₂	347	371	380	366	417	377	304
Mean	385	363	385	378	396	377	360
K ₀	391	353	445				
K ₁	384	392	356				
K ₂	381	345	355				

S.E. of marginal mean = 19.8 lb./ac.

S.E. of body of table = 33.8 lb./ac.

Crop :- Chilli.

Ref :- Ms. 52(50)

Site :- Chillies Breeding Stn. Devihosur.

Type :- 'M'.

Object :-To study the effect of N, P and K in varying doses on chilli crop and to find out the economic dose.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Ragi, Kulth., Savi (c) Nil (ii) (a) Light red to medium black. (b) Refer soil analysis, Devihosur (iii) 30.5.52/12.7.52. (iv) (a) Ploughing, levelling, etc. (b) N.A. (c) 1 lb./ac. (d) Between rows 2½' and between plants 2½'. (e) N.A. (v) Nil (vi) N.A. (vii) Rainfed (viii) 7 interculturings, gap filling, five weedings. (ix) N.A. (x) 18, 21, 22, 24, 25, 26 and 27-12-52, 6.2.53 ; 8.2.53.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N : $N_0=0$, $N_1=15$ and $N_2=30$ lb./ac.

(2) 3 levels of P_2O_5 : $P_0=0$, $P_1=15$ and $P_2=30$ lb./ac.

(3) 3 levels of K_2O : $K_0=0$, $K_1=15$ and $K_2=30$ lb./ac.

Top dressing on 4.10.52. - 'N' as A/S.

" " " 12. 9.52. P_2O_5 as Super and K_2O as Pot. Sul.

3. DESIGN :

(i) 3³ Fact. in R.B.D. (ii) (a) 27 (b) N.A. (iii) 4 (iv) (a) 40'×25' (b) 30'×15'. (v) 5' all round. (vi) Yes.

4. GENERAL :

(i) Growth hindered due to uneven rainfall, growth and stand not good (ii) Nil. (iii) Chillies yield (iv) (a) 1949-1953 (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 599 lb./ac.

(ii) 165 lb./ac.

(iii) Main effects and interactions are not significant.

(iv) Av. yield of dry chillies in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	587	573	635	599	575	612	609
P_1	548	590	567	568	627	517	561
P_2	591	637	668	632	648	617	631
Mean	575	600	623	599	617	583	600
K_0	518	644	628				
K_1	539	535	671				
K_2	609	621	571				

S.E. of marginal mean = 27.1 lb./ac.

S.E. of body of table = 47.4 lb./ac.

Crop :- Chilli.

Ref :- Ms. 53(115).

Site :- Chillies Breeding Stn., Devihosur.

Type :- 'M'.

Object :-To study the effect of N, P and K in various doses on chilli crop and to find out the economic dose.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Rala, Ragi, Savi and Gram (c) Nil. (ii) (a) Light red and medium black (b) Refer soil analysis, Devihosur. (iii) 3.6.53/13.7.53 (iv) (a) Ploughing, levelling, etc. (b) N.A. (c) 1 lb./ac. (d) Between rows 2½' and between plants 2½' (e) N.A. (v) Nil. (vi) Local kaddikai (vii) Unirrigated (viii) 6 interculturings and 5 weedings. (ix) N.A. (x) 30.11.1953, 23.12.1953, 15.1.54, 3.2.54 and 27.2.1954.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N : $N_0=0$, $N_1=15$ and $N_2=30$ lb./ac.

(2) 3 levels of P_2O_5 : $P_0=0$, $P_1=15$ and $P_2=30$ lb./ac.

(3) 3 levels of K_2O : $K_0=0$, $K_1=15$ and $K_2=30$ lb./ac.

N as A/S ; P_2O_5 as Super and K_2O as Pot. Sul.

Manuring done on 11.9.53. A furrow was opened with the help of wooden plough in between the plants and the manure introduced.

3. DESIGN :

(i) 3rd Fact. in R.B.D. (ii) (a) 27 (b) N.A. (iii) 4 (iv) (a) 25'×40' (b) 20'×32' (v) 4' along length and 2½' along breadth. (vi) Yes.

4. GENERAL :

(i) The plant growth was hindered due to bad distribution of rainfall (ii) The plants were showing symptoms of "Murda" disease in their earlier growth. However there was not much damage. (iii) Chillies yield (iv) (a) 1949-1953 (b) No. (c) N.A. (v) N.A. (vi) No (vii) None.

5. RESULTS :

(i) 78 lb./ac.

(ii) 25.9 lb./ac.

(iii) Main effect of N is highly significant. Other effects and interactions are not significant.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	61	74	97	77	72	79	81
P_1	76	78	91	82	77	78	91
P_2	64	79	86	76	71	73	84
Mean.	67	77	91	78			
K_0	60	77	82	73			
K_1	68	72	90	76			
K_2	72	82	103	85			

S.E. of marginal mean = 4.3 lb./ac.

S.E. of the body of table = 7.5 lb./ac.

Crop :- Chillies.

Site :- Chillies Breeding Stn. Devihosur.

Ref :- Ms. 50(15)

Type :- 'C'

Object :- To find optimum combination of spacing and number of seedlings per hill for Chillies.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) No crop. (c) Nil. (ii) (a) Light red and medium black. (b) Refer soil analysis, Devihosur (iii) 24-25.7.1950. (iv) (a) Ploughing, levelling etc. (b) N.A. (c) 1½ lb./ac. (d) & (e) As per treatments. (v) 5 C.L. of F.Y.M./ac. applied during preparatory tillage in June. Top dressing with A/S at 15 lb. N/ac. on 25.8.1950. (vi) N.A. (vii) Rainfed. (viii) 5 interculturings, gap filling, weeding. (ix) N.A. (x) Dec. 50, 2nd week ; Jan. 1st week, Feb. 1st week and April 2nd week, 51.]

2. TREATMENTS :

Main-plot treatments :-

3 spacings : $S_1=2'$, $S_2=2\frac{1}{2}'$ and $S_3=3'$.

Sub-plot treatments :-

3 levels of seedling/hill : $R_1=1$, $R_2=2$ and $R_3=3$.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/block ; 3 sub plots/main plot. (b) N.A. (iii) 6. (iv) (a) 42'×42'. (b) 30'×30'. (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Chillies. (iv) (a) 1949-1953. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 966 lb./ac.
 (ii) (a) 219.3 lb./ac.
 (b) 176.7 lb./ac.
 (iii) Only the levels of R differ significantly ; Others are not significant.
 (iv) Av. yield of dry chillies in lb./ac.

	S ₁	S ₂	S ₃	Mean.
R ₁	916	871	749	845
R ₂	1063	1006	906	992
R ₃	1079	1049	1050	1059
Mean.	1019	976	902	966

S.E. of the difference of two

- (1) main-plot treatment means = 73.1 lb./ac.
 (2) sub-plot treatment means = 59.0 lb./ac.
 (3) sub-plot treatment means at the same level of main plot treatment = 102.1 lb./ac.
 (4) main-plot treatment means at the same level of sub-plot treatment = 110.8 lb./ac.

Crop :- Chillies.

Ref :- Ms. 51 (20)

Site :- Chillies Breeding Stn. Devihosur.

Type :- 'C'.

Object :- To find out optimum combination of spacing and number of seedlings per hill for Chillies.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Ragi and Kulthi. (c) Nil. (ii) (a) Light red to medium black. (b) Refer soil analysis, Devihosur. (iii) 5.6.51/22,28,29.7.51. (iv) (a) Ploughing, levelling. (b) N.A. (c) 1½ lb./ac. (d) & (e) As per treatments. (v) C.L. of F.Y.M./ac. applied during the preparatory tillage in June 51. Top dressing with A/S at 10 lb. N/ac. applied on 17.8.51. (vi) N.A. (vii) Rainfed. (viii) Weeding, interculturing, gap filling. (ix) N.A. (x) 24.11.51 ; 27.12.51 ; 5.2.1952.

2. TREATMENTS:

Main-plot treatments :-

3 spacings : S₁=2', S₂=2½' and S₃=3',

Sub plot treatments :

3 levels of seedlings/hole : R₁=1, R₂=2 and R₃=3.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/block ; 3 sub plots/main plot. (b) N.A. (iii) 6. (iv) (a) 42'×42'. (b) 30'×30'. (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of Chillies. (iv) (a) 1949-1953. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 356 lb./ac.
 (a) 163.6 lb./ac.
 (b) 141.8 lb./ac.
 (iii) The differences in yield due to different spacings are highly significant. Others are not significant.

(iv) Av. yield of dry chillies in lb./ac.

	S ₁	S ₂	S ₃	Mean.
R ₁	367	331	194	297
R ₂	577	358	193	376
R ₃	534	348	301	395
Mean.	493	346	229	356

S.E. of difference of two

- | | |
|---|---------------|
| (1) main-plot treatment means | =54.2 lb./ac. |
| (2) sub-plot treatment means | =46.9 lb./ac. |
| (3) sub-plot treatment means at the same level of main-plot treatment | =81.8 lb./ac. |
| (4) main-plot treatment means at the same level of sub-plot treatment | =86.2 lb./ac. |

Crop :- Chillies.

Ref :- Ms. 52 (51).

Site :- Chillies Breeding Station, Devihosur.

Type :- 'C'.

Object :- To find the optimum combination of spacing and number of seedlings per hill.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) & (c) Ragi and Kulti in replications I, II, III and IV with no manuring. Maize and Kulti with 5 C.L./ac. of F.Y.M. and Nandyal Jowar with 3 C.L./ac. of manure in replications V and VI. (ii) (a) Light red to medium black soil. (b) Refer soil analysis, Devihosur. (iii) 28.8.52. (iv) (a) Ploughing, levelling, etc. (b) N.A. (c) 1½ lb./ac. (d) & (e) As per treatments. (v) 5 C.L. of F.Y.M./ac. was applied during preparatory tillage in June. (vi) N.A. (vii) Rainfed. (viii) 10 interculturings, gap filling and weeding twice. (ix) N.A. (x) 13.11.52 ; 31.12.52 ; 18.2.1953.

2. TREATMENTS :

Main-plot treatments :-

3 spacings : S₁ = 2', S₂ = 2½' and S₃ = 3'.

Sub-plot treatments :-

3 levels of seedlings/hill :- R₁ = 1, R₂ = 2 and R₃ = 3.

3. DESIGN :

(i) Split plot (ii) (a) 3 main-plots/block, 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 42' × 42' (b) 30' × 30' (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) Growth hindered due to uneven rainfall. Growth and stand not good. (ii) Nil. (iii) Yield of Chillies. (iv) (a) 1949-1953 (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 596 lb./ac.

(ii) (a) 129.2 lb./ac.

(b) 133.2 lb./ac.

(iii) The differences in yield due to spacings as well as the number of seedlings/hill are highly significant. Interaction is not significant.

(iv) Av. yield of dry chillies in lb./ac.

	S ₁	S ₂	S ₃	Mean
R ₁	585	529	343	486
R ₂	747	620	521	629
R ₃	727	683	611	674
Mean.	686	611	492	596

S.E. of the difference of two

- | | |
|--|---------------|
| 1. main-plot treatment means | =43.1 lb./ac. |
| 2. sub-plot treatment means | =44.0 lb./ac. |
| 3. sub-plot treatment means at the same level of main-plot treatment | =76.9 lb./ac. |
| 4. main-plot treatment means at the same level of sub-plot treatment | =76.0 lb./ac. |

Crop :- Chillies.

Ref :- Ms. 53 (116).

Site :- Chillies Breeding Stn. Devihosur.

Type :- 'C'.

Object :- To find the optimum combination of spacings and number of seedlings per hill for Chillies.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Fodder, Jowar and Maize (c) 3 C.L./ac. of F.Y.M. (ii) (a) Light red to medium black (b) Refer soil analysis, Devihosur. (iii) 4.6.53/21, 22.7.53 (iv) (a) Ploughing, levelling etc. (b) N.A. (c) 1½ lb./ac. (d) & (e) As per treatments (v) Nil. (vi) Chillies-801. (vii) Rainfed. (viii) 10 interculturings, 6 weedings. (ix) N.A. (x) 11.12.53 ; 6.1.54 ; 2.2.54 ; 20.2.54 ; 10.3.1954.

2. TREATMENTS :

Main-plot treatments :-

3 spacings : $S_1=2'$, $S_2=2\frac{1}{2}'$ and $S_3=3'$.

Sub-plot treatments :-

3 levels of seedlings/hill : $R_1=1$, $R_2=2$ and $R_3=3$.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/block, 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 42'×42'. (b) 30'×30'. (v) 6' all round. (vi) Yes.

4. GENERAL :

(i) The plant growth was stunted due to bad distribution of rainfall. (ii) No appreciable damage. (iii) Yield of chillies. (iv) (a) 1949-1953. (b) No. (c) Nil. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 143 lb./ac.

(ii)(a) 31.0 lb./ac.

(b) 42.6 lb./ac.

(iii) The differences in yield due to spacings and the interaction of spacings and number of seedlings/hill are significant.

(iv) Av. yield of dry chillies in lb./ac.

	S_1	S_2	S_3	Mean
R_1	113	134	124	124
R_2	219	117	125	153
R_3	168	182	111	154
Mean	166	144	120	143

S.E. of difference of two

- | | |
|--|---------------|
| 1. main-plot treatment means | =12.6 lb./ac. |
| 2. sub-plot treatment means | =17.4 " |
| 3. sub-plot treatment means at the same level of main-plot treatment | =30.0 " |
| 4. main-plot treatment means at the same level of sub-plot treatment | =27.6 " |

Crop :- Groundnut.

Ref :- Ms. 53 (136).

Site :- Agri. School Farm, Arbhavi.

Type :- 'M'.

Object :- To study the effect of micro-elements on Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) Medium black. (b) Refer soil analysis, Arbhavi. (iii) 10.7.53. (iv) (a) Ploughing, levelling, clod crushing ; harrowed by country harrow on 16.6.53, and 10.7.53. (b) Seeds drilled. (c) N.A. (d) 12". (e) -- (v) Basal manure at 4 C.L./ac. of F.Y.M. on 16.6.53. Manure mixture at 50 lb./ac. was applied on 18.8.53 as top dressing. (vi) Spanish Improved, (early). (vii) Irrigated. (viii) 4 interculturings and weeding. (ix) N.A. (x) 31.10.1953.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 2 levels of Boron :- $B_0=0$ and $B_1=4$ lb./ac.(2) 2 levels of N:n. : $M_0=0$ and $M_1=6$ lb./ac.Elements were mixed with dry earth and applied on 24.8.53 with a *moghan* attached to the implement.

3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 13'×84'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal, about 30% of normal precipitation was in June and July. The rains in the earlier stages of crop gave a set-back to the normal development of the crop. (ii) Slight attack of "Tikka" was observed. (iii) Yield of pods. (iv) (a) 1952-1954. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 768 lb./ac.
 (ii) 209.4 lb./ac.
 (iii) Main effects and interaction are not significant.
 (iv) Av. yield of pod in lb /ac.

	B ₀	B ₁	Mean
M ₀	697	847	772
M ₁	662	866	764
Mean.	679	857	768

S.E. of marginal mean = 104.7 lb./ac.
 S.E. of body of table. = 158.0 lb./ac.

Crop :- Groundnut.

Ref :- Ms. 52(63).

Site :- Agri. Res. Stn. Bailhongal.

Type :- 'M'.

Object :- To find out the effect of Boron and Manganese on Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Nilwa Jowar. (c) Nil. (ii) (a) Medium black. (b) Refer soil analysis, Bailhongal. (iii) 20.7.52. (iv) (a) Ploughing, levelling, harrowing etc. (b) Seeds drilled. (c) 80 lb/ac. (d) 1½' between rows. (e) — (v) Nil. (vi) Spanish Improved (early). (vii) Rainfed. (viii) Interculturing, weeding. (ix) N.A. (x) 2.11.1952.

2. TREATMENTS :

- Control (local method and basal dose of 4 C.L./ac. of F.Y.M.)
- Boron at 4 lb./ac.
- Mn. at 6 lb./ac.
- Boron at 4 lb./ac. + Mn. at 6 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 2. (iv) (a) 126'×13½'. (b) 120'×40½'. (v) 3' along length, 1½' along breadth. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Pod yield data. (iv) 1952—53. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 1370 lb./ac.
 (ii) 87.8 lb./ac.
 (iii) Treatment differences are not significant.
 (iv) Av. yield of pod in lb./ac.

Treatment	Av. yield.
1.	1348
2.	1400
3.	1314
4.	1417
S.E./mean	= 61.9 lb /ac.

Crop :- Groundnut.

Ref :- Ms. 53(126).

Site :- Agri. Res. Stn. Bailhongal.

Type :- 'M'.

Object :- To find out the effect of Boron and Manganese on yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) 4 C.L./ac. of F.Y.M. (ii) (a) Medium black. (b) Refer soil Analysis, Bailhongal. (iii) 28.6.53. (iv) (a) Ploughing, levelling, harrowing etc. (b) Drill sowing. (c) 80 lb./ac. (d) 12" spacing between rows. (e) N.A. (v) Nil. (vi) Spanish Improved (early). (vii) Rainfed. (viii) Interculturing, weeding. (ix) N.A. (x) 2.11.1953.

2. TREATMENTS :

1. Control (local method of 4 C.L./ac. of F.Y.M.)
2. Boron at 4 lb./ac.
3. Mn. at 6 lb./ac.
4. Boron at 4 lb./ac. + Mn. at 6 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 2. (iv) (a) 100' × 13½' (b) 96' × 10½'. (v) 2' along length, 1½' along breadth. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of "Tikka". No control measures taken. (iii) Pod yield. (iv) (a) 1952—1953 (b) No (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 749 lb./ac.
 (ii) 34.8 lb./ac.
 (iii) Treatment differences are not significant.
 (iv) Av. yield of pod in lb./ac.

Treatment	Av. yield
1.	718
2.	726
3.	851
4.	702
S.E./mean	= 24.6 lb./ac.

Crop :- Groundnut.

Ref :- Ms. 53 (170).

Site :- Agri. Res. Stn. Bijapur.

Type :- 'M'.

Object :- To find the effect of trace elements on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Cereals usually rotated with legumes. (b) Mung. (c) F.Y.M. at 5 C.L./ac. (ii) (a) Medium black. (b) Refer soil analysis, Bijapur. (iii) 1.7.1953. (iv) (a) Ploughing once in 3 years as per dry farming methods. (b) Drilling with 18", 3 coultered seed drill. (c) 80 lb./ac. (d) 18". (e) — (v) F.Y.M. at 5 C.L./ac. applied once in 3 years. (vi) Spanish ; (Early). (vii) Rainfed. (viii) Interculturing, weeding. (ix) 18.12". (1.7.53 to 10.11.53). (x) 10.11.1953.

2. TREATMENTS :

All combinations of (1) & (2)

- (1) 2 levels of Boron : $B_0=0$ and $B_1=4$ lb./ac.
 - (2) 2 levels of Mn. : $M_0=0$ and $M_1=6$ lb./ac.
- Time & method of application N.A.

3. DESIGN :

(i) 2 × 2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 2. (iv) (a) 39' × 39'. (b) 33' × 33'. (v) 3' all round (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Pod yield. (iv) (a) 1952—continued. (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 423 lb./ac.
- (ii) 66.3 lb./ac.
- (iii) Main effects and interaction are not significant.
- (iv) Av. yield of pod in lb./ac.

	B ₀	B ₁	Mean
M ₀	391	481	436
M ₁	505	313	409
Mean	448	397	423

S.E. of marginal mean. = 33.2 lb./ac.

S.E. of body of table. = 46.9 lb./ac.

Crop :- Groundnut.

Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 53(78).

Type :- 'M'.

Object :- To study the effect of P₂O₅ applied to leguminous crops on succeeding cereal crop.

1. BASAL CONDITIONS :

- (i) N.A. (b) Jowar. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar (iii) 3.7.1953.
- (iv) (a) Ploughed and harrowed 4 times before sowing. (b) Seeds drilled. (c) 80 lb./ac. (d) 12" between rows.
- (e) N.A. (v) Nil. (vi) Spanish Improved ; (early). (vii) Unirrigated. (viii) Two interculturings given during the growth period. (ix) 18.57" (3.7.53 to 20.10.53). (x) 20.10.1953.

2. TREATMENTS :

1. 0 lb. P₂O₅/ac.
 2. 50 ,, ,,
 3. 100 ,, ,,
 4. 150 lb. ,,
 5. Cotton crop.
- P₂O₅ applied as Super.

DESIGN :

- (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 42'×30'. (b) 30'×18'. (v) 6' on all sides. (vi) Yes.

4. GENERAL :

(i) Crop suffered slightly due to insufficient moisture during the growth period. (ii) Leaf-eating hairy caterpillars damaged the crop by eating away the leaves. No control measures taken. (iii) Pod yield. (iv) (a) 1949—1956. (b) No. (c) N.A. (v) N.A. (vi) There were rains at the time of harvesting of the crop and thus harvesting could not be done satisfactorily. (vii) The treatment 5 is the cotton crop which serves as a control to determine the performance of the Jowar crop which will be taken after this crop. Cotton-Jowar is the normal rotation in this tract.

5. RESULTS :

- (i) 810.3 lb./ac.
- (ii) 202.5 lb./ac.
- (iii) Treatment differences are not significant.
- (iv) Av. yield of pod in lb./ac.

Treatment	Av. yield.
1.	894.6
2.	733.3
3.	761.5
4.	851.5
5.	fallow
S.E./mean	=101.2 lb./ac.

Crop :- Groundnut.
Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 52(104).
Type :- 'M'.

Object :-To study the effect of trace elements Boron and Manganese on Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize and Tur. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 7.7.1952. (iv) (a) Ploughing, harrowing, etc. (b) Drilled (c) 80 lb./ac. (d) 12" apart. (e) —. (v) Nil. (vi) Spanish; (Early). (vii) Rainfed. (viii) Weeding. (ix) 22.08" (7.7.1952 to 13.10.1952) (x) 13.10.1952.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of Boron : $B_0=0$ and $B_1=4$ lb./ac.

(2) 2 levels of Mn. Sul. : $M_0=0$ and $M_1=6$ lb./ac.

Application of the trace elements as top dressing on 14.7.1952.

3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4 (b) N.A. (iii) 2 (iv) (a) $70' \times 24'$. (b) $60' \times 18'$. (v) 5' at the ends and 3' along the sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight attack of "Tikka". (iii) Pod yield data. (iv) (a) 1952-1955. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 1339 lb./ac.

(ii) 162.0 lb./ac.

(iii) Main effects and interaction are not significant.

(iv) Av. yield of pod in lb./ac.

	B_0	B_1	Mean.
M_0	1230	1462	1346
M_1	1341	1326	1333
Mean.	1285	1394	1339

S.E. of marginal mean. = 81.0 lb./ac.

S.E. of body of table. = 114.5 lb./ac.

Crop :- Groundnut.
Site :- Agri. Res. Stn., Dharwar.

Ref :- Ms. 53(88).
Type :- 'M'.

Object :-To study the effect of trace elements Boron and Manganese on Groundnut.

1. BASAL CONDITIONS :

(i) (a) No (b) Cotton. (c) Nil. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) 5.7.53. (iv) (a) The land was tractor ploughed and was given three harrowings. (b) Kernels drilled. (c) 80 lb./ac. (d) 12" (e) —. (v) 5 C.L./ac of F.Y.M. broadcast on 24.6.53. (vi) Spanish improved (early). (vii) Unirrigated. (viii) Crop received two interculturings and a hand weeding. (ix) 18.48" (5.7.53 to 21.10.1953). (x) 21.10.1953.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of Boron : $B_0=0$ and $B_1=4$ lb./ac.

(2) 2 levels of Mn. Sul. : $M_0=0$ and $M_1=6$ lb./ac.

3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4 (b) N.A. (iii) 2 (iv) (a) $70' \times 24'$ (b) $60' \times 18'$ (v) 5' along the length and 3' along the breadth. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Leaf-eating caterpillars and "Tikka" disease was observed. No control measures taken. (iii) Number of pods/plant and pod yield. (iv) (a) 1952. contd. (b) No. (c) N.A. (v) N.A. (vi) No. (vii) None.

5. RESULTS :

- (i) 1200 lb./ac.
 (ii) 202.9 lb./ac.
 (iii) Main effects and interaction are not significant.
 (iv) Av. yield of pod in lb./ac.

	B ₀	B ₁	Mean.
M ₀	1149	1190	1169
M ₁	1149	1311	1230
Mean.	1149	1250	1200

S.E. of marginal mean = 101.5 lb./ac.
 S.E. of body of table = 143.6 lb./ac.

Crop :- Groundnut.

Site :- College of Agri., Dharwar.

Ref. :- Ms. 53(113).

Type :- 'M'.

Object :- To study the effect of times of sulphur fertilization on the yield of Groundnut and its effect on the following non-legume (Jowar) in light soil.

1. BASAL CONDITIONS :

- (i) (a) Jowar—Groundnut. (b) Jowar. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Light soil. (b) Refer soil analysis, Dharwar. (iii) 26.6.53. (iv) (a) Ploughing, harrowing, hoeing etc. (b) N.A. (c) 80 lb./ac. (d) '12" to 18" (e) N.A. (v) Nil. (vi) Pondicherry 8, (late) (vii) Unirrigated. (viii) Weeding and interculturing. (ix) 42.80" (26.6.53 to 12.11.1953). (x) 12.11.1953.

2. TREATMENTS :

Sulphur fertilization at the rate of 100 lb./ac. during

1. Last week of February, 1953
2. " " of March, "
3. " " of April, "
4. Control.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 42'×24'. (b) 38'×20'. (v) 2' all round. (vi) Yes.

4. GENERAL :

- (i) Good. (ii) Nil. (iii) Height, spread and pod yield. (iv) (a) 1953-1955. (b) No. (c) N.A. (v) N.A. (vi) No. (vii) None.

5. RESULTS :

- (i) 656 lb./ac.
 (ii) 129.5 lb./ac.
 (iii) The treatment differences are not significant.
 (iv) Av. yield of pod in lb./ac.

Treatment	Av. yield
1.	744
2.	662
3.	618
4.	598
S.E./mean	= 52.7 lb./ac.

Crop :- Groundnut.
Site :- College of Agri., Dharwar.

Ref :- Ms. 53(114).
Type :- 'M'.

Object :—To study the effect of sulphur fertilization at different times on the yield of Groundnut and its effect on the following non-leguminous crop in medium soil.

1. BASAL CONDITIONS :

(i) (a) Jowar—Groundnut (b) Jowar (c) 5 C.L./ac. of F.Y.M. (ii) (a) Medium black (b) Refer soil analysis, Dharwar. (iii) 25.6.53 (iv) (a) Harrowing. (b) Sowing by drill. (c) 80 lb./ac. (d) 12" to 18". (e) N.A. (v) Nil. (vi) Spanish improved (early). (vii) Unirrigated (viii) Weeding, intercultivation etc. (ix) 39.95" (26.6.53 to 12.11.1953) (x) 12.11.1953.

2. TREATMENTS :

Sulphur fertilization at the rate of 100 lb./ac. during

1. Last week of February.
2. " " of March.
3. " " of April.
4. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 42'×24' (b) 38'×20' (v) 2' all round (vi) Yes.

4. GENERAL :

(i) Fair (ii) Nil. (iii) Height, spread and pod yield (iv) (a) 1952-1955 (b) No (c) N.A. (v) N.A. (vi) No (vii) Chemical analysis of soil sample shows that there is tendency towards increase in the acidity of soil as a result of sulphur fertilization ; and there is no relation between the increase in soil acidity and the time of sulphur application.

5. RESULTS :

- (i) 138 lb./a.
- (ii) 33.2 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of pod in lb./ac.

Treatment	Av. yield
1.	114
2.	137
3.	167
4.	136
S.E./mean	= 13.7 lb./ac.

Crop :-Groundnut.
Site :-Agri. Res. Stn. Hebbal.

Ref :-Ms. 51(45).
Type :-'M'.

Object :—To study the effect of placement of phosphatic manures on Groundnut.

1. BASAL CONDITIONS :

(i) (a) Generally groundnut or pulses-fallow-ragi. (b) Ragi. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis, Hebbal. (iii) 26.7.1951. (iv) (a) 3 ploughings. (b) to (e) N.A. (v) F.Y.M. 2 ton/ac. (vi) Spanish, (early). (vii) Unirrigated. (viii) Usual thinning, weeding once, passing chippagunte once. (ix) 23.87" (26.7.1951 to 22.11.1951). (x) 22.11. 1951.

2. TREATMENTS :

1. Control.
2. 1 cwt./ac. of Super broadcast at surface.
3. 1 cwt./ac of Super drilled in rows at 3"-4" depth and groundnut sown later.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a), (b) 40'×75'. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Pod yield. (iv) (a) 1951—1952. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 950 lb./ac.
 (ii) 232.5 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of pod in lb./ac.

Treatment	Av. yield
1.	802
2.	1005
3.	1042
S.E./mean	= 116.2 lb./ac.

Crop :-Groundnut.

Ref :-Ms. 52 (3).

Site :-Agri. Res. Stn. Hebbal.

Type :-'M'.

Object :-To find the effect of placement of phosphates on Groundnut.

1. BASAL CONDITIONS :

- (i) (a) Groundnut-Ragi. (b) Ragi. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis, Hebbal. (iii) 19.8.52. (iv) (a) 3 ploughings. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) F.Y.M. at 2 ton/ac. (vi) Spanish (early). (vii) Rainfed. (viii) Weeding once, passing chippagunte once. (ix) 11.85" (19.8.1952 to 3.12.1952). (x) 3.12.1952.

2. TREATMENTS :

1. Control.
 2. 1 cwt./ac. of Super broadcast at surface.
 3. 1 cwt./ac. of Super drilled in rows at 3" depth.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a), (b) 85' x 40'. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) N.A. (ii) N.A. (iii) Yield of pod. (iv) (a) 1951—1952. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 585 lb./ac.
 (ii) 185.9 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of pod in lb./ac.

Treatment	Av. yield.
1.	554
2.	592
3.	608
S.E./mean	= 92.9 lb./ac.

Crop :-Groundnut.

Ref :-Ms. 48(3).

Site :-Agri. Res. Stn. Hebbal.

Type :-'M'.

Object :-To find the effect of inorganic catalyst on Groundnut.

1. BASAL CONDITIONS :

- (i) (a) Groundnut generally followed by Ragi. (b) N.A. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis, Hebbal. (iii) 17.5.1948. (iv) (a) 3 ploughings. (b) to (e) N.A. (v) Nil. (vi) Spanish (early). (vii) Rainfed. (viii) Weeding, interculturing. (ix) About 20" (17.5.1948 to 21.9.1948). (x) 18/21.9.1948.

2. TREATMENTS :

1. Inorganic catalyst product at 40 lb./ac.
2. " " " , 60 lb./ac.
3. " " " 80 lb./ac.
4. Ferrous Sulphate " 28 lb./ac.
5. Control.

Chemicals were mixed with compost which was applied at the rate of 2 ton/ac. Groundnut was sown a week after the application of chemicals.

3. DESIGN :

- (i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 34'×14'. (b) 32'×12'. (v) 1' all round. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield of pod. (iv) (a) 1948—49. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Expt. failed in the year 1949.

5. RESULTS :

- (i) 833 lb./ac.
(ii) 109.9 lb./ac.
(iii) The differences in yield due to treatments are not significant.
(iv) Av. yield of groundnut pod in lb./ac.

Treatment	Av. yield.
1.	838
2.	817
3.	839
4.	850
5.	738
S.E./mean	= 49.1 lb./ac.

Crop :- Groundnut.

Site :- Agri. Res. Stn. Hebbal.

Ref :- Ms. 51(46).

Type :- 'M'.

Object :- To study the effect of lime and phosphate on Groundnut.

