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**EXPERIMENTS**

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**ANDHRA PRADESH**

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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**

<b>Region and headquarters</b>	<b>Regional Supervisors :</b>
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. WAHIUDDIN, 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. BAROOHA, 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.

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\*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.

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 SHRI P.S. SAHOTA,  
Statistician, Department of Agriculture, Punjab.  
PRADESH (CHANDIGARH)
  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 seedings 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.

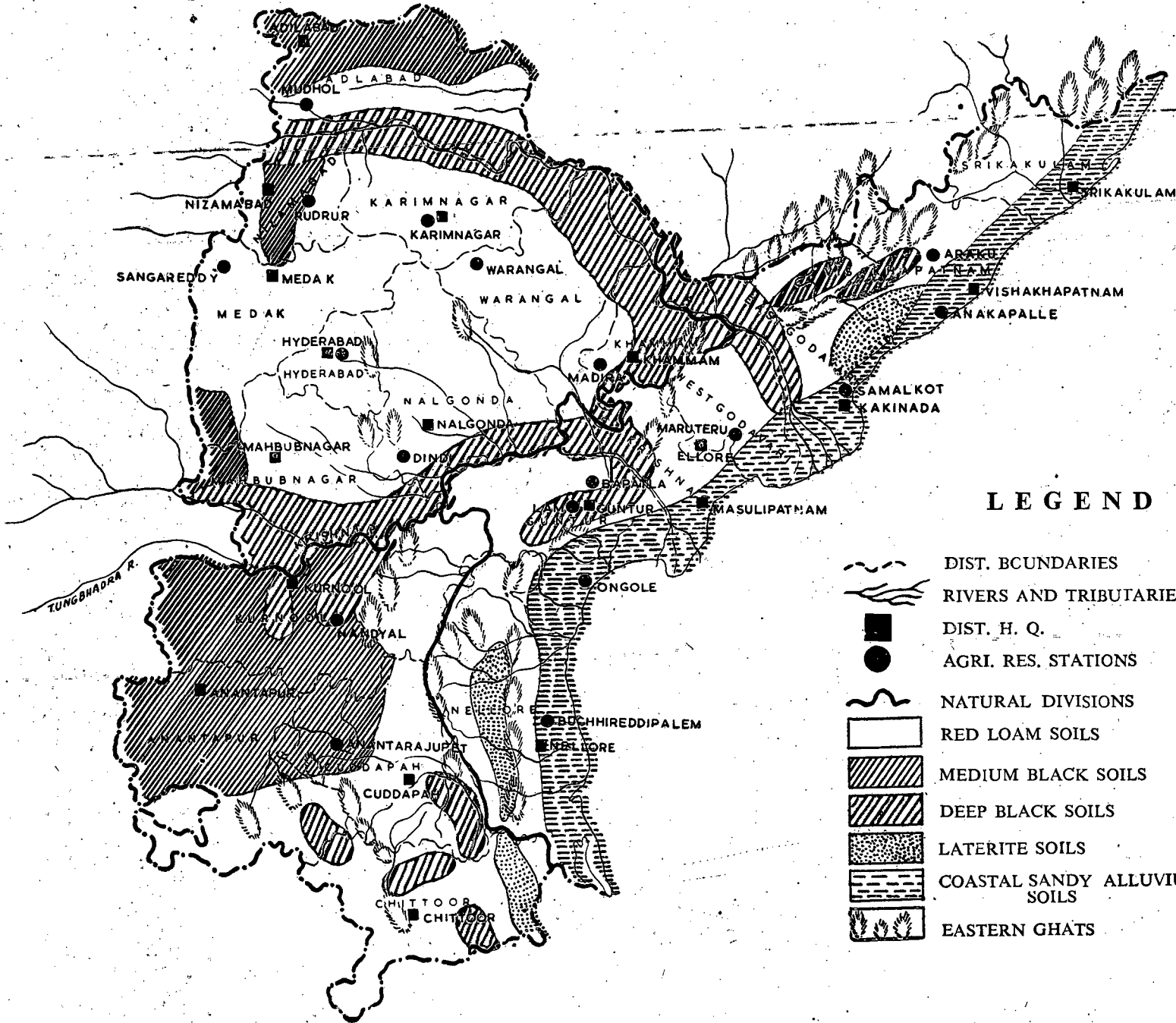
GLOSSARY OF VERNACULAR NAMES OF CROPS

Sl. No.	Name of Crop	Botanical name	Assamese	Bengali	Oriya	Telugu	Tamil	Malayalam	Kannada	Marathi	Gujarati	Hindi	Punjabi
1.	Paddy	<i>Oryza sativa</i> L.	Dhan	Dhan	Dhano	Vadlu, Biyyamu Jonna	Nel	Nellu	Bhatta	Bhat	Dangar	Dhan ; Chawal	Chaul ; Dhan
2.	Jowar	<i>Andropogon sorghum</i> Brot. ; <i>Sorghum vulgare</i> Pers.	—	Jowar	Juara	—	Cholam	Cholam	Jola	Jowari ; Jondhla	Jowari ; Juar	Jowar ; Jaur	Jowar
3.	Wheat	<i>Triticum sativum</i> Lamk. <i>Triticum aestivum</i> L.	Gaum ; Ghehu	Gam	Gaham	Godumalu	Kothumai	Gothamhu	Godhi	Gahu	Ghahu	Gehon	Kanak
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</i> L.	Gom-dhan	Bhutta	Macca	Mokka-jonna	Makka cho am	Cholam	Musukina jola	Makka	Makkai	Makka	Makki ; Makayee
6.	Variga (common millet)	<i>Panicum miliaceum</i> L.	—	Cheena	China ; Bachari ; Bagmu	Variga	Panivaragu	—	Baragu	Vari	Cheno	Chena ; Barri	Cheena
7.	Gram	<i>Cicer arietinum</i> L.	Butmah	Chola	—	Sanagalu	Kadalai ; Sundal	Kadala	Kadale	Harbara	Chana	Chana	Chhole ; Chana
8.	Sugarcane	<i>Saccharum officinarum</i> L.	Kuhiar	Akh	—	Cheruku	Kadalai Karumbu	Karumbu	Kabbu	Oos	Sherdi	Ganna ; Kamad ; Naishakar	Kamad ; Ganna ; Eakh
9.	Cotton	<i>Gossypium</i> spp.	Kapah	Karpas ; Tula	Kapa	Pratti	Paruthi	Paruthi	Hatti	Kapus	Kapas	Kapas	Kapah
10.	Tobacco	<i>Nicotiana tabacum</i> L.	Dhopat	Tamak	Uanpatra	Pogaku	Pugayilai	Pukayila	Hoge soppu	Tambaku	Tamaku	Tambaku	Tamaku ; Tambaku
11.	Groundnut	<i>Arachis hypogaea</i> L.	China badam	Cheena badam	China badam	Nelash-anga	Nilkadalai	Nilakkadla	Kadale kayi	Bhui-mug	Magafali	Mung-phali	Mungfali
12.	Chillies	<i>Capsicum frutescens</i> L.	Jalakiya	Lanka ; Marich	Lanka	Mirapak-aya	Milakai	Mulaku	Menasina kayi	Mirchi	Marcha	Lalmirch	Lalmirch
13.	Potato	<i>Solanum tuberosum</i> L.	Alooguti	Alu	Bilati Alu	Bangladumpa	Uruzhai kilangu	Urala kizangu	Alu gedde	Batata	Aloo, Batata	Aaloo	Alu
14.	Sweetpotato	<i>Ipomoea batatas</i> Lam.	Mitha Aloo	Mishti Alu	Kanda-mula	Chilagadadumpa	Seeni kilangu	Cheeni kizangu	Genasu	Ratalu	Shakaria	Shakar-kandi	Shakarkandi
15.	Cabbage	<i>Brassica oleracea</i> L. <i>Var. capitata</i> L.	Bandhakabi	Bandhakabi	Bandhakabi	L. Akugoli	Muttaikose	Muttakose	Yele kosu	Kobi	Kobij	Patgobhy	Band gobhi
16.	Brinjal	<i>Solanum melongena</i> L.	Bengena	Begun	Baigan	Vankaya	Katharikal	Vazhuthana	Badane kayi	Vange	Vengan	Baigan	Bengan ; Bataun
17.	Lucerne	<i>Medicago sativa</i> L.	Lucerne ghah	Lucern	Lusarna	Garam masal	Kuthirai-masal	Lucerne	Kudure masale	Lasun ghas ; Vilaiti ghavat	Gadab Rajko	—	Lucan
18.	Citrus Fruits (Sweet Orange)	<i>Citrus sinensis</i> Osbeck	Malta ; Mozambique	Mosambi	Mitha kamala	Battayi	Sathugudi ; Cheeni	Madura naranga	Sathkudi	Mosambi	Mosambi	Malta Mausmee	Malta
19.	Banana	<i>Musa paradisiaca</i> L.	Kol	Paka kala	Kadali	Arati	Vazhai-pazam	Vazha	Bale	Kele	Kela	Kela	Kela






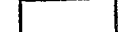



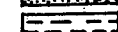
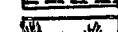
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**MAP OF ANDHRA PRADESH SHOWING  
AGRO-CLIMATIC REGIONS, SOILS,  
AGRICULTURAL RESEARCH STATIONS  
ETC.**



**LEGEND**

-  DIST. BCUNDARIES
-  RIVERS AND TRIBUTARIES
-  DIST. H. Q.
-  AGRI. RES. STATIONS
-  NATURAL DIVISIONS
-  RED LOAM SOILS
-  MEDIUM BLACK SOILS
-  DEEP BLACK SOILS
-  LATERITE SOILS
-  COASTAL SANDY ALLUVIUM SOILS
-  EASTERN GHATS

# ANDHRA PRADESH

## 1. GENERAL DESCRIPTION.

The State of Andhra Pradesh is formed out of the former State of Andhra with districts of Telangana region of the erst-while Hyderabad State bereft of Bellary and Raichur districts. It is bound on east by Bombay and Mysore states, on the south by Madras, on the north-east by Madhya Pradesh and Orissa States and on the east by the Bay of Bengal.

The State has an area of nearly 1.06 lakhs of sq. miles or 664.32 lakh acres. There are 20 districts in the State.

The net area sown in 1956-57 was 281.10 lakh acres or 42.2% of the total geographical area. Barren and uncultivable land: 63.93 lakh acres; land put to non-agricultural uses: 37.66 lakh acres; permanent pastures and grazing lands: 30.54 lakh acres; land under miscellaneous crops and trees and land not included in the net area sown: 5.74 lakh acres. current fallow: 48.34 lakh acres; other fallow lands: 19.91 lakh acres; forests: 137.26 lakh acres. Total cropped area is 307.50 lakh acres.

## 2. PHYSICAL FEATURES, CLIMATE AND RAINFALL

The State has a chain of mountains *viz.* the Eastern Ghats, running over its length on the eastern and northern boundaries. In the far north too, the country is hilly. There are huge forest areas in Srikakulam, Visakhapatnam, Godavari, Kurnool, Warangal and Adilabad districts. The landscape is varied and rich. It ranges from ever-green plains of Godavari and Krishna deltas to the rocky drought-stricken plateau of Rayalaseema, the undulating uplands of Northern Circars, to the flat sandy down in Nellore and Guntur. Physiographically the state can be divided into three natural divisions *viz.* (i) Rayalaseema (ii) Coastal Andhra Pradesh, and (iii) Telangana divisions.

The general elevation of Rayalaseema division which forms part of South-Deccan sub-region of the peninsular hills and plateau region is about 1000 to 2000 ft. with a gentle slope towards east and the rivers traversing the region, drain the waters into Bay of Bengal. The districts covered by this region are Anantapur, Cuddapah, Kurnool and Chittoor. This area being practically enclosed within hill ranges of the Western and the Eastern Ghats, receives much less rainfall than its western and eastern neighbours. The annual rainfall of this division is of the order of 20" to 25". The main rainfall is received both from the South-west monsoon during June to September and North-east Monsoon during October and November. This division is hottest with long dry summer and moderate winter resembling continental type of climate. December to February is a season of clear bright weather except occasionally in December when cloudy skies and light showers result due to incursion of North east monsoon. The early mornings are cold and fogs occur on some days.

March to May is a season of continuous increase of temperature as also the moisture content of the atmosphere and consequently the weather becomes oppressively hot. The average maximum temperature during May is of the order of 110° F.

The Coastal Andhra Pradesh division is part of the Eastern Ghats and coastal natural region. The districts in this division are Srikakulam, Visakhapatnam, East Godavari, West Godavari, Krishna, Guntur and Nellore. The average height of Eastern Ghats in this area is about 2000 ft. The division has moderate temperature and a moist climate all through the year, typical of tropical conditions. The area gets a fairly heavy rainfall after monsoon has established itself over the peninsula. The retreating North-east monsoon, beginning about the end of September gives rain to most of the area. This division which enjoys both the monsoons has a rainfall between 33"-43".

Telangana division includes districts of the previous Hyderabad State *viz.* Khammam, Hyderabad, Mehabubnagar, Adilabad, Nizamabad, Medak, Karimnagar, Warangal and Nalgonda. The country is an extensive plateau, with an average elevation of about 1250 ft. above sea level, summits here and there rising to 2500 ft and even 3000 ft. This portion of the former Hyderabad state belongs to trappean and gneissic region and abounds in a number of tanks. Climatically the year is divided into three distinct seasons : (1) rainy season from June to October, (2) winter season from October to February and (3) summer season from February to June. Greater part of the country is under the influence of arid to semi-arid climatic conditions, the annual rainfall varying from 25" to 40". More than 60% of the annual rainfall is brought by the South-West Monsoon. Telengana division like Rayalaseema division is the hottest area.

Table 1 gives the annual rainfall for the three regions under different seasons.

TABLE 1

Seasonwise Normal Rainfall in inches for Regions of Andhra Pradesh.						
Sl. No.	Region.	Monsoon	Post-monsoon	Winter	Pre-monsoon	Total for the year.
		June to September	October to December	January to February	March to May	
1.	Rayalaseema	15.84	7.73	—	2.58	26.15
2.	Telangana	27.70	3.63	0.16	1.72	33.21
3.	Coastal	20.38	15.77	0.11	2.58	38.84
	State (simple average)	21.30	9.04	0.09	2.29	32.72

**River system :—** There are two major rivers in Andhra Pradesh, the Godavari and the Krishna and three medium rivers with a large number of tributaries. The Godavari flows for the major part through the State, before it falls into the Bay of Bengal. Its main tributaries are Manjira, Pranhita, Indravati, and Sabari some of which flow partly in the Telangana area. The main tributaries of Krishna are Tungabhadra, Yeria, Warna and Dudhganga. The medium rivers are Pennar, Nagavalli and Vamsadhara.

### 3. SOILS

**Rayalaseema Division :—**The major types of soils are the black cotton, red loam and sandy loam. The western and lower part of Cuddapah district is occupied by a bare open plain of black cotton soil, red clay is found scattered in Rajampet division, and in Cuddapah and Proddatur. Red loam exists in all taluks of the districts.

In the eastern portion of Kurnool, poor red soil predominates. The central section is rich in *regur*. In Anantapur district the northern division contains large extent of black cotton soil and the central division contains stony red soil with slight admixture of black in parts, where as, the southern division consists of red soil. The soils of Chittoor district are mainly black, red and mixed ; major portion is occupied by red soils.