1. BASAL CONDITIONS :

- (i) (a) Groundnut followed by Ragi. (b) Ragi. (c) Urine steeping experiment. (ii) (a) Sandy soil. (b) Refer soil analysis, Hebbal. (iii) 28.7.1951. (iv) (a) 3 ploughings. (b) to (e) N.A. (v) F.Y.M. at 2 ton/ac. applied uniformly to all plots. (vi) Erect variety ; Early (vii) Unirrigated. (viii) Weeding once, passing chippagunte once. (ix) 23.8.51 (28.7.51. to 8.12.1951). (x) 7, 8.12.1951.

2. TREATMENTS :

All combinations of (1) & (2)

- (1) Two levels of Lime : $L_0=0$ and $L_1=100$ lb./ac.
- (2) 2 levels of Super : $S_0=0$ and $S_1=112$ lb./ac.

Lime spread uniformly over the surface and harrowed in. Super broadcast.

3. DESIGN :

- (i) 2×2 Fact. in R.B.D. (ii) (a) 4 (b) N.A. (iii) 5 (iv) (a) & (b) 30'×33' (v) No. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield of pod. (iv) (a) 1951-1953. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 628 lb./ac.
(ii) 89.6 lb./ac.

- (iii) The main effect of lime is significant; and that of Super is highly significant. Interaction is not significant.
 (iv) Av. yield of pod in lb./ac.

	L ₀	L ₁	Mean
S ₀	508	539	523
S ₁	807	660	733
Mean	657	599	628

S.E. of body of table = 40.1 lb./ac.
 S.E. of marginal mean = 28.3 lb./ac.

Crop :- Groundnut.
 Site :- Agri. Res. Stn. Hebbal

Ref :- Ms. 52 (4).
 Type :- 'M'.

Object :- To find the effect of lime and phosphate on Groundnut.

1. BASAL CONDITIONS :

- (i) (a) Groundnut, Ragi. (b) Ragi. (c) N.A. (ii) (a) Red sandy loam. (b) Refer soil analysis, Hebbal. (iii) 16.8.1952. (iv) (a) 3 ploughings. (b) to (e) N.A. (v) F.Y.M. at 4 C.L./ac. (vi) Spanish (early). (vii) Rainfed. (viii) Weeding once, passing chippagunte once. (ix) 12.10". (16.8.52 to 4.12.1952). (x) 4.12.1952.

2. TREATMENTS :

All combinations of (1) and (2)

- (1) 2 levels of Lime :- L₀=0 and L₁=100 lb./ac.
 (2) 2 levels of Super :- S₀=0 and S₁=112 lb./ac.

3. DESIGN :

- (i) 2 × 2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a), (b) 62' × 30'. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) N.A. (ii) N.A. (iii) Yield of groundnut pod. (iv) (a) 1951-1953. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Expt. failed in the year 1953.

5. RESULTS :

- (i) 402 lb./ac.
 (ii) 84.1 lb./ac.
 (iii) Main effects and interaction are not significant.
 (iv) Av. pod yield in lb./ac.

	L ₀	L ₁	Mean
S ₀	379	389	384
S ₁	418	422	420
Mean	399	406	402

S.E. of marginal mean = 26.6 lb./ac.
 S.E. of body of table = 37.5 lb./ac.

Crop :- Groundnut.
Site :- "Rama Krishna" Shala.

Ref :- Ms. 52 (130).
Type :- 'M'.

Object :- To find the effect of placement of phosphate for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Red soil. (b) Refer soil analysis, Rama Krishna Shala. (iii) 20.7.52. (iv) (a) Ploughing, harrowing. (b) to (e) N.A. (v) F.Y.M. at 2 ton/ac. (vi) Spanish ; (Early). (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) 1.12.1952.

2. TREATMENTS :

1. Control.
2. Super at 1 cwt./ac. applied at surface.
3. Super at 1 cwt./ac. applied at 3" depth.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) & (b) 1/20th ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Pod yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Records do not furnish any reason for low yields.

5. RESULTS :

- (i) 314 lb./ac
- (ii) 122.0 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of pod in lb./ac.

Treatment	Av. yield
1.	255
2.	332
3.	355
S.E./mean	= 61.0 lb./ac.

Crop :- Groundnut.
Site :- Agri. Res. Stn. Saundatti.

Ref :- Ms. 51 (70).
Type :- 'M'.

Object :- To study the different methods of application of Super to leguminous crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Saundatti. (iii) July, 1951. (iv) (a) Harrowing. (b) Drill sowing. (c) 100 lb./ac. (d) 12" between rows. 3"—6" between plants. (e) N.A. (v) Nil. (vi) Spanish groundnut ; (Early.) (vii) Unirrigated. (viii) Interculturing, weeding. (ix) 17.07. (July, 1951 to November 1951). (x) November 1951.

2. TREATMENTS :

All combinations of (1) & (2)+a Control (No manure)

- (1) 3 methods of application of Super viz ; M₁=Broadcast, M₂=Drilling in rows at 4" depth and M₃=Drilling in between rows at 4" depth.
- (2) 3 levels of P₂O₅ as Super : P₁=10, P₂=20 and P₃=30 lb./ac.
Super applied before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/40th ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Pod yield. (iv) (a) 1951-1956. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 592 lb./ac.
- (ii) 118 lb./ac.

(iii) Main effects, interaction and control vs. others are not significant.

(iv) Av. yield of groundnut pod in lb./ac.

Control = 599 lb./ac.

	M ₁	M ₂	M ₃	Mean.
P ₁	628	661	546	612
P ₂	589	575	458	541
P ₃	564	673	626	621
Mean.	594	636	653	591

S.E. of marginal mean = 34.0 lb./ac.

S.E. of body of table = 50.9 lb./ac.

Crop :- Groundnut

Ref :- Ms. 52 (118).

Site :- Agri. Res. Stn. Saundatti.

Type :- 'M'.

Object :- To study the effect of methods of application of super. to Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Saundatti. (iii) 16.7.52. (iv) (a) Ploughing harrowing. (b) drill sowing. (c) 100 lb./ac. (d) 12" between rows, 3"-6" between plants. (e) N.A. (v) Nil. (vi) Spanish groundnut (Early). (vii) Rainfed. (viii) Weeding, interculturings. (ix) 17.52nd (16.7.1952 to 20.11.1952). (x) 20.11.1952.

2. TREATMENTS :

All combinations of (1) & (2) + a Control (no manure)

(1) 2 methods of application of Super : M₁=Broadcasting M₂=Drilling in rows 4" deep and M₃=Drilling in between rows 4" deep.

(2) 3 levels of P₂O₅ : P₁=10, P₂=20 and P₃=30 lb./ac.

P₂O₅ as Super applied on 13, 14.7.52.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/40th of ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Pod yield data. (iv) (a) 1951-1956. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 544 lb./ac.

(ii) 93.2 lb./ac.

(iii) Interaction, method × level of P, alone is significant.

v) Av. yield of groundnut pod in lb./ac.

Control = 597 lb./ac.

	M ₁	M ₂	M ₃	Mean.
P ₁	572	505	541	539
P ₂	534	518	549	534
P ₃	508	618	503	543
Mean.	538	547	531	539

S.E. of marginal mean = 26.9 lb./ac.

S.E. of body of table = 46.6 lb./ac.

Crop :- Groundnut.
Site :- Agri. Res. Stn. Saundatti.

Ref :- Ms. 53(161)
Type :- 'M'.

Object :- To study the differential effect of methods of application of Super to leguminous crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Saundatti. (iii) 11, 12.7.1953. (iv) (a) Harrowing (b) Drill sowing. (c) 100 lb./ac. (d) 12" between rows, 3"—6" between plants. (e) N.A. (v) Nil. (vi) Spanish groundnut (early). (vii) Rainfed. (viii) Interculturing, weeding. (ix) 11.66" (11.7.53 to 12.11.1953). (x) 12.11.1953.

2. TREATMENTS :

All combinations of (1) and (2) + a Control (no manure).

(1) 3 methods of application of Super : M_1 =Broadcasting, M_2 =Drilling in rows 4" deep and M_3 =Drilling between in rows 4" deep.

(2) 3 levels of P_2O_5 (as Super) : $P_1=10$, $P_2=20$ and $P_3=30$ lb./ac.
Super applied on 11.7.53.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (c) N.A. (iii) 4. (iv) (a) N.A. (b) 1/40th ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight attack by aphids, dusting Gamaxene. (iii) Pod yield. (iv) (a) 1951—1956. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 445 lb./ac.

(ii) 87.1 lb./ac.

(iii) Main effects, interaction and Control vs. Others are not significant.

(iv) Av. yield of pod in lb./ac.

Control =429.

	M_1	M_2	M_3	Mean.
P_1	401	447	396	415
P_2	460	384	519	454
P_3	539	405	471	472
Mean.	467	412	462	447

S.E. of the marginal mean =25.1 lb./ac.

S.E. of body of table =43.5 lb./ac.

Crop :- Groundnut.
Site :- Agri. Res. Stn. Saundatti.

Ref :- Ms. 52(119)
Type :- 'M'.

Object :- To study the residual effect of N and P_2O_5 applied to Kharif Jowar on Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Kharif Jowar. (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Saundatti (iii) July 1952. (iv) (a) Harrowing. (b) Drill sowing. (c) 100 lb./ac. (d) 12" between rows, 3"—6" between plants. (e)—(v) Nil. (vi) Spanish (early). (vii) Rainfed. (viii) Weeding, interculturing. (ix) 17.52" (July 5 to November 1952). (x) November 1952.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 2 levels of F.Y.M. : $F_0=0$ and $F_1=5$ C.L./ac.

(2) 4 levels of N : $N_0=0$, $N_1=10$, $N_2=20$ and $N_3=30$ lb./ac.

(3) 4 levels of P_2O_5 : $P_0=0$, $P_1=10$, $P_2=20$ and $P_3=30$ lb./ac.

The treatments were applied to Kharif Jowar in 1951 and their residual effect was studied in this year.

3. DESIGN :(i) $4 \times 4 \times 2$ Fact. in R.B.D. (ii) (a) 32. (b) N.A. (iii) 3. (iv) (a) N.A. (b) $51' - 10'' \times 21'$. (v) N.A. (vi) Yes.**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Pod yield. (iv) (a) 1952—1956. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 636 lb./ac.
(ii) 98.7 lb./ac.
(iii) Main effects of P_2O_5 and F.Y.M. are significant, others are not significant.
(iv) Av. pod yield in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	P ₀	P ₁	P ₂	P ₃
F ₁	605	608	591	637	610	612	556	612	660
F ₂	655	661	640	693	662	664	627	656	702
Mean	630	635	615	665	636				
P ₀	636	650	575	692	638				
P ₁	579	618	538	630	591				
P ₂	595	635	673	634	634				
P ₃	710	635	675	703	681				

- (1) S.E. of marginal mean of N or P. = 20.1 lb./ac.
(2) S.E. of marginal mean of F.Y.M. = 14.2 lb./ac.
(3) S.E. of body of $N \times P$ table = 40.3 lb./ac.
(4) S.E. of body of F.Y.M. \times (N or P) table = 28.5 lb./ac.

Crop :- Groundnut.**Site :- Agri. Res. Stn. Saundatti.****Ref :- Ms. 53(160)****Type :- 'M'.****Object :-** To study the residual effect of N and P_2O_5 applied to previous Kharif Jowar on Groundnut.**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) Kh. Jowar. (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis Saundatti (iii) July, 1953. (iv) (a) Harrowing. (b) Drill sowing. (c) 100 lb./ac. (d) $12''$ between rows, $3'' - 6''$ between plants. (e) — (v) Nil. (vi) Spanish groundnut (early). (vii) Rainfed. (viii) Interculturing & weeding. (ix) $27.66''$ (July 1953 to Nov. 1953). (x) November, 1953.

2. TREATMENTS :

All combinations of (1), (2) & (3)

- (1) 2 levels of F.Y.M. : $F_0=0$ and $F_1=5$ C.L./ac.
(2) 4 levels of N : $N_0=0$, $N_1=10$, $N_2=20$ and $N_3=30$ lb./ac.
(3) 4 levels of P_2O_5 : $P_0=0$, $P_1=10$, $P_2=20$ and $P_3=30$ lb./ac.

The treatments were applied to kharif Jowar in 1952 and their residual effect was studied on succeeding crop of Groundnut in 1953.

3. DESIGN :(i) $2 \times 4 \times 4$ Fact. in R.B.D. (ii) (a) 32. (b) N.A. (iii) 3. (iv) (a) N.A. (b) $51' - 10'' \times 21'$. (v) N.A. (vi) Yes.**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Pod yield. (iv) (a) 1952—1956. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 560 lb./ac.
 (ii) 122 lb./ac.
 (iii) Main effects of N, P and F.Y.M. and their interactions are not significant.
 (iv) Av. yield of pod in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	P ₀	P ₁	P ₂	P ₃
F ₀	546	561	531	576	554	546	518	577	574
F ₁	545	534	637	553	567	571	566	605	526
Mean	546	547	584	565	560				
P ₀	563	527	581	565	559				
P ₁	603	521	505	541	542				
P ₂	519	625	687	533	591				
P ₃	498	517	565	621	550				

- (1) S.E. of marginal mean of N or P. =24.8 lb./ac.
 (2) S.E. of marginal mean of F.Y.M. =17.6 lb./ac.
 (3) S.E. of body of N×P table =49.7 lb./ac.
 (4) S.E. of body of F.Y.M.×(N or P) table=35.1 lb./ac.

Crop :- Groundnut.

Site :- Agri. Res. Stn. Saundatti.

Ref :- Ms. 52(I17)

Type :- 'M'.

Object :-To study the effect of rare elements Boron & Mn. applied alone or in combination to Groundnut and their effects on cereal crops.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Saundatti. (iii) 16.7.52. (iv) (a) Ploughing, harrowing. (b) Drill sowing. (c) 100 lb./ac. (d) 12" between rows; 3"-6" between plants. (e) N.A. (v) Nil. (vi) Spanish (Early). (vii) Rainfed. (viii) Weeding, interculturing. (ix) 16.52" (16.7.52 to 18.12.1952). (x) 18.12.1952.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 4 levels of Boron : B₀=0, B₁=2, B₂=4 and B₃=6 lb./ac.

(2) 4 levels of Mn : M₀=0, M₁=3, M₂=6 and M₃=9 lb./ac.

Borax and Mn applied on 29/30.7.52.

3. DESIGN :

- (i) 4×4 Fact in R.B.D. (ii) (a) 16. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/120th ac. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Pod [yield. (iv) (a) 1951—1953. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 519 lb./ac.
 (ii) 88.9 lb./ac.
 (iii) Main effects and their interaction are not significant.

(iv) Av. yield of pod in lb./ac.

	B ₀	B ₁	B ₂	B ₃	Mean
M ₀	497	531	514	594	534
M ₁	481	540	506	511	509
M ₂	510	557	502	483	513
M ₃	585	460	525	515	521
Mean	518	522	512	526	519

S.E. of the marginal mean = 18.2 lb./ac.
 S.E. of body of table = 36.3 lb./ac.

Crop :- Groundnut.

Ref :- Ms. 53(165)

Site :- Agri. Res. Stn. Saundatti.

Type :- 'M'.

Object :- To study the effect of trace elements applied to Groundnut.

1. BASAL CONDITIONS :

(i) (a) Jowar—Groundnut. (b) N.A. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Saundatti. (iii) July 1953. (iv) (a) Harrowing. (b) Drill sowing. (c) 100 lb./ac. (d) Between rows 12" ; between plants 3"—6" (e) N.A. (vi) Spanish (early). (vii) Rainfed. (viii) Weeding. (ix) 28.36" (July 53 to Nov. 1953). (x) Nov. 53.

2. TREATMENTS :

Element missing :-

1. Control (all present).
2. Bo. (Borax).
3. Mn. (Manganese).
4. Mg. (Magnesium).
5. Cu. (Copper).
6. Zn. (Zinc).
7. Co. (Cobalt).
8. Mo. (Molybdeum).
9. Si. (Silicon).
10. Fe. (Iron).

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 20' × 6'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Pod yield. (iv) (a) 1953—1955. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 662 lb./ac.
 (ii) 60.3 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of pod in lb./ac.

Treatment	Av. yield
1.	577
2.	623
3.	612
4.	748
5.	646
6.	670
7.	646
8.	657
9.	817
10.	623
S.E./mean	= 42.7 lb./ac.

Crop :- Groundnut.

Ref :- Ms. 52(44).

Site :- Agri. Res. Stn. Annigiri.

Type :- 'C'.

Object :-To find out the optimum spacing and seed rate for Groundnut.

1. BASAL CONDITIONS :

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Medium black intermixed with lime nodules and fine sandy particles. (b) Refer soil analysis, Annigiri. (iii) 28.7.52. (iv) (a) Ploughing, levelling. (b) Dibbling. (c) N.A. (d) N.A. (e) One. (v) 5 C.L./ac. of F.Y.M. (vi) Spanish, (early). (vii) Rainfed. (viii) Dibbled late as there were no rains. Gaps filled on 5.8.62. Interculturing on 16.8.52, 29.8.52 and 12.9.52. (ix) N.A. (x) 18.11.1952, 19.11.1952.

2. TREATMENTS :

Main-plot treatments :-

3 spacings : $S_1=12''$, $S_2=15''$ and $S_3=18''$.

Sub-plot treatments :-

3 seed rates : $R_1=80$, $R_2=100$ and $R_3=120$ lb./ac.**3. DESIGN :**

(i) Split plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main-plot. (iii) 6 (iv) (a) For 12" spacing : 36' x 19'; for 15" spacing : 36' x 20'; for 18" spacing : 36' x 21' (b) 30' x 15' (v) 3' along length and 2 rows along breadth. (vi) Yes.

4. GENERAL :

(i) Germination quite satisfactory. No proper development of crop was observed due to the complete failure of rains in Aug. and Sept. (ii) Nil. (iii) Pod yield. (iv) (a) 1952-54. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 625 lb./ac.

(ii) (a) 36.8 lb./ac.

(b) 47.4 lb./ac.

(iii) The differences in yield due to seed-rates are highly significant. Other effects are not significant.

(iv) Av. yield of Pod in lb./ac.

	S_1	S_2	S_3	Mean.
R_1	605	609	577	597
R_2	633	608	644	628
R_3	682	624	646	651
Mean	640	614	623	625

S.E. for the difference of any two

1. spacing means = 12.6 lb./ac.
2. seed rate means = 15.5 lb./ac.
3. seed rate means at the same level of spacing = 27.1 lb./ac.
4. spacing means at the same level of seed-rate = 25.2 lb./ac.

Crop :- Groundnut.

Ref :- Ms. 53(98).

Site :- Agri. Res. Stn. Annigiri.

Type :- 'C'

Object :-To find out optimum spacing and seedrate for the Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) No. (b) Safflower. (c) N.A. (ii) (a) Medium black intermixed with lime nodules and fine sand particles. (b) Refer soil analysis, Annigiri. (iii) 24.6.53 (iv) (a) Ploughing, levelling etc. (b) Seeds dibbled. (c), (d) N.A. (e) One seed per hill. (v) F.Y.M. at 5 C.L./ac. (vi) Spanish, (early). (vii) Unirrigated. (viii) Gaps filled on 2.7.53 and intercultured on 22.7.53 and 4.8.53 (ix) N.A. (x) 16.10.1953.

2. TREATMENTS :

Main-plot treatments :—

3 spacings : $S_1=12''$, $S_2=15''$ and $S_3=18''$.

Sub-plot treatments :—

3 seedrates : $R_1=80$, $R_2=100$ and $R_3=120$ lb./ac. of Kernel.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/block and 3 sub-plots/main-plot. (b) N.A. (iii) 6 (iv) (a) $36' \times 19'$, $36' \times 20'$, and $36' \times 21'$, for $12''$, $15''$ and $18''$ spacings respectively. (b) $30' \times 15'$ (v) $3'$ along length ; 2 rows along breadth. (vi) Yes.

4. GENERAL :

(i) Heavy and continuous rain in Sept. and Oct. '53 hindered the proper development of the pods. (ii) In the last week of Aug. browning of leaves was observed to a very serious extent and withering of plants in patches was noticed due to attack of mites. Sulphur dusting was done once. (iii) Pod yield. (iv) (a) 1952-1954. (b) No. (c) N.A. (v) (a), (b) None. (vi) No. (vii) None.

5. RESULTS :

- (i) 1800 lb./ac.
 (ii) (a) 173.3 lb./ac.
 (b) 195.5 lb./ac.
 (iii) No main effect is significant, but interaction is significant.
 (iv) Av. yield of pod in lb./ac.

	S_1	S_2	S_3	Mean.
R_1	1920	1682	1639	1747
R_2	1672	1824	1829	1775
R_3	2092	1752	1792	1878
Mean.	1894	1752	1753	1800

S.E. of difference of two

1. spacing means = 57.1 lb./ac.
 2. seedrate means = 64.9 lb./ac.
 3. seedrate means at the same level of spacing = 113.2 lb./ac.
 4. spacing means at the same level of seedrate = 108.4 lb./ac.

Crop :- Groundnut.

Site :- Agri. Res. Stn. Bailhongal.

Ref :- Ms. 52(62),

Type :- 'C'.

Object :- To find out optimum spacing and seedrate for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) 5. C.L./ac. of F.Y.M. (ii) (a) Medium black soil. (b) Refer soil analysis, Bailhongal. (iii) 19.7.52. (iv) (a) Ploughing, levelling, harrowing. (b) Drill sowing. (c) & (d) As per treatments. (e) —. (v) Nil (vi) Spanish Improved (early). (vii) Rainfed. (viii) Interculturing, weeding. (ix) N.A. (x) 2.11.52.

2. TREATMENTS :

Main-plot treatments :—

3 spacings : $S_1=12''$, $S_2=15''$ and $S_3=18''$.

Sub-plot treatments :—

3 seedrates : $R_1=80$, $R_2=100$ and $R_3=120$ lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6 (iv) (a) $36' \times 19'$; $36' \times 20'$; and $36' \times 21'$ according as the spacing is $12''$, $15''$ or $18''$ respectively. (b) $30' \times 15'$ (v) $3'$ along length ; 2 rows along breadth. (vi) Yes.

4. GENERAL ;

(i) Good. (ii) Nil. (iii) Pod yield. (iv) (a) 1952-54. (b) No. (c) N.A. (v) (a) N.A. (b) NA. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 1207 lb./ac.
 (ii) (a) 159.7 lb./ac.
 (b) 145.2 lb./ac.
 (iii) Main effects of spacing, seedrate and their interaction are not significant.
 (iv) Av. yield of pod in lb./ac.

	S ₁	S ₂	S ₃	Mean
R ₁	1262	1155	1168	1195
R ₂	1331	1246	1196	1258
R ₃	1220	1153	1142	1172
Mean.	1271	1184	1169	1207

S.E. of the difference of two

1. spacing means = 53.2 lb./ac.
 2. seedrate means = 48.4 lb./ac.
 3. seedrate means at the same level of spacing = 83.2 lb./ac.
 4. spacing means at the same level of seedrate = 86.2 lb./ac.

Crop :- Groundnut.

Ref :- Ms. 53(95).

Site :- Agri. Res. Stn., Bailhongal.

Type :- 'C'.

Object :- To find out optimum spacing and seedrate for Groundnut crop.

1. BASAL CONDITIONS :

(i) (a) No. (b) Jowar. (c) 4 C.L./ac. of F.Y.M. (ii) (a) Light soil. (b) Refer soil analysis, Bailhongal. (iii) 21.7.53. (iv) (a) One ploughing and two harrowings (b) N.A. (c) & (d) As per treatments. (e) —. (v) 4 C.L./ac. of F.Y.M. broadcast during May and June. (vi) Spanish improved. (vii) Unirrigated. (viii) Two interculturings and weeding. (ix) 22.88" (21.7.53 to 2.11.1953) (x) 2.11.1953.

2. TREATMENTS :

Main-plot treatments :—

3 spacings : S₁=12", S₂=15" and S₃=18".

Sub-plot treatments :—

3 seedrates : R₁=80, R₂=100 and R₃=120 lb./ac.

3. DESIGN :

(i) Split plot (ii) (a) 3 main-plots/block and 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) 36'×19', 36'×20 and 36'×21' for 12", 15" & 18" spacing respectively. (b) 30'×15' (v) 3' along length, 2 rows along breadth. (vi) Yes.

4. GENERAL :

(i) Normal (ii) Slight attack of "Tikka" disease was observed (iii) Pod yield (iv) (a) 1952-1955 (b) No (c) N.A. (v) N.A. (vi) The crop suffered due to continuous rain and pod setting was slightly less. (vii) Nil.

5. RESULTS :

- (i) 699 lb./ac.
 (ii) (a) 80.8 lb./ac.
 (b) 57.6 lb./ac.
 (iii) Main effect of spacing and interaction S×R are significant. Main effect of seedrate is highly significant.

(iv) Av. yield of pod in lb./ac.

	S ₁	S ₂	S ₃	Mean
R ₁	696	641	630	656
R ₂	750	635	698	694
R ₃	775	711	752	746
Mean	740	662	693	699

S.E. of difference of two

1. spacing means = 27.0 lb./ac.
2. seedrate means = 19.1 lb./ac.
3. seedrate means at the same level of spacing = 32.9 lb./ac.
4. spacing means at the same level of seedrate = 38.2 lb./ac.

Crop :- Groundnut.

Ref :- Ms. 52(122)

Site :- Agri. Res. Stn. Bijapur.

Type :- 'C'.

Object :- To find out an economic seed-rate and suitable spacing for Groundnut in this tract.

1. BASAL CONDITIONS :

(i) (a) Cereals are usually rotated with legumes. (b) Jowar. (c) F.Y.M. at 5 C.L./ac. (ii) (a) Medium black. (b) Refer soil analysis, Bijapur. (iii) 11 to 13.6.52. (iv) (a) Ploughing once in three years ; two to three harrowings. (b) Drilling. (c) & (d) As per treatments. (e) N.A. (v) Nil (vi) Spanish improved (Early) (vii) Rainfed. (viii) Interculturings. (ix) 9.38" (11.6.1952 to 22.9.1952) (x) 22.9.1952.

2. TREATMENTS :

Main-plot treatments :-

3 spacings : S₁=12", S₂=15" and S₃=18"

Sub-plot treatments :-

3 seedrates : R₁=80, R₂=100 and R₃=120 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/block, 3 sub-plots/main-plot. (b) N.A. (iii) 6'. (iv) (a) 51'×19', 51'×20' & 51'×21' as per spacing of 12", 15" or 18" respectively. (b) 45'×15'. (v) 3' at the ends and 2 rows along the sides. (vi) Yes.

4. GENERAL :

(i) Germination good, crop growth not satisfactory due to uneven rainfall distribution. (ii) Nil. (iii) Pod yield. (iv) (a) 1952-continued. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 327 lb./ac.
- (ii) (a) 116.2 lb./ac.
(b) 115.4 lb./ac.
- (iii) Main effects of spacing and seed rate are not significant. Interaction is also not significant.
- (iv) Av. yield of pod in lb./ac.

	S ₁	S ₂	S ₃	Mean.
R ₁	325	362	307	331
R ₂	349	355	278	327
R ₃	358	323	288	323
Mean.	344	347	291	327

S.E. of difference of two

1. spacing means = 38.7 lb./ac.
2. seedrate means = 38.5 lb./ac.
3. seedrate means at the same level of spacing = 65.6 lb./ac.
4. spacing means at the same level of seedrate = 66.8 lb./ac.

Crop :- Groundnut.

Ref :- Ms. 53(120).

Site :- Agri. Res. Stn. Bijapur.

Type :- 'C'.

Object :- To find out an economic seed rate and suitable spacing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Cereals usually rotated with legumes. (b) Jowar. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Medium black. (b) Refer soil analysis, Bijapur. (iii) 28.6 53. (iv) (a) Ploughing once in three years. 2-3 harrowings. (b) Drill sowing. (c) & (d) As per treatments. (e) — (v) 5 C.L./ac. of F.Y.M. every third year. (vi) Spanish improved (early). (vii) Rainfed. (viii) Interculturing done on 26.8.53. (ix) 22.11" (28.6.53 to 2.11.53). (x) 2.11.53.

2. TREATMENTS :

Main-plot treatments :—

3 spacings : $S_1=12''$, $S_2=15''$ and $S_3=18''$.

Sub-plot treatments :—

3 seed rates : $R_1=80$, $R_2=100$ and $R_3=120$ lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) $51' \times 19'$, $51' \times 20'$ & $51' \times 21'$ for $12''$, $15''$, $18''$ spacings respectively. (b) $45' \times 15'$ (v) $3'$ along length ; 2 rows along breadth. (vi) Yes.

4. GENERAL :

(i) Germination satisfactory & subsequent growth of the crop was healthy due to frequent showers throughout its growing period. (ii) "Tikka" disease made its appearance on the crop at the time of its maturity. (iii) Pod yield. (iv) (a) 1952-1954. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 722 lb./ac.

(ii) (a) 78.1 ,, ,,

(b) 87.8 ,, ,,

(iii) Main effect of spacing and interaction "Spacing \times Seedrate" are significant. Main effect of seedrate is highly significant.

(iv) Av. yield of pod in lb./ac.

	S_1	S_2	S_3	Mean
R_1	561	688	638	629
R_2	706	818	681	735
R_3	858	808	749	805
Mean	708	771	689	722

S.E. of the difference of two

1. spacing means = 25.8 lb./ac.
2. seedrate means = 29.0 lb./ac.
3. seedrate means at the same level of spacing = 50.3 lb./ac.
4. spacing means at the same level of seedrate = 49.0 lb./ac.

Crop :- Groundnut.

Ref :- Ms. 52(123)

Site :- Agri. Res. Stn. Bijapur.

Type :- 'C'

Object :—To find the suitable spacing and seed-rate combination for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Cereals are rotated with legumes. (b) Jowar. (c) F.Y.M. at 5 C.L./ac. once in three years. (ii) (a) Medium black. (b) Refer soil analysis, Bijapur. (iii) 8, 9.7.1962. (iv) (a) Ploughing once in three years, 2-3 harrowings. (b) Drill sowing. (c) & (d) As per treatments. (e) N.A. (v) Nil. (vi) Pondichery-8 (Late). (vii) Rainfed. (viii) Two interculturings. (ix) 10.57" (8.7.1952 to 8.12.52). (x) 2nd, 8th December 1952.

2. TREATMENTS :

Main-plot treatments :

3 spacings : $S_1=12"$, $S_2=18"$ and $S_3=34"$.

Sub-plot treatments :

3 seed rates : $R_1=80$, $R_2=100$ and $R_3=120$ lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 6 (iv) (a) $54' \times 16'$ for $12"$ and $24"$ spacings. $54' \times 15'$ for $18"$ spacing. (b) $48' \times 12'$. (v) 3' at the ends and $1\frac{1}{2}'$ or 2' along sides. (vi) Yes.

4. GENERAL :

(i) Germination good ; crop growth not satisfactory due to uneven rainfall distribution. (ii) Slight attack of "Tikka" disease when the crop was about to mature. Control measures taken N.A. (iii) Pod yield. (iv) (a) 1952-Contd. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 902 lb./ac.

(ii) (a) 325.4 lb./ac.

(b) 180.4 lb./ac.

(iii) Main effects and interaction are not significant.

(iv) Av. yield of Pod in lb./ac.

	S_1	S_2	S_3	Mean
R_1	876	851	801	843
R_2	897	915	982	931
R_3	969	939	886	932
Mean	914	902	890	902

S.E. of the difference of two

- spacing means = 108.5 lb./ac.
- seedrate means = 60.3 lb./ac.
- seedrate means at the same level of spacing = 104.4 lb./ac.
- spacing means at the same level of seedrate = 138.0 lb./ac.

Crop :- Groundnut.

Ref :- Ms. 53 (121).

Site :- Agri. Res. Stn. Bijapur.

Type :- 'C'.

Object :—To find out a suitable spacing and seedrate for Groundnut.

1. BASAL CONDITIONS

(i) (a) Cereals rotated with legumes. (b) Jowar. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Medium black. (b) Refer soil analysis, Bijapur. (iii) 29.6.53. (iv) (a) Ploughing once in three years, 2-3 harrowings. (b) Drill sowing (c) & (d) As per treatments (e)—(v) 5 C.L./ac. of F.Y.M. every third year. (vi) Pondichery 8-(late) (vii) Rainfed. (viii) Interculturing on 26.8.53 ; weeding on 5.11.1953. (ix) 22.11" (29.6.53 to 17.12.53). (x) 11 to 13, 15 and 17.12.1953.

2. TREATMENTS :

Main-plot treatments :—

3 spacings : $S_1=12''$, $S_2=18''$ and $S_3=24''$.

Sub-plot treatments :—

3 seed rates : $R_1=80$, $R_2=100$ and $R_3=120$ lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main plots/block ; 3 sub plots/main plot. (b) N.A. (iii) 6. (iv) (a) $54' \times 16'$ for $12''$ and $24''$ spacings and $54' \times 15'$ for $18''$ spacing. (b) $48' \times 12'$. (v) 3' along length ; 2' or $1\frac{1}{2}'$ along breadth. (vi) Yes.

4. GENERAL :

(i) Germination satisfactory. Subsequent growth of the crop was also healthy due to frequent showers throughout its growing period. (ii) "Tikka" disease made its appearance at the time of maturity. (iii) Pod yield. (iv) (a) 1952-1954. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Season was wet one for the groundnut crop this year.

5. RESULTS :

- (i) 1128 lb./ac.
 (ii) (a) 89.2 „
 (b) 184.5 „
 (iii) Main effect of 'spacings' alone is significant.
 (iv) Av. yield of pod in lb./ac.

	S_1	S_2	S_3	Mean
R_1	1235	1098	990	1105
R_2	1172	1087	1130	1130
R_3	1155	1141	1145	1147
Mean	1187	1106	1088	1128

S.E. of difference of two

1. spacing means = 29.5 lb./ac.
 2. seedratemeans. = 61.3 lb./ac.
 3. seedrate means at the same level of spacing = 106.6 lb./ac.
 4. spacing means at the same level of seedrate = 91.5 lb./ac.

Crop :- Groundnut.

Ref :- Ms. 52 (94).

Site :- Agri. College Farm. Dharwar.

Type :- 'C'.

Object :—To find out the suitable spacing and seedrate for spreading variety of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) 2 C.L./ac. of F.Y.M. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) 30.7.1952. (iv) (a) Ploughing, harrowing. (b) Dibbling (c) & (d) As per treatments. (e) N.A. (v) Nil. (vi) Pondicherry-8 (Spreading). (vii) Rainfed. (viii) Interculturing twice. Interculturings being done with 6", 9" and 12" entire blade hoes. (ix) N.A. (x) 8, 9.1.53.

2. TREATMENTS :

Main-plot treatments :—

3 spacings :- $S_1=12''$, $S_2=18''$ and $S_3=24''$.

Sub-plot treatments :—

3 seed rates : $R_1=80$, $R_2=100$ and $R_3=120$ lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main plot (b) N.A. (iii) 6. (iv) (a) $16' \times 36'$, $18' \times 36'$, $20' \times 36'$ as per spacings of $12''$, $18''$ and $24''$ respectively. (b) $12' \times 32'$. (v) 2' at the ends, 2', 3' and 4' along the sides of the plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Pod yield. (iv) (a) 1952—continued. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 758 lb./ac.
 (ii) (a) 102.6 lb./ac.
 (b) 85.9 lb./ac.
 (iii) None of the effects is significant.
 (iv) Av. yield of pod in lb./ac.

	S ₁	S ₂	S ₃	Mean
R ₁	689	740	720	716
R ₂	760	791	780	777
R ₃	810	813	718	780
Mean	753	781	739	758

S.E. of the difference of two

1. spacing means = 34.2 lb./ac.
 2. seedrate means = 28.6 lb./ac.
 3. seedrate mean at the same level of spacing = 49.8 lb./ac.
 4. spacing means at the same level of seedrate = 53.0 lb./ac.

Crop :- Groundnut.

Ref :- 52 (95).

Site :- College of Agriculture Dharwar.

Type :- 'C'.

Object :- To find out the suitable spacing and seed-rate for erect variety of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) 2 C.L./ac. of F.Y.M. (ii) (a) Medium black soil. (b) N.A. (iii) 30.7.1952. (iv) (a) Ploughing, harrowing, (b) Dibbling. (c) & (d) As per treatments. (e) N.A. (v) Nil. (vi) Spanish improved. (erect.) (vii) Rainfed. (viii) Interculturing twice. (ix) N.A. (x) 15.11.1952.

2. TREATMENTS :

Main plot treatments :-

3 spacings : S₁=12", S₂=15" and S₃=18".

Sub-plot treatments :-

3 seedrates : R₁=80, R₂=100 and R₃=120 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 6. (iv) (a) 19'×36' ; 20'×36' and 21'×36' for spacings 12", 15" and 18" respectively (b) 15'×36'. (v) 2' ; 2½' and 3' respectively along the sides. (vi) Yes.

4. GENERAL:

(i) The crop growth was normal. (ii) Nil. (iii) Pod yield. (iv) (a) 1952- continued. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 501 lb./ac.
 (ii) (a) 77.4 lb./ac.
 (b) 47.5 lb./ac.
 (iii) The main effect of seed-rate is highly significant. Others are not significant.

(iv) Av. yield of pod in lb./ac.

	S ₁	S ₂	S ₃	Mean
R ₁	420	507	476	467
R ₂	516	538	499	518
R ₃	509	549	493	517
Mean.	482	531	489	501

S.E. of difference of two

- spacing means =25.8 lb./ac.
- seedrate means =15.9 lb./ac.
- seedrate means at the same level of spacing =27.4 lb./ac.
- spacing means at the same level of seedrate =34.2 lb./ac.

Crop :-Groundnut.

Ref :-Ms. 53/111)

Site :-College of Agri. Dharwar.

Type :-'C'.

Object :-To find out suitable spacing and seed-rate for erect and spreading varieties of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut-Jowar, (b) Jowar. (c) Nil. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) 28, 29.7.53. (iv) (a) Ploughing, harrowing etc. (b) N.A. (c) and (d) As per treatments. (e) N.A. (v) Nil. (vi) Spanish improved, (early). (vii) Unirrigated. (viii) Hand weeding, interculturings. (ix) 24.07" (28.7.53 to 24.11.1953. (x) 24.11.1953.

2. TREATMENTS :

Main-plot treatments :-

3 spacings : S₁=12", S₂=15", and S₃=18".

Sub-plot treatments :-

3 seed rates : R₁=80, R₂=100 and R₃=120 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/block and 3 sub-plots/main plot. (b) N.A. (iii) 6. (iv) (a) 19'×36', 20'×36' and 21'×36' as per spacings of 12", 18" and 24" respectively. (b) 15'×32'. (v) 2' along length ; 2', 2½' and 3' respectively along breadth (vi) Yes.

4. GENERAL :

(i) Due to heavy rainfall for a long time in Oct., the groundnut creepers were all rotten. The pods in soil had started germinating and the soil had set extremely hard at harvest. (ii) Nil. (iii) Pod yield. (iv) (a) 1952-1956. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) No. (vii) None.

5. RESULTS :

(i) 236 lb./ac.

(ii) (a) 48.1 lb./ac.

(b) 78.0 lb./ac.

(iii) Only the differences in yield due to the spacings are highly significant.

(iv) Av. yield of pod in lb./ac.

	S ₁	S ₂	S ₃	Mean.
R ₁	252	206	142	200
R ₂	291	273	173	245
R ₃	314	290	182	262
Mean.	286	256	166	236

S.E. of difference of two

- spacing means =16.3 lb./ac.
- seedrate means =25.4 lb./ac.
- seedrate means at the same level of spacing =44.5 lb./ac.
- spacing means at the same level of seedrate =39.9 lb./ac.

Crop :-Groundnut.
Site :-College of Agri. Dharwar.

Ref :-Ms. 53(112).
Type :-'C'

Object :-To find out suitable spacing and seed rate for erect and spreading varieties of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Groundnut-Jowar. (b) Jowar. (c) Nil. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) 26, 27.7.53, (iv) (a) Ploughing, harrowing etc. (b) N.A. (c) and (d) As per treatments. (e) N.A. (v) Nil. (vi) Pondicherry-8 (late). (vii) Unirrigated. (viii) Hand weeding, interculturings. (ix) 24.07" (26.7.53 to 22.12.1953). (x) 22, 24.12.1953.

2. TREATMENTS :

Main-plot treatments :-

3 spacings : $S_1=12''$, $S_2=18''$ and $S_3=24''$.

Sub-plot treatments :-

3 seed-rates : $R_1=80$, $R_2=100$ and $R_3=120$ lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/block and 3 sub-plots/main plot. (b) N.A. (iii) 6. (iv) (a) $16' \times 36'$, $18' \times 36'$ $20' \times 36'$ for $12''$, $18''$ and $24''$ spacings respectively. (b) $12' \times 32'$. (v) $2'$ along length ; $2'$, $2\frac{1}{2}'$, $3'$ respectively along breadth. (vi) Yes.

4. GENERAL :

(i) Due to abnormally high rainfall for a long time in Oct. the groundnut creepers were all rotten. The pods in the soil had started germinating and the soil had set extremely hard at harvest. (ii) Nil. (iii) Pod yield (iv) (a) 1952-1956. (b) No. (c) N.A. (v) (a) N.A. (b) Nil. (vi) No. (vii) None.

5. RESULTS :

(i) 207 lb./ac.

(ii) (a) 61.3 lb./ac.

(b) 57.8 lb./ac.

(iii) Spacing and seedrate effects and their interaction are not significant.

(iv) Av. yield of pod in lb./ac.

	S_1	S_2	S_3	Mean.
R_1	197	194	197	196
R_2	240	222	160	207
R_3	261	210	187	219
Mean.	232	208	182	207

S.E. of difference of two.

1. spacing means = 20.4 lb./ac.

2. seedrate means = 19.3 lb./ac.

3. seedrate means at the same level of spacing = 32.9 lb./ac.

4. spacing means at the same level of seedrate = 34.0 lb./ac.

Crop :-Groundnut.
Site :-College of Agri. Dharwar.

Ref :-Ms. 53(110).
Type :-'C'.

Object :-To determine the exact date of sowing and to find causes for high or low yields when the sowing dates deviate from the normal.

1. BASAL CONDITIONS :

(i) (a) Jowar-Groundnut. (b) Jowar. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) As under treatments. (iv) (a) Ploughing, harrowing. (b) Drill sowing. (c) 80 lb./ac. (d) $12''$ to $18''$. (e) N.A. (v) Nil. (vi) Spanish improved, (early). (vii) Unirrigated. (viii) Weeding. (ix) 39.95" (1st week of June 53 to 18th Nov. 1953). (x) 3rd, 13th and 18th Nov. 1953.

2. TREATMENTS :

Dates of sowing :—

1. 1st week of June.
2. 3rd week of June.
3. 1st week of July.
4. 3rd week of July.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 45'×24'. (b) 40'×20'. (v) 2½' along length and 2' along breadth (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, spread and pod yield. (iv) (a) 1953—1955. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) No. (vii) As there was no moisture in the 1st week of June, sowing could not be taken up as proposed and hence treatment 1 is not taken into account at the time of analysis.

5. RESULTS :

- (i) 383 lb./ac.
- (ii) 98.0 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. yield of pod in lb./ac.

Treatment	Av. yield
1.	--
2.	76.6
3.	27.7
4.	108
S.E./mean	= 39.7 lb./ac.

Crop :-Groundnut.

Site :-Agri. Res. Stn. Bijapur.

Ref :-Ms. 53 (102).

Type :-'D'.

Object :-To study the effect of hormone treatment of seed on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Cereals rotated with pulses. (b) Bajra. (c) F.Y.M. at 5 C.L./ac. once in 3 years. (ii) (a) Medium black soil. (b) Refer soil analysis, Bijapur. (iii) 2.7.53. (iv) (a) Ploughing is done once in 3 years as per dry farming method. (b) Seeds drilled with 12" spaced, 4 coultured seed drill. (c) 80 lb./ac. (d) 12". (e) — (v) F.Y.M. at 5 C.L./ac. every third year. (vi) Spanish, (early). (vii) Unirrigated. (viii) Interculturing on 28.7.53. (ix) 18.12" (2.7.53 to 9.11.53). (x) 9.11.53.

2. TREATMENTS :

1. Soaking seed in water for 20 hours.
2. " 0.00033 p.p.m. of 2-4-D for 20 hours.
3. " 0.001 " " "
4. " 0.0033 " " "
5. " 0.01 " " "
6. " 0.033 " " "
7. Untreated.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 36'×18'. (b) 30'×12'. (v) 3' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of groundnut pods. (iv) (a) 1952—1954. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) No. (vii) Unlike the usual dry seasons, this season was rather wet for groundnut crop.

5. RESULTS :

- (i) 862 lb./ac.
- (ii) 286.1 lb./ac.
- (iii) The differences in yield due to treatments are not significant.

(iv) Av. yield of pod in lb./ac.

Treatment	Av. yield
1.	1033
2.	820
3.	828
4.	775
5.	1044
6.	726
7.	805
S.E./mean	= 143.1 lb./ac.

Crop :-Safflower.

Ref :-Ms. 53(146).

Site :-Agri. Res. Stn. Dharwar.

Type :-'M'.

Object :—To determine the N, P and K requirements of Safflower so as to obtain maximum yield.

1. BASAL CONDITIONS :

(i) (a) Chinamug-Safflower. (b) Chinamug. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Medium light soil. (b) Refer soil analysis, Dharwar. (iii) 5.11.1953. (iv) (a) 4 harrowings, after the harvest of the kharif crop. (b) Dibbled. (c) N.A. (d) 2'×1'. (e) 2. (v) No. (vi) Safflower (local). (vii) Rainfed. (viii) Weeding. (ix) 36.29", (5.11.1953 to 6.4.1954). (x) 6.4.1954.

2. TREATMENTS :

1. Control.
2. 0 lb./ac. of N
3. 20 lb./ac. of N
4. 0 lb./ac. of P₂O₅
5. 20 lb./ac. of P₂O₅
6. 0 lb./ac. of K₂O
7. 40 lb./ac. of K₂O

Super ; A/S and G.N.C. and Pot. Sul. applied on 5.11.1953.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 2. (iv) (a) 40'×30'. (b) 28'×30'. (v) 6' along the row and 2 rows on one side and 3 rows on the other. (vi) Yes.

4. GENERAL :

(i) Satisfactory. There was no difference in the growth of the crop amongst various treatments. (ii) No. (iii) Yield data. (iv) (a) 1951—1954. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) and (vii) No.

5. RESULTS :

- (i) 365 lb./ac.
- (ii) 121 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of safflower in lb./ac.

Treatment	Av. yield.
Control	
(Av. of 1, 2, 4 and 6)	366
3.	214
5.	564
7.	311

S.E. of any treatment mean other than control = 85.6 lb./ac.
 S.E. of the control mean = 42.8 "
 S.E. of control vs. any other treatment mean = 95.8 "

Crop :- Gram.

Ref :- Ms. 53(86).

Site :- Agri. Res. Stn. Dharwar.

Type :- 'M'.

Object :- To determine the N, P & K requirements of Gram so as to obtain maximum yield.

1. BASAL CONDITIONS :

(i) (a) Chinamug—Gram. (b) Chinamug. (c) 5 C.L. of F.Y.M./ac. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) 5.11.53. (iv) (a) 4 harrowings. (b) Sown through drill. (c) 30 lb./ac. (d) 18". (e) N.A. (v) Nil. (vi) Gram—(chafa). (vii) Unirrigated. (viii) N.A. (ix) 36.29" (5.11.53 to 19.2.54). (x) 19.2.1954.

2. TREATMENTS :

1. Control.
2. 20 lb. N/ac. (A/S and G.N.C. in 1 : 1 ratio).
3. 20 lb. P₂O₅/ac. as Super.
4. 40 lb. K₂O/ac. as Pot. Sul.

Treatments applied on 5.11.1953.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) (a) 60'×20'. (b) 45'×12'. (v) 7½' on either side along the rows and 3 lines on both the sides. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Weight of bhusa. (iv) (a) 1951—contd. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) No. (vii) None.

5. RESULTS :

- (i) 769.6 lb./ac.
 (ii) 72.93 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield in lb./ac.

Treatment	Av. yield
1.	766.0
2.	763.1
3.	786.5
5.	752.7
S.E./mean	=41.95 lb./ac.

Crop :- Udid.

Ref :- Ms. 53(80)

Site :- Agri. Res. Stn. Dharwar.

Type :- 'M'.

Object :- To study the effect of application of P₂O₅ to leguminous crops on succeeding cereal crops.

1. BASAL CONDITIONS :

(i) (a) No. (b) Cotton. (c) Nil. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) 27.6.53. (iv) (a) The plot was harrowed two times before sowing. (b) Seeds drilled. (c) 7 lb./ac. (d) 12". (e) N.A. (v) Only fallow plots in the experiment received 5 C.L. of F.Y.M./ac. (vi) Local. (vii) Unirrigated. (viii) One interculturing and one hand weeding. (ix) 22.56" (27.6.53 to 25.9.1953). (x) 25.9.1953.

2. TREATMENTS :

1. 0 lb. P₂O₅/ac.
2. 50 " " "
3. 100 " " "
4. 150 " " "
5. Fallow.
P₂O₅ as Super.

3. DESIGN : (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 42' x 27'. (b) 30' x 15'. (v) 6' on sides. (vi) Yes.

4. GENERAL :

(i) Growth of the crop was slightly hindered due to attack of the leaf-eating caterpillars. (ii) Attacked by leaf-eating caterpillars. No control measures taken. (iii) Number of pods/plant and bhusa yield. (iv) (a) 1949-1955. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) No. (vii) None.

5. RESULTS :

- (i) 858.5 lb./ac.
 (ii) 53.99 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. yield in lb./ac.

Treatment	Av. yield
1.	793.8
2.	933.5
3-	866.4
4.	840.2
S.E./mean	= 26.99 lb./ac.

Crop :- Sweet Potato (1st crop).

Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 51(38).

Type :- 'M'.

Object :- To find the effective period for manuring of Sweet potato.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) N.A. (iv) (a) 4 ploughings with country plough. (b) Planting on ridges. (c) N.A. (d) 9". (e) N.A. (v) Basal manure at 3000 lb./ac. was applied. (vi) B. 4304. (vii) Unirrigated. (viii) Weeding one month after planting. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. Full dose of manure applied at planting time (control).
 2. Full dose of manure applied at earthing *i.e.* one month after planting,
 3. Half dose of manure applied at planting and other half dose at earthing.
- Full dose of manure : Super at 300 lb./ac. + G.N.C. at 400 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) & (b) 25' x 2½'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951—1953. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 11580 lb./ac.
 (ii) 2303.6 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of sweet potato in lb./ac.

Treatment	Av. yield.
1.	11347
2.	10476
3.	12915
S.E./mean	= 814.4 lb./ac.

Crop :- Sweet Potato (2nd crop).

Ref :- Ms. 51(39).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'.

Object :- To find the effective period for manuring of Sweet potato.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 17.11.1951. (iv) (a) 4 ploughings with country plough. (b) Planting on the ridges. (c) N.A. (d) 9". (e) N.A. (v) Basal manure at 3000 lb./ac. was applied. (vi) B. 4304 (vii) Unirrigated. (viii) Weeding, one month afterplanting. (ix) N.A. (x) 29.2.1952.

2. TREATMENTS :

1. Full dose of manure applied at the time of planting (control).
2. Full dose of manure applied at earthing (one month after planting).
3. Half dose of manure applied at planting and half dose at earthing.
Full dose of manure : Super at 300 lb./ac + G.N.C. at 400 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 16. (iv) (a), (b) 18' x 3'; (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951—1953. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 8445 lb./ac.
- (ii) 1380 lb./ac.
- (iii) The differences in yield due to treatments are highly significant.
- (iv) Av. yield of sweet potato in lb./ac.

Treatment	Av. yield
1.	9138
2.	9151
3.	7046
S.E./mean	= 345.0 lb./ac.

Crop :- Sweet Potato (1st crop).

Ref :- Ms. 52(77).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'.

Object :- To find the effective period for manuring of Sweet potato.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 8.7.1952. (iv) (a) 4 ploughings with country plough. (b) Planting on ridges. (c) N.A. (d) 9". (e) N.A. (v) Basal dose of 2500 lb./ac. of G.L. (vi) B. 4004. (vii) Rainfed. (viii) Weeding. (ix) N.A. (x) 26.10.1952.

2. TREATMENTS :

1. Full dose of manure at the time of planting (control).
2. Full dose of manure at the time of earthing on 5.8.1952.
3. Half dose of manure at the time of planting and other half dose at the time of earthing on 5.8.1952.
Full dose of manure : Ash at 3000 lb./ac. + Super at 300 lb./ac. + G.N.C. at 400 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 12. (iv) (a) 18' x 2½'; (b) 18' x 2½'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951—1953. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 13915 lb./ac.
 (ii) 2623.3 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. yield of sweet potato in lb./ac.

Treatment	Av. yield.
1.	18614
2.	6695
3.	16436
S.E./mean	= 757.2 lb./ac.

Crop :- Sweet Potato (2nd crop).

Ref :- Ms. 52(78).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'.

Object :- To find the effective period for manuring of Sweet potato.

1. BASAL CONDITIONS :

- (i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 14.11.1952.
 (iv) (a) 4 ploughings with country plough. (b) Planting on ridges (c) N.A. (d) 9". (e) N.A. (v) C.M. at 5000 lb./ac. (vi) B. 4004. (vii) Rainfed. (viii) Weeding one month after planting. (ix) N.A. (x) 25.2.1953.

2. TREATMENTS :

1. Full dose of manure applied at planting. (control).
 2. Full dose of manure applied at earthing. (one month after planting).
 3. Half dose of manure applied at planting and other half dose at earthing.

Full dose of manure : Ash at 3000 lb./ac. + Super at 300 lb./ac. + G.N.C. at 400 lb./ac.

3. DESIGN :

- (a) R.B.D. (ii) (a) 3 (b) N.A. (iii) 12 (iv) (a) 20' x 2½' (b) 20' x 2½' (v) No border kept. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951-1953. (b) No. (c) N.A. (v) (a) Not known. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 9353 lb./ac.
 (ii) 1206.8 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of Sweet potato in lb./ac.

Treatment	Av. yield
1.	9910
2.	8912
3.	9238
S.E./mean	= 348.5 lb./ac.

Crop :- Sweet Potato (1st crop).

Ref :- Ms. 53(141).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'.

Object :- To find the effective period for manuring of Sweet potato.

BASAL CONDITIONS :

- (i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 4.7.1953
 (iv) (a) 4 ploughings with country plough (b) Planting on ridges (c) N.A. (d) 9" apart. (e) N.A. (v) 3000 lb./ac. of G.L. (vi) T.S.T. White. (vii) Rainfed. (viii) Weeding one month after planting. (ix) N.A. (x) 19.10.1953.

2. TREATMENTS :

1. Full dose of manure at planting (control).
2. Full dose of manure at earthing on 4.8.1953.
3. Half dose of manure at planting and half dose at earthing on 4.8.1953.
Full dose of manure : Super at the rate of 300 lb./ac. + G.N.C. at the rate of 400 lb./ac.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 12 (iv) (a) 12' × 2½' (b) 12' × 2½'. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951—1953. (b) No. (c) N.A. (v) (a) Not known. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 12193 lb./ac.
 (ii) 2246.2 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.
 (iv) Av. yield of sweet potato in lb./ac.

Treatment	Av. yield.
1.	13858
2.	9359
3.	13363
S.E./mean	= 648.4 lb./ac.

Crop :- Sweet Potato (2nd crop).

Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 53(142).

Type :- 'M'.

Object :- To find the effective period for manuring of Sweet potato.

1. BASAL CONDITIONS :

- (i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 20.10.1953.
 (iv) (a) 4 ploughings with country plough. (b) Planting on ridges. (c) N.A. (d) 9' apart. (e) N.A.
 (v) 3000 lb./ac. of G.L. applied. (vi) T.S.T. White. (vii) Rainfed. (viii) Weeding, earthing. (ix) N.A.
 (x) 30.1.1954.

2. TREATMENTS :

1. Full dose of manure at planting (control).
2. Full dose of manure at earthing.
3. Half dose of manure at planting and half dose at earthing.
Full dose of manure : Super at 300 lb./ac. + G.N.C. at 400 lb./ac.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 12 (iv) (a) 7' × 2½'. (b) 7' × 2½'. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951-1953. (b) No. (c) N.A. (v) (a) Not known. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 30424 lb./ac.
 (ii) 10853 lb./ac.
 (iii) The differences in yield due to treatments are significant.
 (iv) Av. yield of sweet potato in lb./ac.

Treatment	Av. yield.
1.	37130
2.	29248
3.	24892
S.E./mean	= 3133 lb./ac.

Crop :- Sweet Potato.

Ref :- Ms. 51(76).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'.

Object :- To determine the optimum dose of manure required for Sweet potato.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) C.M. at 2 ton/ac. + G.N.C. at 200 lb./ac. + B.M. at 100 lb./ac. + A/S at 50 lb./ac. (ii) (a) Red loam. (b) Refer soil analysis, Mangalore. (iii) 20.11.1951. (iv) (a) 4 ploughings with country plough, forming ridges. (b) Planting 9" cuttings erect. (c) N.A. (d) 9" apart, between row 2½'. (e) N.A. (v) Nil. (vi) F.B. 4004 (4 months duration). (vii) Unirrigated. (viii) Weeding, earthing up. (ix) 1.02" (2.11.1951 to 4.3.1952.). (x) 4.3.1952.

2. TREATMENTS :

Main-plot treatments :

3 levels of B.D. : B₀=No B.D. B₁=F.Y.M. at 10,000 lb./ac. & B₂=G.L. at 10,000 lb./ac.

Sub-plot Treatments :-

All combinations of (1), (2) & (3)

(1) 3 levels of N : N₀=0, N₁=50 and N₂=100 lb./ac.(2) 3 levels of K₂O : K₀=0, K₁=40 and K₂=80 lb./ac.(3) 2 levels of P₂O₅ : P₀=0, and P₁=80 lb./ac.N as A/S ; K₂O as Mur. pot : P₂O₅ as Super.

Time & method of application : N.A.

3. DESIGN :

- (i) Split plot. (ii) (a) 3 main-plots/block ; 18 sub-plots/main plot. (b) N.A. (iii) 2 (iv) (a) N.A. (b) 20' × 6'. (v) Yes. Common guard row left between 2 sub-plots ; exact dimensions N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Slight waire attack ; no control measures taken. (iii) Sweet potato yield data (iv) (a) 1951-continued with slight modification (b) No (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 8296 lb./ac.

(ii) (a) 5155 lb./ac.

(b) 2371 lb./ac.

(iii) Only main effects of N, P and K are highly significant.

(iv) Av. yield of sweet potato in lb./ac.

	B ₀	B ₁	B ₂	Mean	P ₀	P ₁	K ₀	K ₁	K ₂
N ₀	5021	5596	5679	5432	4946	5919	4802	5982	5513
N ₁	8296	9733	9506	9178	8798	9559	7751	8992	10792
N ₂	9097	11865	9876	10279	9055	11505	9468	10277	11094
K ₀	6148	833	7570	7340	7270	7411			
K ₁	8288	8659	8303	8417	7305	9528			
K ₂	7978	10232	9188	9133	8223	10043			
P ₀	6019	8979	7799	7599					
P ₁	8924	9150	8908	8994					
Mean	7471	9065	8354	8296					

S.E of the difference of two :

1. B means = 1215.1 lb./ac.
 2. N or K means = 558.9 lb./ac.
 3. P means = 456.3 lb./ac.
 4. N or K means at the same level of B = 968.1 lb./ac.
 5. B means at the same level of N or K = 1449.6 lb./ac.
 6. P means at the same level of B = 790.3 lb./ac.
 7. B means at the same level of P = 1337.6 lb./ac.
 8. S.E. of the body of N × K table = 684.4 lb./ac.
 9. S.E. of the body of P × N or P × K table = 558.8 lb./ac.

Crop :- Sweet Potato.

Ref :- Ms. 52(136).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'.

Object :- To determine the optimum dose of manure required for Sweet potato.

1. BASAL CONDITIONS :

- (i) (a) Paddy—Sweet potato—Paddy. (b) Paddy. (c) C.M. at 2 ton/ac. + G.N.C. at 200 lb./ac. + B.M. at 100 lb./ac. + A/S 50 lb. top dressing. (ii) (a) Sandy loam. (b) Refer soil analysis, Manglore. (iii) 5.7.1952. (iv) (a) 4 ploughings with country plough, forming ridges. (b) Planting 9" cuttings erectly. (c) N.A. (d) Plants 9" apart—between rows 2½'. (e) N.A. (v) Nil. (vi) F.B. 4004 V.8. (4 months duration). (vii) Unirrigated. (viii) Weeding and earthing; up after one month. (ix) 88.61" (5.7.1952 to 3.10.1952) (x) 3.10.1952.

2. TREATMENTS :

Main-plot treatments :—

3 levels of B.D. : B₀=No B.D., B₁=F.Y.M. at 10,000 lb./ac. & B₂=C.M. at 15,000 lb./ac.

Sub-plot treatments :—

All combinations of (1), (2) & (3)

(1) 3 levels of N : N₀=0, N₁=50 and N₂=100 lb./ac.(2) 3 levels of K₂O : K₀=0, K₁=80 and K₂=160 lb./ac.(3) 2 levels of P₂O₅ : P₀=0 and P₁=80 lb./ac.N as A/S ; P₂O₅ as Super & K₂O as Po.. Sul.

Time and method of application—N.A.

3. DESIGN :

- (i) Split plot. (ii) (a) 3 main-plots/block ; 18 sub-plots/main-plot. (b) N.A. (iii) 2 (iv)(a) 20'×8' (b) 20'×6' (main plot size N.A.) (v) Yes. Single common border row in between two rows. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951—being continued with slight modification. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 5105 lb./ac.
 (ii) (a) 1169 lb./ac.
 (b) 1401 lb./ac.
 (iii) Both main plot treatment and sub-plot treatment effects are significant. K effect is highly significant while no other effect is significant.
 (iv) Av. yield in lb./ac.

	B ₀	B ₁	B ₂	Mean	P ₀	P ₁	K ₀	K ₁	K ₂
N ₀	2843	6057	5634	4835	4890	4780	4560	4545	5400
N ₁	3940	6064	6599	5434	5550	5319	4462	5974	5868
N ₂	4764	4817	5558	5046	4487	5606	4091	5127	5921
K ₀	2987	4953	5173	4371	4452	4290			
K ₁	4477	5740	5430	5216	5021	5410			
K ₂	4084	6246	6859	5730	5455	6005			
P ₀	3524	5309	6095	4976					
P ₁	4174	5984	5546	5235					
Mean	3349	5646	5820	5105					

S.E. of the difference of two

1. 'B' means = 275.4 lb./ac.
2. N or K means = 330.1 lb./ac.
3. P means = 269.5 lb./ac.
4. N or K means at the same level of B = 571.9 lb./ac.
5. B means at the same level of N or K = 542.1 lb./ac.
6. P means at the same level of B = 466.8 lb./ac.
7. B means at the same level of P = 430.0 lb./ac.
8. S.E. of the body of N×K table = 404.3 lb./ac.
9. S.E. of the body of P×N or P×K table = 330.1 lb./ac.

Crop :- Sweet Potato. (1st crop)

Ref :- Ms. 53(57)

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'M'.

Object :- To determine the optimum dose of manure required for Sweet potato.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sweet potato—Paddy (b) Paddy (c) G.L. 1 ton/ac. + super 150 lb./ac. + A/S 60 lb./ac. A/S top dressed. (ii) (a) Red loam (b) Refer soil analysis, Mangalore. (iii) 4.7.53 (iv) (a) 4 ploughings with country plough (b) Planting 9" cuttings (c); (d) & (e) N.A. (v) As per treatments (vi) F.B. 4004 (vii) Unirrigated. (viii) Weeding and earthing up after one month. (ix) 16.98" (4.7.53 to 14.10.53) (x) 13th and 14.10.1953.