**Coastal Andhra Pradesh Division :—**Most parts of Visakhapatnam and Srikakulam districts are hilly. The coastal taluks include extensive sandy tracts. The soils in these districts belong chiefly to *regur* or black cotton and red ferruginous series. Near the hills the red varieties are predominant but towards the coast, the soil becomes finer and in the richest valleys there is a fertile black clay. Sandstones predominate in the central portion of the East Godavari district. There are four classes of soils in this district, *viz.* alluvial, black *regur*, red ferruginous and menaceous soil. The deltaic character of the

district accounts for the large extent of the alluvial soil. In West Godavari district, there are three classes of soils, viz., alluvial, black *regur* and red ferruginous, of which alluvial soil is most extensive. Same type of soils are also found in Krishna district where black *regur* is extensive. Next in extent is alluvial soil. The red soils are found in uplands and sandy soils bordering the sea coast. The general character of Guntur district is an open plain of fertile black soil broken by a few hillocks here and there. The eastern portion of the Nellore district is fairly fertile. Soils in this district are black, red and sandy.

**Telangana Division** :—The soils in this division are medium black largely derived from trap and gneissic parent material. They are neutral in reaction. The dominant pH ranges from 6.5 to 7.5. Usually the black soils or *regur* are found in the valleys and their texture and other characteristics are determined by the drainage conditions. Most of the black soils can be said to be alluvial. The sandy loams are located at higher level and are residual. The black soils vary in texture from clay to loams, depending on the situation. The deeper soils are heavier and shallow soils are lighter in texture. The sandy loams are utilized for cultivation of *kharif* crops while the heavy black soils are mostly used for *rabi* crops. In the sandy loam areas, alkali patches are developed due to bad drainage.

#### 4. IRRIGATION

During the First Five Year Plan period six major irrigation projects viz. Tungabhadra, Krishna regulator-cum-road bridge, upper Pennar, Romperu drainage, Rollapadu (II stage) and Bhairavanitippa projects were taken up for execution to benefit an area of 290,675 acres in the districts of Krishna, Guntur, Nellore and Anantapur. Seventeen medium projects to provide irrigation facilities to 3,79,678 acres of land were taken up for execution and 4 of them were completed during the first plan period. Four of the medium projects are located in Srikakulam, three each in Nellore and Chittoor districts, two each in Cuddapah and Anantapur districts and one each in Vishakhapatnam, West Godavari and Kurnool districts.

Two major irrigation projects in Telangana are Rajolibanda Diversion Scheme for providing irrigation facilities to about 1 lakh acres in Mahabubnagar districts and Kadam project benefiting an area of 67,000 acres in the Adilabad district. They are continued as spill over schemes in second plan. Five medium irrigation projects to benefit 60,000 acres in Mahabubnagar district, Musi and Bhimanpally projects benefiting 43,860 acres in Nalgonda district and Sirala project benefiting 3000 acres in Adilabad district were taken up during the first Five Year Plan period. Total area benefited by these major and medium projects is 2,73,860 acres.

The major and medium irrigation projects included in the second plan of Andhra Pradesh, provide irrigation to 4.49 lakh acres of additional land during the second plan period while area ultimately expected to benefit from these amounts to 9.18 lakh acres.

Total net area irrigated in 1956-57 was 7,068,200 acres, total gross area irrigated was 8,371,172 acres. Area irrigated more than once was 1,302,972 acres.

The following statement shows the net area irrigated by different sources in 1956-57.

TABLE 2

Source	Acres (000 acres)
1. Govt. Canals.	3,114
2. Private Canals.	35
3. Tanks.	2,916
4. Wells.	793
5. Others.	210

## 5. AGRICULTURAL PRODUCTION AND NORMAL CROPPING PATTERN

The table below shows the area, production and average yield per acre of principal crops of Andhra Pradesh in 1957-58.

TABLE-3

Crops	Area (000 acres)	Production (000 tons)	Av. yield lb./ac.
1. Rice.	6,974	3,468	1,114
2. Jowar.	6,180	1,178	27
3. Bajra.	1,613	425	590
4. Maize.	471	154	732
5. Ragi.	799	270	757
6. Small millets.	2,643	364	308
7. Wheat.	54	4	166
8. Barley.	9	2	498
9. Gram.	263	32	273
10. Tur.	408	43	236
11. Other pulses	2,837	202	159
12. Dry chillies.	427	100	575
13. Tobacco.	362	109	674
14. Sugarcane.	176	401	5,104
15. Groundnut.	3,101	995	719
16. Other oilseeds.	1,549	104	190
17. Cotton.	939	127*	53

\* in 000 bales of 392 lb. each.

From the above table it is seen that among food grains Rice and Jowar are major crops of the state. Groundnut is an important oilseed crop. Chillies and Tobacco are important cash crops of the state.

Paddy, Jowar, Castor, Sugarcane and Groundnut are major crops of the Telangana division.

Paddy is the only main food crop of the coastal division of the state. Two crops of Paddy are raised by double cropping. Other important field crops are Tobacco, Chillies and Sugarcane.

In Rayalaseema division the main crops grown are Paddy, Potato, Chillies and Groundnut.

Rice is usually rotated with Black gram, horsegram or green manure crops in coastal region, and in Rayalseema and Telangana regions Rice is rotated with either horsegram or Sugarcane.

## 6. AGRICULTURAL EXPERIMENTATION AND RESEARCH FARMS

There were 18 agricultural research stations which reported experiments for the period 1948-53. Most of these stations are working since many years. The oldest station is Agricultural Research Station at Nandyal which was established in 1906. The other principal agricultural stations are at Anakapalle, Buchhiredypalem, Himayatsagar Guntur (Lam), Maruteru, Samalkot, Rudrur and Warangal. The soils of most of these stations range from sandy loam to clayey loam. The farms at Guntur and Madira have deep black to black soils. Irrigational facilities are also available at most of these stations. The research work on agronomic problems on Paddy is mainly carried out in Buchhiredipalem, Himayatsagar, Maruteru, Rudrur, Samalkot and Warangal.



The research work on Jowar, Cotton, Tobacco, and Chillies is carried out at Lam farm in Guntur, Mudhol and Nandyal. The experiments on fruit crops are concentrated only at Anantharajapet, and Kodur. The Sugarcane Research Station at Anakapalle conducts experiments on Sugarcane crop mainly but experiments on Paddy and Ragi are also reported from the station. Agricultural College farm at Bapatla is mainly meant for research work of students, although some portion of the land is allotted for other research projects. Madira farm carries out experiments on Tobacco.

The maximum number of experiments reported was from Maruteru station. There were 81 experiments in this farm. Out of this 79 were on Paddy alone. The next farm which reported more experiments was Anakapalle (69). Out of 69 experiments available at this farm, 47 were on Sugarcane. Research farm at Himayatsagar reported 62 experiments out of which 47 were on Paddy. There were 47 experiments available at Rudrur farm out of which 43 were on Paddy. Buchhiredipalem had 47 experiments all devoted to Paddy and the Lam farm had 49 experiments, 18 of them were on chillies and 19 on mixed cropping.

## 7. EXPERIMENTS

There were 490 experiments available for the period 1948—53. The distribution of these experiments according to crops and the types of the treatments studied is given in tabular form below :—

TABAL 4

Distribution of experiments according to crop and types of treatments tried.

Crop	M	MV	C	CV	CM	CMV	I	IM	D	DI	Mixed	Total
Paddy	189	45	31	14	15	3	5	—	2	—	—	304
Ragi	13	—	—	—	—	—	—	—	—	—	—	13
Jowar	7	—	1	—	—	—	—	—	—	—	—	8
Pulses	2	—	—	—	—	—	—	—	—	—	—	2
Vegetables	9	—	—	—	—	—	—	—	1	—	—	10
Chillies	3	—	11	—	—	—	—	—	4	—	—	18
Sugarcane	19	3	1	4	2	—	5	5	3	5	—	47
Cotton	12	2	2	2	1	—	—	—	3	—	—	22
Tobacco	2	—	8	—	—	—	—	—	—	—	—	10
Oilseeds	3	—	1	—	—	—	—	—	4	—	—	8
Other Crops	9	—	4	—	—	—	—	—	1	—	—	14
Mixed cropping	—	—	—	—	—	—	—	—	—	—	32	32
Fruit crops	2	—	—	—	—	—	—	—	—	—	—	2
Total	270	50	59	20	18	3	10	5	18	5	32	490

From the table above it is seen that out of 490 experiments reported nearly 60% are on Paddy which is an important food crop of the State, occupying nearly an area of 7 million acres. Although Jowar is the next important food crop covering nearly 6 million acres under it, not much attention is paid to it so far as agronomic problems are concerned. The commercial crops which receive attention are sugarcane, cotton, chillies and tobacco. The extent of research on agronomic problems for these crops is not much but it may be that varietal trials for evolving better yielding and disease resistant varieties of these crops have been conducted.

The experiments in which manurial treatments were tried either purely or combined with varieties or cultural practices accounted for nearly 70% of the total. Purely manurial trials accounted for 55% of the total. Out of 304 experiments on Paddy crop, nearly 80% of

the experiments had one of the treatments as manurial. On all other crops also, it is seen that manurial experiments form major group of the total.

The source of nitrogen in most of the manurial experiments was Ammonium Sulphate, Groundnut cake or their mixture. The dose of nitrogen varied from 30 lb. per acre to 60 lb. per acre. Green manures, Farm yard manures and Night soil compost were also tried to study the comparative merits of these with other artificial manures. The common green manures that were utilised for the experiments were sunnhemp, pillipesara, sesbania, *dhaincha* and wildindigo. The amounts of green leaf, farm yard manure and compost applied in experiments varied from 2500 lb./ac. to 7500 lb. per acre. In a few experiments the phosphatic manures such as super phosphate, bonemeal, bonedust, Rock-phosphate and Hyperphosphate were taken as sources of  $P_2O_5$ . The levels of  $P_2O_5$  varied from 30 lb. per acre to 60 lb. ac. There were only few experiments where nitrogenous and phosphatic fertilizers were tried to study their effect either singly or in combination. The manurial-cum-varietal experiments were conducted mainly to study the performance of two varieties under manured and unmanured conditions. The manured plot had the treatment 2000 lb. of green leaf per acre+112 lb. of Super per acre+400 lb. of groundnut cake+50 lb. nitrogen per acre as ammonium sulphate. The other type of manurial experiments commonly found was with three treatments to study the farm yard manure and compost to supply 60 lb./ac of N against control.

The design most commonly utilised was that of Randomised block. The number of plots per block varied usually from 2 to 17 although in few cases it was as much as 36, The number of replications was invariably four.

The designs having treatment as factorial combinations were not many. There was only one  $3^3$  confounded design with 2 replications. There were no other confounded factorial designs.

The split plot design was most common in some of the manurial and varietal-cum-manurial type of experiments. The main plots had usually the bulky manures such as green leaf or green manures and sub-plots had artificial manures such as Ammonium sulphate or Groundnut cake. In other type, the varieties were in sub plots. The number of main plots varied from 2 to at the most 5 and sub-plots varied from 2 to 8.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

Sl. No.	Name of the Experimental Stations.	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 topography of the experimental area.
1	2	3	4	5	6	7	8	9	10	11
1.	Anakapalle Sugarcane Res. Station.	Visakhapatnam, 1 mile from Anakapalle Rly. Stn.	Mixed crop-ping with sugarcane.	1913	Sugarcane and Paddy.	Broadly of three types :— <i>Dry land</i> :— Light free working soil. <i>Green land</i> :— Medium loam. Improved by manuring and by lift irrigation facilities. <i>Wet land</i> :— Clayey loam of a heavy type formed by successive deposition of silt brought in by water of "Cheruvulopu Kalva". <i>Soil analysis</i> :— (i) <i>Chem. Analysis</i> (%) (typical clay loam) pH—7.5—7.4 Lime—0.36. P <sub>2</sub> O <sub>5</sub> Total—0.0820 P <sub>2</sub> O <sub>5</sub> (Avl) 0.0175—0.0159 Avl K <sub>2</sub> O 0.0234—0.0111 N Total 0.0392—0.0350 (ii) <i>Mech. analysis</i> (%) Clay 27.70—24.75 Silt 9.70— 9.75 Coarse ) 59.36—53.14 and fine sand. )	June 3.56 July 4.57 Aug. 8.73 Sept. 6.46 Oct. 11.53 Nov. 1.67 Dec. 0.15 Jan. 0.40 Feb. 0.27 Mar. 0.20 April 0.71 May 5.89 Total 44.19  Average of 10 years.	"Cheruvulopu Kalva" from Sarada River supplemented by wells from inception of the station. The soil is well drained with good drainage channels.	16 Paddy 5 <i>Ragi</i> 1 Lucerne 47 Sugarcane. ----- 69 Total.	Information not available.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
2.	Anantharajupet, Govt. Fruit Res. Stn.	Cuddapah, Anantharajupet. P.O. Koduru Rly. Stn. 2 miles from Koduru.	Rayalaseema tract of Anchra Pradesh.	(i) 1935 (ii) 1951	Citrus fruits, Guava etc.	Red loamy soils upto 4' 6' with sufficiently fine structure. <i>(i) Chem. Anal.</i> Loam. pH 9.5 Soil. 0.3 Salts --- Org. matter 0.37 <i>(ii) Mech Anal.</i> Range of depth 0—8' (Range for constituents are given below). Clay 17.1—40.2% Salt 9.3 12.2% Fine sand 43.4—65.7% Coarse sand. 5.7—10.4%	June 2.29 July 5.22 Aug. 4.69 Sept. 3.64 Oct. 4.70 Nov. 3.79 Dec. 2.56 Jan. 0.00 Feb. 0.11 Mar. 0.18 April 0.46 May 2.85 ----- Total. 30.49 Average of 5 years.	Irrigation facilities are available by pumping waters from the wells. Proper drainage system is also available.	1 Citrus.	Information not available.
3.	Araku Araku Valley Farm.	Araku Valley P.O. Visakhapatnam. 72 miles from Waltair Rly. Station.	N.A.	1946	Wet Paddy, dry paddy and ragi, potato, and vegetable crops.	Red loam. Other information not available.	Annual rainfall 44".	N.A.	4—Paddy 2—Ragi. 5—Potato. 2—Cabbage.	N.A.
									13 Total.	

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
4.	Bapatla Agri. College Farm.	Guntur, 1½ miles from Bapatla Rly. Station.	Sandy and clay soils.	1950	Paddy	Sandy, Sandy loam and clay (i) <i>Chem. Anal.</i> % N 0.064% Total 0.052 P <sub>2</sub> O <sub>5</sub> Avl. 0.00047 P <sub>2</sub> O <sub>5</sub> Total 1.28 K <sub>2</sub> O Lime 1.30 pH 7.85 (ii) <i>Mech. Anal.</i> Clay 70.50 Salt 12.45 Coarse sand 3.18 Fine sand 14.80	June 3.44 July 6.13 Aug. — Sep. 3.69 Oct. 10.87 Nov. 4.02 Dec. 6.06 Jan. 0.02 Feb. — Mar. 0.51 April 1.63 May 1.13  Total 37.50 Average of 3 years.	Canal water facilities available since inception. About 50 acres of wet lands has no proper drainage facilities.	5—Paddy 6—Ragi  11—Total	Uniformly levelled, three fourth of the area is sandy. There is about 100 acres of wet land consisting of clay and sandy loams.
5.	Buchhireddi—palem, Rice Res. Station.	Nellore, 9 miles from Kodavalur Rly. Station.	N.A.	1937	Paddy	Sandy loam	Annual rainfall-38"	N.A.	47—Paddy	N.A.
6.	Dindi Agri. Exptl. Farm.	Nalgonda, 50 miles from Jadcherla Rly. Station.	N.A.	1949	Paddy and Jowar.	Sandy (chalka)	20"—26"	N.A.	7—Paddy	N.A.

**STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS**

1	2	3	4	5	6	7	8	9	10	11
7. *	Himayatsagar, Agri. Res. Station.	Hyderabad 9 miles from Rly. Station.	N.A.	19.7	Paddy, Wheat, Jowar, Maize, Groundnut and Vegetables.	Sandy clay, clay loam and silt loam.	29"	N.A.	47—Paddy 7—Maize 7—Groundnut 1—Brinjal.	N.A.
									----- 62—Total	
8.	Karimnagar, Maize Res. Station.	Karimnagar	N.A.	19.2	Maize	Sandy loam	32"	N.A.	2—Maize	N.A.
9.	Lam Agri. Stn. (Guntur).	Guntur, 6 miles from Guntur Rly. Station.	Deep black soils.	1922	Millets, Chillies Cotton, Pulses and Groundnut.	Deep black soils. Structure—clayey. (i) <i>Chem. Anal.</i> (%) Alumina 11.174 Fe <sub>2</sub> O <sub>3</sub> 6.767 Lime 2.597 Mg. 2.380 P <sub>2</sub> O <sub>5</sub> 0.039 K <sub>2</sub> O 0.543 (ii) <i>Mech. Anal.</i> (%) Moisture 8.19 Coarse 2.74 Sand Silt 11.93 Tfin 30.06 Silt Clay 29.0	June 4.50 July 6.82 Aug. 6.44 Sep. 4.45 Oct. 8.50 Nov. 2.18 Dec. 0.22 Jan. 0.00 Feb. 0.46 Mar. 0.28 April 0.689 May 2.50 ----- Total 34.04	Irrigation facilities not available ; there is proper drainage system.	2—Jowar 4 Cotton 1—Groundnut 2—Tobacco 3—Variga 19—Mixed cropping 18—Chillies ----- 49—Total	N.A.

\* This Station has recently been named as Agri. Res. Institute, Rajender Nagar.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
10.	Maruteru Agri. Res. Stn.	West Godavari	N.A.	1925	Paddy	Heavy clay.	42"	N.A.	79—Paddy 2—Sweet-potato <hr/> 81—Total.	N.A.
11.	Madira-Tobacco Res. Stn.	Khammam, $\frac{1}{2}$ furlong from Madira Rly. Stn.	N.A.	1945	Tobacco	Black soil.	33"	N.A.	8—Tobacco.	N.A.
12.	Mudhol Plant breeding Stn.	Adilabad.	Black cotton soil.	1934	Cotton and Jowar.	Black cotton soil of medium fertility. (i) <i>Chem. Anal.</i> N.A. (ii) <i>Mech. Anal.</i> N.A.	June 6.30 July 12.52 Aug. 8.68 Sept. 7.33 Oct. 3.73 Nov. 0.63 Dec. 0.15 Jan. 0.11 Feb. 1.31 Mar. 0.33 April 0.41 May 0.74 <hr/> Total 42.24	No irrigation facilities available. There is proper drianage system.	8—Cotton.	N.A.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
13.	Nandyal Agri Res. Stn.	Kurnool.	Black soils of added dis- tricts.	1906	Cotton and Jowar.	Black clayey soils 7' depth. (i) <i>Chem. Anal.</i> Lime 2.76% Mgo. 1.46% K <sub>2</sub> O 0.49% P <sub>2</sub> O <sub>5</sub> 0.05% Avl. K <sub>2</sub> O 0.033% Avl. P <sub>2</sub> O <sub>5</sub> 0.014% N 0.033% pH 9.0% (ii) <i>Mech. Anal.</i> Clay 45.7—48.3% Silt 23.3—23.0% Coarse Sand. 8.2—7.8%	June 3.64 July 5.90 Aug. 5.38 Sept. 6.02 Oct. 3.58 Nov. 0.60 Dec. 0.08 Jan. -- Feb. 0.10 Mar. 0.22 April 0.76 May. 3.35 Total 29.63 Average of 10 years.	No irrigation facilities. Poor drainage in rain- fall seasons.	2 Jowar 7 Cotton 9 -Mixed-cropping 18 -Total.	N.A.
14.	Onogle Govt. Millet Farm.	Guntur, ½ mile from Ongole Rly. Stn.	Loamy soils of Guntur district.	1949	Millets— <i>Jonna and variga.</i>	Clay loam. (i) <i>Chem. Anal.</i> N.A. (ii) <i>Mech. Anal.</i> N.A.	June 1.75 July 4.37 Aug. 4.02 Sept. 6.16 Oct. 9.06 Nov. 3.57 Dec. 1.71 Jan. 0.17 Feb. -- March 0.24 April 0.14 May 2.90 Total 33.92 (Average of 10 years).	No irrigation facilities. Natural drainage.	1—Jowar.	Situated in coastal plain.



STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
17.	Sangareddy, Fruit Res. Stn.	Medak, 12 miles from Shankarpalli Rly. Stn.	N.A.	1918	Fruit trees.	Red sandy loam (chalka) and black clayey loams.	N.A.	N.A.	2—Paddy.	M.S.L. 1702 ft.
									2—Total	
18.	Warangal Govt. Main Agri. Farm.	Warangal, 8 miles from Warangal Rly. Stn.	Eastern Telangana division.	1953	Paddy, Jowar, Cotton, Pulses, etc.	Sandy loam and (Chalka) Regur or black cotton soil. (i) Chem. Anal. (Chalka) pH 6.9—8.2 P <sub>2</sub> O <sub>5</sub> 6.2—3.7 (Avl) K <sub>2</sub> O 80 to 178 (Avl) Regur. pH 8.0 to 8.2 P <sub>2</sub> O <sub>5</sub> 0.46 to 6.4 Avl K <sub>2</sub> O 164.8 to 249.6 Avl (ii) Mech. Anal. N.A.	June 4.98 July 9.56 Aug. 6.55 Sep. 8.55 Oct. 3.54 Nov. 0.49 Dec. 0.01 Jan. 0.05 Feb. 0.18 March 0.51 Apr. 0.88 May 1.76 Total 37.06 (Average of 10 years).	Two small tanks whose supply is entirely dependant on rainfall, from 1933. No proper drainage system.	20—Paddy. 2—Cotton. 1—Jowar. 4—Mixed. 27—Total.	Plain area.

STATEMENT SHOWING DETAILS OF EXPERIMENTAL STATIONS

1	2	3	4	5	6	7	8	9	10	11
15.	Rudrur, Agri. Res. Stn.	Nizamabad, 5 miles from Bodhan Rly. Stn.	Perennial water supply Zone.	1938	Sugarcane and Rice.	Sandy loam. (Chalka) Clay loam. (Black) (i) <i>Chem. Anal.</i> Al <sub>2</sub> O <sub>3</sub> 13.75—9.92 Fe <sub>2</sub> O <sub>3</sub> 6.29—3.88 MnO. 0.05—0.07 CaO. 1.37—3.06 K <sub>2</sub> O. 4.1—2.6 P <sub>2</sub> O <sub>5</sub> 0.04—0.13 (ii) <i>Mech. Anal.</i> N.A.	June 6.62 July 12.13 Aug. 10.91 Sept. 8.91 Oct. 3.27 Nov. 0.57 Dec. 0.08 Jan. 0.11 Feb. 0.47 March 0.48 April 0.69 May 0.53 <hr/> Total 44.77 (Average of 10 years).	Irrigation by distribution of Nizamsagar Canal from inception. Surface drainage exists.	43—Paddy. 2—Jowar. 1—Wheat. 1—Banana. <hr/> 47—Total.	On the eastern side, a range of hills covers the farm and the lands sloping from East to West.
16.	Samalkot. Agri. Res. Station.	East Godavari, ½ mile from Samalkot Rly. Stn.	Eastern Godvari delta.	1902	Paddy	Heavy alluvial clay. (i) <i>Chem. Anal.</i> pH=7.5—8.5 N=0.05 to 0.10% (ii) <i>Mech. Anal.</i> N.A.	June 5.00 July 8.39 Aug. 5.42 Sep. 5.60 Oct. 8.60 Nov. 1.90 Dec. 0.39 Jan. 0.27 Feb. 0.58 Mar. 0.14 Apr. 0.82 May 0.31 <hr/> Total 137.42 (Average of 10 years)	Godavari canal since inception. No separate drainage system.	34—Paddy. 2—Gram. 1—Cotton. <hr/> 37—Total	Level lands with very good facilities for drainage.

Crop :- Paddy (*Kharif*).

Ref :- A.P. 48(85).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the residual effect of green manuring from plots that received G.M. for 20 years prior to 1947.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) N.A. (iv) (a) 2-3 ploughings. (b) Transplanted. (c)—. (d) 6"×6". (e) 2—3. (v) Nil. (vi) GEB-24. (vii) Irrigated. (viii) One or two weeding. (ix) 33.55". (x) N.A.

2. TREATMENTS :

1. G.M.(Sannhemp) at 3000 lb./ac. per year prior to 1947.  
2. Not manured.

3. DESIGN :

(i) Paired plot. (ii) (a) 2. (b) N.A. (iii) 8. (iv) (a) 140'×20'. (b) 133'×13½'. (v) N.A. (vi) No.

4. GENERAL :

(i) Not satisfactory. (ii) N.A. (iii) Grain yield data. (iv) (a) 1947—1951. (b) Yes. (c) Nil. (v) (a) Nil. (b) Nil. (vi) Nil. (vii) Raw data not traceable.

5. RESULTS :

(i) 572 lb./ac.  
(ii) N.A.  
(iii) Treatments do not differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	600
2.	545
S.E./mean	=N.A.

Crop :- Paddy (*Kharif*).

Ref :- A.P. 49(83)/48(85).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the residual effect of green manuring from plots that received G.M. for 20 years prior to 1947.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 6.7.49/27 and 28.9.49. (iv) (a) 2-3 ploughings. (b) Transplanted. (c)—. (d) 6"×6". (e) 2—3. (v) Nil. (vi) GEB-24. (vii) Irrigated. (viii) One or two weeding. (ix) 42.34". (x) 8,9.12.49.

2. TREATMENTS :

1. G.M. (Sannhemp) at 3000 lb./ac. per year prior to 1947.  
2. Not manured.

3. DESIGN :

(i) Paired plot. (ii) (a) 2. (b) N.A. (iii) 8. (iv) (a) 140'×20'. (b) 133'×13½'. (v) N.A. (vi) No.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield data. (vi) (a) 1947—1951. (b) Yes. (c) Nil. (v) (a) Nil. (b) Nil. (vi) Nil. (vii) Raw data not traceable.

5. RESULTS :

(i) 2602 lb./ac.  
(ii) N.A.  
(iii) Treatments do not differ significantly.

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

Treatment	Av. yield
1.	2625
2.	2578
S.E./mean	= N.A.

Crop :- Paddy

Ref :- A.P. 50(84)/49(83)/48(85).

Site :- Sugarcane Res. Stn., Anakapalle. Type :- 'M'.

Object : To study the residual effect of green manuring from plots that received G.M. for 20 years prior to 1947.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 8.7.50/19, 20.8.50. (iv) (a) 2-3 ploughings. (b) Transplanted. (c) —. (d) 6"×6". (e) 2-3. (v) Nil. (vi) GEB-24. (vii) Irrigated. (viii) Weeding once or twice. (ix) 27.30" (x) 6.12.50.

## 2. TREATMENTS :

- G.M. (Sannhemp) at 3000 lb./ac. per year prior to 1947.
- Not manured.

## 3. DESIGN :

(i) Paired plot (ii) (a) 2. (b) N.A. (iii) 8. (iv) (a) 140'×20'. (b) 133'×13.5'. (v) N.A. (vi) No.

## 4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1947—1951. (b) Yes. (c) Nil. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) Raw data not traceable.

## 5. RESULTS :

- 1512 lb /ac.
- N.A.
- Treatments do not differ significantly.
- Av. yield of grain in lb /ac.

Treatment.	Av. yield.
1.	1522
2.	1502
S.E./mean	=N.A.

Crop :- Paddy.

Ref :- A.P. 51(44)/50(84)/49(83)/48(85).

Site :- Sugarcane Res. Stn., Anakapalle. Type :- 'M'.

Object :- To study the residual effect of green manuring from plots that received G.M. for 20 years prior to 1947.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Loamy soil. (b) Refer soil analysis, Anakapalle. (iii) 13.7.51/1,2.9.51. (iv) 2-3 ploughings. (b) Planting in lines. (c) —. (d) 6"×6". (e) 2-3. (v) Nil. (vi) GEB-24. (vii) Irrigated. (viii) Weeding on 13.10.51. (ix) 9.67". (x) 18.12.51.

## 2. TREATMENTS :

- G.M. (Sannhemp) at 3000 lb./ac. per year prior to 1947.
- Not manured.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 8. (iv) (a) 140'×20'. (b) 133'×13½'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Good. Lodged due to cyclonic weather on 25.11.51. (ii) Nil. (iii) Grain & straw yield. (iv) (a) 1947-1951. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data not traceable.

## 5. RESULTS :

- (i) 3000 lb./ac.  
 (ii) N.A.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	3054
2.	2947
S.E./mean	=N.A.

Crop :- Paddy.

Ref :- A. P. 49 (61).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the relative merits of night soil compost and F.Y.M.

## 1. BASAL CONDITIONS :

- (i) (a) Sugarcane—Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Anakapalle. (iii) 3 8.1949/8.9.1949. (iv) (a) 2 to 3 ploughngs. (b) Transplanted. (c) to (d) N.A. (e) 2 to 3. (v) Nil. (vi) BAM—3. (vii) Irrigated. (viii) One or two weedings. (ix) 36.80" (Aug. to Dec.). (x) 25.12.49.

## 2. TREATMENTS :

- No manure.
  - Night soil compost to supply 60 lb./ac. of N.
  - F.Y.M. to supply 60 lb./ac. of N.
- Manures applied as basal dose on 6.9.1949.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 64'×18'-8". (b) 58'-4"×13'-4". (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Not satisfactory due to floods in October, 1949. (ii) Nil. (iii) Growth measurements and grain yield. (iv) (a) 1949 to 1950. (b) No. (treatments were same for both years, but dose and crop differ in 1950). (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1703 lb./ac.  
 (ii) 188.6 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1582
2.	1770
3.	1756
S.E./mean	= 77.9 lb./ac.

Crop :- Paddy.

Ref :- A.P. 50 (64).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the relative merits of night soil compost and F.Y.M.

## 1. BASAL CONDITIONS :

- (i) (a) Paddy—Paddy—Sugarcane. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 8.7.1950/11.9.1950. (iv) (a) (a) 2 or 3 ploughings. (b) Transplanted. (c) to (d) N.A. (e) 2 to 3. (v) Nil. (vi) BAM—3. (vii) Irrigated. (viii) One or two weedings. (ix) 24.62" (July to Dec.). (x) 11.12.50.

## 2. TREATMENTS :

1. No manure.
  2. Night soil compost to supply 60 lb./ac. of N.
  3. F.Y.M. to supply 60 lb./ac. of N.
- Manures applied as basal dressing on 17.8.1950.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 64'×18'-8". (b) 58'-4"×13'-4". (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Grain weight., tiller count, etc. (iv) (a) 1949—1950. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2058 lb./ac.
- (ii) 235.1 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1893
2.	2239
3.	2043
S.E./mean	= 95.9 lb./ac.

Crop :- Paddy.

Site :- Sugarcane Res. Stn., Anakapalle.

Ref :- A.P. 50(65).

Type :- 'M'.

Object :—To study the relative merits of night soil compost and F.Y.M.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy—Paddy. (b) Sugarcane. (c) Same as under treatments, but the total dose of N in lb./ac. was 250. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 5.7.50/12.9.50. (iv) (a) 2 to 3 ploughings. (b) Transplanted. (c) —. (d) N.A. (e) 2 to 3. (v) Nil. (vi) BAM-3. (vii) Irrigated. (viii) One or two weedings. (ix) 24.62". (July to Dec.). (x) 12.12.50.

## 2. TREATMENTS :

1. No manure.
  2. Night soil compost to supply 60 lb./ac. of N.
  3. F.Y.M. to supply 60 lb./ac. of N
- Manures applied on 18.8.50. as basal dose.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 64'×18'8". (b) 58'4"×13'4". (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Grain weight, tiller count, etc. (iv) (a) 1949 to 1950. (b) Treatments were same every year but dose and crop differed from year to year. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1763 lb./ac.
- (ii) 367.4 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1557
2.	1867
3.	1864
S.E./mean	= 150.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 51(41).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S on the yield of Sugarcane and on its normal rotational crops (*Ragi* and Paddy).

## 1. BASAL CONDITIONS :

(i) (a) *Ragi*-Paddy-Sugarcane. (b) *Ragi*. (c) 40 lb./ac. of N in different forms. (ii) (a) Loamy soil. (b) Refer soil analysis, Anakapalle. (iii) 31.8.51. (iv) (a) Twice ploughing with country plough, puddling, trimming bunds, and levelling. (b) Transplanted. (c) —. (d) 6" × 6". (e) 2-3. (v) Nil. (vi) GEB-24. (vii) Irrigated. (viii) Weeding once on 1.10.51. (ix) 12.80". (x) First week of December, 1951.

## 2. TREATMENTS :

1. 60 lb./ac. of N as A/S.
2. 60 lb./ac. of N as G.N.C.
3. 60 lb./ac. of N as F.Y.M.
4. 60 lb./ac. of N as mixture of G.N.C. and A/S in the ratio 2:1.
5. No manure.

Applied in single dose 20 days after transplanting.

## 3. DESIGN :

(i) 5 × 5 L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 39.6' × 37'. (b) 33' × 26.4'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield, growth measurements. (iv) (a) 1951—continued. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2150 lb./ac.  
 (ii) 197.0 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1510
2.	2530
3.	2370
4.	2200
5.	2140
S.E./mean	= 88.1 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52(51)/51(41).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S on the yield of Sugarcane and on its normal rotational crops (*Ragi* and Paddy).

## 1. BASAL CONDITIONS :

(i) (a) *Ragi*-Paddy-Sugarcane. (b) *Ragi*. (c) 40 lb./ac. of N in different forms. (ii) (a) Loamy soil. (b) Refer soil analysis, Anakapalle. (iii) 24.25.9.52. (iv) (a) 2 ploughings with country plough including one dry ploughing, puddling, trimming bunds and levelling. (b) Transplanted. (c) —. (d) 6" × 6". (e) 2—3. (v) Nil. (vi) GEB-24. (vii) Irrigated. (viii) Two weedings. (ix) N.A. (x) 18.12.52.

## 2. TREATMENTS :

1. 60 lb./ac. of N as A/S.
2. 60 lb./ac. of N as G.N.C.
3. 60 lb./ac. of N as F.Y.M.
4. 60 lb./ac. of N as mixture of G.N.C. and A/S in the ratio 2:1.
5. No manure.

Applied in single dose 20 days after transplanting.

**3. DESIGN :**

(i) 5 × 5 L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 39.6' × 37'. (b) 33' × 26.4' (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Mild attack of blast. (iii) Grain and straw yield and growth measurements. (iv) a) 1951—continued. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 1506 lb./ac.  
 (ii) 1655 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.
- | Treatment | Av. yield      |
|-----------|----------------|
| 1.        | 1650           |
| 2.        | 1903           |
| 3.        | 1178           |
| 4.        | 1805           |
| 5.        | 993            |
| S.E./mean | = 74.0 lb./ac. |

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Crop :- Paddy.

Ref :- A.P. 53(62)/52(51)/51(41).

Site :- Sugarcane Res. Stn., Anakapalle. Type :- 'M'.

Object. :- To study the effect of continuous application of A/S on the yield of Sugarcane and on its normal rotational crops (*Ragi* and Paddy).

**1. BASAL CONDITIONS :**

(i) (a) Sugarcane-*Ragi*-Paddy-Sugarcane. (b) *Ragi*. (c) 40 lb./ac. of N as A/S. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 1st week of Aug. 1953. (iv) (a) 2 to 3 ploughings, puddling and levelling. (b) Transplanting. (c) —. (d) 6" between rows. (e) 2 to 3. (v) Nil. (vi) GEB-24 (vii) Irrigated. (viii) One weeding. (ix) 20.73". (x) Third week of November, 1953.

**2. TREATMENTS :**

- 60 lb./ac. of N as A/S.
- 60 lb./ac. of N as G.N.C.
- 60 lb./ac. of N as F.Y.M.
- 60 lb./ac. of N as mixture of A/S. and G.N.C. in the ratio 1 : 2.
- No manure.  
Applied in single dose 20 days after planting.

**3. DESIGN :**

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 39.6' × 37'. (b) 33' × 26.4'. (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1951—continued. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 2068 lb./ac.  
 (ii) 114.0 lb./ac.  
 (iii) Treatments differ highly significantly.  
 (iv) Av. yield of grain in lb./ac.
- | Treatment | Av. yield      |
|-----------|----------------|
| 1.        | 2300           |
| 2.        | 2335           |
| 3.        | 1925           |
| 4.        | 2255           |
| 5.        | 1525           |
| S.E./mean | = 50.9 lb./ac. |

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Crop :-Paddy.

Ref :-A.P. 53(61).

Site :-Sugarcane Res. Stn., Anakapalle.

Type :-'M'.

Object :-To study the effect of continuous application of A/S (Series 2).

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane—Ragi—Paddy—Sugarcane. (b) Ragi. (c) 40 lb./ac. of N in different forms. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 8.8.53. (iv) (a) 2 to 3 ploughings, levelling and puddling. (b) Transplanting. (c) —. (d) 6"×6". (e) 2 to 3. (v) Nil. (vi) G.E.B. 24. (vii) Irrigated. (viii) Weeding once. (ix) 20.73". (x) 22.11.53.

## 2. TREATMENTS :

1. 60 lb./ac. of N as A/S.
2. 60 lb./ac. of N as A/S+1500 lb./ac. of lime prior to planting.
3. 60 lb./ac. of N as mixture of G.N.C. and A/S in the ratio of 2 : 1.
4. Treatment (3)+lime at 1500 lb./ac., prior to planting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 39.6'×26.4'. (b) 33'×19.8'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1953—1955. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2380 lb./ac.  
 (ii) 174.7 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2327
2.	2254
3.	2427
4.	2514
S.E./mean	= 78.1 lb./ac.

Crop :-Paddy.

Ref :-A.P. 53(98).

Site :-Sugarcane Res. Stn., Anakapalle.

Type :-'M'.

Object :-To assess the direct manurial value of organic and inorganic manures and find out the necessity of liming paddy fields for correcting acidity, if any, developed.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Clayey loam. (b) Refer soil analysis, Anakapalle. (iii) N.A. (iv) (a) Puddling with country plough 4 times. (b) Transplanted. (c) —. (d) 6"×6". (e) 2. (v) Nil. (vi) AKP 4 (medium). (vii) Irrigated. (viii) N.A. (ix) 27.47". (x) Second week of Dec. 53.

## 2. TREATMENTS :

Main-plot treatments :-

Application of N :  $N_0$ =No manure,  $N_1$ =60 lb./ac. of N as C.M.,  $N_2$ =60 lb./ac. of N as compost,  $N_3$ =60 lb./ac. of N as A/S and  $N_4$ =60 lb./ac. of N as G.M.

Sub-plot treatments :-

All combinations of (1), (2) and (3)

- (1) 2 levels of  $P_2O_5$  :  $P_0=0$  and  $P_1=60$  lb./ac.
  - (2) 2 levels of  $K_2O$  :  $K_0=0$  and  $K_1=60$  lb./ac.
  - (3) 2 levels of lime :  $L_0=0$  and  $L_1=60$  lb./ac.
- $P_2O_5$  as Super and  $K_2O$  as Pot. Sulphate. Lime as slaked lime.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/block, 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 35'×15.2'. (b) 31.7'×12.5'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—1956 (Expt. failed in 1952). (b) Yes. (c) Nil. (v) (a) and (b) Maruteru, Samalkot. (vi) Nil. (vii) One day prior to the day of harvest, earheads were lost by theft from the standing crop in 8 plots of two replications. Hence yield of grain was taken into account from 2 replications only.

## 5. RESULTS :

- (i) 2703 lb./ac.  
 (ii) (a) 524.4 lb./ac.  
 (b) 245.8 lb./ac.  
 (iii) Main effect of N alone is significant. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	N <sub>0</sub>	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	N <sub>4</sub>	Mean	L <sub>0</sub>	L <sub>1</sub>	K <sub>0</sub>	K <sub>1</sub>
P <sub>0</sub>	2996	3147	3202	2264	1931	2708	2670	2747	2646	2772
P <sub>1</sub>	2907	3280	3191	2218	1892	2698	2667	2728	2719	2676
K <sub>0</sub>	2969	3264	3262	2037	1877	2682	2587	2777		
K <sub>1</sub>	2935	3161	3130	2447	1946	2724	2750	2698		
L <sub>0</sub>	2948	3061	3263	2296	1775	2669				
L <sub>1</sub>	2954	3366	3129	2188	2048	2737				
Mean	2952	3213	3196	2242	1912	2703				

## S.E. difference of two

1. N marginal means = 185.4 lb./ac.
2. P or K or L marginal means = 54.9 lb./ac.
3. P or K or L means at the same level of N = 122.9 lb./ac.
4. N means at the same level of P or K or L = 204.7 lb./ac.
5. means in the body of table P×L or P×K or L×K = 109.9 lb./ac.

Crop :- Paddy (main season).

Ref :- A.P. 53(87).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To compare the effect of manuring by broadcasting and by deep placement on Paddy.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 9, 10.9.53. (iv) (a) to (c) N.A. (v) G.L. at 4 ton/ac. (vi) MTU—1. (vii) Irrigated. (viii) One or two weedings. (ix) 20.73°. (x) 7, 8.12.53.

## 2. TREATMENTS :

1. Manuring by broadcasting.
2. Manuring by deep placement.

Details of manuring :- Super to supply 30 lb./ac. of P<sub>2</sub>O<sub>5</sub>+A/S to supply 40 lb./ac. of N (manuring done by dibbling a mixture of A/S and clay 1 : 5 made into balls of uniform size).

## 3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 44'×16'-8". (b) 44'×16'-8". (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield, tiller count, etc. (iv) (a) 1953—N.A. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2453 lb./ac.  
 (ii) 455.5 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2480
2.	2425
S.E./mean	= 131.4 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52(72).

Site :- Demonstration cum Exploratory Stn., Araku Valley. Type :- 'M'.

Object :- To compare C/N with A/S in giving high yields for dry Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Dry paddy. (c) N.A. (ii) (a) Clayey loam. (b) Refer soil analysis, Araku Valley. (iii) 28.6.52. (iv) (a) to (e) N.A. (v) Nil. (vi) Battadhan (mass selected). (vii) Unirrigated. (viii) N.A. (ix) 34.39%. (June 52 to Dec. 52). (x) 15.11.52.

## 2. TREATMENTS :

- Basal dressing of lime 450 lb./ac. +3 ton/ac. of C.M.+Super at 30 lb./ac. of  $P_2O_5$ .
- Treatment (1)+A/S at 40 lb./ac. of N.
- Treatment (1)+A/S at 60 lb./ac. of N.
- A/S alone at 40 lb./ac. of N.
- A/S alone at 60 lb./ac. of N.
- Treatment (1)+C/N at 40 lb./ac. of N.
- Treatment (1)+C/N at 60 lb./ac. of N.
- C/N alone to give more than 40 lb./ac. of N (50 lb.)
- C/N alone to give more than 60 lb./ac. of N (70 lb.)

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 5. (iv) (a) and (b) 1 cent. (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1952 to 1953. (b) No. (c) No. (v) (a) and (b) N.A. (vi) Nil. (vii) Nil.

## 5. RESULTS :

- (i) 1040 lb./ac.  
 (ii) 156.5 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	780
2.	1110
3.	1150
4.	1160
5.	1070
6.	780
7.	1010
8.	1060
9.	1240
S.E./mean	= 70.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 53 (80)

Site :- Demonstration cum Exploratory Stn., Araku Valley. Type :- 'M'.

Object :—To compare C/N with A/S in giving high yield for dry Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Araku Valley. (iii) 22.6.53 (iv) (a) to (e) N.A. (v) Nil. (vi) Battadhan (mass selected) (vii) Unirrigated (viii) 2 or 3 weedings & hoeing (xi) 39.42" (June '53 to Dec. '53) (x) 2.11.53.

2. TREATMENTS :

1. Basal dressing of lime 450 lb./ac. + 3 ton/ac. of C.M. + Super at 30 lb./ac. of  $P_2O_5$ .
2. Treatment (1) + A/S at 40 lb./ac. of N
3. Treatment (1) + A.S at 60 lb./ac. of N
4. A/S alone at 40 lb./ac. of N
5. A/S alone at 60 lb./ac. of N
6. Treatment (1) + C/N at 40 lb./ac. of N
7. Treatment (1) + C/N at 60 lb./ac. of N
8. C/N alone to give more than 40 lb. ac. of N (50 lb.)
9. C/N alone to give more than 60 lb./ac. of N (70 lb.)

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 5. (iv) (a) & (b) 1 cent (v) Nil. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

- i) 1322 lb./ac.
- (ii) 111.8 lb./ac.
- (iii) Treatments differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	960
2.	1400
3.	1700
4.	1000
5.	1380
6.	1320
7.	1840
8.	1120
9.	1100
S.E/mean	= 50.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52 (16)

Site :- Agri. College Farm, Bapatla.

Type :- 'M'

Object :—To study the response of organic and inorganic manures on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 4000 lb./ac. of G.L. + 150 lb./ac. of Super + 150 lb./ac. of A/S. (ii) (a) Sandy loam. (b) Refer soil analysis, Bapatla (iii) 3.6.52/12.8.52 (iv) (a) to (e) N.A. (v) Nil. (vi) MTU-7. (vii) Irrigated. (viii) 2 Weedings. (ix) 16.2" (x) 28.12.52.

2. TREATMENTS :

1. 60 lb./ac. of N as G.N.C.
2. 60 lb./ac. of N as Castor Cake.
3. 60 lb./ac. of N as G.L.
4. 60 lb./ac. of N as G.L+A/S.
5. 60 lb./ac. of N as A/S.
6. No manure.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 11.9' × 18.5' (b) 10.6' × 17.2' (v) 0.66' left as border on all sides (vi) Yes.

## 4. GENERAL :

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

## 5. RESULTS :

- (i) 3459 lb./ac.  
 (ii) 525.0 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3684
2.	3412
3.	3452
4.	3764
5.	3624
6.	2818
S.E./mean	= 214.4 lb./ac.

Crop :- Paddy

Ref :- A.P. 53(6)

Site :- Agri. College Farm, Bapatla.

Type :- 'M'.

Object :- To study the effect of broadcasting and placement of A/S on Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) 150 lb./ac. of Super + 150 lb./ac. of A/S. (ii) (a) Sandy loam. (b) Refer soil analysis, Bapatla. (iii) 13.6.53/2.8.53. (iv) (a) Mummy digging once. (b) Transplanting. (c) —. (d) 6" × 6" (e) N.A. (v) Nil. (vi) MTU-19. (vii) Irrigated. (viii) 2 weedings. (ix) 16.2" (x) 21.12.53.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 methods of application of N :- P=Placement and B=broadcasting.

(2) 3 levels of N :- N<sub>1</sub>=30, N<sub>2</sub>=45 and N<sub>3</sub>=60 lb./ac.

And one control (No manure).

N applied as A/S. In case of placement, A/S is placed 2"—3" below the surface in the interspace of the seedlings, in the form of pellets.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 13.2' × 26.4'. (b) 12.2' × 25.4'. (v) 0.5' on all sides. (vi) Yes.