2. TREATMENTS :

Main-plot treatments :—

3 levels of B.D. : B_0 = No B.D. B_1 = F.Y.M. at 10,000 lb./ac., and B_2 = G.M. at 5,000 lb./ac.

Sub-plot treatments :—

All combinations of (1), (2) & (3)

(1) 3 levels of N : N_0 = 0, N_1 = 50 and N_2 = 100 lb./ac.(2) 3 levels of K_2O : K_0 = 0, K_1 = 80 and K_2 = 160 lb./ac.(3) 2 levels of P_2O_5 : P_0 = 0, and P_1 = 80 lb./ac.N as A/S ; K_2O as Pot. Sul. ; P_2O_5 as super.

3. DESIGN :

(i) Split plot (ii) (a) 3 main-plots/block and 18 sub-plots/main-plot (b) N.A. (iii) 2 (iv) (a), (b) 20' × 6' (sub-plot size). (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Germination counts, weight of vines & tuber weight. (iv) (a) 1951-continued with slight modifications. (b) No (c) N.A. (v) (a) No (b) N.A. (vi) No (vii) Nil.

5. RESULTS :

(i) 13408 lb./ac.

(ii) (a) 4169.9 lb./ac.

(b) 704.7 lb./ac.

(iii) N effect and interaction (Main × Sub) are highly significant. K effect and interaction $N \times K \times P$ are significant, while other effects are not significant.

(iv) Av. yield in lb./ac.

	B_0	B_1	B_2	Mean	P_0	P_1	K_0	K_1	K_2
N_0	9470	14550	11939	11986	11664	12308	13535	10988	11434
N_1	11450	15616	16267	14444	13719	15170	13808	14649	14875
N_2	12433	14096	14853	1394	13824	13764	11570	15427	14384
K_0	9545	15199	14170	12971	11735	14208			
K_1	11306	14965	14792	13688	14909	12967			
K_2	12501	14097	14097	13564	13063	14066			
P_0	10522	15044	13641	13069					
P_1	11713	14464	15065	13747					
Mean	11117	14754	14353	13408					

S.E. of the difference of two

1. B means = 982.9 lb./ac.
2. N or K means = 166.1 lb./ac.
3. P means = 135.6 lb./ac.
4. N or K means at the same level of B = 287.8 lb./ac.
5. B means at the same level of N or K = 489.1 lb./ac.
6. P means at the same level of B = 234.9 lb./ac.
7. B means at the same level of P = 399.3 lb./ac.
8. S.E. of the body of $N \times K$ table = 203.4 lb./ac.
9. S.E. of the body of $P \times N$ or $P \times K$ table = 166.1 lb./ac.

Crop :- Sweet Potato.

Ref :- Ms. 49(32).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'M'.

Object :- To study the effect of the trace element Boron on the development of Sweet potato tubers.

1. BASAL CONDITIONS :

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) 8.11.1949. (iv) (a) Ploughing, levelling, bund forming etc. (b) to (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated (viii) Weeding (ix) N.A. (x) 14,15.4.1950.

2. TREATMENTS :

1. No boron
2. Boron at 20 lb./ac.
3. " " 30 "
4. " " 40 "

Boron was applied on 9.10.1949.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6 (iv) (a) 26.4' × 13.2' (b) 21.12' × 10.56' (v) 2.64' along length and 1.32' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tuber yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Data N.A.

5. RESULTS :

- (i) 13397 lb./ac.
- (ii) 1989 lb./ac.
- (iii) The differences in yield due to treatments are not significant.
- (iv) Av. yield of tuber in (lb./ac.)

Treatment	Av. yield.
1.	12834
2.	13586
3.	13834
4.	13334
S.E./mean	= 812 lb./ac.

Crop :- Sweet Potato (1st crop).

Ref :- Ms. 51(37).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'C'.

Object :- To test the difference in yield due to difference in method of planting.

1. BASAL CONDITIONS :

(i) (a) Sweetpotato-Paddy-Sweet potato. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore (iii) N.A. (iv) (a) 4 ploughings with country plough. (b) Planting on ridges as per treatments. (c) N.A. (d) 9". (e) N.A. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) Weeding and earthing up one month after planting. (ix) N.A. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2) + a Control.

(1) 2 ways of planting : W_1 =Planting horizontally and W_2 =Planting vertically.(2) 2 levels of no. of tubers : $S_1=1$ and $S_2= 2$.

Control:—Planting with both ends up.

3. DESIGN .

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 6 (iv) (a) 25' × 2½' ; (b) 25' × 2½'. (v) No border kept. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951—continued. (b) No. (c) N.A. (v) (a) None (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 2230 lb./ac.
 (ii) 508.3 „
 (iii) Main effects, interaction and Control vs others are not significant.
 (iv) Av. yield of Sweet potato in lb./ac.

Control mean=2265 lb./ac.

	W ₁	W ₂	Mean.
S ₁	2178	2033	2106
S ₂	2120	2555	2338
Mean.	2149	2294	2222

S.E. of marginal mean = 146.7 lb./ac.

S.E. of the body of table = 207.5 „

Crop :- Sweet Potato. (2nd crop)

Ref:- Ms. 51(31).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'C'.

Object :- To test the difference in yield due to difference in method of planting.

1. BASAL CONDITIONS :

- (i) (a) Sweet potato-Paddy-Sweet potato. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 17.11.1951. (iv) (a) 4 ploughings with country plough, (b) Planting on ridges, as per treatments. (c) N.A. (d) 9". (e) N.A. (v) 5000 lb./ac. of C.M.+200 lb./ac. of A/S and 200 lb./ac. of Super applied on the date of planting. (vi) B₄-304 (Duration N.A.) (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) 15 and 18.2.1952.

2. TREATMENTS :

All combinations of (1) and (2)

- (1) 2 ways of planting : W₁=Planting horizontally and W₂=Planting vertically.
 (2) 2 levels of no. of tubers : S₁=1 and S₂=2

3. DESIGN :

- (i) 2x2 Fact. in R.B.D. (ii) (a) 4 (b) N.A. (iii) 12 (iv) (a) 18'x3'. (b) 18'x3'. (v) No border kept. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951-continued. (b) No. (c) N.A. (v) (a) Not known. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 8285 lb./ac.
 (ii) 1229.8 lb./ac.
 (iii) Planting horizontally vs vertically is significant. Others are not significant.
 (iv) Av. yield of sweet potato in lb./ac.

	W ₁	W ₂	Mean.
S ₁	8621	7395	8008
S ₂	8840	8285	8563
Mean.	8731	7840	8285

S.E. of marginal mean = 250.9 lb./ac.

S.E. of the body of table=354.9 „

Crop :- Sweet Potato (1st crop).
Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 52(75).
Type :- 'C'.

Object :- To test the difference in yield due to the different methods of planting.

1. BASAL CONDITIONS :

(i) (a) Sweet potato—Paddy—Sweet potato. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 8.7.1952. (iv) (a) 4 ploughings with country plough. (b) planting on the ridges. as per treatments. (c) N.A. (d) 9" apart for w_2s_1 & w_2s_2 (other details N.A.) (v) 250J lb./ac. of G.L. ; 2000 lb./ac. of Ash and 300 lb./ac. of Super were given on 7.7.52. One month after earthing up, ash at 2000 lb., G.N.C. at 250 lb., and A/S at 100 lb./ac. supplied (vi) B. 4604 (Duration N.A.) (vii) Rainfed. (viii) Weeding and earthing up, one month after planting. (ix) N.A. (x) 26.10.1952.

2. TREATMENTS ;—

All combinations of (1) & (2)

- (1) 2 ways of planting : W_1 =Planting horizontally and W_2 =Planting vertically.
(2) 2 levels of no. of tubers : $S_1=1$ and $S_2=2$

3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 8. (iv) (a) $18' \times 2\frac{1}{2}'$. (b) $18' \times 2\frac{1}{2}'$. (v) No border kept (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951-continued. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 14147 lb./ac.
(ii) 1964.1 lb./ac.
(iii) Only the effect of S_1 vs S_2 is significant.
(iv) Av. yield of sweet potato in lb./ac.

	W_1	W_2	Mean
S_1	13400	13340	13370
S_2	15306	14550	14928
Mean	14353	13945	14147

S.E. of marginal means = 491.0 lb./ac.
S.E. of body of table = 694.5 „

Crop :- Sweet Potato (2nd crop).
Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 52(76).
Type :- 'C'.

Object :- To test the difference in yield due to different methods of planting.

1. BASAL CONDITIONS :

(i) (a) Sweetpotato—Paddy—Sweetpotato. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 14.11.1952. (iv) (a) 4 ploughings with country plough. (b) Planting on ridges. (c) N.A. (d) 9". (e) N.A. (v) C.M. at 5000 lb./ac.+Ash at 300J lb./ac.+Super at 300 lb./ac.+G.N.C. at 400 lb./ac. (vi) B. 4004 (vii) Rainfed. (viii) Weeding and earthing, after. one month of planting. (ix) N.A. (x) 25.2.1953.

2. TREATMENTS :

All combinations of (1) & (2)

- (1) 2 ways of planting : W_1 =Planting horizontally and W_2 =Planting vertically.
(2) 2 levels of no. of tubers : $S_1=1$ and $S_2=2$

3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 8. (iv) (a) $20' \times 2\frac{1}{2}'$. (b) $20' \times 2\frac{1}{2}'$. (v) No border kept. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951-continued. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 11486 lb./ac.
 (ii) 1812.1 lb./ac.
 (iii) Main effects and interaction are not significant.
 (iv) Av. yield of sweet potato in lb./ac.

	W ₁	W ₂	Mean
S ₁	11503	11530	11517
S ₂	11353	11557	11455
Mean	11428	11544	11486

S.E. of the marginal mean = 453.0 lb./ac.
 S.E. of the body of table = 640.6 „

Crop :- Sweet Potato (1st crop).

Ref :- Ms. 53(140).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'C'.

Object :- To test the differences in yield due to the different methods of planting.

1. BASAL CONDITIONS :

(i) (a) Sweet potato—Paddy—Sweet Potato. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 5.7.1953. (iv) (a) 4 ploughings with country plough. (b) Planting on ridges as per treatments. (c) N.A. (d) 9". (e) N.A. (v) Nil. (vi) T.S.T. White. (vii) Rainfed. (viii) Weeding and earthing, one month after planting. (ix) N.A. (x) 19.10.1953.

2. TREATMENTS :

All combinations of (1) & (2)

- (1) 2 ways of planting : W₁=Planting horizontally and W₂=Planting vertically.
 (2) 2 levels of no. of tubers : S₁=1 and S₂=2.

3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 8. (iv) (a) 12'×2½'. (b) 12'×2½'. (v) No border kept. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951-continued. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) 16734 lb./ac.
 (ii) 1531.2 lb./ac.
 (iii) Main effects of 'S₁ vs S₂' is highly significant while that of 'W₁ vs W₂' is significant. Interaction is not significant.
 (iv) Av. yield of sweet potato in lb./ac.

	W ₁	W ₂	Mean
S ₁	15246	16670	15958
S ₂	16914	18105	17509
Mean	16080	17388	16734

S.E. of marginal mean = 328.8 lb./ac.
 S.E. of the body of table = 541.3 „

Crop :- Sweet Potato (2nd crop).
Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 53(139).
Type :- 'C'.

Object :- To test the differences in yield due to different methods of planting.

1. BASAL CONDITIONS :

(i) (a) Sweetpotato—Paddy—Sweet potato, (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 20.10.1953. (iv) (a) 4 ploughings with country plough. (b) Planting on ridges as per treatments. (c) N.A. (d) 9". (e) N.A. (v) 5000 lb./ac. of C.M.+200 lb./ac. of A/S+200 lb./ac. of Super applied on the date of planting. (vi) T.S.T. White. (vii) Rainfed. (viii) Weeding and earthing up, one month after planting. (ix) N.A. (x) 30.1.54

2. TREATMENTS :

All combinations of (1) & (2)

(1) 2 ways of planting : W_1 =Planting horizontally and W_2 =Planting vertically.

(2) 2 levels of no. of tubers : $S_1=1$ and $S_2=2$

3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 8. (iv) (a) $7' \times 2\frac{1}{2}'$. (b) $7' \times 2\frac{1}{2}'$. (v) No border kept. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Sweet potato yield data. (iv) (a) 1951-continued. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

(i) 3836 lb./ac.
(ii) 999.7 lb./ac.
(iii) Main effects and interaction are not significant.
(iv) Av. yield of sweet potato in lb./ac.

	W_1	W_2	Mean.
S_1	4220	3772	3996
S_2	3442	3909	3676
Mean.	3831	3840	3836

S E. of marginal means = 249.9 lb./ac.

S E. of the body of table = 353.3 „

Crop :- Sweet Potato (1st crop).
Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 52(36),
Type :- 'C'.

Object :- To test the differences in yield due to different methods of planting.

1. BASAL CONDITIONS :

(i) (a) Sweet potato-Paddy. (b) Paddy. (c) 2 ton./ac. of C.M.+G.N.C. 200 lb./ac.+B.M. 100 lb./ac.+A/S 50 lb./ac. as top dressing. (ii) (a) Red loam. (b) Refer soil analysis, Mangalore. (iii) 2.7.52. (iv) (a) 4 ploughings with country plough. forming trenches; applying manure and forming ridges (b) Planting. (c) N.A. (d) $9' \times 28'$. (e) N.A. (v) 5000 lb./ac. of C.M.+2000 lb./ac. of ash. applying before ridging in trenches. A/S one month after planting at 112 lb./ac. (vi) Sulanthi Chubath (4 months duration). (vii) Rainfed. (viii) Weeding and earthing up one month after planting. (ix) 88.61" (2.7.52 to 2.10.52). (x) 2.10.1952.

2. TREATMENTS :

1. Planting erect.
2. Planting horizontally.

3. DESIGN :

- (i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 20'×10'. (b) 20'×7½'. (v) Yes. one row between plots. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Germination counts, weight of vines & tuber weight. (iv) (a) 1952-continued with slight modifications. (b) No. (c) N.A. (v) (a) No. (b) No. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 5121 lb./ac.
 (ii) 370.8 lb./ac.
 (iii) Treatment difference is highly significant.
 (iv) Av. yield of sweet potato in lb./ac.

Treatment	Av. yield.
1.	4834
2.	5409
S.E./mean	= 107.0 lb./ac.

Crop :- Sweet Potato (2nd crop)

Ref :- Ms. 52(37).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'C'.

Object :- To test the differences in yield due to different methods of planting.

1. BASAL CONDITIONS :

- (i) (a) Paddy-Sweet potato. (b) Paddy. (c) C.M. 1 ton/ac.+Super 150 lb./ac.+A/S 60 lb./ac. (ii) (a) Red loam. (b) Refer soil analysis, Mangalore. (iii) 7.11.52. (iv) (a) Ploughings with country plough, forming trenches, applying manure and forming ridges. (b) Planting. (c) N.A. (d) 2½' spacing between rows. (e) N.A. (v) 5000 lb./ac. of C.M.+2000 lb./ac. of ash. Ash/applied before ridging trenches. A/S one month after planting at 112 lb./ac. (vi) F.B. 4004 (4 months duration). (vii) Irrigated. (viii) Weeding and earthing up one month after planting. (ix) 0.61" (7.11.52 to 5.3.53). (x) 5.3.53.

2. TREATMENTS :

1. Planting 9" cuttings, single, erect on ridges 9" apart.
 2. Planting 9" cuttings, single with middle portion in the soil and ends above, 9" apart.

3. DESIGN :

- (i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 20'×10'. (b) 20'×7½'. (v) Yes. One row between plots. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Germination counts, weight of vines.& tuber weight. (iv) (a) 1952-continued (b) No. (c) N.A. (v) (a) No. (b) No. (vi) & (vii) Nil.

5. RESULTS :

- (i) 9750 lb./ac.
 (ii) 1919 lb./ac.
 (iii) The difference in yield due to treatments is not significant.
 (iv) Av. yield of Sweet potato in lb./ac.

Treatment	Av. yield.
1.	9801
2.	9700
S.E./mean	= 553.7 lb./ac.

Crop :- Sweet Potato. (1st crop).

Ref :- Ms. 53(66).

Site :- Paddy Breeding, Stn. Mangalore.

Type :- 'C'.

Object :- To test the differences in yield due to different methods of planting.

1. BASAL CONDITIONS :

- (i) (a) Sweet potato-Paddy-Sweet potato. (b) Paddy. (c) G.L. 1ton/ac.+Super 130 lb./ac.+A/S 60 lb./ac.
 (ii) (a) Red loam. (b) Refer soil analysis, Mangalore. (iii) 5.7.53. (iv) (a) 4 ploughings with country plough. (b) Planting 5" cuttings on ridges. (c). (d) & (e) N.A. (v) 5000 lb./ac. F.Y.M.+200 lb./ac. Ash +A/S 112 lb./ac. one month after planting as top dressing. (vi) T.S.T-White. (vii) Unirrigated. (viii) Weeding and earthing up after one month. (ix) 106.98" (5.7.53 to 11.10.53). (x) 10 and 11.10.53.

2. TREATMENTS :

1. Horizontal planting.
2. Erect planting.

3. DESIGN :

- (i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 20' x 10'. (b) 18' x 7½'. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Germination counts & weight of vines and tuber weight. (iv) (a) 1952-contd. (b) No. (c) N.A. (v) (a) No. (b) No. (vi) No. (vii) None.

5. RESULTS :

- (i) 11103 lb./ac.
 (ii) 1282.6 lb./ac.
 (iii) The difference in yield due to two plantings is not significant.
 (iv) Av. yield of Sweet potato in lb./ac.

Treatment	Av. yield.
1.	11317
2.	10890
S.E./mean	= 370.3 lb./ac.

Crop :- Sweet Potato. (2nd crop)

Ref :- Ms. 53(67).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'C'.

Object :- To test the difference in yield due to different methods of planting.

1. BASAL CONDITIONS :

- (i) (a) Sweet potato-Paddy. (b) Paddy (c) G.L. 2 tons/ac.+Super 150 lb./ac.+A/S 100 lb./ac.
 (ii) (a) Red loam (b) Refer soil analysis, Mangalore. (iii) 31.10.53. (iv) (a) 4 ploughings with country plough (b) 9" cuttings planted on ridges (c) to (e) N.A. (v) 5000 lb./ac. of F.Y.M.+2000 lb./ac. Ash+A/S 112 lb./ac. A/S given one month after planting. (vi) T.S.T white (vii) Unirrigated (viii) Weeding and earthing up one month after planting. (ix) 9.37" (31.10.53 to 22.2.54) (x) 22.2.19 54.

2. TREATMENTS :

1. Horizontal planting.
2. Erect planting.

3. DESIGN :

- (i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 12 (iv) (a) 20' x 10' (b) 18' x 7½' (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) Nil (iii) Germination counts, weight of vines & tuber weight (iv) (a) 1952-contd. (b) No (c) N.A. (v) (a) No (b) No (vi) No (vii) Nil.

5. RESULTS :

- (i) 6654 lb./ac.
 (ii) 670.6 lb./ac.
 (iii) The difference in yield due to treatments is not significant.

(iv) Av. yield of Sweet potato in lb./ac.

Treatment	Av. yield.
1.	6756
2.	6353
S.E./mean	= 193.6 lb./ac.

Crop :- Sweet Potato. (1st crop)
 Site :- Paddy Breeding Stn. Mangalore.

Ref :- Ms. 52(34).
 Type :- 'C'.

Object :- To find out the optimum spacing for planting sweet potato.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sweet potato—Paddy (b) Paddy (c) Basal dressing of C.M. 2 ton/ac.+G.N.C. 200 lb./ac.+ B.M. 100 lb./ac. A/S at 50 lb./ac. as top dressing. (ii) (a) Laterite soil (b) Refer soil analysis, Mangalore. (iii) 22.6.1952. (iv) (a) 4 ploughings with country plough. Forming trenches and applying manure and forming ridges. (b) 9" cuttings planted erect. (c) N.A. (d) As per treatments. (e) N.A. (v) 5000 lb./ac. of C.M.+200 lb./ac. Ash applied before ridging+A/S at 112 lb./ac. applied one month after planting (vi) V. 8 (vii) Rainfed (viii) Weeding and earthing up after one month (ix) 88.61" (22.6.52 to 18.10.52) (x) 18.10.1952.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 3 spacings between plants : $P_1=6''$, $P_2=9''$ and $P_3=12''$

(2) 3 spacings between rows : $R_1=24''$, $R_2=30''$ and $R_3=36''$

3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 4 (iv) (a) N.A. (b) $30' \times 12'$ (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Weight of vines germination counts & tuber weight (iv) (a) 1952-- continued with slight modifications. (b) No. (c) N.A. (v) (a) No. (b) No. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 6706 lb./ac.

(ii) 993.9 lb./ac.

(iii) Main effects and interaction are not significant.

(iv) Av. yield of sweet potato in lb./ac.

	R_1	R_2	R_3	Mean
P_1	6519	7457	6988	6988
P_2	6709	6489	6829	6673
P_3	6330	6156	6889	6458
Mean,	6516	6701	6902	6706

S.E. of marginal mean = 286.9 lb./ac.

S.E. of the body of table = 496.9 lb./ac.

Crop :- Sweet Potato.

Ref :- 52(35).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'C'.

Object :- To find out the optimum spacing for planting Sweet potato.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sweet potato—Paddy. (b) Paddy (c) G.N.C. 300 lb./ac. + Super 150 lb./ac. + A/S 60 lb./ac.
 (ii) (a) Sandy loam. (b) Refer soil analysis, Mangalore. (iii) 6.11.1952 (iv) (a) 4 ploughings with country plough, forming trenches, then applying manure and forming ridges. (b) Planting 6" apart, erect planting of 9" cuttings. (c) —. (d) As per treatments. (e) N.A. (v) 5000 lb./ac. C.M. + 200 lb./ac. Ash applied before ridging + A/S 112 lb./ac. one month after planting (vi) V.8 (vii) Irrigated (viii) Weeding and earthing up one month after planting. (ix) C.61" (6.11.1952 to 4.3.1953) (x) 4.3.1953.

2. TREATMENTS :

All combinations of (1) & (2)

(1) 3 spacings between plants : $P_1=6"$, $P_2=9"$ and $P_3=12"$ (2) 3 spacings between rows : $R_1=24"$, $R_2=30"$ and $R_3=36"$

3. DESIGN :

(i) 3 × 3 Fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 4 (iv) (a) N.A. (b) 30' × 12'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Weight of vines, germination counts & tuber weight. (iv) (a) 1952-continued (with slight modifications). (b) No. (c) N.A. (v) (a) No (b) No (vi) Nil (vii) Nil.

5. RESULTS :

(i) 12149 lb./ac.

(ii) 3017.0 lb./ac.

(iii) Main effect of spacings between plants alone is significant.

(iv) Av. yield of sweet potato in lb./ac.

	R_1	R_2	R_3	Mean
P_1	14368	14414	12531	13771
P_2	11374	10346	14671	12130
P_3	12962	10111	8568	10547
Mean	12901	11624	11923	12149

S.E. of marginal means = 870.9 lb./ac.

S.E. of the body of table = 1508.8 lb./ac.

Crop :- Sweet Potato (1st crop)

Ref :- Ms. 53(68).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'C'

Object :- To find the optimum spacing for Sweet potato.

1. BASAL CONDITIONS :

(i) (a) Sweetpotato-Paddy. (b) Paddy. (c) G.L. 1 ton/ac. + Super 150 lb./ac. + A/S 60 lb./ac. (ii) (a) Red loam. (b) Refer soil analysis, Mangalore. (iii) 2.7.53. (iv) (a) 4 ploughings with country plough. (b) Planting 9" cuttings or ridges. (c) N.A. (d) As per treatments. (e) N.A. (v) 5000 lb./ac. F.Y.M. + 2000 lb./ac. of ash + 112 lb./ac. A/S applied one month after planting. (vi) FB 4004 (vii) Unirrigated. (viii) Weeding and earthing up one month after planting. (ix) 106.98" (2.7.53 to 19.9.53) (x) 19.9.1953

2. TREATMENTS :

All combinations (1) & (2)

(1) 3 spacings between plants : $P_1=6"$, $P_2=9"$ and $P_3=12"$.(2) 3 spacings between rows : $R_1=24"$, $R_2=30"$, and $R_3=36"$.

3. DESIGN :

(i) 3 × 3 Fact. in R.B.D. (ii) (a) 9 (b) N.A. (iii) 4 (iv) (a) N.A. (b) 36' × 12'. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Germination count, weight of vines and of tuber. (iv) (a) 1952-contd. (b) No. (c) N.A. (v) (a) Nil. (b) No. (vi) No. (vii) Nil.

5. RESULTS :

- (i) 14561 lb./ac.
 (ii) 529.4 lb./ac.
 (iii) Main effects and interaction are not significant.
 (iv) Av. yield of tuber in lb./ac.

	R ₁	R ₂	R ₃	Mean
P ₁	14770	15435	14278	14828
P ₂	14966	13499	14429	14298
P ₃	14303	14951	14414	14558
Mean.	14681	14628	14374	14561
S.E. of marginal mean				=152.8 lb./ac.
S.E. of body of table				=264.7 lb./ac.

Crop :- Sweetpotato (2nd crop).

Ref :-Ms. 53(69).

Site :- Paddy Breeding Stn. Mangalore.

Type :- 'C'.

Object :- To find out the optimum spacing for Sweet potato.

1. BASAL CONDITIONS :

- (i) (a) Sweetpotato-Paddy. (b) Paddy. (c) G.L. 2 ton/ac.+Super 150 lb./ac.+A/S 100 lb./ac. (ii) (a) Red loam. (b) Refer soil analysis, Mangalore. (iii) 5.11.53. (iv) (a) 4 ploughings with country plough. (b) 9" cuttings planted on ridges. (c) N.A. (d) As per treatments. (e) N.A. (v) 5000 lb./ac. of F.Y.M.+ 2000 lb./ac. of Ash+112 lb./ac. of A/S one month after planting. (vi) F.B. 4004 V. 8. (vii) Irrigated. (viii) Weeding and earthing up after one month. (ix) 9.39" (5.11.53 to 24.2.1954) (x) 24.2.1954.

2. TREATMENTS :

All combinations of (1) & (2)

- (1) 3 spacings between plants : P₁=6", P₂=9" and P₃=12".
 (2) 3 spacings between rows : R₁=24", R₂=30" and R₃=36".

3. DESIGN :

- (i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4—(iv) (a) N.A. (b) 30'×12'. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Germination count, weight of vines and of tuber (iv) (a) 1952-contd. (b) No. (c) N.A. (v) (a) No. (b) No. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 8427 lb./ac.
 (ii) 904.2 lb./ac.
 (iii) Main effect of row spacing is highly significant. Effect of plant spacing and interaction plant×row spacing are not significant.
 (iv) Av. yield of tuber in lb./ac.

	R ₁	R ₂	R ₃	Mean
P ₁	9328	8904	9262	9165
P ₂	8780	9714	8208	8901
P ₃	6045	8030	7570	7215
Mean.	8051	8883	8347	8427

S.E. of marginal mean =261.0 lb./ac.
 S.E. of body of table =452.1 lb./ac.

Crop :—Sweetpotato.

Ref :—Ms. 52(38).

Site :—Paddy Breeding Stn. Mangalore.

Type :—'C'.

Object :— To compare the yield of vines raised from vines and tubers.

1. BASAL CONDITIONS :

(i) (a) Paddy-Sweetpotato. (b) Paddy. (c) C.M. 2 ton/ac+G.N.C. 200 lb./ac.+B.M. 100 lb./ac. +A/S 50 lb./ac. (ii) (a) Red loam. (b) Refer soil analysis, Mangalore. (iii) 28.3.52. (iv) (a) 4 ploughings with country plough, forming trenches, ridges ; applying manure. (b) Planting. (c) N.A. (d) 30' between rows. (e) N.A. (v) 5000 lb./ac. of C.M.+2000 lb./ac. of ash applied in trenches. A/S at 112 lb./ac. one month after planting (vi) I.B. 22. (vii) Rainfed. (viii) Weeding and earthing up one month after planting. (ix) 88. 61" (28.3.52 to 20.10.52) (x) 20.10.1952.

2. TREATMENTS :

1. Vines from vines.
2. Vines from tubers.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 10. (iv) (a) N.A. (b) 20'×10'. (v) One row either side of the net plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Germination count, weight of vine and weight of tuber. (iv) (a) 1952-continued. (b) No. (c) N.A. (v) (a) No. (b) No. (vi) & (vii) Nil.

5. RESULTS :

- (i) 6561 lb./ac.
- (ii) 616.8 lb./ac.
- (iii) The difference in yields due to treatments is significant.
- (iv) Av. yield of tuber in lb./ac.

Treatment	Av. yield
1.	6954
2.	169
S.E/mean	=195.2 lb./ac.

Crop :—Sweetpotato.

Ref :—Ms. 53(70).

Site :—Paddy Breeding Stn. Mangalore.

Type :—C.

Object :— To compare the yield of vines raised from vines and tubers.

1. BASAL CONDITIONS :

(i) (a) Sweetpotato-Paddy. (b) Paddy. (c) G.L. 1 ton./ac.+Super 150 lb./ac.+A/S 60 lb./ac. (ii) (a) Red loam. (b) Refer soil analysis, Mangalore. (iii) 29.6.53. (iv) (a) 4 ploughings with country plough. (b) Planting 9" cuttings. (c) N.A. (d) 2½' between rows. (e) N.A. (v) 5000 lb./ac of F.Y.M.+2000 lb./ac of Ash applied in trenches+A/S at 112 lb./ac. applied one month after planting. (vi) V-8 FB-4004. (vii) Irrigated (viii) Weeding and earthing up one month after planting. (ix) 9.37" (29.6.53 to 2.11.1953) (x) 2.11.53.

2. TREATMENT :

1. Vines from vines.
2. Vines from tubers.

3. DESIGN :

(i) R.B.D. (ii) (a) 2 (b) N.A. (iii) 12 (iv) (a)&(b) 20'×5' (v) Nil (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Germination count, weight of vines & weight of tubers. (iv) (a) 1952-contd (b) No. (c) N.A. (v) (a) Coimbatore. (b) N.A. (vi) No. (vii) Nil.

5. RESULTS :

- (i) 5275 lb./ac.
 (ii) 1102.6 lb./ac.
 (iii) The difference in yield due to treatments is not significant.
 (iv) Av. yield of tuber in lb./ac.

Treatment	Av. yield.
1.	4556
2.	5995
S.E./mean	=318.4 lb./ac.

Crop :-Lucerne.

Ref :-Ms. 50(67).

Site :-Agri. Res. Stn. Siruguppa.

Type :-'M'.

Object :—To study the effect of the trace element Boron on the growth of Lucerne.

1. BASAL CONDITIONS :

- (i)(a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) 1.1.1950.
 (iv) (a) Ploughing, levelling, bund forming etc. (b) to (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

1. No Borax.
 2. Borax at 20 lb./ac.
 3. " " 40 " "
 4. " " 80 " "
 Treatments applied on 30.12.49.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 26.4'×16' (b) 21'×10.6' (v) 2.7' all round (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Data N.A.

5. RESULTS :

- (i) 5716 lb./ac.
 (ii) N.A.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield in lb./ac.

Treatment	Av. yield
1.	5450
2.	5616
3.	6133
4.	5666
S.E./mean	= N.A.

Crop :-Korra.

Ref :- Ms. 48(37).

Site :-Agri. Res. Stn. Siruguppa.

Type :-'M'.

Object :—To find out the optimum manurial requirements of Korra.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) 11.8.48.
 (iv) (a) Ploughing, levelling, bund forming etc. (b) to (e) N.A. (v) Nil. (vi) K. 132 Korra (early). (vii) Irrigated. (viii) Interculturing, weeding. (ix) 13.95" (11.8.48 to 11.11.1948). (x) 11.11.48.