## 4. DESIGN :

- (i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—contd. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) Nil.

## 5. RESULTS :

- (i) 2587 lb./ac.  
 (ii) 462.0 lb./ac.  
 (iii) Main effects and interaction are not significant.  
 (iv) Av. yield of grain in lb./ac.

	Control=2553 lb./ac.			Mean
	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	
P	2307	2677	2677	2554
B	2763	2886	2248	2632
Mean	2535	2781	2463	2593

- S.E. of marginal mean of levels of N = 163.3 lb./ac.  
 S.E. of marginal mean of methods = 133.3 lb./ac.  
 S.E. of body of table = 231.0 lb./ac.  
 S.E. of control vs. any mean in the body of table = 326.7 lb./ac.

Crop :- Paddy.  
Site :- Agri. College Farm, Bapatla.

Ref :- A.P. 53(29).  
Type :- 'M'.

Object :- To study the effect of N and P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Bapatla. (iii) 13.6.53/24.7.53.  
(iv) (a) *Mummatty* digging once. (b) Transplanting. (c) —. (d) 6' × 6'. (e) N.A. (v) Nil. (vi) MTU-19 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 16.2" (x) 24.12.53.

2. TREATMENTS :

Main-plot treatments :

Levels of N :  $N_0=0$ ,  $N_1=30$ ,  $N_2=45$  and  $N_3=60$  lb./ac.

Sub-plot treatments :

Levels of  $P_2O_5$  :  $P_0=0$ ,  $P_1=30$ ,  $P_2=45$  and  $P_3=60$  lb./ac.

N as A/S and  $P_2O_5$  as Super.

3. DESIGN :

(i) Split plot. (ii) (a) 4 main-plots/block ; 4 Sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 33' × 13.2' (b) 32' × 12.2' (v) 0.5' left as border on all sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—contd. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 2655 lb./ac.  
(ii) (a) 742.3 lb./ac.  
(b) 420.2 lb./ac.  
(iii) None of the effects is significant.  
(iv) Av. yield of grain in lb./ac.

	$N_0$	$N_1$	$N_2$	$N_3$	Mean
$P_0$	2419	2891	2807	2551	2667
$P_1$	2400	3027	2468	2518	2603
$P_2$	2878	2764	2776	2530	2737
$P_3$	2617	2659	2805	2368	2612
Mean	2578	2835	2714	2492	2655

S E. of difference of two

1. main-plot treatment means = 263.0 lb./ac.
2. sub-plot treatment means = 149.0 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment. = 297.0 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment. = 368.0 lb./ac.

Crop :- Paddy.  
Site :- Rice Res. Stn., Buchireddipalem.

Ref :- A.P. 50(16).  
Type :- 'M'.

Object :- To assess the relative merits of two kinds of  $P_2O_5$  viz B.M. and Super each at different levels.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) Transplanted on 3.10.50. (iv) (a) 2 to 3 dry ploughings. (b) Transplanting. (c) —. (d) 6' × 6'. (e) 2. (v) Nil. (vi) BCP-2 (ate) (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 37.80". (x) 8.2.51.

**2. TREATMENTS :**

Main-plot treatments :—

2 sources of  $P_2O_5$  :  $S_1$ =B.M. and  $S_2$ =Super.

Sub-plot treatments :—

3 levels of  $P_2O_5$  :  $P_0=0$ ,  $P_1=30$  and  $P_2=45$  lb /ac.**3. DESIGN :**(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b)  $9' \times 42'$ .  
(v) No. (vi) Yes.**4. GENERAL :**(i) Normal. (ii) Paddy blast and stemborer appeared in mild scale. (iii) Grain yield. (iv) (a) 1950—contd.  
(b) No. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Nil.**5. RESULTS :**

- (i) 1827 lb /ac.  
 (ii) (a) 426.4 lb./ac.  
 (b) 151.5 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of grain in lb./ac.

	$P_0$	$P_1$	$P_2$	Mean
$S_1$	—	1817	1788	1830
$S_2$	—	1789	1897	1825
Mean	1837	1803	1842	1827

S.E. of difference of two

1. main-plot treatment means =174.1 lb./ac.  
 2. sub-plot treatment means = 75.6 lb./ac.  
 3. sub-plot treatment means at the same level of main-plot treatment =107.2 lb./ac.  
 4. main-plot treatment means at the same level of sub-plot treatment =194.8 lb./ac.

Crop :- Paddy.

Ref :- A.P. 53(76).

Site :- Rice Res. Stn., Bhuchireddipalem.

Type :- 'M'.

Object :- To assess the relative merits of two kinds of  $P_2O_5$  viz. B.M. and Super at different levels.**1. BASAL CONDITIONS :**(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 25.9.53. (iv) (a) 3 dry ploughings and twice puddling. (b) Transplanted. (c) —. (d)  $6'' \times 6''$ . (e) 2. (v) 4000 lb./ac. of G.L. (vi) BCP-2 (late). (vii) Irrigated. (viii) 3 weedings. (ix) 28.47". (x) 2.2.54.**2. TREATMENTS :**

All combination of (1) and (2)

(1) 2 sources of  $P_2O_5$  :  $S_1$ =B.M. and  $S_2$ =Super.(2) 3 levels of  $P_2O_5$  :  $P_0=0$ ,  $P_1=30$  and  $P_2=45$  lb./ac.**3. DESIGN :**(i)  $2 \times 3$  Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) and (b)  $8' \times 42'$ . (v) No. (vi) Yes.**4. GENERAL :**

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

## 5. RESULTS :

- (i) 2165 lb./ac.  
(ii) 117.1 lb./ac.  
(iii) Main effects and interaction are not significant.  
(iv) Av. yield of grain in lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	Mean
P <sub>0</sub>	—	—	2119
P <sub>1</sub>	2153	2206	2179
P <sub>2</sub>	2159	2236	2198
Mean	2156	2221	2165

S.E. of marginal mean = 41.4 lb. ac.  
S.E. of body of table = 58.6 lb./ac.

Crop :- Paddy.

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

Ref :- A. P. 50 (14).

Type :- 'M'.

Object :- To study the incidence of blast on Paddy manured with lime and Super over a high dose of G.L.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 50 lb./ac. of G.N.C. + 112 lb./ac. of B.M. + 4000 to 6000 lb./ac. of G.L. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 13.8.50. (iv) (a) 2 to 3 dry ploughings and two puddlings. (b) Transplanting. (c)—(d) 6" x 6". (e) 2. (v) Nil. (vi) BCP-1 (late). (vii) Irrigated (viii) 2 to 3 hand weedings. (ix) 37.80". (x) 4.1.51.

## 2. TREATMENTS :

- No manure.
- 8000 lb./ac. of G.L.
- Treatment (2) + 112 lb./ac. of Super.
- Treatment (2) + 2000 lb./ac. of lime.
- Treatment (4) + 112 lb./ac. of Super.

G.L. ploughed in *situ* and incorporated into the soil before sowing. Lime applied about a fortnight before sowing and incorporated in the soil. Super applied in puddle.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b) 10' x 20'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Paddy blast and Stemborer on mild scale. (iii) Grain yield and the no. of affected and healthy earheads noted. (iv) (a) 1950—1953. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Nil.

## 5. RESULTS :

- (i) 1599 lb./ac.  
(ii) 202.6 lb./ac.  
(iii) Treatments do not differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1447
2.	1643
3.	1629
4.	1720
5.	1556
S.E./mean	= 82.7 lb./ac.



Crop :- Paddy.

Ref :- A. P. 52 (45)/50 (14).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :- To study the incidence of blast on Paddy manured with lime and Super over a high dose of G.L.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Green gram was grown as a catch crop as the same expt. could not be laid out due to non-availability of water. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) transplanted on 8.11.1952. (iv) (a) 2 to 3 dry ploughings and two puddings. (b) Transplanted. (c) —. (d) 6" x 6". (e) 2. (v) Nil. (vi) BCP-2. (late). (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 22.68". (x) 24.2.53.

## 2. TREATMENTS :

1. No manure.
2. 8000 lb./ac. of G.L.
3. Treatment (2) + 112 lb./ac. of Super.
4. Treatment (2) + 2000 lb./ac. of lime.
5. Treatment (4) + 112 lb./ac. of Super.

G.M. puddled in *situ* before planting ; lime puddled in the soil about a fortnight before planting ; Super broadcast and mixed with soil just before sowing.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b) 25' x 8'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Slight attack of blast. (iii) Grain yield ; 20 plants were taken at random from each plot and the number of healthy and affected earheads counted. (iv) (a) 1950 to 1953. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) No experiment in the year 1951.

## 5. RESULTS :

- (i) 1677 lb./ac.  
 (ii) 283.1 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1559
2.	1801
3.	1495
4.	1797
5.	1736
S.E./mean	= 115.6 lb./ac.

Crop :- Paddy.

Ref :- A.P. 53(73)/52(45)/50(14).

Site :- Rice Res. Stn., Buchireddipalem. Type :- 'M'.

Object :- To study the incidence of blast on Paddy manured with lime and Super over a high dose of G.L.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 1st week of August 1953. (iv) (a) 2 to 3 dry ploughings and two puddings. (b) Transplanted. (c) —. (d) 6" x 6". (e) 2. (v) Nil. (vi) BCP-2 (late). (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 28.47". (x) 1st week of February, 1954.

## 2. TREATMENTS :

1. No manure.
2. 8000 lb./ac. of G.L.
3. Treatment (2) + 112 lb./ac. of Super.
4. Treatment (2) + 2000 lb./ac. of lime.
5. Treatment (4) + 112 lb./ac. of Super.

G.L. puddled in *situ* before planting lime puddled into the soil about a fortnight before planting. Super broadcast and mixed with soil just before planting.]

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b) 8'×25'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Blast attack—not severe. (iii) Grain yield 20 plants were taken at random from each plot and the number of healthy and affected earheads counted. (iv) (a) 1950 to 1953. (b) Yes. (c) N.A. (vi) (a) and (b) Nil. (vi) Nil. (vii) Nil.

## 5. RESULTS :

(i) 2455 lb./ac.

(ii) 283.1 lb./ac.

(iii) Treatments do not differ significantly.

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

Treatment	Av. yield.
1.	2419
2.	2598
3.	1858
4.	2337
5.	2387
S.E. of mean	= 115.5 lb./ac.

Crop :- Paddy.

Ref :- A.P. 49(21).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :—To assess the milling quality of rice when manured with G.N.C. alone or in combination with G.M.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) N.A. (iv) (a) 2 to 3 dry ploughings. (b) Transplanted. (c) —. (d) 6"×6". (e) 2. (v) Nil. (vi) 2552, 'late'. (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 25.82%. (x) N.A.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of G.N.C. :  $G_0=0$ ,  $G_1=400$  and  $G_2=600$  lb./ac.

(2) 2 levels of G.M. :  $M_0=0$  and  $M_1=4000$  lb./ac.

G.M. applied 15 days before planting and ploughed in ; G.N.C. applied as top dressing one month after transplanting.

## 3. DESIGN :

(i) 3×2 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) and (b) 7'×44'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield (samples taken for studying milling properties). (iv) (a) 1949 to 1951. (b) N.A. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Nil.

## 5. RESULTS :

(i) 2711 lb./ac.

(ii) 286.0 lb./ac.

(iii) The effects of G.N.C. and G.M. are significant. Their interaction is not significant.

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

	$G_0$	$G_1$	$G_2$	Mean
$M_0$	2207	2607	2832	2549
$M_1$	2651	3000	2967	2873
Mean	2429	2803	2899	2711

S.E. of marginal mean of G.N.C. = 101.1 lb./ac.

S.E. of marginal mean of G.M. = 85.6 lb./ac.

S.E. of body of table = 145.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 48(32).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :- To ascertain the relative merits of sources of  $P_2O_5$  along with G.N.C.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 12.8.48/22.10.48. (iv) (a) 2 to 3 ploughings. (b) Transplanting. (c) —. (d) 6" × 6". (e) 2. (v) Nil. (vi) 1834. (medium). (vii) Irrigated. (viii) 2 to 3 hand-weedings. (ix) 25.56". (x) 16.2.49.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1)  $P_0=0$ ,  $P_1=30$  lb./ac. of  $P_2O_5$  as Super.,  $P'_1=30$  lb./ac. of  $P_2O_5$  as B.M. and  $P_1''=30$  lb./ac. of  $P_2O_5$  as Calcined B.M.

(2)  $N_0=0$  and  $N_1=G.N.C.$  at 40 lb./ac. of N.

## 3. DESIGN :

(i) 2 × 4 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) and (b) 20' × 12' (v) No. (vi) Yes.

## 4. GENERAL :

(i) Unfavourable season. (ii) Attack of paddy blast and *kodu*. (iii) Grain yield. (iv) (a) 1944—1949. (b) N.A. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2060 lb./ac.  
 (ii) 166.0 lb./ac.  
 (iii) Main effect of N alone is significant.  
 (iv) Av. yield of grain in lb./ac.

	$P_0$	$P_1$	$P'_1$	$P_1''$	Mean
$N_0$	1952	1918	2034	2062	1992
$N_1$	2056	2130	2193	2133	2128
Mean	2034	2024	2114	2098	2060

S.E. of body of table = 83.0 lb./ac.

S.E. of marginal mean of P = 58.7 lb./ac.

S.E. of marginal mean of N = 41.5 lb./ac.

Crop :- Paddy.

Ref :- A.P. 49(2).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :- To ascertain the relative merits of sources of  $P_2O_5$  along with G.N.C.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 14.7.49/2.9.49. (iv) (a) 2 to 3 ploughings. (b) Transplanting. (c) —. (d) 6" × 6". (e) 2. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 25.8". (x) 25.1.50.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1)  $P_0=0$ ,  $P_1=30$  lb./ac. of  $P_2O_5$  as Super,  $P'_1=30$  lb./ac. of  $P_2O_5$  as B.M. and  $P_1''=30$  lb./ac. of  $P_2O_5$  as Calcined B.M.

(2)  $N_0=0$  and  $N_1=40$  lb./ac. of N as G.N.C.

## 3. DESIGN :

(i) 2 × 4 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) and (b) 19' × 12' (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain weight. (iv) (a) 1947 to 1949. (b) N.A. (c) N.A. (v) (a) and (b) Nil (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 5219 lb./ac.  
 (ii) 570.0 lb./ac.  
 (iii) Main effects and interaction are not significant.  
 (iv) Av. yield of grain in lb./ac.

	P <sub>0</sub>	P <sub>1</sub>	P <sub>1</sub> '	P <sub>1</sub> "	Mean
N <sub>0</sub>	5237	5243	5061	5061	5150
N <sub>1</sub>	5010	5325	5445	5375	5289
Mean	5123	5284	5253	5218	5219

S.E. of marginal mean of N = 142.5 lb./ac.  
 S.E. of marginal mean of P = 201.5 lb./ac.  
 S.E. of body of table = 285.0 lb./ac.

Crop :- Paddy.

Site :- Rice Res. Stn., Buchireddipalem.

Ref:- A.P. 48(84).

Type :- 'M'.

Object :- To find out the requirement of lime for Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 20.9.48/13.11.43. (iv) (a) 2 to 3 dry ploughings, (b) Transplanted. (c) —. (d) 6' x 6'. (e) 2. (v) Nil. (vi) 2202. (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 25.56". (x) 23.2.49.

## 2. TREATMENTS :

Main-plot treatments :-

Levels of G.L. : G<sub>0</sub>=0 and G<sub>1</sub>=G.L. at 6000 lb./ac.

Sub-plot treatments :-

Levels of lime : L<sub>0</sub>=0, L<sub>1</sub>=100, L<sub>2</sub>=2000 and L<sub>3</sub>=3000 lb./ac.

## 3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 9' x 19'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Severe attack of blast. (iii) Height measurements, tiller count and grain yield. (iv) (a) 1948 to 1950. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1485 lb./ac.  
 (ii) (a) 227.5 lb./ac.  
 (b) 163.3 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of grain in lb./ac.

	L <sub>0</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	Mean
G <sub>0</sub>	1421	1385	1429	1604	1460
G <sub>1</sub>	1433	1421	1651	1544	1512
Mean	1427	1403	1540	1574	1485

## S.E. of difference of two

1. main-plot treatment means = 80.4 lb./ac.  
 2. sub-plot treatment means = 81.6 lb./ac.  
 3. sub-plot treatment means at the same level of main-plot treatment = 115.5 lb./ac.  
 4. main-plot treatment means at the same level of sub-plot treatment = 128.3 lb./ac.

Crop :- Paddy.  
Site :- Rice Res. Stn., Buchireddipalem.

Ref :- A.P. 49(4).  
Type :- 'M'.

Object :—To study the need of lime for soils of the station.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 14.7.49/1.9.49. (iv) (a) 2 to 3 ploughings. (b) Transplanting. (c) —. (d) 6"×6". (e) 2. (v) Nil. (vi) BCP-2. (late). (vii) Irrigated. (viii) 2 weedings. (ix) 25.82". (x) 24.1.50.

2. TREATMENTS :

Main-plot treatments :—

2 levels of G.M. :  $G_0=0$  and  $G_1=G.M.$  at 6000 lb./ac.

Sub-plot treatments :—

4 levels of lime :  $L_0=0$ ,  $L_1=1000$ ,  $L_2=2000$  and  $L_3=3000$  lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 18'×10'. (v) No. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1950. (b), (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

- (i) 2761 lb./ac.  
(ii) (a) 1889.0 lb./ac.  
(b) 491.9 lb./ac.  
(iii) None of the effects is significant.  
(iv) Av. yield of grain in lb./ac.

	$L_0$	$L_1$	$L_2$	$L_3$	Mean
$G_0$	2174	2571	2488	3169	2601
$G_1$	2983	3116	2739	2847	2921
Mean	2578	2844	2613	3008	2761

S.E. of difference of two

1. main-plot treatment means =667.8 lb./ac.  
2. sub-plot treatment means =245.9 lb./ac.  
3. sub-plot treatment means at the same level of main-plot treatment =347.9 lb./ac.  
4. main-plot treatment means at the same level of sub-plot treatment =732.7 lb./ac.

Crop :-Paddy.  
Site :-Rice Res. Stn., Buchireddipalem.

Ref :-A.P. 50(17).  
Type :-'M'.

Object :—To find out the requirement of lime for soils of the station.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 50 lb./ac. of G.N.C. +112 lb./ac. of B.M. +4000 to 6000 lb./ac. of G.L. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 26.7.50/2.10.50. (iv) (a) 2 to 3 dry ploughings. (b) Transplanting. (c) —. (d) 6"×6". (e) 2. (v) Nil. (vi) BCP-2 (late). (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 37.80". (x) 8.2.51.

2. TREATMENTS :

Main-plot treatments :—

2 levels of G.L. :  $G_0=0$  and  $G_1=G.L.$  at 4000 lb./ac.

Sub-plot treatments :—

4 levels of lime :  $L_0=0$ ,  $L_1=1000$ ,  $L_2=2000$  and  $L_3=3000$  lb./ac.

## 3. DESIGN :

(i) Split-plot (ii) (a) 2 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 10'×16'.  
(v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Paddy blast and Stemborer appeared on a mild scale. (iii) Grain and straw yield. (iv) (a) 1948—1950. (b) N.A. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1685 lb./ac.  
(ii) (a) 3.56 lb./ac.  
(b) 462.8 lb./ac.  
(iii) None of the effects is significant.  
(iv) Av. yield of grain in lb./ac.

	L <sub>0</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	Mean
G <sub>0</sub>	1732	1740	1838	1583	1723
G <sub>1</sub>	1482	1808	1531	1762	1646
Mean	1607	1774	1685	1673	1685

S.E. of difference of two.

1. main-plot treatment means = 136.6 lb./ac.  
2. sub-plot treatment means = 231.3 lb./ac.  
3. sub-plot treatment means at the same level of main-plot treatment = 327.3 lb./ac.  
4. main-plot treatment means at the same level of sub-plot treatment = 314.7 lb./ac.

Crop :-Paddy.

Ref :-A.P. 48 (75).

Site :-Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :-To study the maximum potentialities of Paddy with different combinations of N, P and K manures.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burchireddipalem. (iii) 24 to 28.9.48. (iv) (a) 2 to 3 ploughings. (b) Transplanted. (c) —. (d) 6"×6". (e) 2. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 25.56°. (x) 13.2.49.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 6 levels of N : N<sub>0</sub>=0, N<sub>1</sub>=G.L. (dose N.A.), N<sub>2</sub>=N<sub>1</sub>+30 lb./ac. of N, N<sub>3</sub>=N<sub>1</sub>+60 lb./ac. of N, N<sub>4</sub>=N<sub>1</sub>+90 lb./ac. of N and N<sub>5</sub>=N<sub>1</sub>+120 lb./ac. of N.

(2) 3 levels of P<sub>2</sub>O<sub>5</sub> : P<sub>0</sub>=0, P<sub>1</sub>=30 and P<sub>2</sub>=60 lb./ac.

(3) 2 levels of K<sub>2</sub>O : K<sub>0</sub>=0 and K<sub>1</sub>=60 lb./ac.

Other details N.A.

## 3. DESIGN :

(i) 2×3×6 Fact. in R.B.D. (ii) (a) 36. (b) N.A. (iii) 4. (iv) (a) and (b) 9'×19'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Severe attack of paddy blast. (iii) Grain weight, height measurements and tiller counts etc. (iv) (a) 1947—1949. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2139 lb./ac.  
(ii) 276.0 lb./ac.  
(iii) Main effects of N and K and interaction NK are significant. Other effects are not significant.

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

	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	Mean	K <sub>0</sub>	K <sub>1</sub>
N <sub>0</sub>	1917	1990	2067	1991	1938	2045
N <sub>1</sub>	2147	2181	2339	2222	2316	2129
N <sub>2</sub>	2151	2411	2038	2200	2124	2276
N <sub>3</sub>	2129	2119	2029	2092	2107	2078
N <sub>4</sub>	2219	2159	2221	2200	2281	2119
N <sub>5</sub>	2137	2043	2211	2130	1966	2295
Mean	2117	2151	2151	2139	2122	2157
K <sub>0</sub>	2107	2106	2153			
K <sub>1</sub>	2127	2196	2148			

S.E. of marginal mean of N	= 56.3 lb./ac.
S.E. of marginal mean of P	= 39.8 lb./ac.
S.E. of marginal mean of K	= 32.5 lb./ac.
S.E. of body of table N×P	= 97.6 lb./ac.
S.E. of body of table N×K	= 79.7 lb./ac.
S.E. of body of table P×K	= 56.3 lb./ac.

Crop:- Paddy.

Ref :- A.P. 49 (84).

Site : Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :—To study the maximum potentialities of the Paddy crop, with different combinations of N, P and K manures.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) N.A.  
 (iv) (a) 2 to 3 ploughings. (b) Transplanted. (c) —. (d) 6"×6". (e) 2. (v) Nil. (vi) N.A.  
 (vii) Irrigated. (viii) N.A. (ix) 25.82". (x) N.A.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 6 levels of N : N<sub>0</sub>=0, N<sub>1</sub>=G.L. (dose N.A.), N<sub>2</sub>=N<sub>1</sub>+30 lb./ac. of N, N<sub>3</sub>=N<sub>1</sub>+60 lb./ac. of N, N<sub>4</sub>=N<sub>1</sub>+90 lb./ac. of N and N<sub>5</sub>=N<sub>1</sub>+120 lb./ac. of N.

(2) 3 levels of P<sub>2</sub>O<sub>5</sub> : P<sub>0</sub>=0, P<sub>1</sub>=30 and P<sub>2</sub>=60 lb./ac.

(3) 2 levels of K<sub>2</sub>O : K<sub>0</sub>=0 and K<sub>1</sub>=60 lb./ac.

Other details N.A.

## 3. DESIGN :

- (i) 2×3×6 Fact. in R.B.D. (ii) (a) 36. (b) N.A. (iii) 4. (iv) (a), (b) 26'×10'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Pre-lodging of crop in plots receiving higher dosage of N. (ii) N.A. (iii) Grain yield. (iv) (a) 1947 to 1949. (b) N.A. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data and calculation sheets not traceable.

## 5. RESULTS :

(i) 2291 lb./ac.

(ii) N.A.

(iii) Main effect of N and interactions N×K, N×P and P×K are significant (treatments receiving G.L.).

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

A. For treatments averaged over 'N<sub>0</sub>' plots (i.e. over no G.L.).

	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	Mean.
K <sub>0</sub>	2992	2338	3168	2586
K <sub>1</sub>	2388	2717	2652	2833
Mean.	2690	2527	2910	2709

S.E. of marginal mean of P = 152.0 lb./ac.

S.E. of marginal mean of K = 125.0 lb./ac.

S.E. of body of table = 193.0 lb./ac.

B. For treatments averaged over plots receiving G.L.

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	N <sub>4</sub>	N <sub>5</sub>	Mean	K <sub>0</sub>	K <sub>1</sub>
P <sub>0</sub>	2136	2868	2369	2103	1792	2254	2422	2085
P <sub>1</sub>	2822	2336	2603	1828	1326	2183	2254	2112
P <sub>2</sub>	2725	2590	2186	1774	1649	2185	2043	2327
Mean	2561	2598	2386	1902	1589	2207	2175	2240
K <sub>0</sub>	2771	2679	2488	1656	1604			
K <sub>1</sub>	2351	2517	2285	2147	1574			

S.E. of marginal mean of N = 100.0 lb./ac.

S.E. of marginal mean of P = 77.0 lb./ac.

S.E. of marginal mean of K = 50.0 lb./ac.

S.E. of body of table N×P = 173.0 lb./ac.

S.E. of body of table N×K = 141.0 lb./ac.

S.E. of body of table P×K = 109.0 lb./ac.

Crop :- Paddy.

Ref :- A. P. 48 (28).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :- To compare the effect of different sources of N, on the yield of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem (iii) 18.8.48/3.11.48. (iv) (a) 2 to 3 dry ploughings. (b) Transplanting. (c) —. (d) 6'×6'. (e) 2. (v) Nil. (vi) BCP-1. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 25.56%. (x) 22.2.49.

## 2. TREATMENTS :

- No manure.
- Pati manure to supply 40 lb./ac. of N.
- F.Y.M. at 40 lb./ac. of N.
- G.L. at 40 lb./ac. of N.
- G.N.C. at 40 lb./ac. of N.
- A/S at 40 lb./ac. of N.
- (G.N.C.+A/S) each at 40 lb./ac. of N+B.M. (details N.A.).

## 3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a), (b) 6'×20'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Unfavourable season. (ii) Severe attack of paddy blast and Kodu. (iii) Grain yield. (iv) (a) 1946 to 1948. (b) N.A. (c) N.A. (v) (a) (b) N.A. (vi) and (vii) Nil.



## 5. RESULTS :

- (i) 1804 lb./ac.  
(ii) 221.4 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1826
2.	1713
3.	1770
4.	1736
5.	1843
6.	2098
7.	1651
S.E./mean	= 110.7 lb./ac.

Crop :- Paddy.

Ref :- A.P. 48(26).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'M'.

Object :- To determine the best time of application of G.N.C. to Paddy crop.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 18.8.48/3.11.48. (iv) (a) 2 to 3 dry ploughings. (b) Transplanted. (c) —. (d) 6" x 6". (e) 2. (v) 2000 lb./ac. of G.L. (vi) BCP-1. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 25.56". (x) 22.2.49.

## 2. TREATMENTS :

- 40 lb./ac. of N as G.N.C. applied at planting.
- 40 lb./ac. of N as G.N.C. applied 15 days after planting.
- 40 lb./ac. of N as G.N.C. applied 30 days after planting.
- 40 lb./ac. of N as G.N.C. applied 45 days after planting.
- 40 lb./ac. of N as G.N.C. applied 60 days after planting.
- 40 lb./ac. of N as G.N.C. applied 75 days after planting.
- 40 lb./ac. of N as G.N.C. applied 90 days after planting.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a), (b) 6' x 20'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Unfavourable season. (ii) Severe attack of paddy blast and *Kodu*. (iii) Grain yield. (iv) (a) 1946 to 1948. (b) N.A. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil

## 5. RESULTS :

- (i) 1550 lb./ac.  
(ii) 272.3 lb./ac.  
(iii) Treatments do not differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1418
2.	1764
3.	1446
4.	1429
5.	1435
6.	1656
7.	1702
S.E./mean	= 136.2 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 53(23).

Site :- Govt. Agri. Farm, Dindi.

Type :- 'M'.

Object :- To determine the best time of application of manure to Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Chalka (Sandy loam). (b) Refer soil analysis, Dindi. (iii) 20 6.53. (iv) (a) Dry ploughing, 2 puddlings and levelling. (b) Transplanting. (c) —. (d) 6' × 6". (e) N.A. (v) Nil. (vi) H.R. 19 (medium). (vii) Irrigated. (viii) Weeding 3 times. (ix) 35.04" (during *Abi*, 53-54). (x) 26.10.53.

2. TREATMENTS :

1. Control (no manure).
2. Manure in puddle (30 lb./ac. of N as paddy fertilizer mixture).
3. Manure split (15 lb./ac. of N at the time of puddling + 15 lb./ac. of N after one month).
4. Manure at weeding (30 lb./ac. of N at the time of first weeding, one month after transplantation).

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 2. (iv) (a), (b) 1/40 acre. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. Total lodging in September and October 53 due to heavy rains. (ii) Nil. (iii) Grain weight and straw weight, height in inches and no. of tillers etc. (iv) (a) No. (b) No. (c) N.A. (v) (a), (b) Govt. Farm, Himayatsagar and Agri. Res. Stn., Rudrur. (vi) and (vii) Nil.

5. RESULTS :

- (i) 638 lb./ac.
- (ii) 84.0 lb./ac.
- (iii) Treatments differ highly significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	460
2.	1080
3.	560
4.	450
S.E./mean	= 59.5 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 48(56).

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

Type :- 'M'.

Object :- To determine the manurial requirement of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) *Regur*. (b) Refer soil analysis, Himayatsagar. (iii) 5.7.48. (iv) (a) 4 puddlings and 2 levellings. (b) Transplanted. (c) 30 lb./ac. (d) 6' × 6". (e) —. (v) Nil. (vi) H.R.19. (vii) Irrigated. (viii) One weeding and roughing. (ix) 34.86". (x) 24.10.48.

2. TREATMENTS :

1. 15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
2. 30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
3. 45 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
4. 60 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

A basal dose of 60 lb./ac. of N as G.N.C. given to all plots. P<sub>2</sub>O<sub>5</sub> as mixture of Super and B.M. in the ratio 1 : 1.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 7. (iv) (a) and (b) 34' × 16'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. Lodging occurred in September 1948. (ii) Slight attack of Hispa. (iii) Grain and straw yield. (iv) (a) 1947 (*Abi*. 47—48) to 1951 (*Tabi*. 51—52). (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2906 lb./ac.  
 (ii) 76.72 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2926
2.	2846
3.	2869
4.	2983
S.E./mean	=29.0 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 49(41)/48(56).

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

Type :- 'M'.