2. TREATMENTS :

- All combinations of (1) and (2) + a Control (no manure)
 (1) 3 levels of N : $N_1=20$, $N_2=40$ and $N_3=60$ lb./ac.
 (2) 3 levels of P_2O_5 : $P_0=0$, $P_1=10$ and $P_2=20$ lb./ac.

3. DESIGN :

- (i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 6. (iv) (a) $44' \times 12'$ (b) $41' \times 8'$ (v) 1.5' along length 2' along breadth. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1948—1949. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS ;

- (i) 1814 lb./ac.
 (ii) N.A.
 (iii) N.A.
 (iv) Av. yield of grain in lb./ac.

Control. = 1474 lb./ac.

	N_1	N_2	N_3	Mean
P_0	1833	1761	1883	1842
P_1	1597	1761	1965	1774
P_2	1802	1883	2129	1938
Mean.	1761	1802	1992	1852

S.E./mean = N.A.

Crop :- Korra.

Site :- Agri. Res. Stn. Siruguppa.

Ref :- Ms. 49 (31).

Type :- 'M'.

Object :—To find out the optimum dose of manure for korra in irrigated soil under Tungbhadra project.

1. BASAL CONDITIONS :

- (i)(a) Nil. (b) Vegetables. (c) N.A. (ii)(a) Heavy black clayey soil (b) Refer soil analysis, Siruguppa. (iii) 10.7.1949. (iv)(a) Ploughing, levelling, bund forming etc. (b) to (e) N.A. (v) Nil. (vi) N—1 Korra (Early). (vii) Irrigated (viii) Interculturing, weeding. (ix) 16.73" (10.7.49 to 14.10.1949). (x) 14.10.1949.

2. TREATMENTS :

- All combinations of (1) and (2) + a Control (no manure)
 (1) 3 levels of N : $N_1=20$, $N_2=40$ and $N_3=60$ lb./ac.
 (2) 3 levels of P_2O_5 : $P_0=0$, $P_1=10$ and $P_2=20$ lb./ac.

3. DESIGN :

- (i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) $44' \times 12'$. (b) $41' \times 8'$. (v) 1'—6" along length and 2' along breadth. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1948-1949. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

- (i) 1.29 lb./ac.
 (ii) 258.0 lb./ac.
 (iii) Main effect of N and control vs. ϕ others are highly significant. Others are not significant.

(iv) Av. yield of grain in lb./ac.

Control = 721 lb./ac.

	N ₁	N ₂	N ₃	Mean
P ₀	1074	1142	1238	1151
P ₁	1006	1238	1414	1219
P ₂	816	1333	1306	1152
Mean	965	1238	1319	1174

S.E. of marginal mean = 74.5 lb./ac.
 S.E. of the body of table = 129.0 "
 S.E. of control vs. any mean in the body of table = 182.4 "

Crop :-Korra.

Ref :-Ms. 52(84).

Site :-Agri. Res. Stn. Siruguppa.

Type :-'M'.

Object :—To find out the optimum dose of manure for Korra in irrigated soil under Tungabhadra project.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa.
 (iii) 5.7.1952. (iv) (a) Ploughing, levelling & bund forming. (b) to (e) N.A. (v) Nil. (vi) N-1Korra, (early).
 (vii) Irrigated. (viii) Intercultivation and weeding twice. (ix) 9.22" (5.7.1952 to 11.10.1952. (x) 11.10.1952.

2. TREATMENTS :

All combinations of (1) and (2)+a Control (no manure)
 (1) 3 levels of N : N₁=20, N₂=40 and N₃=60 lb./ac.
 (2) 3 levels of P₂O₅ : P₀=0, P₁=10 and P₂=20 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 6. (iv) (a) 6.75'×32'. (b) 3.75'×29'. (v) 1.50' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1952—1953. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2146 lb./ac.
 (ii) 177.4 lb /ac.
 (iii) Main effects of N, P and control vs. others are significant. Others are not significant.
 (iv) Av. y.eld of grain in lb./ac.

Control = 1998 lb./ac.

	N ₁	N ₂	N ₃	Mean.
P ₀	2039	2006	2163	2068
P ₁	2123	2226	2273	2207
P ₂	2118	2206	2310	2211
Mean.	2093	2146	2248	2162

S.E. of marginal mean of N or P = 41.8 lb./ac.
 S.E. of body of table = 72.4 lb./ac.
 S.E. of control vs. any other mean = 83.6 lb./ac.

Crop :- Korra.

Ref :- Ms. 53(40).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'M'.

Object :- To find out the optimum dose of manure for Korra crop in black soils of Tungabhadra project under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) No. (b) Ragi. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) 22.7.53. (iv) (a) Ploughing, levelling, bund forming etc. (b) to (e) N.A. (v) Nil. (vi) N-1 Korra. (vii) Irrigated (viii) Inter-cultivation and weeding twice. (ix) 15.79" (22.7.53 to 8.11.53), (x) 7, 8.11.1953.

2. TREATMENTS :

All combinations of (1) and (2) + a Control (no manure)

(1) 3 levels of N : $N_1=20$, $N_2=40$ and $N_3=60$ lb./ac.

(2) 3 levels of P_2O_5 : $P_0=0$, $P_1=10$ and $P_2=20$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 5. (iv) (a) $32' \times 6\frac{1}{2}'$. (b) $29' \times 3\frac{1}{2}'$ (v) $1\frac{1}{2}'$ all round the net plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) No. (b) N.A. (c) N.A. (v) (a) and (b) No. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 1110 lb./ac.

(ii) 208.6 lb./ac.

(iii) Main effects of N, P and control vs. others are highly significant. Interaction NP is not significant.

(iv) Av. yield of grain in lb./ac.

Control = 579 lb./ac.

	N_1	N_2	N_3	Mean
P_0	709	1038	1338	1028
P_1	992	1255	1559	1269
P_2	884	1225	1517	1209
Mean	862	1173	1471	1168

S.E. of marginal mean = 49.2 lb./ac.

S.E. of body of table = 85.2 lb./ac.

Crop :- Sugarcane.

Ref :- Ms. 48(28).

Site :- Agri. Res. Stn. Arabhavi.

Type :- 'R'.

Object :- To study the economic aspect of Sann green manuring in keeping the soil fertility of the canal area.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Arabhavi. (iii) 1st week of Jan., last week of May, 2nd week of Oct. (iv) (a)—(b) Sugarcane-band planting; Maize and Sann-drilling; Cotton-dibbling. (c) Sugarcane-10,000 setts/ac.; Maize-15 lb./ac. Sann-65 lb./ac. Cotton-10 lb./ac. (d) Distance between rows-Sugarcane 3'; Cotton-3'; Maize-3' with cotton; Rabi maize 18". (e) Cotton-2 seeds/dibble. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

Rotational cycle :

(1) Sann green manuring Sugarcane-Sann and Rabi Maize.

(2) Sann green manuring-Sugarcane-Maize and Cotton (mixture).

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 54'-4.5"×30'. (b) 45'-4.5"×24'. (v) 3' along breadth and 4.5' along length. (vi) Yes.

4. GENERAL ;

(i) Satisfactory. (ii) Nil. (iii) Crop yield. (iv) (a) 1944-1950. (b) As per treatments. (c) N.A. (v) (a), (b) N.A. (vi) Nil. (vii) Expt. analysed only for sugarcane.

5. RESULTS :

(i) 25.09 ton/ac.
 (ii) 3.88 ton/ac.
 (iii) The treatment difference is not significant.
 (iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	25.30
2.	24.89
S.E./mean	=1.59 ton/ac.

Crop :- Sugarcane.

Ref :- Ms. 49(43)/48(28).

Site :- Agri. Res. Stn. Arabhavi.

Type :- 'R'.

Object :- To study the economic aspect of sann green manuring in keeping the soil fertility of the canal area.

1. BASAL CONDITIONS :

(i) (a), (b) & (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Arabhavi. (iii) 1st week, of Jan. ; last week of May., 2nd week of Oct. (iv) (a)—(b) Sugarcane-hand planting ; Maize & Sann—drilling ; Cotton—dibbling. (c) Sugarcane—10,000 setts/ac. ; Maize—15 lb./ac. ; Sann—65 lb./ac. Cotton—10 lb./ac. (d) Distance between rows : Sugarcane—3' ; Cotton—3' ; Maize—3' with Cotton ; Rabi Maize—18". (e) Cotton—2 seeds/hole. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

Rotations :

1. Sann green manuring—Sugarcane—Sann & Rabi Maize.
2. Sann green manuring—Sugarcane—Maize & Cotton (mixture).

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 54'-4.5"×30'. (b) 45'-4.5"×24'. (v) 3' along breadth and 4.5' along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1944—1950. (b) As per treatments. (c) N.A. (v) (a), (b) N.A. (vi) Nil. (vii) Expt. analysed only for sugarcane crop.

5. RESULTS :

(i) 27.48 ton/ac.
 (ii) 4.05 ton/ac.
 (iii) The treatment difference is not significant.
 (iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	26.96
2.	27.99
S.E./mean	= 1.65 ton/ac.

Crop :- Sugarcane.

Ref :- Ms. 50(69)/49(43)/48(28).

Site :- Agri. Res. Stn. Arabhavi.

Type :- 'R'.

Object :-To study the economic aspect of Sanr. green manuring in keeping with the soil fertility of the canal area.

1. BASAL CONDITIONS :

(i) (a), (b) & (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Arabhavi. (iii) 1st week of Jan ; last week of May ; 2nd week of Oct. 1950. (iv) (a)—(b) Sugarcane-hand planting ; Maize & Sann—drilling, Cotton-dibbling. (c) Sugarcane—10,000 setts/ac. Maize 15 lb./ac. ; Sann 65 lb./ac. ; Cotton 10 lb./ac. (d) Distance between rows. Sugarcane—3' ; Cotton & Maize—3' ; Rabi Maize—18". (e) Cotton—2 seeds/dibble. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) N.A.

2. TREATMENTS :

Rotations :-

1. Sann green manuring—Sugarcane—Sann & Rabi Maize.
2. Sann green manuring—Sugarcane—Maize & Cotton (mixture).

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 54'—4.5"×30'. (b) 45'—4.5"×24'. (v) 3' along breadth and 4.5' along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1944—1950. (b) As per treatments. (c) N.A. (v) (a), (b) N.A. (vi) Nil. (vii) Expt. analysed only for sugarcane.

5. RESULTS :

- (i) 20.09 ton/ac.
- (ii) 3.27 ton/ac.
- (iii) The treatment difference is not significant.
- (iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	20.15
2.	20.04
S.E./mean	=1.34 ton/ac.

Crop :- Groundnut, Jowar, Cotton (Kharif).

Ref :- Ms. 48(7).

Site :- Agri Res. Stn. Dharwar.

Type :- 'R'

Object :- To study the best rotation for Cotton and Jowar with and without a legume (Groundnut).

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) Jowar, Cotton, Wheat. (c) Nil. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) Groundnut 18.7.48, Jowar 20.7.48 ; Cotton. 20.8.48 ; (iv) Harrowing, Groundnut : dibbling seeds. at 80 lb./ac. with 1' between rows, 6" between plants. One plant/hole. Jowar : sulphur treated seeds at 4 lb./ac. ; spacing 18". Cotton :—seeds dibbled at 8 lb./ac. with 1' in between dibbles, 2' between rows. 2 seeds/dibble. (v) Nil (vi) Jowar Nandyal. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 26.68% (18.7.48 to 29.3.1949). (x) Groundnut 27.10.48 ; Jowar 21.12.1948. Cotton. 29.3.1949.

2. TREATMENTS :

Please refer to page 432.

3. DESIGN :

(i) R.B.D. (ii) (a) 22. (b) N.A. (iii) 5. (iv) (a) 62'×30'. (b) 50'×18'. (v) 6' all round. (vi) Yes

4. GENERAL :

(i) Satisfactory. (ii) Curl leaf disease on groundnut ; Red leaf disease on Jowar ; shoot borer and powdery mildew on Cotton. (iii) Yield data. (iv) (a) 1948—continued. (b) As per treatments. (c) Not done. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Year wise analysis for 1948—53 done.

5. RESULTS :

GROUNDNUT

- (i) 1486 lb./ac.
- (ii) 167.0 lb./ac.
- (iii) The treatment differences are not significant.

(iv) Av. yield of groundnut pod in lb./ac.

Treatment	Av. yield
J.	1406
L.	1484
N.	1518
P.	1588
U.	1375
V.	1546
S.E./mean	= 74.5 lb./ac.

JOWAR

(i) 1763 lb./ac.

(ii) 395.4 lb./ac.

(iii) The treatment differences are not significant.

(iv) Av. yield of jowar grain in lb./ac.

Treatment	Av. yield
D.	2005
E.	1888
F.	1517
H.	1898
M.	1716
O.	1573
S.	1537
T.	1970
S.E./mean	= 177.3 lb./ac.

COTTON

(i) 408.4 lb./ac.

(ii) 78.89 lb./ac.

(iii) The treatment differences are significant.

(iv) Av. yield of seed cotton in lb./ac.

Treatment	Av. yield
A.	468.1
B.	446.2
C.	399.8
G.	442.2
I.	313.8
K.	469.3
Q.	382.2
R.	345.3
S.E./mean	= 35.37 lb./ac.

Crop :- Groundnut, Jowar, Cotton (Kharif).

Ref :- Ms. 49(16)/48(7).

Site :- Agri. Res. Stn., Dharwar.

Type :- 'R'.

Object :- To study the best rotation for Cotton and Jowar with and without legume Groundnut.

1. BASAL CONDITIONS :

(i) (a), (b) & (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) Groundnut 16.7.49 ; Jowar, 20.7.49 ; Cotton. 19.8.49. (iv) Ploughing and harrowings given according to local practices. Groundnut : Seeds dibbled, 1 seed/hole ; spacing : 12" × 6". Jowar : Sulphur treated seeds at 4 lb./ac. spacing : 18". Cotton : seeds dibbled—2 seeds/hole, spacing : 24" × 12". (v) Nil. (vi) Groundnut—Spanish improved. Jowar—Nandyal ; Cotton—Jayadhar. (vii) Unirrigated. (viii) N.A. (ix) 20.44' (16.7.1949 to 24.3.1950) (x) 30.10.49 ; 19.12.1949. 6.3.50 24.3.50.

2. TREATMENTS :

Please refer to page 432.

3. DESIGN :

(i) R.B.D. (ii) (a) 22. (b) N.A., (iii) 5. (iv) (a) 62' × 30'. (b) 50' × 18'. (v) 6' all round. (vi) Treatments are already fixed for all the years of experimentation.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948—continued. (b) As per treatments. (c) Not done. (v) (a) N.A. (b) N.A. (vi) N.I (vii) Year wise analysis done.

5. RESULTS :

GROUNDNUT

- (i) 2199 lb./ac.
 (ii) 178.6 lb./ac.
 (iii) The treatment differences are significant.
 (iv) Av. yield of groundnut Pod in lb./ac.

Treatment	Av. yield.
I.	1994
K.	2226
M.	2318
O.	2297
R.	2042
T.	2316
S.E./mean	= 80.08 lb./ac.

JOWAR

- (i) 1828 lb./ac.
 (ii) 266.7 lb./ac.
 (iii) The treatment differences are highly significant.
 (iv) Av. yield of jowar grain in lb./ac.

Treatment	Av. yield.
D.	1283
E.	1315
F.	1249
G.	1439
N.	2659
P.	2386
Q.	1528
V.	2733
S.E./mean	= 119.6 lb./ac.

COTTON

- (i) 543.0 lb./ac.
 (ii) 93.41 lb./ac.
 (iii) The treatment differences are highly significant.
 (iv) Av. yield of seed cotton in lb./ac.

Treatment	Av. yield.
A.	476.5
B.	429.5
C.	477.2
H.	598.9
J.	672.0
L.	647.3
S.	484.4
U.	558.2
S.E./mean	= 41.88 lb./ac.

Crop :- Cotton, Groundnut and Jowar (Kharif).
 Site :- Agri. Res. Stn. Dharwar.

Ref :- Ms. 50(37)/49(16)/48(7).
 Type :- 'R'.

Object :- To study the best rotation for Cotton and Jowar with and without legume Groundnut.

1. BASAL CONDITIONS :

- (i) a), (b) & (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) 5.8.50 ; 14.7.50 ; 16.7.49. (iv) Harrowing :- Groundnut : dibbling seeds at 80 lb./ac., with 1' between rows and 6" between plants. one plant/hole. Jowar :- Sulphur treated seeds at 4 lb./ac. spacing 18". Cotton : seeds dibbled at 8 lb./ac, with 1' in between dibble and 2' between rows, 2 seeds/dibble. (v) Nil. (vi) Jayadhar Cotton ; Spanish—Groundnut ; Nandyal Jowar. (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 37.14" (5.8.50 to 4.1.1951). (x) 21.2.51 ; 9,29.3.51 ; 29.10.50. ; 3,4.1.1951.

2. TREATMENTS :

Please refer page 432.

3. DESIGN :

(i) R.B.D. (ii) (a) 22. (b) N.A. (iii) 5. (iv) (a) 62'×30'. (b) 50'×18'. (v) 6' all round. (vi) Treatments are already fixed for all the years of experimentation.

4. GENERAL :

(i) Satisfactory. (ii) Leaf curl diseases and "tikka" disease on groundnut, mildew and stem borer attack on Jowar. Aphis attack on cotton. (iii) Yield data. (iv) (a) 1943-continued. (b) As per treatments. (c) Not done. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) Year wise analysis is done.

5. RESULTS :

GROUNDNUT

- (i) 1341 lb./ac.
 (ii) 227.5 lb./ac.
 (iii) The treatment differences are not significant.
 (iv) Av. yield of groundnut pod in lb./ac.

Treatment	Av. yield.
J.	1393
L.	1478
N.	1355
P.	1417
Q.	1348
S.	1055

S.E./mean = 102.6 lb./ac.

JOWAR

- (i) 1186 lb./ac.
 (ii) 210.1 lb./ac.
 (iii) The treatment differences are significant.
 (iv) Av. yield of jowar grain in lb./ac.

Treatment	Av. yield.
D.	982
E.	989
F.	811
H.	1186
M.	1318
O.	1345
R.	1485
U.	1368

S.E./mean = 94.22 lb./ac.

COTTON

- (i) 597.9 lb/ac.
 (ii) 91.96 lb./ac.
 (iii) The treatment differences are not significant.
 (iv) Av. yield of seed cotton in lb./ac.

Treatment	Av. yield.
A.	592.8
B.	580.1
C.	490.5
G.	577.6
T.	649.7
K.	588.0
T.	704.1
V.	600.7

S.E./mean = 41.23 lb./ac.

Crop :- Groundnut, Jowar, Cotton (Kharif).

Ref :- Ms. 51(58)/50(37)/
49(16)/48(7).

Site :- Agri. Res. Stn. Dharwar.

Type :- 'R'.

Object :—To study the best rotation for Cotton and Jowar with and without legume Groundnut.

1. BASAL CONDITIONS :

(i)(a),(b),(c) As per treatments. (i)(a) Medium black. (b) Refer soil analysis, Dharwar. (iii) Groundnut. 3.7.51; Jowar. 12.7.51. Cotton. 15.8.51. (iv) Harrowings; Groundnut :- sowing with coultured seed-drill; spacing 12"; seed rate :- 80 lb./ac. Jowar :- seeds treated with sulphur applied at 4 lb /ac. ; Cotton :- Seeds dibbled with 2' x 1' spacing. (v) Nil (vi) Groundnut-Spanish improved. (vii) Unirrigated. (viii) Two interculturings and weedings. (ix) Groundnut 16.58"; Jowar. 30.53"; Cotton. 3.53" (3.7.51 to 18.10.1951); (12.7.51 to 27.12.1951); and (15.8.51 to 31.3.1951) respectively. (x) 18.10.1951; 27.12.51 and 10.3.1952 1st picking and 31.3.1952 2nd picking

2. TREATMENTS :

Please refer page 432.

F.Y.M. was applied on 30.6.51 as per treatments. For groundnut, super applied on 2.7.1951 as per treatments.

3. DESIGN :

(i) Split plot for groundnut and R.B.D. for other crops. (ii) (a) 44. Each of the 22 plots was divided into two portions and only groundnut plots receive Super at 0 and 100 lb./ac. (b) N.A. (iii) 5. (iv) (a) 62' x 30' as in previous year. (b) 22 x 10' (50' x 18' in two parts.) (v) 6' all round. (vi) Treatments are already fixed as per rotations.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948—continued. (b) As per treatments. (c) Not done. (v) (a) N.A. (b) N.A. (vi) Nil. (v) i) Year wise analysis done.

5. RESULTS :

GROUNDNUT

- (i) 900.1 lb./ac.
 (ii) (a) 217.8 lb./ac.
 (b) 246.4 lb./ac.
 (iii) None of the effects is significant.
 (iv) Av. yield of groundnut pod in lb./ac.

	I	K	M	O	U	V	Mean.
S ₀	902.0	860.2	957.0	937.2	979.0	931.7	927.9
S ₁	803.0	920.7	898.7	810.7	907.5	893.2	872.3
Mean	852.5	890.5	927.9	873.5	943.3	912.5	900.1

S₀=No phosphate, S₁=100 lb./ac. of Super.

S. E. of difference of two

1. main-plot treatment means = 97.7 lb.
 2. sub-plot treatment means = 63.7 lb./ac.
 3. sub-plot treatment means at the same level of main-plot treatment = 155.8 lb./ac.
 4. main-plot treatment means at the same level of sub-plot treatment = 146.7 lb./ac.

JOWAR

- (i) 1291 lb./ac.
 (ii) 185.4 lb./ac.
 (iii) The treatment differences are highly significant.
 (iv) Av. yield of grain in lb./ac..

Treatment	Av. yield
D.	1089
E.	968
F.	917
G.	1235
N.	1504
P.	1658
S.	1719
T.	1240
S.E./mean	= 83.12 lb./ac.

COTTON

- (i) 400.5 lb./ac.
- (ii) 75.02 lb./ac.
- (iii) The treatment differences are significant.
- (iv) Av. yield of seed cotton in lb./ac.

Treatment	Av. yield
A.	384.8
B.	326.5
C.	361.7
H.	402.7
J.	469.4
L.	415.0
Q.	494.7
R.	341.2
S.E./mean	=33 64 lb./ac.

Crop :-Groundnut, Jowar, Cotton (Kharif). Ref :-Ms. 52(103)/51(58)/

50(37)/47(16)/48(7).

Site :-Agri. Res. Stn. Dharwar.

Type :-'R'.

Object :-To study the best rotation for Cotton and Jowar with and without legume Groundnut.

1. BASAL CONDITIONS :

(i) (a), (b) and (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) Groundnut 26, 27.6.52 :-Jowar :-16.7.52 Cotton : 10.8.52 (iv) Groundnut.—seeds dibbled at 80 lb./ac. ; spacing : 18" × 6" . ; Jowar :-seeds were sown with 18" , 3 coultured seed-drill ; seed-rate :-4 lb./ac. ; Cotton:—seeds dibbled at 7 lb./ac. ; spacing :-24" × 12" . (v) Nil. (vi) Groundnut : Spanish improved. ; (vii) Unirrigated. (viii) Hand weeding, interculturings. (ix) 29.04" (26.6.52. to 20.3.53). (x) 12.10.52, 5.12.1952, 5.3.53 and 20.3.53.

2. TREATMENTS :

Please refer page 432

F.Y.M. at 5 C.L./ac. was applied on 25.6.52 as required. To groundnut plots Super was applied at 100 lb./ac. on 20.6.52 as per treatments.

3. DESIGN :

(i) Split plot for groundnut and R.B.D. for other crops. (ii) (a) 44. Groundnut sub-plots received Super at 0, and 100 lb./ac. (b) N.A. (iii) 5. (iv) (a) 62' × 30' (b) 22' × 18' (50' × 18' in two parts). (v) 6' all round. (vi) Treatments are already fixed as per rotations.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948—continued. (b) Treatments are assigned to various plots as per rotation already fixed. (c) None. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Yearwise analysis done.

5. RESULTS :

GROUNDNUT

- (i) 959 lb./ac.
- (ii) (a) 268.4 lb./ac.
- (b) 134.2 lb./ac.

(iii) None of the effects is significant.

(iv) Av. yield of Pod in lb./ac.

	J	L	N	P	R	T	Mean
S ₀	968	866	930	800	1124	899	939
S ₁	942	908	963	897	1117	1045	978
Mea.1	954	887	946	848	1144	971	959

S₀ = No Super ; S₁ = 100 lb./ac. of Super.

S. E. of difference of two

- (i) main-plot treatment means = 12.4 lb./ac.
(ii) sub-plot treatment means = 34.7 „
(iii) sub-plot treatment means at the same level of main-plot treatment = 84.5 „
(iv) main plot treatment means at the same level of sub-plot treatment = 134.2 „

JOWAR

- (i) 1656 lb./ac.
(ii) 292.3 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
D.	1243
E.	1101
F.	1082
H.	1481
M.	1874
O.	1927
A.	1981
V.	2557
S.E./mean	= 131.1 lb./ac.

COTTON

- (i) 558.9 lb./ac.
(ii) 67.27 lb./ac.
(iii) The treatment differences are significant.
(iv) Av. yield of seed cotton in lb./ac.

Treatment	Av. yield.
A.	533.6
B.	537.1
C.	503.2
G.	541.9
L.	560.0
K.	615.8
S.	508.0
U.	671.4
S.E./mean	= 30.16 lb./ac.

Crop :- Groundnut, Jowar, Cotton (Kharif).

Ref :- Ms. 53(154)/52(103)/
51(58)/50(37)/49(16)/48(7).

Site :- Agri. Res. Stn. Dharwar.

Type :- 'R'.

Object :- To study the best rotation for Cotton and Jowar with and without legume (groundnut) in the rotation.

I. BASAL CONDITIONS :

- (i) (a), (b) and (c) As per treatments. (ii) (a) Medium black soil. (b) Refer soil analysis, Dharwar. (iii) Groundnut :- 8, 9.7.53 :- Jowar. 12, 13.7.53. Cotton :- 8.8.53. (iv) Ploughing with wooden plough. Groundnut :- kernels dibbled ; spacing 12" x 6" ; seed-rate :- 80 lb./ac. Jowar :- drilled with seed-rate 4 lb./ac. ; spacing :- 18". Cotton :- dibbled at 7 lb./ac. ; spacing :- 24" x 12". (v) Nil. (vi) Groundnut. Spanish improved ; Jowar-Nandyal ; Cotton-Jayadhar (vii) Unirrigated. (viii) Interculturing, hand weeding. (ix) 36.29" (8.9.53 to 14.1954). (x) 13.10.53 ; 18, 19.12.1953 ; 15.3.1954 ; 1.4.54.

2. TREATMENTS :

Please refer page 432.

F.Y.M. was applied on 4.7.53 as per treatments. Super was applied on 8.7.1953 as per treatments.

3. DESIGN :

(i) Split plot for groundnut and R.B.D. for other crops. (ii) (a) 44. groundnut sub-plots received Super at 0 and 100 lb./ac. (b) N.A. (iii) 5. (iv) (a) 62'×30' (b) 22'×18' (50'×18' in two parts). (v) 6' all round. (vi) Treatments are already fixed for all the years of experimentation as per rotations.

4. GENERAL :

(i) Satisfactory. (ii) Groundnut : Slight attack of leaf caterpillars and "Tikka" disease. no control measures. Jowar : Nil. ; Cotton : Slight incidence of leaf caterpillars, and gray downy mildew was noticed. No control measures. (iii) Yield data. (iv) (a) 1948—continued. (b) As per rotations (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :**GROUNDNUT**

- (i) 1143 lb./ac.
 (ii) (a) 258.5 lb./ac.
 (b) 218.9 lb./ac.
 (iii) None of the effects and interaction is significant.
 (iv) Av. yield of groundnut pod in lb./ac.

	O	M	K	Q	S	I	Mean
S ₀	1092	976	1172	1273	1188	1182	1147
S ₁	1078	979	1053	1249	1257	1221	1139
Mean	1085	978	1112	1261	1222	1202	1143

S₀=No Super, S₁=100 lb./ac. of super.

S. E. of difference of two

- | | |
|--|-----------------|
| 1. main-plot treatment means | = 115.9 lb./ac. |
| 2. sub-plot treatment means | = 56.6 lb./ac. |
| 3. sub-plot treatment means at the same level of main-plot treatment | = 137.9 lb./ac. |
| 4. main-plot treatment means at the same level of sub-plot treatment | = 151.4 lb./ac. |

JOWAR

- (i) 887 lb./ac.
 (ii) 158.8 lb./ac.
 (iii) The treatment differences are highly significant.
 (iv) Av. yield of jowar grain in lb./ac.

Treatment	Av. yield
D.	842
E.	576
F.	653
G.	739
N.	843
P.	1064
R.	1329
U.	1051
S.E./mean	= 71.18 lb./ac.

COTTON

- (i) 356.2 lb./ac.
 (ii) 67.76 lb./ac.
 (iii) The treatment differences are significant.
 (iv) Av. yield of seed cotton in lb./ac.

Treatment	Av. yield
A.	322.7
B.	303.5
C.	279.3
H.	446.2
J.	384.6
L.	367.5
T.	361.5
V.	384.5
S.E./mean	= 30.38 lb./ac.

The cycle of rotation : key to the treatments

Treatment	Year					
	1948—49	1949—50	1950—51	1951—52	1952—53	1953—54
1	2	3	4	5*	6*	7*
A.	Cm	Cm	Cm	Cm	Cm	Cm
B.	Cm	C	Cm	C	Cm	C
C.	C	Cm	C	Cm	C	Cm
D.	Jm	Jm	Jm	Jm	Jm	Jm
E.	Jm	J	Jm	J	Jm	J
F.	J	Jm	J	Jm	J	Jm
G.	C	Jm	C	Jm	C	Jm
H.	Jm	C	Jm	C	Jm	C
I.	C	G	C	G	C	G
J.	G	C	G	C	G	C
K.	Cm	G	Cm	G	Cm	G
L.	G	Cm	G	Cm	G	Cm
M.	J	G	J	G	J	G
N.	G	J	G	J	G	J
O.	Jm	G	Jm	G	Jm	G
P.	G	Jm	G	Jm	G	Jm
Q.	C	Jm	G	C	Jm	G
R.	C	G	Jm	C	G	Jm
S.	Jm	C	G	Jm	C	G
T.	Jm	G	C	Jm	G	C
U.	G	C	Jm	G	C	Jm
V.	G	Jm	C	G	Jm	C

C=Cotton, J=Jowar, G=Groundnut, m=Manured. F.Y.M. at 5 C.L./ac. Spread and harrowed.

*All plots divided into two halves. In case of groundnut plots, one sub-plot will receive Super at 100 lb./ac.

N.B.—A, B, C, D, E and F are one crop rotations.

G, H, I, J, K, L, M, N, O and P are two crop rotations.

Q, R, S, T, U and V are three crop rotations.

Crop :- Cotton, Jowar & Bengalgram.

Ref :- Ms. 48(20).

Site :- Agri. Res. Stn. Hagari.

Type :- 'R'.

Object :- To find out suitable rotation with Jowar and Cotton.

1. BASAL CONDITIONS :

(i) (a) As per treatments, (b) As per treatments. (c) Nil. (ii) (a) Black cotton soil. (b) Refer soil analysis, Hagari. (iii) 4.10.48 ; 23.9.48 & 22.10.48 respectively. (iv) (a) Working blade harrow 3-4 times. (b) Drill sowing. (c) Cotton :- 10 lb./ac. Jowar :- 3 lb./ac. ; Bengalgram :- 15 lb./ac. (d) Cotton :- Spacing 36", Jowar :- 18", Bengalgram-N.A. (e) Cotton & Jowar one seed/hole. (v) Nil. (vi) M-47-3 Jowar. H₁ Cotton (Medium): CA 112-Bengalgram (Medium). (vii) Unirrigated. (viii) Interculturing, weeding. (ix) 6.61" (4.10.48 to 25.4.1949). (x) 19.2.49 ; (1.4.49 & 25.4.49) ; 25.2.49 respectively.