Object :—To determine the manurial requirement of Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) *Regur*. (b) Refer soil analysis, Himayatsagar. (iii) 23.1.49. (iv) (a) 2 puddlings and levelling. (b) Transplanted. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) One weeding. (ix) 1.76". (x) 3.5.49.

## 2. TREATMENTS :

1. 15 lb./ac. of  $P_2O_5$ .  
 2. 30 lb./ac. of  $P_2O_5$ .  
 3. 45 lb./ac. of  $P_2O_5$ .  
 4. 60 lb./ac. of  $P_2O_5$ .

A basal dose of 60 lb./ac. of N as G.N.C. given to all plots,  $P_2O_5$  as mixture of Super and B.M. in the ratio 1 : 1.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 7. (iv) (a) 36'×19'. (b) 34'×16'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1947 (*Abi*. 47—48) to 1951 (*Tabi* 51—52). (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3071 lb./ac.  
 (ii) 266.7 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3131
2.	2903
3.	3189
4.	3063
S.E./mean	= 101.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 49(42)/49(41)/48(56).

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

Type :- 'M'.

Object :—To determine the manurial requirement of Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) *Regur*. (b) Refer soil analysis, Himayatsagar. (iii) 16.6.49 (iv) (a) 2 puddlings and levelling. (b) Transplanted. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) 1 hand weeding. (ix) 21.70". (x) 9.10.49.

## 2. TREATMENTS :

1. 15 lb./ac. of  $P_2O_5$ .
2. 30 lb./ac. of  $P_2O_5$ .
3. 45 lb./ac. of  $P_2O_5$ .
4. 60 lb./ac. of  $P_2O_5$ .

A basal dose of 60 lb./ac. of N as G.N.C. given to all plots.  $P_2O_5$  as mixture of Super and B.M. in the ratio 1 : 1.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 7. (iv) (a)  $36' \times 19'$ . (b)  $34' \times 16'$ . (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1947 (*Abi* 47-48) to 1951 (*Tabi* 51-52) (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1870 lb./ac.  
 (ii) 321.6 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1776
2.	1888
3.	1728
4.	2088
S.E./mean	= 121.8 lb./ac.

Crop :- Paddy (*Tabi*)

Ref :- A.P. 50(41)/49(41, 42)/48(56).

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :- To determine the manurial requirement of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) 1.2.50 (iv) (a) 2 puddlings and one levelling. (b) Transplanted. (c) —. (d)  $6'' \times 4''$ . (e) N.A. (vi) Nil. (vi) H.R. 19. (vii) Irrigated. (vii) 1 hand weeding. (ix) 3.24". (x) 3.5.50.

## 2. TREATMENTS :

1. 15 lb./ac. of  $P_2O_5$ .
2. 30 lb./ac. of  $P_2O_5$ .
3. 45 lb./ac. of  $P_2O_5$ .
4. 60 lb./ac. of  $P_2O_5$ .

A basal dose of 60 lb./ac. of N as G.N.C. given to all plots.  $P_2O_5$  as mixture of Super and B.M. in the ratio 1 : 1.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 7. (iv) (a)  $36' \times 19'$ . (b)  $34' \times 16'$ . (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Crop damaged by wild bears. (iii) Grain and straw yield. (iv) (a) 1947 (*Abi* 47-48) to 1951 (*Tabi* 51-52). (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1800 lb./ac.  
 (ii) 285.6 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1800
2.	1902
3.	2102
4.	2229
S.E./mean	= 108.2 lb./ac.

Crop :- Paddy (*Abi*)

Ref :- A. P. 50(42)/50(41)/49(41,42)/48(56).

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :- To determine the manurial requirement of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) *Regur* (b) Refer soil analysis, Himayatsagar. (iii) 28.6.50  
 (iv) (a) 1 dry ploughing, 2 puddlings and one levelling (b) Transplanted. (c) — (d) 6" × 4". (e) N.A. (vi) H.R. 19  
 (vii) Irrigated. (viii) One hand weeding and one roughing (xi) 42.15". (x) 16.10.50.

## 2. TREATMENTS :

1. 15 lb./ac. of  $P_2O_5$ .
2. 30 lb./ac. of  $P_2O_5$ .
3. 45 lb./ac. of  $P_2O_5$ .
4. 60 lb./ac. of  $P_2O_5$ .

A basal dose of 60 lb./ac. of N as G.N.C. given to all plots.  $P_2O_5$  as mixture of Super and B.M. in the ratio 1 : 1.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) N.A. (iii) 7. (iv) (a) 36' × 19' (b) 34' × 16' (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Stemborer and Hispa attack. (iii) Grain and straw yield. (iv) (a) 1947 (*Abi* 47-48) to 1951 (*Tabi* 51-52) (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) & (vii) Nil.

## 5. RESULTS

- (i) 2411 lb./ac.  
 (ii) 323.8 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2589
2.	2349
3.	2257
4.	2451
S.E./mean	= 122.0 lb./ac.

Crop :- Paddy (*Tabi*)

Ref :- A.P. 51(70)/50(41,42)49/(41,42)/48(56)

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :- To determine the manurial requirement of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) 18.1.51. (iv) (a) One dry ploughing, 2 puddlings and levelling. (b) Transplanted. (c) —. (d) 6" × 4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) One hand weeding. (ix) 0.88" (x) 23.4.51.

## 2. TREATMENTS :

1. 15 lb./ac. of  $P_2O_5$ .
2. 30 lb./ac. of  $P_2O_5$ .
3. 45 lb./ac. of  $P_2O_5$ .
4. 60 lb./ac. of  $P_2O_5$ .

A basal dose of 60 lb./ac. of N as G.N.C. applied to all Plots.  $P_2O_5$  as mixture of Super and B.M. in the ratio 1 : 1.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 7. (iv) (a) 36' × 18'. (b) 34' × 16'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Heavy attack of Stemborer (iii) Grain yield. (iv) (a) 1947 (*Abi* 47-48) to 1951 (*Tabi* 51-52) (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) & (vii) Nil.

## 5. RESULTS :

- (i) 1898 lb./ac.  
 (ii) 355.6 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1914
2.	1771
3.	2000
4.	1909
S.E./mean	= 134.7 lb /ac.

Crop :- Paddy. (*Abi*)

Ref :-A.P. 51(2)/51(70)/50(41,42)/49(41,42)/48(56).

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

Type :- 'M'.

Object :- To determine the manurial requirement of Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) Paddy. (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) Transplanted on 14.7.51 (date of sowing N.A.) (iv) (a) Dry ploughing, 2 puddlings and levelling before sowing. (b) Transplanting. (c) -. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R.19. (vii) Irrigated. (viii) Hand weeding. (ix) 2).66" (during *Abi* 1951-52). (x) 23.10.51.

## 2. TREATMENTS :

1. 15 lb./ac. of  $P_2O_5$ .  
 2. 30 lb./ac. of  $P_2O_5$ .  
 3. 45 lb./ac. of  $P_2O_5$ .  
 4. 60 lb./ac. of  $P_2O_5$ .

A basal dose of 60 lb./ac. of N as G.N.C. given to all plots.  $P_2O_5$  applied as mixture of Super and B.M. in 1 : 1 ratio.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 7. (iv) (a) 35'×18'. (b) 34'×16'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) Attack of Hispa—The area was dusted with gammaxene and tips of leaves were removed and burnt. Attack of stemborer—affected plants removed and burnt. (iii) Straw weight. (iv) (a) 1947 to 1951 (*Tabi* 1951-52). (b) Yes. (c) N.A. (v) (a) Nil. (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1922 lb./ac.  
 (ii) 233.6 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1904
2.	1909
3.	1834
4.	2040
S.E./mean	= 88.1 lb./ac.

Crop :- Paddy (*Tabi*). Ref :- A.P. 51(8)/51(2, 70)/50(41, 42)/49(41, 42)/48(56).

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :- To determine the manurial requirement of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As per treatments. (ii) (a) **Medium black**. (b) Refer soil analysis, Himayatsagar. (iii) 28.12.51. (iv) (a) One dry ploughing, 2 puddlings and levelling. (b) Transplanting. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R.-19. (vii) N.A. (viii) One hand weeding. (ix) 6.23". (during *Tabi* 1951-52). (x) 19.4.52.

2. TREATMENTS :

1. 15 lb./ac. of  $P_2O_5$ .
2. 30 lb./ac. of  $P_2O_5$ .
3. 45 lb./ac. of  $P_2O_5$ .
4. 60 lb./ac. of  $P_2O_5$ .

A basal dose of 60 lb./ac. of N given to all plots.  $P_2O_5$  applied as mixture of B.M. and Super in the ratio 1 : 1.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 7. (iv) (a) 36'×18'. (b) 34'×16'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Attack of Hispa : gammaxene dusting. Attack of *Helmin the sposium* : Spraying of perenox. (iii) Grain weight. (iv) (a) 1947 to *Tabi* 1951-52. (b) Yes. (c) N.A. (v) (a) Nil. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

- (i) 2500 lb./ac.  
 (ii) 408.8 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2242
2.	2334
3.	2586
4.	2837
S.E./mean	= 154.2 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 48(57).

Site :- Agri Res. Stn., Himayatsagar.

Type 'M'.

Object :- To compare the effect of application of different kinds of  $P_2O_5$  manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Green brown sandy clay soil. (b) Refer soil analysis, Himayatsagar. (iii) N.A. (iv) (a) Puddling and levelling. (b) Transplanted. (c) —. (d) 6"×4". (e) N.A. (v) G.N.C. at 30 lb./ac. of N. (vi) H.R.-19. (vii) Irrigated. (viii) One weeding. (ix) 34.86". (x) N.A.

2. TREATMENTS :

1. No manure (control).
2. Bone dust at 15 lb./ac. of  $P_2O_5$ .
3. Super at 15 lb./ac. of  $P_2O_5$ .
4. Rock Phosphate at 15 lb./ac. of  $P_2O_5$ .

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 52'×45'. (b) 50'×44'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Slight attack of Hispa. (iii) Grain and straw yield. (iv) (a) 1948 (*Abi* 48-49) to 1951 (*Tabi* 1950-51). (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

- (i) 2279 lb./ac.  
 (ii) N.A.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2140
2.	2080
3.	2540
4.	2355
S.E./mean	= N.A.

Crop :- Paddy.

Ref :- A.P. 49(43)/48(57).

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

Type :- 'M'.

Object :—To compare different kinds of  $P_2O_5$  manures in giving high yield.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) *Regur*. (b) Refer soil analysis, Himayatsagar. (iii) Last week of January, 1949. (iv) (a) Puddling and levelling. (b) Transplanted. (c) —. (d) 6" × 4". (e) N.A. (v) G.N.C. at 30 lb./ac. of N. (vi) H.R.-19. (vii) Irrigated. (viii) One weeding. (ix) 1.76". (x) N.A.

## 2. TREATMENTS :

- No manure (control).
  - B.M. at 15 lb./ac. of  $P_2O_5$ .
  - Super at 15 lb./ac. of  $P_2O_5$ .
  - Rock Phosphate at 15 lb./ac. of  $P_2O_5$ .
- Other details N.A.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 52' × 45'. (b) 52' × 44'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 (*Abi* 1948-49) to 1951 (*Tabi* 1950-51). (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) Nil. (vii) Raw data is not traceable.

## 5. RESULTS :

- (i) 16 3 lb./ac.  
 (ii) N.A.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1530
2.	1535
3.	1903
4.	1705
S.E./mean	= N.A.



Crop :- Paddy (*Abi*).

Ref :- A.P. 49(44)/49(43)/48(57).

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

Type :- 'M'.

Object :-To compare different kinds of  $P_2O_5$  manures in giving high yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) *Regur*. (b) Refer soil analysis, Himayatsagar. (iii) 18.6.49. (iv) (a) Puddling and levelling. (b) Transplanted. (c) —. (d)  $6'' \times 4''$ . (e) N.A. (v) G.N.C. at 30 lb./ac. of N. (vi) H.R.-19. (vii) Irrigated. (viii) One hand weeding. (ix) 21.70". (x) 11.10.49.

2. TREATMENTS :

1. No manure (control).
2. B.M. at 15 lb./ac. of  $P_2O_5$ .
3. Super at 15 lb./ac. of  $P_2O_5$ .
4. Rock Phosphate at 15 lb./ac. of  $P_2O_5$ .

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a)  $52' \times 45'$ . (b)  $50' \times 44'$ . (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of Hispa. (iii) Grain and straw yield. (iv) (a) 1948 (*Abi* 1948-49) to 1951 (*Tabi* 1950-51). (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 1723 lb./ac.
- (ii) 178.8 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1565
2.	1655
3.	1985
4.	1685
S.E./mean	= 89.4 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 50(46)/49(43,44)/48(57).

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :-To compare different kind of  $P_2O_5$  manures in giving high yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) 2.2.50. (iv) (a) 3 puddlings and one levelling. (b) Transplanted. (c) —. (d)  $6'' \times 4''$ . (e) N.A. (v) G.N.C. at 30 lb./ac. of N. (vi) H.R.-19. (vii) Irrigated. (viii) One weeding. (ix) 3.24". (x) 8.5.50.

2. TREATMENTS :

1. Control (no manure).
2. 15 lb./ac. of  $P_2O_5$  as B.M.
3. 15 lb./ac. of  $P_2O_5$  as Super.
4. 15 lb./ac. of  $P_2O_5$  as Rock Phosphate.

3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a)  $52' \times 45'$ . (b)  $50' \times 44'$ . (v) N.A. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Attack of urid figs and Stemborer. (iii) Grain and straw yield. (iv) (a) 1948 (*Abi* 1948-49) to 1951 (*Tabi* 1950-51). (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 57.6 lb./ac.  
 (ii) 247.2 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	395.0
2.	652.4
3.	34.0
4.	552.4
S.E., mean	= 123.6 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 50(47), 50(46), 49(43,44) 48(57).

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

Type :- 'M'.

Object :- To compare different kinds of  $P_2O_5$  manures in giving high yield.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) *Regur*. (b) Refer soil analysis, Himayatsagar. (iii) 26.6.50. (iv) (a) 2 puddings and one levelling. (b) Transplanted. (c) —. (d) 6" x 4". (e) N.A. (v) G.N.C. at 30 lb./ac. of N. (vi) H.R. 19. (vii) Irrigated. (viii) One hand weeding. (ix) 42.15". (x) 17.10.50.

## 2. TREATMENTS :

- Control (no manure)
- 15 lb./ac. of  $P_2O_5$  as B.M.
- 15 lb./ac. of  $P_2O_5$  as Super.
- 15 lb./ac. of  $P_2O_5$  as Rock Phosphate.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 52' x 45'. (b) 50' x 44'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Slight attack of Hispa and Stem borer. (iii) Grain and straw yield. (iv) (a) 19.8 (*Abi* 1943-49) to 1951 (*Tabi* 1950-51). (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2229 lb./ac.  
 (ii) 228.9 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2050
2.	2255
3.	2395
4.	2215
S.E., mean	= 114.0 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 51(73), 50(46,47) 49(43,44) 48(57).

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

Type :- 'M'.

Object :- To compare different kinds of  $P_2O_5$  manures in giving high yield.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) 19.1.51. (iv) (a) Dry ploughing, 2 puddings and levelling. (b) Transplanted. (c) —. (d) 6" x 4". (e) N.A. (v) G.N.C. at 30 lb./ac. of N. (vi) H.R. 19. (vii) Irrigated. (viii) One hand weeding. (ix) 0.88". (x) 24.4.51.

## 2. TREATMENTS :

1. Control (no manure).
2. 15 lb./ac. of  $P_2O_5$  as B.M.
3. 15 lb./ac. of  $P_2O_5$  as Super.
4. 15 lb./ac. of  $P_2O_5$  as Rock Phosphate.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a)  $52' \times 45'$ . (b)  $50' \times 44'$ . (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Not satisfactory. (ii) Heavy attack of Stemborer and Hispa. (iii) Grain and straw yield. (iv) (a) 1948 (*Abi* 1948—49) to 1951 (*Tabi* 1950—51). (b) Yes (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1204 lb./ac.
- (ii) 299.6 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1200
2.	1014
3.	1498
4.	1105
S.E./mean	= 149.8 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 51(4).