2. TREATMENTS :

Crop rotations as follows :-

1. Cotton—Cotton—Cotton.
2. Jowar—Jowar—Jowar.
3. Cotton—Jowar—Cotton.
4. Cotton—Jowar—Pulse.
5. Cotton—Pulse—Jowar.
6. Cotton—Fallow—Cotton.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 36'×66'. (b) 26.4'×59.4'. (v) 3.3' all round. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield. (iv) (a) 1940—1960. (b) Yes. As per treatments. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Individual plot-wise yield data not available. Results taken from annual report.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Av. yield	
1. Cotton	51 (kapas)	—
2. Jowar	239 (grain)	870 (straw)
3. Jowar	241 („)	1289 („)
4. Jowar	263 („)	1354 („)
5. Pulse	155 („)	—
6. Fallow	—	—
S.E. =N.A.		

Crop :- Cotton, Jowar and Bengalgram.

Ref :- Ms. 49(25)/48(20).

Site :- Agri. Res. Stn. Hagari.

Type :- 'R'.

Object :- To find out suitable rotation with Jowar and Cotton.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) Nil. (ii) (a) Black cotton soil. (b) Refer soil analysis, Hagari. (iii) Date of sowing 7.10.49, 8.9.49, & 28.10.1949 respectively. (iv) (a) Working blade harrow 3-4 times. (b) Drill sowing. (c) Cotton :- 10 lb./ac. Jowar :- 3 lb./ac. ; Bengalgram :- 15 lb./ac. (d) Cotton : 36", Jowar :- 18". (e) Both one seed-per hole, Bengalgram N.A. (v) Nil. (vi) Variety M-47-3 Jowar (early) H₁—Cotton (Medium) CA112 Bengalgram (Medium). (vii) Unirrigated. (viii) Interculturing, weeding. (ix) 9.37" (8.9.1949 to 15.4.1950). (x) 20.2.50, 25.2.50 ; 3, 26.3.50 ; 15.4.1950 & 12.2.1950 respectively.

2. TREATMENTS :

Crop rotations as follows :-

1. Cotton—Cotton—Cotton.
2. Jowar—Jowar—Jowar.
3. Cotton—Jowar—Cotton.
4. Cotton—Jowar—Pulse.
5. Cotton—Pulse—Jowar.
6. Cotton—Fallow—Cotton.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 33'×66'. (b) 26.4'×59.4' (v) 3.3' all round. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1940—1960. (b) As per rotations. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Plot wise yield data not available. Results taken from annual report.

5. RESULTS :

Av. yield in lb./ac.		Av. yield	
Treatment			
1. Cotton	262 (kapas)	—	
2. Jowar	318 (grain)	564 (straw)	
3. Cotton	307 (kapas)	—	
4. Pulse	86 (grain)	—	
5. Jowar	698 (, ,)	1134 (straw)	
6. Cotton	197 (kapas)	—	
S.E.	=N.A.		

Crop :- Cotton, Jowar and Bengalgram.

Ref :- Ms. 50(53)/49(25)/48(20).

Site :- Agri. Res. Stn. Hagari.

Type :- 'R'.

Object :- To find out suitable rotations with Jowar and Cotton.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) Nil. (ii) (a) Black cotton. (b) Refer soil analysis, Hagari, (iii) Cotton :- 4.9.1950. Jowar :- 12.10.1950. (iv) (a) Working blade harrow 3—4 times. (b) Drill sowing. (c) Cotton :- 10 lb./ac. Jowar :- 3 lb./ac. (d) Cotton : 36". Jowar :- 18". (e) For both one seed/hole. Bengalgram N.A. (v) Nil. (v) Cotton Westerns 1, (Medium); Jowar. M—47—3 (early). (vii) Unirrigated. (viii) Interculturing, weeding. (ix) 13.12" (4.9.50 to 12.4.1951). (x) 14.2.51; 5.3.51; 12.4.51. (Cotton) 20.2.1951 (Jowar).

2. TREATMENTS :

Crop rotations as follows :—

1. Cotton—Cotton—Cotton.
2. Jowar—Jowar—Jowar.
3. Cotton—Jowar—Cotton.
4. Cotton—Jowar—Pulse.
5. Cotton—Pulse—Jowar.
6. Cotton—Fallow—Cotton.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 33'×66' (b) 26.4'×59.4' (v) 3.3' all round. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1940—1960. (b) As per rotations. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Plot wise yield data not available. Results taken from annual report.

5. RESULTS :

Av. yield in lb./ac.		Av. yield	
Treatment			
1. Cotton	150 (kapas)		
2. Jowar.	442 (grain)	637 (straw).	
3. Jowar.	539 (grain)	782 (straw).	
4. Cotton.	308 (kapas)		
5. Cotton.	253 (kapas)		
6. Fallow.	—		
S.E. N.A.			

Crop :- Cotton, Jowar and Bengalgram. Ref :- Ms. 51(1)/50(53)/
49(25)/48(20).

Site :- Agri. Res. Stn. Hagari. Type :- 'R'.

Object :- To find out suitable rotation with Jowar and Cotton.

1. BASAL CONDITIONS :

(i) (a), (b) As per treatments. (c) No. (ii) (a) Deep black cotton of 3' depth. (b) Refer soil analysis, Hagari. (iii) Cotton :- 9.9.51 ; 18.10.51 ; Bengalgram :- 26.10.51. (iv) (a) Working harrow 3—4 times. (b) Drill sowing. (c) Cotton :- 10 lb./ac ; Jowar :- 3 lb./ac. ; Bengalgram :- 15 lb./ac. (d) & (e) N.A. (v) No. (vi) Cotton Westerns I ; Jowar M—47—3 ; Bengalgram C.A. 112. (vii) Rainfed. (viii) After one month danties worked and line weeding done. (ix) 8.71" (9.9.1951 to 29.3.52). (x) Cotton—13.2.52 to 29.3.52 ; Jowar—28.2.52 and Bengal gram 19.2.52.

2. TREATMENTS :

Crop rotations as follows :-

1. Cotton—Cotton—Cotton.
2. Jowar—Jowar—Jowar.
3. Cotton—Jowar—Cotton.
4. Cotton—Jowar—Pulse.
5. Cotton—Pulse—Jowar.
6. Cotton—Fallow—Cotton.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 33'×66' (b) 26.4'×59.4' (v) Cotton :- One row on one side, 2 rows on the other, Jowar and Bengal gram :- 3 rows on each side. (vi) Yes.

4. GENERAL :

(i) Season unfavourable ; Cotton alone had a fair growth due to rains. Jowar and Bengalgram recorded poor growth and yields. (ii) No pests and diseases. (iii) Germination, stand flowering, yield. (iv) (a) 1940—41 to 1960—61. (b) As per treatments. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Raw data not available. Results taken from the annual report.

5. RESULTS :

(iv) Av. yield in lb./ac.

Treatment	Av. yield.	
1. Cotton	249 kapas	—
2. Jowar	138 grain	271 (straw).
3. Cotton	306 kapas	—
4. Jowar	143 grain	289 (straw).
5. Pulse	73 „	—
6. Cotton	411 kapas	—
S.E.	=N.A.	

Crop :- Cotton, Jowar, and Bengalgram. Ref :- Ms. 52(13)/51(1)/50(53)/
49(25)/48(20)

Site :- Agri. Res. Stn. Hagari. Type :- 'R'.

Object :- To find out suitable rotation with Jowar and Cotton.

1. BASAL CONDITIONS :

(i) (a), (b) As per treatments (c) No manure (ii) (a) Deep black cotton soil of 3' depth (b) Refer soil analysis, Hagari (iii) Jowar :- 15.10.52 ; Cotton :- 3.10.52 ; Bengalgram :- 21.10.52 (iv) (a) 3—4 times working blade harrow (b) Drill sowing (c) Cotton :- 10 lb ; Jowar 3 lb ; Bengalgram 15 lb./ac. (d) N.A. (e) N.A. (v) No. (vi) Jowar (M—47—3) ; Cotton (Western 1) ; Bengalgram (C.A.112) (vii) Rainfed (viii) During summer country blade harrow was worked 2—3 times and finally guntaka was worked. After one month danties were worked and weeding done (ix) 6.73" (3.10.52 to 2.4.53). (x) Cotton :- 10.3.53 & 2.4.53. ; Jowar :- 11.2.53 ; Bengalgram :- 4.2.53.

2. TREATMENTS :

Crop rotations as follows :—

1. Cotton—Cotton—Cotton.
2. Jowar—Jowar—Jowar.
3. Cotton—Jowar—Cotton.
4. Cotton—Jowar—Pulse.
5. Cotton—Pulse—Jowar.
6. Cotton—Fallow—Cotton.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a) 33'×66' (b) 26.4'×59.4' (v) Cotton—one row on one side, 2 rows on other ; Jowar— 3 rows on each side ; Bengalgram—3 rows on each side (vi) Yes.

4. GENERAL :

(i) Lack of post-sowing rains adversely affected the growth as well as yields. (ii) No pests and diseases. (iii) Germination, stand, flowering, yield. (iv) (a) 1940-41 to 1960-61. (b) As per treatments. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Raw data not available. Results taken from annual reports.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Av. yield
1. Cotton	118 (kapas) —
2. Jowar	475 (grain) 732 (straw)
3. Jowar	325 („) 530 („)
4. Pulse	137 („) —
5. Jowar	453 („) 700 („)
6. Fallow	
S.E.	= N.A.

Crop :- Cotton, Jowar, and Bengalgram. Ref :- Ms. 53/(7)/52(13)/51(1)/50(53)
49(25)/48(20)

Site :- Agri. Res. Stn. Hagari. Type :- 'R'.

Object :—To find out suitable rotation with Jowar and Cotton.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) No manure. (ii) (a) Deep black cotton soil of 3' depth. (b) Refer soil analysis, Hagari. (iii) Cotton :—21.9.53 ; Jowar :—12.10.53 ; Bengalgram. :— N.A. (iv) (a) Working blade harrow 3-4 times as preparatory cultivation. (b) Drill sowing. (c) Cotton :—10 lb./ac. ; Jowar :—3 lb./ac. ; Bengalgram :—15 lb./ac. (d) and (e) N.A. (v) No. (vi) Cotton H₁ (Improved) ; Jowar-M 47-3 Improved (early) ; Bengalgram. C.A. 112 (Improved). (vii) Unirrigated. (viii) During summer country blade harrow worked 2-3 times and finally guntaka worked, seeds sown through the seed drill and after one month danties worked and line weeding done. (ix) 13.71" (21.9.53 to 30.4.1954). (x) Cotton—28.4.54 and 30.4.54, Jowar—19.3.54, Bengalgram—N.A.

2. TREATMENTS :

Crop rotations as follows :—

1. Cotton—Cotton—Cotton.
2. Jowar—Jowar—Jowar.
3. Cotton—Jowar—Cotton.
4. Cotton—Jowar—Pulse.
5. Cotton—Pulse—Jowar.
6. Cotton—Fallow—Cotton.

3. DESIGN :

(i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 6. (iv) (a) 33'×66' (b) 26.4'×59.4' (v) Cotton—one row one side, 2 rows on other ; Jowar-3 rows on each side ; Bengalgram-3 rows on each side. (vi) Yes.

4. GENERAL

(i) Season had been unfavourable, cotton alone had a fair growth as it had the benefit of rains. Jowar and Bengalgram plots recorded very poor growth and yields. (ii) No pests and diseases. (iii) Germination, stand, flowering, yield. (iv) (a) 1940-41 to 1960-61. (b) As per treatments (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Raw data not available. Results taken from annual reports.

5. RESULTS :

Av. yield in lb./ac.		Av. yield	
Treatments			
1. Cotton	260 (kapas)	—	
2. Jowar	393 (grain);	802 (straw)	
3. Cotton	296 (kapas)	—	
4. Cotton	320 („)	—	
5. Cotton	301 („)	—	
6. Cotton	306 („)	—	
S.E.	=N.A.		

Crop :- Jowar, Groundnut and Cotton.

Ref :- Ms. 51(71).

Site :- Agri. Res. Stn. Saundatti.

Type :- 'R'.

Object :- To find out a suitable rotation for Cotton and Jowar with and without legume (the legume being taken with and without P_2O_5)

BASAL CONDITIONS :

(i) (a) As per treatments. (b) N.A. (c) N.A. (ii) (a) Medium black soil. (b) Refer soil analysis, Saundatti. (iii) Cotton—Aug. 51 ; Groundnut—July 51 ; Jowar—July 51. (iv) Cotton—Drill sowing, seed rate 10 lb./ac. distance between rows 24" between plants 6"—7". Jowar—Drill sowing seed rate 6 lb./ac, distance between rows 12", between plants 6"—8". Groundnut—Drill sowing, seed rate 100 lb./ac., distance between rows 12", between plants 3"—6". (v) Nil. (vi) Cotton Jayadhar (medium) ; Ground nut Spanish (early). ; Jowar. Fulgar while (Medium). (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 9.15". (July 51 to March 1952) (x) March 52 ; Nov. 51 & Jan. 52.

2. TREATMENTS :

See page 441

F.Y.M. in June 51 ; P_2O_5 in July 1951.

3. DESIGN :

(i) R.B.D. (ii) (a) 32 (b) N.A. (iii) 6 (iv) (a) Cotton—57'—10"×27' ; Jowar & Groundnut—57'—10"×27' (b) Cotton—51'—10"×20' ; Jowar & Groundnut—51'—10"×21' (v) Cotton—3'×3½' ; Jowar & Groundnut. 3'×3' (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) 'Yield' data. (iv) (a) 1951-continued. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Nil.

5. RESULTS :

GROUNDNUT

- (i) 430.5 lb./ac.
- (ii) 59.62 lb./ac.
- (iii) The treatment differences are not significant.

JOWAR

- (i) 26.37 lb./ac.
- (ii) 12.40 lb./ac.
- (iii) The treatment differences are not significant.

(iv) Av. pod yield in lb./ac.

Treatment	Av. yield.
10.	415.2
12.	425.5
14.	403.0
16.	415.5
18.	438.4
20.	474.4
23.	403.6
26.	474.4
29.	413.7
32.	415.0
S.E./mean	= 24.43 lb./ac.

(iv) Av. yield of Jowar grain in lb./ac.

Treatment	Av. yield.
4.	61.27
5.	27.30
6.	23.97
8.	21.97
15.	12.65
17.	45.95
19.	13.32
22.	13.32
24.	21.97
28.	19.31
30.	28.63
S.E./mean	= 5.08 lb./ac.

COTTON

- (i) 169.7 lb./ac.
(ii) 68.49 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of seed cotton in lb./ac.

Treatment	Av. yield.
1.	155.2
2.	200.2
3.	121.1
7.	228.9
9.	196.7
11.	142.8
13.	149.0
21.	140.7
25.	184.1
27.	143.5
31.	200.2
S.E./mean	= 28.06 lb./ac.

Crop :- Jowar, Groundnut and Cotton.

Ref :- Ms. 52(120)/52(71).

Site :- Agri. Res. Stn. Saundatti.

Type :- 'R'.

Object :- To find out a suitable rotation for Cotton and Jowar with and without a legume (the legume being taken with and without P_2O_5 .)

1. BASAL CONDITIONS :

(i) (a), (b)&(c) As per treatments. (ii) (a) Medium black soil. (b) Refer soil analysis, Saundatti. (iii) Cotton. —26, 27.8.52 ; Jowar —30.7.52 ; Groundnut—17, 18.7.1952. (iv) Cotton—Drill sowing, seed rate 10 lb./ac., distance between rows 24", between plants 6"—7" ; Jowar :—Drill sowing, seed rate 6 lb./ac., distance between rows 12", between plants 6"—8". Groundnut :—Drill sowing, seed-rate 100 lb./ac., distance between rows 12", between plants 3"—6". (v) Nil. (vi) Cotton. Jayadhar (Medium) ; Jowar. Fulgar white (medium ; Groundnut. Early. (vii) Unirrigated. (viii) Interculturing. (ix) 17.01". (26.8.52 to 25.3.1953) (x) Cotton 12, 24, 25. 3. 53. Jowar. 25, 26.12.52 ; Groundnut. 21, 22.12.1952.

2. TREATMENTS :

See page 441.

F.Y.M. applied on 2, 3.7.52 ; P_2O_5 applied on 17.7.1952.

3. DESIGN :

(i) R.B.D. (ii) (a) 32 (b) N.A. (iii) 6 (iv) (a) Cotton 57'—10"×27' ; Jowar & Groundnut. 57'—10"×27'. (b) Cotton—51'—10"×20' ; Jowar & Groundnut—51'—10"×21'. (v) Cotton—3'×3½' ; Jowar & Groundnut—3'×3'. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1951—continued. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil (vii) Nil.

5. RESULTS :

GROUNDNUT

- (i) 535.6 lb./ac.
 (ii) 99.64 lb./ac.
 (iii) The treatment differences are significant.
 (iv) Av. yield of Groundnut in lb./ac.

Treatment	Av. yield.
9.	493.5
11.	550.2
13.	451.9
15.	497.7
17.	620.3
19.	555.3
22.	546.3
25.	466.9
28.	630.3
31.	549.4

S.E./mean = 40.83 lb./ac.

JOWAR

- (i) 413.4 lb./ac.
 (ii) 112.9 lb./ac.
 (iii) The treatment differences are significant.
 (iv) Av. yield of Jowar in lb./ac.

Treatment	Av. yield.
4.	409.3
5.	326.8
6.	331.8
7.	407.7
16.	270.1
18.	460.2
20.	570.6
21.	400.2
26.	513.5
27.	282.5
32.	575.2

S.E /mean = 46.3 lb./ac.

COTTON

- (i) 307.3 lb./ac.
 (ii) 65.97 lb./ac.
 (iii) The treatment differences are significant.
 (iv) Av. yield of seed cotton in lb./ac.

Treatment	Av. yield.
1.	250.6
2.	265.6
3.	195.5
8.	306.2
10.	313.3
12.	314.9
14.	408.5
23.	273.0
24.	311.9
29.	273.2
30.	367.0

S.E./mean = 270.3 lb./ac.

Crop :- Jowar, Groundnut and Cotton. Ref :- Ms. 53(166)/52(120)/51(71).

Site :- Agri. Res. Stn. Saundatti. Type :- 'R'

Object :- To find out a suitable rotation for Cotton and Jowar with and without a legume (the legume being taken with and without P_2O_5).

1. BASAL CONDITIONS :

- (i) (a), (b) and (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Saundatti. (iii) Cotton :- 25.8.53 ; Groundnut—14,15.7.53. Jowar :- 14,15.7.53. (iv) Cotton :- Drill sowing, seed rate 10 lb./ac., distance between rows 24", between plants 6"-7". Jowar :- drill sowing, seed rate 6 lb./ac.,

distance between rows 12" between plants 6"-8". Groundnut :- drill sowing, seedrate 100 lb./ac., distance between rows 12", between plants 3"-6". (v) Nil. (vi) Cotton-Jayadhar Medium ; Groundnut-Spanish (early) Jowar-Fulgar white (Medium). (vii) Unirrigated. (viii) Weeding, interculturing. (ix) 28.36" (25.8.53 to March 54). (x) Cotton. March 54 ; Groundnut 18,19.11.53 ; Jowar 20,21.1.1954.

2. TREATMENTS :

See page 441.

F. Y. M. on 13, 14 and 15.6.53. P₂C₅ on 14, 15.7.1953.

3. DESIGN :

(i) R.B.D. (ii) (a) 32 (b) N.A. (iii) 6. (iv) (a) Cotton, 57'-10"×27' ; Jowar and Groundnut 57'-10"×27'. (b) 51'-10"×20' ; 51'-10"×21'. (v) Cotton 3'×3½' ; Jowar and Groundnut 3'×3'. (vi) Yes.

4. GENERAL :

(i) Quantity of bhusa in groundnut less than normal due to heavy rains. Jowar also slightly affected. (ii) Groundnut slightly affected by aphids. Kharif Jowar attacked by stem borers and grass hoppers. Dusting Gammoxene. (iii) Yield data. (iv) (a) 1951—continued. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

GROUNDNUT

- (i) 332.7 lb./ac.
 (ii) 77.63 lb./ac.
 (iii) The treatment differences are not significant.
 (iv) Av. yield of Groundnut pod in lb./ac.

Treatment	Av. yield.
10.	271.7
12.	333.9
14.	351.8
16.	315.6
18.	333.5
20.	410.2
21.	320.5
24.	332.2
27.	361.8
30.	295.5

S.E./mean = 31.31 lb./ac.

JOWAR

- (i) 329.4 lb./ac.
 (ii) 146.1 lb./ac.
 (iii) The treatment differences are significant.
 (iv) Av. yield of Jawar in lb./ac.

Treatment	Av. yield
4.	240.5
5.	224.5
6.	182.6
8.	369.0
15.	234.3
17.	478.1
19.	369.1
23.	328.9
25.	380.2
29.	309.3
31.	508.1

S.E./mean = 59.9 lb /ac.

COTTON.

- (i) 233.8 lb./ac.
 (ii) 66.39 lb./ac.
 (iii) The treatment differences are significant.
 (iv) Av. yield of seed-cotton in lb./ac.

Treatment	Av. yield
1.	251.1
2.	252.8
3.	165.7
7.	275.6
9.	198.6
11.	193.3
13.	216.5
22.	207.4
26.	298.7
28.	253.3
32.	257.3

S.E./mean = 27.2 lb /ac.

ROTATIONAL EXPERIMENT ON COTTON, JOWAR AND GROUNDNUT

Key to Treatment ; and Rotational Cycle

Treatment	1951	1952	1953	1954	1955	1956
1.	Cm	Cm	Cm	Cm	Cm	Cm
2.	Cm	C	Cm	C	Cm	C
3.	C	Cm	C	Cm	C	Cm
4.	Jm	Jm	Jm	Jm	Jm	Jm
5.	Jm	J	Jm	J	Jm	J
6.	J	Jm	J	Jm	J	Jm
7.	C	Jm	C	Jm	C	Jm
8.	Jm	C	Jm	C	Jm	J
9.	C	G	C	G	C	G
10.	G	C	G	C	G	C
11.	Cm	G	Cm	G	Cm	G
12.	G	Cm	G	Cm	G	Cm
13.	C	Gp	C	Gp	C	Gp
14.	Gp	C	Gp	C	Gp	C
15.	J	G	J	G	J	G
16.	G	J	G	J	G	J
17.	Jm	G	Jm	G	Jm	G
18.	G	Jm	G	Jm	G	Jm
19.	J	Gp	J	Gp	J	Gp
20.	Gp	J	Gp	J	Gp	G
21.	C	Jm	G	C	Jm	G
22.	Jm	G	C	Jm	G	C
23.	G	C	Jm	G	C	Jm
24.	Jm	C	G	Jm	C	G
25.	C	G	Jm	C	G	Jm
26.	G	Jm	C	G	Jm	C
27.	C	Jm	Gp	C	Jm	Gp
28.	Jm	Gp	C	Jm	Gp	C
29.	Gp	C	Jm	Gp	C	Jm
30.	Jm	C	Gp	Jm	C	Gp
31.	C	Gp	Jm	C	Gp	Jm
32.	Gp	Jm	C	Gp	Jm	C

Crop :- As per rotation.
Site :- Agri. Res. Stn. Siruguppa.

Ref :- Ms. 48(39).
Type :- 'R'

Object :-To find-out the most economical rotation for the black soils. (3 course rotations).

1. BASAL CONDITIONS :

(i)(a) As per treatments. (b) N.A. (c) N.A. (ii) (a) Heavy black clayey. (b) Refer soil analysis, Siruguppa. (iii) Jowar. 23.7.48 ; Cotton :- Ist fortnight of August. (iv)(a) Ploughing, levelling, bund forming, etc. (b) to (e) N.A. (v) N.A. (vi) Jowar A.S. 2095 ; Cotton M.H. II. (Duration N.A.) Details of other crops N.A. (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) Jowar, Nov. 48 ; Cotton Feb.—March 1949.

2. TREATMENTS :

Crop rotations :-

1. Groundnut+Redgram—Cotton—Korra.
2. Jowar—Groundnut+Redgram—Cotton.
3. Cotton—Groundnut+Redgram—Jowar.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6. (iv) (a) 44'×22.5'. (b) 29'×7.5'. (v) 7.5' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948-1956. (b) Yes. As per rotations. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Data N.A.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield
1.	Jowar	2594 (grain) 4970 (straw)
2.	Groundnut	888 (pod) 1450 (haulms)
3.	Redgram	—
	Cotton	1508 (kapas)

Crop :- As per rotation.
Site :- Agri. Res. Stn. Siruguppa.

Ref :- Ms. 49(39)/48(39)
Type :- 'R'.

Object :-To find out the most economical rotation for the black soils under irrigations. (3 course rotations in deep soils).

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) N.A. (ii) (a) Black clayey. (b) Refer soil analysis, Siruguppa. (iii) July-August 1949. (iv) (a) Ploughing, levelling, bund forming etc. (b) to (e) N.A. (v) N.A. (vi) Jowar A.S. 2095 ; Cotton M.A. II. (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) Nov. 1949, Jan., Feb., March 1950.

2. TREATMENTS :

Crop rotations :-

1. Groundnut+Redgram—Cotton—Korra.
2. Jowar—Groundnut+Redgram—Cotton
3. Cotton—Groundnut+Redgram—Jowar.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6. (iv) (a) 44'×22.5'. (b) 29'×7.5'. (v) 7.5' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948-1956. (b) Yes, as per rotation. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) Data N.A.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield
1.	Cotton	613 (kapas)
2.	Groundnut	747 (pod)
	Redgram	162 (grain)
3.	Groundnut	762 (pod)
	Redgram	246 (grain)

Crop :- As per rotation.

Ref :-Ms. 50(64)/49(39)/48(39).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'R'.

Object :- To find out the economical rotation for the black soils under irrigation. (3 course rotations ; deep soils).

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) July, August 1950. (iv) (a) Ploughing, level'ing, bund forming, etc (b) to (e) N.A. (v) N.A. (vi) Jowar. A.S. 2095 ; Cotton. M.A. II. (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) Nov. 50 ; Jan., February and March 1951.

2. TREATMENTS :

Crop rotation.

1. Groundnut+Red-gram—Cotton—Korra.
2. Jowar—Groundnut+Redgram—Cotton.
3. Cotton—Groundnut+Redgram—Jowar.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a) 44'×22.5'. (b) 29'×7.5'. (v) 7.5' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948-1956. (b) As per rotation. (c) N.A. (v)(a) Nil. (b) N.A. (vi) Nil. (vii) Data N.A.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield
1.	Korra	1146.0 (grain) 4633 (straw)
2.	Cotton	436.0 (kapas)
3.	Jowar	1687.5 (grain) 9233 (straw)

Crop :- As per rotation.

Ref :-Ms. 52(86)/51(N.A.)/50(64)/49(39)/48(39)

Site :- Agri Res. Stn. Siruguppa.

Type :- 'R'

Object :- To find out the most economical rotation in irrigated black soils of Tungabhadra project.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa (iii) Cotton :- 26.8.52 ; Groundnut. :- 10.7.52 ; Redgram :- 10.7.1952. (iv) (a) Ploughing, levelling, bund forming, etc. (b) to (e) N.A. (v) F.Y.M. at 10 C.L./ac. (vi) Cotton Laxmi (late), Groundnut TMV,2, Red-gram—Udgir. Duration N.A. (vii) Irrigated. (viii) Intercultivation, weeding. (ix) 7.18" (10.7.1952 to 27.3.1953) (x) Cotton 27.2.53 & 27.3.53 ; Groundnut. 27.11.1952. Red. Gram. 8.1.53. and 9.1.1953.

2. TREATMENTS :

Crop rotations.

1. Groundnut+Redgram—Cotton—Korra
2. Jowar—Groundnut+Redgram—Cotton
3. Cotton—Groundnut+Redgram—Jowar

3. DESIGN

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a) 44'×22.5' (b) 29'×7.5' (v) 7.5' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948-1956. (b) No (c) N.A. (v) [(a) None. (b) N.A. (vi) Nil. (vii) Data for previous year N.A. This is the second year of the second cycle of the 3 course rotation.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield
1.	Cotton	2109 (kapas).
2.	Groundnut	639 (pod).
	Redgram	214 (grain).
3.	Groundnut	627 (pod).
	Redgram	254 (grain).

Crop :- As per rotation. Ref :- Ms. 53(44)/52 86/51(N.A.)/50 (64)/ 49(39)/48(39)

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'R'.

Object :- To find the best and most economical 3 course rotation of crops for the deep black soils.

1. BASAL CONDITIONS :

(i) (a), (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) Korra—10.7.53 Cotton—15.8.53 Jowar—10.7.53. (iv) N.A. (v) 5 tons/ac. of F.Y.M. (vi) Korra (N₁) Cotton (Laksmi), Jowar—Co. 9. (vii) Irrigated. (viii) Intercultivation and weeding twice. (ix) 17.14" (10.7.53 to 8.4.1954). (x) Korra—29.10.53, Cotton—17.3.1954 and 8.4.54, Jonna—5.11.1953.

2. TREATMENTS :

Crop rotations :-

1. Groundnut+Redgram—Cotton--Korra.
2. Cotton—Groundnut+Redgram--Jowar.
3. Jowar—Groundnut+Redgram—Cotton.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 44'×22½'. (b) 29'×7½'. (v) 7½' all round the net plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) yield data. (iv) (a) 1948—1956. (b) No. (c) N.A. (v) Nil. (vi) No. (vii) Nil.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Av. yield.	
1. Korra	525 (grain)	750 (straw).
2. Cotton	969 (I:apas).	
3. Jowar	1156 (grain)	3966 (straw).

Crop :- Groundnut.

Ref :- Ms. 48(40).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'R'.

Object :- To find the best rotation of crops for shallow soils (Three course rotations).

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) N.A. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) Jowar :- 1st week of July 1948 ; Cotton :- 1st fortnight of August. dates N.A. (iv) (a) Ploughing, levelling, bund forming etc. (b) to (e) N.A. (v) N.A. (vi) Jowar A.S. 2095 ; Cotton. M.A. II. Duration N.A. Details of other crops N.A. (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) Jowar—Nov. 1948 ; Cotton—Feb., March 1949.

2. TREATMENTS :

Crop rotations :—

1. Groundnut+Redgram—Cotton+Korra.
2. Jowar—Groundnut+Redgram—Cotton.
3. Cotton—Groundnut+Redgram—Jowar.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 44'×37.5'. (b) 38.5'×22.5'. (v) 2.75' at the ends and 7.5' along sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948—1956. (b) Yes. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Data N.A.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield	
1.	Jowar	1105 (grain)	5637 (straw).
2.	Groundnut	847 (pod)	1053 (haulms)
3.	Redgram+	—	—
	Cotton	904 (kapas).	

Crop :-As per rotation.

Site :- Agri. Res. Stn. Siruguppa.

Ref :-Ms. 49(40)/48(40).

Type :-'R'.

Object :-To find out the most economical rotation for the black soils under irrigation. (3 course rotations in shallow soil).

1. BASAL CONDITIONS:

(i) (a) As per treatments. (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) July—August 1949. (iv) (a) Ploughing, levelling, bund forming, etc. (b) to (e) N.A. (v) N.A. (vi) Jowar. A.S. 2095, Cotton M.A. II. (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) Nov. 1949, Jan., Feb. and March 1950.

2. TREATMENTS :

Crop rotations :—

1. Groundnut. Redgram—Cotton—Korra.
2. Jowar—Groundnut, Redgram—Cotton.
3. Cotton—Groundnut, Redgram—Jowar.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 44'×37.5'. (b) 38.5'×22.5'. (v) 2.75' along length and 7.5' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948—1956. (b) As per rotations. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Data N.A.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield	
1.	Cotton	495 (kapas).	
2.	Groundnut	805 (pod).	
	Redgram	114 (grain).	
3.	Groundnut	494 (pod).	
	Redgram	117 (grain).	

Crop :- As per rotation.

Ref :- Ms. 50(63)/49(40)/48(40).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'R'.

Object :-To find out the most economical rotation for the black soil under irrigation. (3 course rotations in shallow soil)

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) July, August. 1950 (iv) (a) Ploughing, levelling, bund forming (b) to (e) N.A. (v) N.A. (vi) Jowar A.S. 20/5, Cotton M.A. II. (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) Nov. 50, Jan. Feb. and March 1951.

2. TREATMENTS :

Crop rotations :-

1. Groundnut + Red gram—Cotton—Korra.
2. Jowar—Groundnut + Redgram—Cotton.
3. Cotton—Groundnut + Red gram—Jowar.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a) 44' × 37.5' (b) 38.5' × 22.5'. (v) 2.75' along length and 7.50' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948—1956. (b) As per rotations. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) Data N.A.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield
1.	Jowar	1035 (grain) 6450 (straw)
2.	Cotton	345 (kapas)
3.	Korra	1194 (grain) 5733 (straw)

Crop :- As per rotation.

Ref :- Ms. 52(85)/51(N.A.)/50(63)/49(40)/48(40).

Site :- Agri. Res. Stn. Siruguppa. Type :- 'R'.

Object :-To find-out the most economical rotation in irrigated black soils of Tungabhadra project.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) Cotton. 26.8.52 ; Groundnut 10.7.1952. (iv) (a) Ploughing, levelling, bund forming, etc. (b) to (e) N.A. (v) F.Y.M. at 10 C.L./ac. (vi) Cotton, Laxmi (Late) ; Groundnut. TMV 2 ; Redgram Udgir. (vii) Irrigated. (viii) Intercultivation. weeding. (ix) 7.18" (10.7.52 to 27.3.1953) (x) Cotton. 27.2.53 & 27.3.53. ; Groundnut, 20.11.1952 ; Redgram, 9.1.1953 and 10.1.1953.

2. TREATMENTS :

Crop rotation :-

1. Groundnut + Redgram—Cotton—Korra.
2. Jowar—Groundnut + Redgram—Cotton.
3. Cotton—Groundnut + Redgram.—Jowar.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a) 44' × 37.5' (b) 38.5' × 22.5'. (v) Border of 2.75' at the two ends and a strip of 7.50' along the length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948—1956. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Data N.A. This is the second year of the second cycle of the 3 course rotations.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield.
1.	Cotton.	415 (kapas).
2.	Groundnut Redgram.	435 (pods). 130 (grain).
3.	Groundnut Redgram.	352 (pods). 103 (grain).

Crop :- As per rotation.

Ref :- Ms. 53(43).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'R'.

Object :- To find out the most economical 3 course rotation for the shallow soils of Thungabhadra project.

1. BASAL CONDITIONS :

(i) (a), (b) As per treatments (c) N.A. (ii) (a) Heavy black clayey soil (b) Refer soil analysis, Siruguppa. (iii) Korra—10.7.53 ; Jowar—10.7.53 ; Cotton—15.8.53. (iv) N.A. (v) 5 ton/ac. of F.Y.M. (vi) Korra (N₁), Jowar (C₀9), Cotton (Lakshmi) (vii) Irrigated. (viii) Intercultivation and weeding twice (ix) 17.14" (10.7.1953 to 8.4.54) (x) Korra—28.10.53, Jowar—5.11.53, Cotton—17.3.54 to 8.4.1954.

2. TREATMENTS :

Rotation Cycles as follow :

1. Groundnut+Redgram—Cotton—Korra.
2. Jowar—Groundnut+Redgram—Cotton.
3. Cotton—Groundnut+Redgram—Jowar.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) (a) 43½' × 57.5' (b) 38½' × 22½' (v) 2½' along length and 7½' along breadth (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil. (iii) Crop yield (iv) (a) 1948—1956 (b) No (c) N.A. (v) Nil (vi) No (vii) Nil.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield
1.	Korra	337 (grain) 917 (straw)
2.	Cotton	284 (kapas)—
3.	Jowar	918 (grain) 3445 (straw).

Crop :- As per rotation.

Ref :- Ms. 48(42).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'R'.

Object :- To find the best rotation of crops for shallow soils (4 course rotations).

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) N.A. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) Jowar—1st week of July 48 ; Cotton—1st fortnight of August. (iv) (a) Ploughing, levelling, bund forming ; etc. (b) to (e) N.A. (v) N.A. (vi) Jowar A.S. 2095 ; Cotton. M.A. II. Duration N.A. Details of other crops N.A. (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) Nov.—March 1949 for Jowar & Cotton.

2. TREATMENTS :

Rotation cycles as follow :-

1. Groundnut+Redgram—Cotton—Wheat—Jowar.
2. Jowar—Wheat—Cotton—Groundnut+R. gram.
3. Wheat—Groundnut+Redgram —Jowar—Cotton.
4. Cotton—Jowar—Groundnut+Redgram—Wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 4(b) N.A. (iii) 6 (iv) (a) 44'×30' (b) 29'×15'. (v) 7.5' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Crop yield. (iv) (a) 1948—1955. (b) As per treatment. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) N.A.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield
1.	Jowar	1476 (grain) 6589 (straw)
2.	Groundnut+ Redgram	805 (pod) 1453 (haulm)
3.	Wheat	718 (grain)
4.	Cotton	833 (kapas)

Crop :-As per rotation.**Ref :-Ms. 49(38)/48(42).****Site :-Agri. Res. Stn. Siruguppa.****Type :- 'R'.****Object :-To find out the most economical rotation for the black soil under irrigation. (4 course rotations in shallow soils.)****1. BASAL CONDITIONS :**

(i) (a) As per treatments. (b) As per treatments. (c) N. A. (ii) (a) Heavy black clayey soil. (b). Refer soil analysis, Siruguppa. (iii) July-Nov. 1949. (iv) (a) Ploughing, levelling, bund forming, etc.(b) to (e) N.A. (v) N. A. (vi) Jowar—A.S. 2095, Cotton—M.A. II (vii) Irrigated (viii) Interculturing, weeding. (ix) N.A. (x) Nov.-March 1950.

2. TREATMENTS :

Rotation cycles as follows :-

1. Groundnut+Redgram—Cotton—Wheat—Jowar.
2. Jowar—Wheat—Cotton—Groundnut+Redgram.
3. Wheat—Groundnut+Redgram—Jowar—Cotton.
4. Cotton—Jowar—Groundnut+Redgram—Wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (ii) 6 (iv) (a) 44'×30' (b) 29'×15' (v) 7.5' all round (vi) Yes.

4. GENERAL :

(i) Satisfactory (ii) Nil (iii) Crop yield (iv) (a) 1948-1955. (b) As per rotation. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil (vii) Raw data N.A.

5. RESULTS :

Treatment	Crop	Av. yield in lb./ac.
1.	Cotton	486 (kapas)
2.	Wheat	490 (grain)
3.	Groundnut	983 (pods)
	Redgram	258 (grain)
4.	Jowar.	2758 (grain)

Crop :- As per rotation.

Ref :- Ms. 50 (65) /49 (38)/48 (42).

Site :- Agri. Res. Station. Siruguppa.

Type :- 'R'.

Object :- To find out the most economical rotation for the black soils under irrigation. (4 Course rotation in shallow soil).

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa (iii) July-Nov. 1950. (iv) (a) Ploughing, levelling, bund forming, etc. (b) to (e) N.A. (v) N.A. (vi) Jowar, A.S. 2095; Cotton. M.A. II (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) Nov.-March 1951.

2. TREATMENTS :

Rotational cycles as follow :-

1. Groundnut+Redgram—Cotton—Wheat—Jowar.
2. Jowar—Wheat—Cotton—Groundnut+Redgram.
3. Wheat—Groundnut+Redgram—Jowar—Cotton.
4. Cotton—Jowar—Groundnut+Redgram—Wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 44' x 30'. (b) 29' x 15' (v) 7.5' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil (iii) Crop yield (iv) (a) 1948-1955. (b) As per rotation. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil (vii) N.A.

5. RESULTS :

Av. yield in lb /ac.

Treatment	Crop	Av. yield
1.	Jowar	742 (grain) 6983 (straw)
2.	Wheat	531 (,,) —
3.	Cotton	494 (kapas) —
4.	Groundnut	300 (pod) —
	Redgram	520 (grain) —

Crop :- As per rotation.

Ref :- Ms. 52(87)/51 (N.A)/50 (65)/
49 (38)/48 (42)

Site :- Agri. Res. Stn. Siruguppa. Type :- 'R'.

Object :- To find out the most economical rotation for irrigated black soil of Tungabhadra project.

1. BASAL CONDITIONS :

(i) (a) & (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) Groundnut—9.7.1952; Redgram—10.7.1952; Jowar :—9.7.1952; Wheat—6.11.1952; Cotton—26.8.1952. (iv) (a) Ploughing, levelling, bund forming, etc. (b) to (e) N.A. (v) F.Y.M. at 10 C.L./ac. (vi) Groundnut :—TMV2. Redgram :—Udgir. (Both durations not available). Jowar :—Co 9. (Early).; Wheat :—Local (Early). Cotton.—Laxmi. (Late). (vii) Irrigated. (viii) Intercultivation, weeding. (ix) 7.18" (9.7.52 to 27.3.1953). (v) Groundnut 24.11.1952; Redgram 7.1.53; (Jowar 5.11.52; Wheat. 20.2.53 & 27.3 1953.

2. TREATMENTS :

Rotation cycles as follow :-

1. Groundnut+Redgram—Cotton—Wheat—Jowar.
2. Jowar—Wheat—Cotton—Groundnut+Redgram.
3. Wheat—Groundnut+Redgram—Jowar—Cotton.
4. Cotton—Jowar—Groundnut+Redgram—Wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 44' x 33'. (b) 29' x 15'. (v) 7.5' all round. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948—1955. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil (vii) This is the first year of the second cycle of 4 course rotational experiment.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield
1.	Groundnut	331 (pod).
	Redgram	169 (grain).
2.	Jowar	1845 (grain).
3.	Wheat	756 (grain).
4.	Cotton	1193 (kapas).

Crop :- As per rotation. Ref :- Ms. 53(45)/52(87)/51(N.A.)506(5)/49(38)/48(42).

Site :- Agri. Res. Str. Siruguppa.

Type :- 'R'.

Object :- To find out the most economical 4 course rotation of crops for black soils.

1. BASAL CONDITIONS :

(i) (a), (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) Cotton—15.4.53 ; Wheat—31.10.53 ; Groundnut+Redgram—10.7.53; Jowar—9.7.53. (iv) N.A. (v) 5 ton/ac. of F.Y.M. (vi) Cotton (Laxmi), Jowar (Co 9), Wheat (Glumed). (vii) Irrigated. (viii) Intercultivation and weeding twice. (ix) 17.14". (9.7.53 to 8.4.1954. (x) Cotton—17.3.54 and 8.4.54; Wheat 23.2.54 ; Groundnut+Redgram—10.11.53 and 16.1.1954 ; Jowar—5.11.1953.

2. TREATMENTS :

Rotation cycles as follows :-

1. Groundnut+Redgram—Cotton—Wheat—Jowar.
2. Jowar—Wheat—Cotton—Groundnut+Redgram.
3. Wheat—Groundnut+Redgram—Jowar—Cotton.
4. Cotton—Jowar—Groundnut+Redgram—Wheat

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6. (iv) (a) 44'×30'. (b) 29'×15'. (v) 7½' all round the net plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Crop yield. (iv) (a) 1948—1955. (b) No. (c) N.A. (v) Nil. (vi) No. (vii) Nil.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield
1.	Cotton	609 (kapas.) —
2.	Wheat	607 (grain.) 708
3.	Groundnut	491 (pod.)
	Redgram	409 (grain.) —
4.	Jowar	743 (grain.) 2966 (straw)

Crop :- As per rotation.

Ref :- Ms. 48(41)

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'R'.

Object :- To find the most economical 4 course rotation of crops for black soils.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) N.A. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) Jowar :— 23.7.48 ; Cotton :— 1st fortnight of August. (iv) (a) Ploughing, levelling, bund forming, etc. (b) to (e) N.A. (v) N.A. (vi) Jowar. A.S. 2093 ; Cotton M.A. II ; Duration N.A. Details of other crops N.A. (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) Nov.—March 49.

2. TREATMENTS :

Rotation cycles as follow :—

1. Groundnut+Redgram—Cotton—Wheat—Jowar.
2. Jowar—Wheat—Cotton—Groundnut+Redgram.
3. Wheat—Groundnut+Redgram—Jowar—Cotton.
4. Cotton—Jowar—Groundnut+Redgram—Wheat.

3. DESIGN :

(i) R.B.D. (ii) 4. (b) N.A. (iii) 6. (iv) a 32'×30'. (b) 29'×15'. (v) 1.5' at both the ends and 7.5' along the sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948—1955. (b) As per treatments. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield	
1.	Jowar	2860 (grain)	5462 (straw).
2.	Groundnut	903 (pod)	1710 (haulm).
	Redgram	—	—
3.	Wheat	1140 (grain)	—
4.	Cotton	1776 (kapas)	—

Crop :- As per rotation.

Ref :- Ms. 49(37)/48 (41).

Site :- Agri. Res. Stn. Siruguppa.

Type :- 'R'.

Object :— To find out the economical rotation for the black soil under irrigation. (4 course rotation in deep soil).

1. BASAL CONDITIONS :

(i) (a) As per treatments (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) July—Nov. 1949. (iv) (a) Ploughing, levelling, bund forming etc. (b) to (e) N.A. (v) N.A. (vi) Jowar A.S. 2095 ; Cotton M.A. II. (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) Nov.—March. 1950.

2. TREATMENTS :

Rotation cycles as follow :—

1. Groundnut+Redgram—Cotton—Wheat—Jowar.
2. Jowar—Wheat—Cotton—Groundnut+Redgram.
3. Wheat—Groundnut+Redgram—Jowar—Cotton.
4. Cotton—Jowar—Groundnut+Redgram—Wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 32'×30'. (b) 29'×15'. (v) 1.5' along length and 7.5' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Crop yield. (iv) (a) 1948—1955. (b) As per rotations. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield
1.	Cotton	821 (kapas.)
2.	Wheat	684 (grain.)
3.	Groundnut	1205 (pod.)
	Redgram	461 (grain.)
4.	Jowar	4026 (grain.)

Crop :- As per rotation.
Site :- Agri. Res. Stn. Siruguppa.

Ref :- Ms. 50(66)/49(37)/48(41).
Type :- 'R'.

Object :- To find out the most economical rotation for the black soils under irrigation. (4 course rotation in deep soils).

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) July-Nov 1950. (iv) Ploughing, levelling, bund forming etc. (b) to (e) N.A. (v) N.A. (vi) Jowar A.S. 2095 ; Cotton M.A. II. (vii) Irrigated. (viii) Interculturing, weeding. (ix) N.A. (x) Nov.-March 1951.

2. TREATMENTS :

Rotation cycles as follow :

1. Groundnut + Redgram—Cotton—Wheat—Jowar.
2. Jowar—Wheat—Cotton—Groundnut + Redgram.
3. Wheat—Groundnut + Redgram—Jowar—Cotton.
4. Cotton—Jowar—Groundnut + Redgram—Wheat.

3. DESIGN :

(i) (a) R.B.D. (ii) (a) 4 (b) N.A. (iii) 6. (iv) (a) 32' × 30'. (b) 29' × 15'. (v) 1.5' along length and 7.5' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Crop yield. (iv) (a) 1948-1955. (b) As per rotations. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield	
1.	Jowar	1225 (grain)	8267 (straw)
2.	Wheat	1106	(grain)
3.	Cotton	713	(kapas)
4.	Groundnut	317	(pod)
	Redgram	1167	(grain)

Crop :- As per rotation.
Site :- Agri. Res. Stn. Siruguppa.

Ref :- Ms. 52(88)/51(N.A.)/50(66)/49(37)/48(41)
Type :- 'R'.

Object :- To find-out the most economical rotation in the irrigated black soils of Thungabhadra project.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) Groundnut :- 10.7.52 ; Redgram :- 10.7.52 ; Jowar :- 10.7.52 ; Wheat :- 6.11.1952 ; Cotton :- 26.8.52. (iv) (a) Ploughing, levelling, bund forming, etc. (b) to (e) N.A. (v) F.Y.M. at 10 C.L./ac. (vi) Groundnut :- TMV 2 and Redgram :- Udgir (both durations not available). Jowar :- C0 9 (Early.) Wheat :- Local (early). Cotton :- Laxmi (late). (vii) Irrigated. (viii) Intercultivation, weeding. (ix) 7.18" (10.7.52 to 27.3.1953). (x) Groundnut 25.11.1952 ; Redgram. 6.1.1953 ; Jowar. 3.11.1952 ; Wheat 13.2.1953 ; Cotton. 27.2.53 and 27.3.1953.

2. TREATMENTS :

Rotation cycles as follow :

1. Groundnut + Redgram—Cotton—Wheat—Jowar.
2. Jowar—Wheat—Cotton—Groundnut + Redgram.
3. Wheat—Groundnut + Redgram—Jowar—Cotton.
4. Cotton—Jowar—Groundnut + Redgram—Wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 32' × 30'. (b) 29' × 25'. (v) 1.5' at both the ends and a strip of 7.5' along the length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Crop yield. (iv) (a) 1948-1955. (b) No. (c) N.A. (v) (a) None. (b) N.A. (vi) Nil. (vii) This is the first year of the second cycle of the 4 course rotational experiment.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield
1.	Groundnut	488 (pod)
	Redgram	500 (grain)
2.	Jowar	2043 (grain)
3.	Wheat	1043 (grain)
4.	Cotton	329 (kapas)

Crop :- As per rotation.

Ref :- Ms 53(46)/52(88)/51(N.A.)/50(66)/49(37)/
48(41.)

Site :- Agri. Res. Stn. Siruguppa. Type :- 'R'.

Object :- To find out the best and most economical 4 course rotation of crops for the deep black cotton soils.

1. BASAL CONDITIONS :

(i) (a), (b) As per treatments. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Refer soil analysis, Siruguppa. (iii) Groundnut+Redgram:-9,10.7.53. Jowar :-9.7.53 Cotton-15.8.53 ; Wheat-31.10.53. (iv) N.A. (v) 5 ton F.Y.M./ac. (vi) Cotton-Laksmi ; Jowar (Co 9), Wheat (glumed). (vii) Irrigated. (viii) Weeding twice and intercultivation. (ix) 17.14" (9.7.53 to 8.4.1954). (x) Cotton-17.3.54 and 8.4.54 ; Wheat-13.2.54. Groundnut+Redgram-9.11.53 and 15.1.54. Jowar-5.11.1953.

2. TREATMENTS :

Rotation cycles as follow :

1. Groundnut+Redgram-Cotton-Wheat-Jowar.
2. Jowar-Wheat-Cotton-Groundnut+Redgram.
3. Wheat-Groundnut+Redgram-Jowar-Cotton.
4. Cotton-Jowar-Groundnut+Redgram-Wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 32'×30'. (b) 29'×15'. (v) 1½' along length and 7½' along breadth. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Crop yield. (iv) (a) 1948-1960 (b) No. (c) N.A. (v) Nil. (vi) No. (vii) Nil.

5. RESULTS :

Av. yield in lb./ac.

Treatment	Crop	Av. yield
1.	Cotton	582 (kapas)
2.	Wheat	705 (grain) 750 (straw)
3.	Groundnut	424 (pod) ;
	Redgram	801 (grain)
4.	Jowar	772 (grain) ; 3038 (straw)

Crop :- Gram&Wheat.

Ref :- Ms. 52(135).

Site :- Agri. Res. Stn. Annigeri.

Type :- 'X'.

Object :- To find out the optimum proportion of Gram and Wheat to get maximum yield of Wheat and also Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black intermixed with lime nodules and fine sandy particles. (b) Refer soil analysis, Annigeri. (iii) Nov. 1952. (iv) (a) N.A. (b) Gram :- drilled by 4 coultered 12" drill. (c) Gram 32 lb/ac. ; Wheat 32 lb/ac. (d) Gram, 12" drill. (e) N.A. (v) Nil. (vi) Chafa Wheat Kenphad ; Gram medium (early). (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) Feb. 1953.

2. TREATMENTS :

1. Gram alone.
2. Wheat alone.
3. Gram and Wheat as 2 : 1
4. " " " " 4 : 1
5. " " " " 6 : 1
6. " " " " 8 : 1
7. " " " " 10 : 1

3. DESIGN :

- (i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 2 (iv) (a) N.A. (b) 40'×18', 20' ; 21' or 22'. (v) Border left. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil

5. RESULTS :

- (i) Wheat 291 lb./ac ; Gram 609 lb./ac.
 (ii) 67.7 lb./ac. ; 148.2 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield (Wheat)	Av. yield (Gram)
1.	—	578
2.	273	—
3.	329	591
4.	277	601
5.	251	665
6.	329	605
7.	289	613
S. ¹ /mean.	=47.9	=104.8 lb./ac.

Crop :- Groundnut and Jowar.

Ref :- Ms. 52(134)

Site :- Agri. Res. Stn. Annigeri.

Type :- 'X'.

Object :- To find the best proportion of Jowar & Groundnut.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black intermixed with lime nodules and fine sandy particles. (b) Refer soil analysis, Annigeri (iii) 28.7.1952. (iv) (a) N.A. (b) Sown by drilling with 3 coultered drill (c) Groundnut :-80 lb./ac. Jowar :-4 lb./ac. (d) 15" apart. (e)—. (v) F.Y.M. at 5 C.L./ac. Time and method of application N.A. (vi) Jowar-fulgar white ; medium. Groundnut-Spanish improved, (early.) (vii) Unirrigate I. (viii) Thinning of Jowar was done on 22.8.52 & interculturing on 16.8.52 & 6.9.52. (ix) N.A. (x) 29.12.1952 ; 20.11.1952.

2. TREATMENTS :**Treatment**

1. Jowar alone.
2. Groundnut alone.
3. Groundnut+Jowar as 10 : 1
4. " " " 8 : 1
5. " " " 6 : 1
6. " " " 8 : 2
7. " " " 6 : 3

3. DESIGN :

- (i) R.B.D. (ii) (a) 7 (b) N.A. (iii) 2 (iv) (a) & (b) 8'—9"×48' for 1, 2 & 5 ; 11'—3"×48' for 4 & 7 ; 13'—9"×48' for 3 and 12'—6"×48' for 6. (v) Nil. (vi) yes.

4. GENERAL :

- (i) Satisfactory, lodging of jowar was noticed more in one row plots. (ii) Nil. (iii) Grain & pod yield. (iv) (a) No. (b) No (c) N.A. (v) (a) N.A. (b) N.A. (vi) & (vii) Nil.

5. RESULTS :

- (i) Groundnut (pod) 262 lb./ac. Jowar (grain) 2644 lb./ac.
(ii) " 57.7 lb./ac. " 380.9 lb./ac.
(iii) Treatment differences are not significant for groundnut crop but are highly significant for jowar crop.
(iv) Av. yield of grain in lb./ac.

Treatment	Groundnut (pod)	Jowar
1.	—	625
2.	278	—
3.	347	3129
4.	241	4127
5.	249	3721
6.	229	2608
7.	226	1655
S.E /mean	=40.8 lb./ac.	=269.4 lb./ac.

Crop :-Jowar and Groundnut.
Site :-Agri. Res. Stn. Annigeri.

Ref :-Ms. 53(173).
Type :-'X'.

Object :—To find out the best plot proportion of Groundnut and Jowar.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Medium black intermixed with lime nodules and fine sandy particles. (b) Refer soil analysis, Annigeri. (iii) Jowar :—18.7.1953 ; and Groundnut. 27.6.1953. (iv) (a) N.A. (b) to (d) Groundnut and Jowar seed were drilled at 80 lb. and 4 lb./ac. respectively. Drilling with 3 coultered drill 15" apart. (e) N.A. (v) 5 C.L./ac. of F.Y.M. thoroughly mixed (vi) Jowar-fulgar white ; medium. Groundnut-Spanish improved ; (early). (vii) Unirrigated. (viii) Filling the gaps, thinning and interculturing. (ix) N.A. (x) Jowar-30.12.1953 ; Groundnut, 18.10.1953.

2. TREATMENTS :

Treatment	Gross plot size.	Net plot size.
1. Jowar alone	33' × 50'	24' × 40'
2. Groundnut alone	30' × 50'	24' × 40'
3. Groundnut : Jowar :: 2 : 1	30' × 50'	24' × 40'
4. " : " :: 4 : 1	31' × 50'	25' × 31'—6"
5. " : " :: 6 : 1	27' × 50'	21' × 45'—9"
6. " : " :: 8 : 1	33' × 50'	27' × 35'—6"
7. " : " :: 10 : 1	28' × 50'	22' × 43'—8"

3. DESIGN :

- (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) and (b) As given under treatments. (v) 3' at the ends. 2'-1½" to 7'-3" along the sides. (vi) Yes.

4. GENERAL :

- (i) The germination was quite satisfactory. Groundnut thrived well till formation of pods, but heavy rains in Sept.—Oct. gave set-back to further development. Jowar was attacked by stem borer in the early stage, physiological disturbances resulting in the ruptures of the grain were also observed. (ii) Jowar attacked by stem borers and mildew was present to a certain extent. Sugary disease (rupture of grain in milk stage) was also much more. Virulent attack of root-rot to groundnut. No control measures taken. (iii) Yield data. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) No reason mentioned in the record books for high yields.

5. RESULTS :

- (i) Groundnut (pod) 1965 lb./ac. ; Jowar (grain) 1128 lb./ac.
(ii) " 271.78 lb./ac. ; " 298.3 lb./ac.
(iii) Treatment differences are not significant in case of groundnut but highly significant in case of jowar.

(iv) Av. yield in lb./ac.

Treatment	Groundnut (pod)	Jowar
1.	—	418
2.	1975	—
3.	2177	1005
4.	1885	504
5.	1987	205
6.	1795	537
7.	1972	1100
S.E./mean	= 135.9 lb./ac.	= 149.2 lb./ac.

Crop :- Gram and Jowar.

Ref :- Ms. 52(138).

Site :- Agri. Res. Stn. Bijapur.

Type :- 'X'.

Object :- To find out the best proportion of Gram and Jowar to get maximum return.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) F.Y.M. at 5 C.L./ac. (ii) (a) Medium black soils. (b) Refer soil analysis, Bijapur. (iii) 11.10. 952. (iv) (a) Ploughing once in 3 years, 2—3 harrowings. (b) Drilling with 18" — 3 coultered drill. (c) 4 lb./ac. for Jowar and 30 lb./ac. for Gram. (d) 18". (e) — (v) Nil. (vi) Chafa Gram, Jowar M. 35—1 (both early). (vii) Unirrigated. (viii) Interculturing. (ix) 4.65" (11.10.1952 to 17.2.53). (x) Gram : 9.1.1953 Jowar. 17.2.1953 :

2. TREATMENTS :

1. Gram alone.
2. Jowar alone.
3. Gram and Jowar in the ratio 2 : 1.
4. " " " 4 : 1.
5. " " " 6 : 1.
6. " " " 8 : 1.
7. " " " 10 : 1.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 2. (iv) (a) 51' x 39'. (b) [45' x 27', 30', 31.5' or 33' adjusted according to proportions. (v) 3' at the ends ; 6', 4.5', 3.75' and 3' along sides. (vi) Yes.

4. GENERAL :

(i) Germination of the seeds was satisfactory. The growth of the crop was not so good due to the absence of rain and famine conditions prevailed during crop season. (ii) Nil. (iii) Grain yield data. (iv) (a) 1952—1953. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) Gram 244.7 lb./ac. Jowar 883 lb./ac.
 (ii) " 100.9 lb./ac. " 358 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Gram	Jowar
1.	294.8	—
2.	—	577
3.	328.4	1250
4.	190.4	565
5.	294.2	1231
6.	160.8	634
7.	199.5	1039
S.E./mean	= 71.32 lb./ac.	= 253.5 lb./ac.

Crop :- Gram and Jowar.

Ref :- Ms. 53(171).

Site :- Agri. Res. Stn. Bijapur.

Type :- 'X'.

Object :- To work out returns of mixed cropping of Gram and Jowar as compared with those of entire crop.

1. BASAL CONDITIONS :

(i) (a) Cereals are rotated with pulses. (b) Jowar. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Medium black soil. (b) Refer soil analysis, Bijapur. (iii) 20.10.1953. (iv) (a) Ploughing once in three years. (b) Gram :- drill sowing with 12" 4 coultured seed drill ; Jowar :- drill sowing with 18" 3 coultured seed drill. (c) Gram :- 30 lb./ac. ; Jowar :- 4 lb./ac. (d) Jowar—18" ; Gram—12". (e)—(v) 5 C.L./ac. :- of F.Y.M. spread out at the time of harrowing. (vi) Chafa Gram ; Jowar M—35—1 (early). (vii) Unirrigated. (viii) Interculturing. (ix) 6.08" (20.10.53 to 17.2.1954). (x) 17.2.1954.

2. TREATMENTS :

1. Gram alone
2. Jowar alone
3. Gram and Jowar in the ratio of 2 : 1
4. " " " 4 : 1.
5. " " " 6 : 1.
6. " " " 8 : 1.
7. " " " 10 : 1.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 2. (iv) (a) 51'×39'. (b) 45'×32'. for 1, 2, 3 & 5 ; 45'×30' for 4. ; 45'×27' for 6. ; 45'×33' for 7. (v) 3' along length, 3½', ; 4½', 9½' or 3' along breadth. (vi) Yes.

4. GENERAL :

(i) Germination was good. Growth of the crop was satisfactory. (ii) There was attack of sugary disease. No control measures taken. (iii) Grain yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) Gram. 601 lb./ac. Jowar. 553 lb./ac.
 (ii) " 72.4 lb./ac. " 292.9 lb./ac.
 (iii) The differences in yield due to treatments are not significant.
 (iv) Av. yield of grain in lb./ac.

Treatment	Gram	Jowar
1.	601	—
2.	—	567
3.	457	379
4.	640	533
5.	539	893
6.	750	677
7.	617	271
S.E./mean	= 51.2 lb./ac.	= 207.1 lb./ac.

Crop :- Groundnut and Cotton.

Ref : Ms. 53 (85).

Site :- Agri. Res. Stn. Dharwar.

Type :- 'M.X'.

Object :- To study the rotation of Cotton and Jowar with intercropping of Groundnut in Cotton with and without super applied to Groundnut.

1. BASAL CONDITIONS :

(i) (a) Jowar—Cotton (b) Jowar. (c) F.Y.M. at 5 C.L./ac. (ii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) Groundnut :- 3.7.53. Cotton :- 7.8.53. (iv) (a) 6 harrowings given to the plot: (b) Groundnut drilled and cotton dibbled. (c) Groundnut : 80 lb./ac. Cotton : 7 lb./ac. (d) Groundnut : 24", Cotton : 24". (e) N.A. (v) N.A. (vi) Groundnut, Spanish improved ; Cotton Jayadhar (vii) Unirrigated (viii) Intercultured once and weeded two times (ix) Groundnut : 16.68" (3.7.53 to 18.10.53) Cotton : 36.29" (7.8.53 to 15.2.54) (x) Groundnut : 18.10.1953. Cotton. 15.2. 1954.

2. TREATMENTS :

1. Cotton alone.
2. Groundnut intercropped with cotton.
3. Groundnut intercropped with cotton + 10 lb. P_2O_5 /ac. as Super applied to groundnut.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 62' × 50'. (b) 50' × 24' (v) 6' on all sides (vi) Yes.

4. GENERAL :

- (i) Satisfactory (ii) There was an attack of leaf eating caterpillars on the groundnut crop. No control measures taken (iii) Kapas & pod yield. (iv) (a) 1949-contd. (b) No (c) N.A. (v) (a), (b) N.A. (vi) No (vii) None.

5. RESULTS :

- (i) Groundnut :—952.8 lb./ac. ; Cotton :—413.0 lb./ac.
 (ii) „ 210.1 „ ; „ 43.9 „ .
 (iii) The effect of treatments on groundnut is not significant but for cotton the treatment effects are highly significant.
 (iv) Av. yield in lb./ac.

Treatment	Groundnut	Cotton.
1.	—	473.0
2.	943.8	400.0
3.	961.7	65.9
S.E./mean. =	81.68 lb./ac.	17.79 lb./ac.

Crop :-Groundnut and Jowar.
 Site :-Agri. Res. Stn. Dharwar.

Ref :-Ms. 52 (108).
 Type :-'X'.

Object :-To observe the yields of Groundnut and kharif Jowar when grown as mixed crops.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Cotton. (c) Nil. (ii) (i.) Medium black. (b) Refer soil analysis, Dharwar (iii) 21.7.1952 (both for Groundnut and Jowar). (iv) (a) The plot was ploughed with tractor and given 3 harrowings. (b), (c), (d) & (e) Groundnut dibbled at 15" × 6", 2 kernels per dibble. Jowar drilled with 3 coultered drill 15" apart at 4 lb./ac. (v) F.Y.M. at 5 C.L./ac. was applied by broadcasting a week prior to sowing of groundnut. (vi) Spanish improved (early) : Nanlyal (early) (vii) Unirrigated. (viii) Two interculturings and hand weedings. (ix) 17-19" Groundnut 29-04" (Jowar) (21.7.52 to 19.12.1952) (x) groundnut. 10.11.1952 ; Jowar 19.12.1952.

2. TREATMENTS :

	Net plot size.
1. Ground nut & Jowar in the proportion 0 : 1 row	60' × 27.50'
2. „ „ „ „ 1 : 0 „	60' × 27.50'
3. „ „ „ „ 2 : 1 „	60' × 26.25'
4. „ „ „ „ 4 : 1 „	60' × 25.00'
5. „ „ „ „ 6 : 1 „	60' × 26.25'
6. „ „ „ „ 8 : 1 „	60' × 22.50'
7. „ „ „ „ 10 : 1 „	60' × 27.50'

3. DESIGN :

- (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 2. (iv) (a) 70' × 30'. (b) As under treatments (v) 5' at the ends, varying at sides. (vi) Yes.

4. GENERAL :

- (i) Satisfactory. (ii) Nil (iii) Yield data. of groundnut pod and jowar grain. (iv) (a) 1952-1953. (b) No. (c) N.A. (v) (a) & (b) N.A. (vi) Nil (vii) Nil.

5. RESULTS :

- (i) Jowar 7369 lb./ac. Groundnut 423 lb./ac.
 (ii) „ 983.0 lb./ac. „ 31.3 lb./ac.
 (iii) The differences in yield due to treatments are highly significant.

(iv) Av. yield in lb./ac.

Treatment	Jowar (grain)	Groundnut (pod)
1.	2200	—
2.	—	649
3.	5902	241
4.	9084	323
5.	8967	361
6.	7914	479
7.	10145	487
S.E./mean	= 695.1 lb./ac.	= 22.1 lb./ac.

Crop :- Groundnut and Jowar.

Ref :-Ms. 53(155)

Site :- Agri. Res. Stn. Dharwar.

Type :- 'X'.

Object :- To observe the yields of Groundnut and kharif Jowar when grown as mixed crops.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) N.A. (iii) (a) Medium black. (b) Refer soil analysis, Dharwar. (iii) Groundnut 10.7.53 and Jowar :- 10.7.1953. (iv) (a) The plot was ploughed with tractor and given 3 harrowings. (b), (c), (d), and (e) Groundnut dibbled at 15"×6", 2 kernels per dibble. Jowar drilled with 3c—15" drill, at 4 lb./ac. at 2 grains/dibble. (v) F.Y.M. at 5 C.L./ac. was applied by broadcasting a week prior to sowing. (vi) Spanish improved, Nandyal. (vii) Unirrigated. (viii) Two interculturings and hand weedings. (ix) Groundnut 17 62"; Jowar 36.29" (10.7.53 to 26.12.1953). (x) Groundnut—29.10.1953; Jowar. 26.12.1953.

2. TREATMENTS :

	Net plot size
1. Groundnut and Jowar in the proportion 0 : 1 row.	60'×27.50'
2. " " " " 1 : 0 "	60'×27.50'
3. " " " " 2 : 1 "	60'×26.25'
4. " " " " 4 : 1 "	60'×25.00'
5. " " " " 6 : 1 "	60'×26.25'
6. " " " " 8 : 1 "	60'×22.50'
7. " " " " 10 : 1 "	60'×27.50'

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 2. (iv) (a) 70'×30'. (b) As under treatments. (iv) 5' at the ends, varying at sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) There was attack of leaf-eating caterpillars on groundnut. No control measures were taken. (iii) Groundnut pod and Jowar grain yield. (iv) (a) 1952-1953. (b) No. (c) N.A. (v) (a, b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) Groundnut 1149 lb./ac. Jowar 5761 lb./ac.
 (ii) " 187.6 lb./ac. " 737.4 lb./ac.
 (iii) The treatment differences are not significant in case of groundnut, but highly significant in case of jowar.
 (iv) Av. yield in lb./ac.

Treatment	Jowar (grain)	Groundnut (pod)
1.	1280 lb./ac.	—
2.	— "	1188 " lb./ac
3.	3879 "	770 "
4.	6225 "	948 "
5.	8011 "	1327 "
6.	8023 "	1279 "
7.	7151 "	1379 "
S.E./Mean	= 521.4 "	= 132.7 "

Crop :- Arabica Coffee.

Ref :- Ms. 48(51).

Site :- Coffee Res. Stn. Balehonnur.

Type :- 'M'.

Object :- To study the effect of varying combinations of N, P and K on the growth and yield of Coffee.

1. BASAL CONDITIONS :

(i) The area was under tea crop prior to 1937. Later it was cleared of tea crop and the soil was bulked and spread. Sub-soil drains were provided in 1942. 1000 lb./ac. of dry mulch was applied in two doses upto 1947 and after that 1000 lb./ac. was applied in one dose in dry weather. Lime was applied in 1943, 1948 and 1954. (ii) (a) Loam (Reddish). (b) N.A. (iii) Selected seedlings. (iv) Kents Arabica. (v) Planted 5' x 5' within sub-plots, neighbouring plants in sub-plots 6' apart. Each sub-plot is separated from its neighbouring plant by cement concrete slabs. (vi) Eight months. (vii) Nil, except for lime applied during years 1943, 1948 and 1954. (viii) Manuring, mulching, weeding, hot weather stirring, removing suckers, handling, spraying with Bourdeux mixture. Regulation of shade by arranging bamboos. Renewal of bamboo. (ix) Nil (x) Unirrigated. (xi) 120.19". (xii) October to December.

2. TREATMENTS :

1. 20 lb. N/ac. upto 1949 (applied in two doses) + 40 lb. N/ac. upto 1953 (applied in 2 doses) + 60 lb. N/ac. from 1954 onwards (applied in 3 doses.)
 2. (1) + 30 lb. P₂O₅/ac. applied in 2 doses.
 3. (1) + 40 lb. K₂O/ac. " "
 4. (1) + 30 lb. P₂O₅/ac + 40 lb. K₂O/ac. applied in 2 doses.
 5. Control (no manure, except leaf mulch)
- N as Urea and Nitro-lime ; P₂O₅ as Rock-phos or Hydro-Phos and K₂O as Mur. of Pot.
N applied in Feb.-March (pre-blossom), May (pre-monsoon) and Sept.-Oct. (post-monsoon) and P, K were applied in 2 doses. i.e., in Feb.-March and May.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) Upto 1955, 40 plants and after 1955, 20 plants. (v) One general guard row all round the plot. Cement concrete slabs separate each sub-plot. from its neighbour. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Treated with gammaxene to prevent attack of white stemborer. Spraying twice a year to control the disease. (iii) Yield of ripe cherry and clean coffee. (iv) (a) Planted in Sept. 1937-continued. (b) N.A. (v) and (vi) Nil.

5. RESULTS :

- (i) 625 lb./ac.
- (ii) 120.2 lb./ac.
- (iii) Treatment differences are significant.
- (iv) Av. yield of coffee in lb./ac.

Treatment	Av. yield
1.	485
2.	665
3.	528
4.	768
5.	682
S.E./mean	= 53.8 lb./ac.

Crop :- Arabica Coffee.

Ref :- Ms. 49(53)

Site :- Coffee Res. Stn. Balehonnur.

Type :- 'M'

Object :- To study the effect of varying combinations of N, P and K on the growth and yield of Coffee.

1. BASAL CONDITIONS :

- (i) The area was under tea crop prior to 1937. Later it was cleared of tea crop and the soil was bulked and spread. Sub-soil drains were provided in 1942. 1000 lb./ac. of dry mulch was applied in two doses upto 1947 and after that 1000 lb./ac. was applied in one dose in dry weather. Lime was applied in 1943, 1948 and 1954. (ii) (a) Loam (Reddish). (b) N.A. (iii) Selected seedlings. (iv) Kents Arabica. (v) Planted 5' x 5' within sub-plots. Neighbouring plants in sub-plots 6' apart. Each sub-plot is separated from its neighbouring plant by cement concrete slabs. (vi) Eight months. (vii)

Nil, except for lime applied during years 1943, 1948 and 1954. (viii) Manuring, mulching, weeding, hot weather stirring, removing suckers, handling, spraying with Bordeaux mixture. Regulation of shade by arranging bamboos, renewal of bamboo. (ix) Nil. (x) Unirrigated. (xi) 94.05". (xii) October to December.

2. TREATMENTS :

1. 20 lb. N/ac. upto 1949 (applied in two doses)+40 lb./ac. N upto 1953 (applied in 2 doses)+60 lb./ac. N from 1954 onwards (applied in 3 doses.)
 2. (1)+30 lb./ac. P_2O_5 applied in 2 doses.
 3. (1)+40 lb./ac. K_2O " " "
 4. (1)+30 lb./ac. P_2O_5 +40 lb./ac. K_2O applied in 2 doses.
 5. Control (no manure except leaf mulch).
- N as Urea and Nitrolime ; P_2O_5 as Rock-Phos or Hydro-Phos and K_2O Pot Mur. of Pot.
N applied in Feb, March (pre-blossom), May (pre-monsoon) and Sept-Oct. (post-monsoon) ; and P & K were applied in 2 doses, i.e. in Feb. March and May.

3. DESIGN :

- (i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) Upto 1955, 40 plants and after 1955, 20 plants. (v) One general guard row all round the plot. Cement concrete slabs separate each sub-plot, from its neighbour. (vi) Yes.

4. GENERAL :

- (i) Good. (ii) Treated with gammaxene to prevent attack of white stemborer. Spraying twice a year to control the disease. (iii) Yield of ripe cherry and clean coffee. (iv) (a) Planted in Sept. 1937-continued. (b) N.A. (v) and (vi) Nil.

5. RESULTS :

- (i) 1773 lb./ac.
- (ii) 368.1 lb./ac.
- (iii) Treatment differences are not significant.
- (iv) Av. yield in lb /ac.

Treatment	Av. yield
1.	1824
2.	1886
3.	1744
4.	1774
5.	1635
S.E./mean	=164.6 lb./ac.

Crop :- Arabica Coffee.

Ref :- Ms. 50(79).

Site :- Coffee Res. Stn. Balehonnur.

Type :- 'M'.

Object :-To study the effect of varying combinations of N, P & K on the growth & yield of Coffee.

1. BASAL CONDITIONS :

- (i) The area was under tea prior to 1937. Later it was cleared of tea crop and the soil was bulked and spread. Sub-soil drains were provided in 1942, 1000 lb./ac. of dry mulch was applied in two doses upto 1947 and after that 1000 lb./ac. was applied in one dose in dry weather. Lime was applied in 1943, 1948, and 1954.
- (ii) (a) Loam (Reddish) (b) N.A. (iii) Selected seedlings. (iv) Kents Arabica. (v) Planted 5' x 5' with in sub-plots. Neighbouring plants in sub-plots 6' apart. Each sub-plot is separated from its neighbouring plants by cement concrete slabs. (vi) Eight months. (vii) Nil, except for lime applied during years 1943, 1948 and 1954. (viii) Manuring, mulching, weeding, hot weather stirring, removing suckers, handling, spraying with Bordeaux mixture, regulation of shade by arranging bamboos, renewal of bamboo. (ix) Nil. (x) Unirrigated. (xi) 120.19". (xii) October to December.

2. TREATMENTS :

1. 20 lb./ac. N upto 1949 (applied in two doses)+40 lb./ac. N upto 1953 (applied in 2 doses)+60 lb./ac. N from 1954 onwards (applied in 3 doses).
 2. (1)+30 lb./ac. P_2O_5 applied in 2 doses.
 3. (1)+40 lb./ac. K_2O " " "
 4. (1)+30 lb./ac. P_2O_5 +40 lb. K_2O /ac, applied in 2 doses.
 5. Control (no manure except leaf mulch.)
- N as Urea & Nitro-lime ; P_2O_5 as Rock phos. or Hydro-phos and K_2O as Mur of Pot.
N applied in Feb.—March (pre-blossom), May (pre-monsoon) and Sept.-Oct. (post-monsoon) ; and P & K were applied in 2 doses, i.e. in Feb.-March and May.

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) Upto 1955, 40 plants & after 1955, 20 plants. (v) One general guard row all round the plot. Cement concrete slabs separate each sub-plot from its neighbour. (vi) Yes.

4. GENERAL :

(i) Very poor setting due to blossom showers. (ii) Treated with gammaxene to prevent attack of white stemborer, spraying twice a year to control the disease. (iii) Yield of ripe cherry & clean coffee. (iv) (a) Planted in Sept. 1937—continued. (b) N.A. (v) & (vi) Nil.

5. RESULTS :

- (i) 410 lb./ac.
 (ii) 202 lb./ac.
 (iii) Treatment differences are not significant.
 (iv) Av. yield in lb./ac.

Treatment	Av. yield.
1.	575
2.	406
3.	553
4.	279
5.	235
S.E./mean	= 90.4 lb./ac.

Crop :- Arabica Coffee.

Site :- Coffee Res. Stn. Balehonnur.

Ref :- Ms. 51(89).

Type :- 'M'.

Object :—To study effect of varying combinations of N P & K on the growth & yield of Coffee.

1. BASAL CONDITIONS :

(i) The area was under tea prior to 1937. Later it was cleared of tea crop and the soil was bulked and spread. Sub-soil drains were provided in 1942. 1000 lb./ac. of dry mulch was applied in two doses upto 1947 and after that 1000 lb./ac. was applied in one dose in dry weather. Lime was applied in 1943, 1948 and 1954. (ii) (a) Loam (Reddish) (b) N.A. (iii) Selected seedlings. (iv) Kents Arabica. (v) Planted 5' x 5' within sub-plots. Neighbouring plants in sub-plots 6' apart. Each sub-plot is separated from its neighbouring plant by cement concrete slabs. (vi) Eight months. (vii) Nil, except for lime applied during years 1943, 1948 and 1954. (viii) Manuring, mulching, weeding, hot weather stirring, removing suckers, handling, spraying with Bordeaux mixture. Regulation of shade by arranging bamboos. Renewal of bamboo. (ix) Nil. (x) Unirrigated. (xi) 99.02" (xii) October to December.

2. TREATMENTS :

- 20 lb./ac. N upto 1949 (applied in two doses) + 40 lb./ac. N upto 1953 (applied in 2 doses) + 60 lb./ac. N from 1954 onwards (applied in 3 doses.)
 - (1) + 30 lb./ac. P_2O_5 applied in 2 doses.
 - (1) + 40 lb./ac. K_2O .
 - (1) + 30 lb./ac. P_2O_5 + 40 lb./ac. K_2O applied in 2 doses.
 - Control (no manure-except leaf mulch.)
- N as Urea & Nitro-lime ; P_2O_5 as Rock phos. or Hydro-phos. and K_2O as Mur. of Pot.
 N applied in Feb.—March (pre-blossom), May (pre-monsoon) and Sept.—Oct. (post-monsoon) ; and P & K were applied in 2 doses, i.e. in Feb.-March and May.

3. DESIGN :

(i) L. Sq. (ii) (a) 5 (b) N.A. (iii) 5 (iv) Upto 1955, 40 plants & after 1955, 20 plants. (v) One general guard row all round the plot. Cement concrete slabs separate each sub-plot from its neighbour. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Treated with gammaxene to prevent attack of white stemborer. Spraying twice a year to control the disease. (iii) Yield of ripe cherry & clean coffee. (iv) (a) Planted in Sept. 1937—continued. (b) N.A. (v) & (vi) Nil.

5. RESULTS :

- (i) 2220 lb./ac.
 (ii) 521.3 lb./ac.
 (iii) Treatment differences are not significant.

(iv) Av. yield in lb /ac.

Treatment	Av. yield.
1.	2433
2.	2372
3.	2344
4.	2387
5.	1567
S.E./mean	= 233.1 lb./ac.

Crop :-Arabica Coffee.

Ref :-Ms. 52 (148)

Site :-Coffee Res. Stn. Balehonnur.

Type :-'M'.

Object :- To study the effect of varying combinations of N, P & K on the growth & yield of Coffee.

1. BASAL CONDITIONS :

(i) The area was under tea prior to 1937. Later it was cleared of tea crop and the soil was bulked and spread. Sub-soil drains were provided in 1942. 1000 lb./ac. of dry mulch was applied in two doses upto 1947 and after that 1000 lb./ac. was applied in one dose in dry weather. Lime was applied in 1943, 1948 and 1954. (ii) (a) Loam (Reddish). (b) N.A. (iii) Selected seedlings. (iv) Kents Arabica. (v) Planted 5' x 5' with in sub-plots. Neighbouring plants in sub-plots 6' apart. Each sub-plot is separated from its neighbouring plant by cement concrete slabs. (vi) Eight months. (vii) Nil, except for lime applied during years 1943, 1948 and 1950. (viii) Manuring, mulching, weeding, hot weather stirring, removing suckers, handling spraying with Bordeaux mixture. Regulation of shade by arranging bamboos. Renewal of bamboo. (ix) Nil. (x) Unirrigated. (xi) 98.22" (xii) October to December.

2. TREATMENTS :

- 20 lb.N/ac. upto 1949 (applied in two doses)+40 lb./ac. N upto 1953 (applied in 2 doses)+60 lb./ac. N from 1954 onwards (applied in 3 doses.)
 - (1)+30 lb./ac. P₂ O₅ applied in 2 doses.
 - (1)+40 lb./ac. K₂ O " "
 - (1)+30 lb./ac. P₂ O₅+40 lb./ac. K₂ O applied in 2 doses.
 - Control (no manure except leaf mulch.)
- N as Urea & Nitro lime : P₂ O₅ as Rock Phos. or Hydro-Phos. and K₂ O as Mur. of Pot.
N applied in Feb.—March (pre-blossom). May (pre-monsoon) and Sept.—Oct. (post-monsoon) :
and P & K were applied in 2 doses, i.e. in Feb—March and May.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) (5) (iv) Upto 1955, 40 plants & after 1955, 20 plants. (v) One general guard row all round the plot. Cement concrete slabs separate each sub-plot from its neighbour. (vi) Yes.

4. GNERAL :

(i). Very poor setting due to blossom showers. (ii) Treated with gammaxene to prevent attack of white stemborer. Spraying twice a year to control the disease. (iii) Yield of ripe cherry & clean coffee. (iv) (a) Planted in Sept. 1937—continued. (b) N.A. (v) & (vi) Nil.

5. RESULTS :

- 444 lb./ac.
- 248.1 lb./ac.
- Treatment differences are not significant.
- Av. yield of coffee in lb./ac.

Treatment	Av. yield.
1.	515
2.	405
3.	489
4.	476
5.	333
S.E./mean.	= 111.0 lb./ac.

Crop :- Arabica Coffee.
Site :- Coffee Res. Stn. Balehonnur.

Ref :- Ms. 53(199).
Type :- 'M'.

Object :- To study the effect of varying combinations of N, P & K on the growth & yield of Coffee.

1. BASAL CONDITIONS :

(i) The area was under tea prior to 1937. Later it was cleared of tea crop and the soil was bulked and spread. Sub-soil drains were provided in 1942. 1000 lb./ac. of dry mulch was applied in two doses upto 1947 and after that 1000 lb./ac. was applied in one dose in dry weather. Lime was applied in 1943, 1948 and 1954. (ii) (a) Loam (Reddish). (b) N.A. (iii) Selected seedlings. (iv) Kents Arabica. (v) Planted 5' x 5' with in sub-plots. Neighbouring plants in sub-plots 6' apart. Each sub-plot is separated from its neighbouring plant by cement concrete slabs. (vi) Eight months. (vii) Nil, except for lime applied during years 1943, 1948 and 1954. (viii) Manuring, mulching, weeding, hot weather stirring, removing suckers, handling, spraying with Bordeaux mixture. Regulation of shade by arranging bamboos. Renewal of bamboo. (ix) Nil. (x) Unirrigated. (xi) 130.25". (xii) October to December.

2. TREATMENTS :

1. 20 lb./ac. N upto 1949 (applied in two doses) + 40 lb./ac. N upto 1953 (applied in 2 doses) + 60 lb./ac. N from 1954 onwards (applied in 3 doses).
2. (1) + 30 lb. P₂O₅/ac. applied in 2 doses.
3. (1) + 40 lb. K₂O/ac. " " "
4. (1) + 30 lb. P₂O₅/ac. + 40 lb. K₂O/ac. applied in 2 doses.
5. Control (no manure except leaf mulch).

N as Urea & Nitrolime ; P₂O₅ as Rock Phos. or Hydro-Phos. and K₂O as Mur. of Pot.

N applied in Feb.—March (pre—blossom), May (pre—monsoon) and Sept.—Oct. (post—monsoon) ; and P&K were applied in 2 doses *i.e.* in Feb.—March and May.

3. DESIGN :

(i) L.Sq. (ii) (a) 5. (b) N.A. (iii) 5 (iv) Upto (1955), 40 plants & after 1955, 20 plants. (v) One general guard row all round the plot. Cement concrete slabs separate each sub-plot from its neighbour. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Treated with gammaxene to prevent attack of white stemborer. Spraying twice a year to control the disease. (iii) Yield of ripe cherry & clean coffee. (iv) (a) Planted in Sept. 1937—continued. (b) N.A. (v) & (vi) Nil.

5. RESULTS :

- (i) 1243 lb./ac.
- (ii) 383.6 lb./ac.
- (iii) Treatment differences are not significant.
- (iv) Av. yield of coffee in lb./ac.

Treatment	Av. yield.
1.	1119
2.	1110
3.	1318
4.	1592
5.	1075
S.E./mean	= 171.6 lb./ac.

Crop :- Arabica Coffee.

Ref :- Ms. 49(54), 50(80)/51(90),
52(149)/53(197).

Site :- Coffee Res. Stn. Balehonnur . Type :- 'M'.

Object :- To study the effect of small doses of Iron and Manganese salts in improving the availability of the plant foods.

1. BASAL CONDITIONS :

(i) Old coffee. (ii) (a) Loam (darkish brown). (b) N.A. (iii) Seedlings. (iv) Kents Arabica. (v) N.A. as the expt. was conducted on old coffee (6' x 6'). (vi) Eight months. (vii) (20 lb. N + 30 lb. P₂O₅ + 40 lb. K₂O)/ac. N is applied in 3 split doses namely. Feb.—March (pre—blossom). May (pre—monsoon) and Sept.—October (post monsoon). Phosphat e & potash applied in 2 doses as mentioned above. N as Urea and Nitrolime. Phosphat e as Rock Phos or hydro-Phos. & Potash as Mur. of Pot. (viii) Weeding, Manuring, and hot weather scruffing, removing suckers and light handling and shade regulation etc. (ix) Nil. (x) Unirrigated. (xi) 1949—94.05" ; 1950—124.67" ; 1951—99.62" ; 1952—98.22" ; 1953—130.25" respectively. (xii) November.

2. TREATMENTS :

1. Proprietary product A.
2. Proprietary product B.
3. Ferrous sulphate.
4. Potassium permanganate.
5. Control (no catalyst added).

A & B are commercial fertilizers containing the catalytic agents Fe. & Mn.

3. DESIGN :

- (i) L.Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) Gross $10 \times 7 = 70$ plants. ; Net : $8 \times 5 = 40$ plants. (v) 30 plants (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Gammaxene—swabbing against white stemborer attack. (iii) Yield of ripe cherry and coffee. (iv) (a) 1949—53. (b) N.A. (v) N.A. (vi) Since the crop picked in 1953 harvest was very small the data was not analysed. As the experiment was terminated in 1953, raw data for this experiment for the years 1949—53 were not available in the resarch station itself and hence the average yield as it is available, is furnished with the significance as given there in.

5. RESULTS :

- (i) to (iv)

Year	Av. yield of ripe Cherry in lb./ac.					S.E. as % of G.M.	C.D.	Significant or not.
	1.	2.	3.	4.	5.			
1949	498	504	456	480	480	49.1	74	No
1950	672	624	498	798	558	19.21	374	No
1951	744	780	678	816	816	19.14	753	No
1952	3872	3600	3024	3560	3682	9.92	961	No
1953	36.1	24.7	26.9	53.8	7.2			

Crop :- Robusta Coffee.

Ref :- Ms. 53(195).

Site :- Coffee Res. Stn. Balehonnur.

Type :- 'M'.

Object :- To study the effect of two varying levels of N with the same level of P_2O_5 & K_2O on Coffee.

1. BASAL CONDITIONS :

(i) The experiment was laid out in 1951 on Robusta Coffee. All cultural operations like weeding, suckering, shade regulation, digging, etc. as given in general Robusta blocks. (ii) (a) Brown loamy soil. (b) Refer soil analysis Balehonnur. (iii) By seed. (iv) Robusta coffee. (v) N.A. (vi) Eight months. (vii) Nil. (viii) Shade regulation, suckering & weeding. (ix) Nil. (x) Unirrigated. (xi) $130.25''$. (xii) January and February.

2. TREATMENTS :

1. 40 lb. N/ac. + 30 lb. P_2O_5 /ac. + 40 lb. K_2O /ac.
2. 80 lb. N/ac. + 30 lb. P_2O_5 /ac. + 40 lb. K_2O /ac.
3. Control (no manure).

Half the dose of N applied at pre-blossom stage and the other half along with P_2O_5 and potash during post-monsoon. Half the number of replicates were given. light pruning during pre-blossom period.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3 (b) N.A. (iii) 6 (iv) Gross $(8 \times 4) = 32$ plants. Net $(6 \times 2) = 12$ plants: (v) 20 plants. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of ripe cherry and clean coffee. (iv) (a) 1951-continued. (b) N.A. (v) 1952 being the basic year, the data were not analysed. (vi) Nil.

5. RESULTS :

- (i) 2977 lb./ac.
 (ii) 976.7 lb./ac.
 (iii) Treatment differences are not significant.
 (iv) Av. yield in lb./ac.

Treatment	Av. yield
1.	3209
2.	2689
3.	3032
S.E./mean	=398.6 lb./ac.

Crop :- Arabica Coffee.

Ref :- Ms. 50(81),51(91),52(150),53(198).

Site :- Coffee Res. Sub. Stn. Chetahally.

Type :- 'M'

Object :- To study the effect of small doses of Iron & Manganese salts in improving the availability of the plant foods.

1. BASAL CONDITION :

(i) Old coffee. (ii) (a) Loam (Darkish brown). (b) N.A. (iii) Seedlings. (iv) Kents Arabica. (v) N.A. as the expt. was conducted on old coffee (6'x6') N is applied in 3 split doses namely Feb.-March (pre-blossom), May (pre-monsoon) & Sept.-Oct. (pre-monsoon). P & K applied in 2 doses i.e. as mentioned above. N as Urea and Nitrolime. P as Rock phos or Hydro-phos & Potash as Mur. or Pot. sul. 6' (vi) Eight months. (vii) General manurial mixtures containing 20 lb. N.+40 lb. of K_2O .+30 lb. of P_2O_5 /ac. (viii) Weeding manuring, mulching, and hot-weather stirring, removing suckers and light handling and shade regulation, etc. (ix) Nil. (x) Unirrigated. (xi) 1950 = 73.83 ; 1951 = 62.30* ; 1952 = 50.59* : 1953 = 87.94* respectively. (xii) November.

2. TREATMENTS :

- Proprietary product A.
- Proprietary product B.
- Ferrous sulphate.
- Potassium permanganate.
- Control (no catalyst added).

A & B are commercial fertilizers containing the catalytic agents Fe & Mn.

3. DESIGN :

(i) L.Sq. (ii) (a) 5. (b) N.A. (iii) 5 (iv) Gross : $10 \times 7 = 70$ & Net : $8 \times 5 = 40$ (v) 30 plants. (vi) Yes

4. GENERAL :

(i) Fair. (ii) Gamaxene-swabbing against white stemborer attack. (iii) Yield of ripe cherry and clean coffee. (iv) (a) 1949-1953. (b) N. A. (v) N. A. (vi) As the experiment was terminated in 1953 the raw data for this experiment for the years—1950-53 were not available in the research station itself and hence the average yield as it is available, is furnished with the significance as given therein.

5. RESULTS :

(i) to (iv)

Year	Average yield of ripe Cherry in lb./ac					S.E. as % of G.M	C.D.	Significant or not.
	1	2	3	4	5			
1950	1685	1330	1436	744	1538	29.50	1231	No.
1951	3012	2424	2844	1986	2658	9.74	775	No.
1952	540	804	594	372	546	20.92	367	No.
1953	4080	4668	4050	3408	4254	11.78	1482	No.

Crop :- Robusta Coffee.

Ref :- Ms. 53(196).

Site :- Bhadra Estate (Private), Balehonnur.

Type :- 'CM'.

Object :- To study the effect of applying complete dose of manures with two varying levels of N and constant levels of P_2O_5 & K_2O . The effect of giving light pruning is also studied.

1. BASAL CONDITIONS :

(i) The experiment is on robusta coffee of 15—20 years of age. All cultural operations like weeding, shade regulation, suckering and short hole borer remover are as in general estate. The expt. was laid out in Sept. 1952. (ii) (a) Clayey soil. (b) Refer soil analysis, Balehonnur. (iii) By seed. (iv) Robusta. (v) Not known as it is old coffee. 8' x 8'. (vi) Eight months. (vii) Nil. (viii) As in (i). (ix) Nil. (x) Unirrigated. (xi) 130.25". (xii) January and February.

2. TREATMENTS :

1. Control — no manure.
2. Pruned — no manure.
3. Manured with N P K at 40 N — 30 P — 40 K lb./ac.
4. Manured with N P K at 80 N — 30 P — 40 K lb./ac.
5. Manured with N P K at 40 N — 30 P — 40 K lb./ac. + pruning.
6. Manured with N P K at 80 N — 30 P — 40 K + pruning.

Half the dose of N applied during pre-blossom and the other half along with P_2O_5 & K_2O is applied during post-monsoon. Light pruning is given at pre-blossom.

3. DESIGN :

(i) L Sq. (ii) (a) 6 (b) N.A. (iii) 6 (iv) (a) Gross (6 x 10) = 60 plants (b) Net (4 x 8) = 32 plants. (v) 28 plants. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of ripe cherry and clean coffee. (iv) (a) 1952— continued. (b) N.A. (v) The harvest of 1952 being basic, yield is not considered. (vi) Nil.

5. RESULTS :

- (i) 3587 lb/ac.
 (ii) 903.3 lb/ac.
 (iii) Treatment differences are not significant.
 (iv) Av. yield in lb./ac.

Treatment.	Av. yield.
1.	3423
2.	3532
3.	3708
4.	3626
5.	3666
6.	3568
S.E./mean.	= 368.7 lb/ac.