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

Type :- 'M'.

Object :- To study the residual effect of  $P_2O_5$  applied for 6 seasons prior to *Abi* 1951-52.

## 1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Sandy clay soil. (b) Refer soil analysis, Himayatsagar. (iii) N.A./14.7.51. (iv) (a) Dry ploughing & 2 puddlings. (b) Transplanted. (c)—. (d)  $6'' \times 4''$ . (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) Hand weeding. (ix) 20.66" (during *Abi* 51-52). (x) 31.11.51.

## 2. TREATMENTS :

1. Control (no manure).
2. 30 lb./ac. of N as G.N.C. + residual effect of B.M. at 15 lb./ac. of  $P_2O_5$ .
3. 30 lb./ac. of N as G.N.C. + residual effect of Super at 15 lb./ac. of  $P_2O_5$ .
4. 30 lb./ac. of N as G.N.C. + residual effect of Rock Phosphate at 15 lb./ac. of  $P_2O_5$ .

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a)  $52' \times 45'$ . (b)  $50' \times 44'$ . (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) Attacked by Stemborer. Affected plants removed and burnt. (iii) Grain and straw weight. (iv) (a) 1951 (*Abi* 51-52) to 1953 (*Tabi* 52-53). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1451 lb./ac.
- (ii) 301.9 lb./ac.
- (iii) Treatments differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1020
2.	1542
3.	1709
4.	1535
S.E./mean	= 151.0 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 51(15), 51(4).

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

Type :- 'M'.

Object—To study the residual effect of  $P_2O_5$  applied for 6 seasons prior to *Abi* 1951-52.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Sandy clay soil. (b) Refer soil analysis, Himayatsagar. (iii) N.A./29.12.51. (iv) (a) Dry ploughing, 2 puddlings and levelling. (b) Transplanted. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) One weeding. (ix) 6.23" (during *Tabi* 1951-52). (x) 26.4.52.

2. TREATMENTS :

1. Control (no manure).
2. 30 lb./ac. of N as G.N.C.+residual effect of B.M. at 15 lb./ac. of  $P_2O_5$ .
3. 30 lb./ac. of N as G.N.C.+residual effect of Super at 15 lb./ac. of  $P_2O_5$ .
4. 30 lb./ac. of N as G.N.C.+residual effect of Rock Phosphate at 15 lb./ac. of  $P_2O_5$ .

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 52'×45'. (b) 50'×44'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Gammaxene dusted for Hispa and Perenox spraying for Helminthosporium. (iii) Grain yield. (iv) (a) 1951 (*Abi* 1951-52) to 1953 (*Tabi* 52-53). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

- (i) 1946 lb./ac.
- (ii) 634.4 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1318
2.	2042
3.	2308
4.	2116
S.E./mean	= 318.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 52(34)/51(4, 15).

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

Type :- 'M'.

Object :-To study the residual effect of  $P_2O_5$  applied for 6 seasons prior to *Abi* 1951-52.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) G.N.C. at 30 lb./ac. of N. (ii) (a) Sandy clay soil. (b) Refer soil analysis, Himayatsagar. (iii) 18.8.52. (iv) (a) Usual ploughing and levelling. (b) Transplanted. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) Weeding. (ix) 22.59". (x) 11.11.52.

2. TREATMENTS :

1. Control (no manure).
2. 30 lb./ac. of N as G.N.C.+residual effect of B.M. at 15 lb./ac. of  $P_2O_5$ .
3. 30 lb./ac. of N as G.N.C.+residual effect of Super at 15 lb./ac. of  $P_2O_5$ .
4. 30 lb./ac. of N as G.N.C.+residual effect of Rock Phosphate at 15 lb./ac. of  $P_2O_5$ .

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 52'×45' (b) 1/20 acre. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Blast attack at the flowering stage. (iii) Straw weight and grain yield. (iv) (a) 1951 (*Abi* 1951-52) to 1953 (*Tabi* 52-53). (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) The yield is low due to blast attack at the flowering stage.

## 5. RESULTS :

- (i) 308 lb./ac.  
 (ii) 248.0 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	120
2.	335
3.	440
4.	330
S.E./mean	=124.0 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 53(49)/52(34)/51(4, 15).

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :- To study the residual effect of  $P_2O_5$  applied for six seasons prior to *Abi* 1951-52.

## 1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy. (c) G.N.C. at 30 lb./ac. of N applied in puddle. (ii) (a) Sandy clay soil. (b) Refer soil analysis, Himayatsagar. (iii) 26.1.53. (iv) (a) Usual ploughings and levelling. (b) Broadcast. (c) 80 lb./ac. (d) —. (e) —. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 23.5.53.

## 2. TREATMENTS :

- Control (no manure).
- 30 lb./ac. of N as G.N.C.+residual effect of B.M. at 15 lb./ac. of  $P_2O_5$ .
- 30 lb./ac. of N as G.N.C.+residual effect of Super at 15 lb./ac. of  $P_2O_5$ .
- 30 lb./ac. of N as G.N.C.+residual effect of Rock Phosphate at 15 lb./ac. of  $P_2O_5$ .

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 52'x45'. (b) 1/20 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) N.A. (iii) Grain and straw weight. (iv) (a) 1951 (*Abi* 1951-52) to 1953 (*Tabi* 1952-53). (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Standard error is not available in the Annual report. The raw data is also not traceable either with the Agricultural Chemist or in the Directorate of Agriculture.

## 5. RESULTS :

- (i) 613 lb./ac.  
 (ii) N.A.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	280
2.	622
3.	870
4.	678
S.E./mean	=N.A.

Crop :- Paddy (*Abi*).

Ref :- A. P. 51 (5).

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

Type :- 'M'.

Object :- To compare the effects of the application of different types of P manures on yield of Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) Wheat. (c) F.Y.M. and Paddy-Fertilizer mixture. Amount N.A. (ii) (a) Black soil. (b) Refer soil analysis, Himayatsagar. (iii) 18.8.51. (iv) (a) 3 puddings and levelling before sowing. (b) Transplanted. (c) —. (d) 6" x 4". (e) N.A. (v) G.N.C. at 30 lb./ac. of N at last puddling + 5 lb./ac. of N as A/S one month after transplanting. (vi) H.R. 19. (vii) Irrigated. (viii) Hand weeding. (ix) 2).65" (during *Abi* 51-52). (x) 5:12:1.

## 2. TREATMENTS :

1. Control (no phosphate)
2. 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Bone dust.
3. 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Rock Phosphate.
4. 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.

Bone dust and Rock phosphate applied at last puddling. Super applied half at last puddling and half at ear primordium.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 72'×27½'. (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) Heavy attack of Stemborer. Affected plants removed and burnt. (iii) Grain yield data. (iv) (a) 1951 (*Abi* 51—52) to 1953 (*Abi* 53—54). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Farm section.

## 5. RESULTS :

- (i) 223 lb./ac.  
 (ii) 152.0 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	157
2.	302
3.	59
4.	373
S.E./mean	= 62.0 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 51 (10)/51 (5).

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

Type :- 'M'.

Object :- To compare the effects of the application of different types of P manure on yield of Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Himayatsagar. (iii) Transplanted on 10.1.1952 (As transplanting is generally done 3 weeks after sowing in the nursery; this experiment has been classified under 1951) (Date of sowing N.A.) (iv) (a) 3 puddlings and levelling before sowing. (b) Transplanted. (c) —. (d) 6'×4". (e) N.A. (v) 30 lb./ac. of N as G.N.C. at last puddling + 15 lb./ac. of N as A/S at ear primordium. (vi) Paddy H.R. 19. (vii) Irrigated. (viii) One weeding. (ix) 6.23" (During *Tabi* 1951—52). (x) 26.4.1952.

## 2. TREATMENTS :

1. Control (no manure).
2. 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Bone dust at last puddling.
3. 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Rock Phosphate at last puddling.
4. 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super half at last puddling and at half at ear primordium.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a), (b) 72'×27½'. (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) Gammaxene dusting for Hispa control and Perenox spraying for Helminthosporium. (iii) Grain yield (iv) (a) 1951 (*Abi*. 1951—52) to 1953 (*Abi*. 1953—54). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Farm section.

## 5. RESULTS :

- (i) 359 lb./ac.  
 (ii) 226.9 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	156
2.	374
3.	141
4.	765
S.E./mean	= 93.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 52(32).

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

Type :- 'M'.

Object :- To study the effects on yield, of the application of different types of P manure.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Himayatsagar. (iii) N.A. /27.7.52. (iv) (a) Usual ploughing and levelling (b) Transplanted. (c) —. (d) 6" x 4". (e) N.A. (v) G.N.C. at 30 lb./ac. of N at last puddling + 15 lb./ac. of N as A/S at weeding. (vi) H.R. 19. (vii) Irrigated. (viii) Weeding one month after transplanting. (ix) 22.59". (x) 8.11.52.

## 2. TREATMENTS :

- No phosphate.
- 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Bone dust.
- 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.
- 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Rock Phosphate.  
P<sub>2</sub>O<sub>5</sub> applied at last puddling.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/22.2 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) Nil. (iii) Grain yield data. (iv) (a) 1951 (*Abi* 51-52) to 1953. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil (vii) Conducted by Chemist's section.

## 5. RESULTS :

- (i) 757 lb./ac.  
 (ii) 551.1 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	570
2.	907
3.	139
4.	1411
S.E./mean	= 224.0 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 53(47)/52(32)/51(5, 10).

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

Type :- 'M'.

Object :- To study the effects on yield, of the application of different types of P manure.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Himayatsagar. (iii) 24.1.53. (iv) (a) Usual ploughing and levelling. (b) Broadcast. (c) 80 lb./ac. (d) —. (e) —. (v) G.N.C. at 30 lb./ac. of N at last puddling and 15 lb./ac. of N as A/S at the time of weeding. (vi) H.R. 19. (vii) Irrigated (viii) Weeding one month after transplanting. (ix) N.A. (x) 21.5.53.

## 2. TREATMENTS :

1. No phosphate.
2. 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Bone dust.
3. 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Rock Phosphate.
4. 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.  
P<sub>2</sub>O<sub>5</sub> applied at last puddling.

## 3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/22.21 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield data. (iv) (a) 1951 (*Abi* 51-52) to 1953 (*Abi* 53-54). (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Conducted by Chemist's section.

## 5. RESULTS :

- (i) 430 lb./ac.
- (ii) 406.7 lb./ac.
- (iii) Treatments differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	218
2.	381
3.	99
4.	1020
S.E., mean	= 166.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 53(48)/53(47),52(32)/51 (5,10)

Site :- Agri. Res. Stn., Himayatsagar

Type :- 'M'.

Object :- To study the effects on yield, of the application of different types of P manure.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black cotton soil (b) Refer soil analysis, Himayatsagar. (iii) 21.7.53. (iv) (a) Usual ploughing and levelling. (b) Transplanted. (c) —. (d) 6" x 4". (e) N.A. (v) G.N.C. at 30 lb./ac. of N. at last puddling and 15 lb./ac. of N as A/S at the time of weeding. (vi) H.R. 19 (vii) Irrigated. (viii) Weeding one month after transplanting. (ix) 25.65". (x) 30.10.53.

## 2. TREATMENTS :

1. No P<sub>2</sub>O<sub>5</sub>.
2. 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Bone dust.
3. 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Rock Phosphate.
4. 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/22.22 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield (iv) (a) 1951 (*Abi* 1951-52) to 1953 (*Abi* 53-54) (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Chemist's section.

## 5. RESULTS :

- (i) 1167 lb./ac.
- (ii) 370.2 lb./ac.
- (iii) Treatments differ significantly.



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

Treatment	Av. yield
1.	862
2.	1078
3.	955
4.	1773
S.E./mean	= 151.0 lb/ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 50(13).

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

Type :- 'M'.

Object :—To determine the effect on yield, of different doses of N obtained from G.N.C.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) F.Y.M. (Quantity N.A.) (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar (iii) 11.2.50. (iv) (a) Ploughing, 2 puddlings and levelling. (c)—. (d) 6"×4". (e) N.A. (v) 8 C.L. of F.Y.M./ac. (vi) H.R. 19 (vii) Irrigated. (viii) Weeding once. (ix) N.A. (x) 17.5.50.

## 2. TREATMENTS :

- Control (no nitrogen).
- G.N.C. at 20 lb/ac. of N.
- G.N.C. at 25 lb./ac. of N.
- G.N.C. at 30 lb./ac. of N.

G.N.C. applied before transplanting and at puddling time mixed with soil.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 18'×40½'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Heavy attack of Stemborer. (iii) Straw and grain yield. (iv) (a) 1950 (*Tabi* 1949-50) to 1951 (*Tabi* 1951-52). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- 328 lb./ac.
- 94.8 lb./ac.
- Treatments do not differ significantly.
- Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	203
2.	325
3.	420
4.	368
S.E./mean	= 47.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 50(45)/50(13).

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

Type :- 'M'.

Object :—To determine the effect of different doses of N obtained from G.N.C. on yield of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) *Regur* (med.). (b) Refer soil analysis, Himayatsagar. (iii) 23.6.50. (iv) (a) Dry ploughing, 2 puddlings and one levelling. (b) Transplanted. (c)—. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) One hand weeding and one roguing. (ix) 42.15". (x) 25.10.50.

**2. TREATMENTS :**

1. 8 C.L./ac. of F.Y.M.
2. G.N.C. at 20 lb./ac. of N.
3. G.N.C. at 25 lb./ac. of N.
4. G.N.C. at 30 lb./ac. of N.

**3. DESIGN :**

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 18' × 40½'. (v) Nil. (vi) Yes.

**4. GENERAL :**

- (i) Normal. (ii) Slight attack of Stemborer and Hispa. (iii) Grain and straw yield. (iv) (a) *Tabi* 1949-50 (1950) to *Tabi* 1951-52 (1951). (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 13.0 lb./ac.  
(ii) 490.3 lb./ac.  
(iii) Treatments do not differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1110
2.	1410
3.	1275
4.	1568
S.E./mean	= 245.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 51(71)/50(13,45).

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

Type :- 'M'.

Object :—To determine the effect of different doses of N obtained from G.N.C. on yield of Paddy.

**1. BASAL CONDITIONS :**

- (i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) 24.1.51. (iv) (a) Dry ploughing, two puddlings. (b) Transplanted. (c) —. (d) 6" × 4". (e) N.A. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) One hand weeding. (ix) 0.88". (x) 30.4.51.

**2. TREATMENTS :**

1. 8 C.L./ac. of F.Y.M. (control).
2. G.N.C. at 20 lb./ac. of N.
3. G.N.C. at 25 lb./ac. of N.
4. G.N.C. at 30 lb./ac. of N.

**3. DESIGN :**

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 18' × 40½'. (v) Nil. (vi) Yes.

**4. GENERAL :**

- (i) Not satisfactory. (ii) Heavy attack of Stemborer. (iii) Grain and straw yield. (iv) (a) 1950 (*Tabi* 1949-50) to 1951 (*Tabi* 1951-52). (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 835 lb./ac.  
(ii) 104.4 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	600
2.	727
3.	930
4.	1080
S.E./mean	= 52.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 51(1)/51(71)/50(13, 45).

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :- To determine the effect of different doses of N obtained from G.N.C. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As under treatments. (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) Transplanted on 13.7.51. (iv) (a) Dry ploughing, 2 puddlings and levelling. (b) Transplanting. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R.—19. (vii) Irrigated. (viii) Hand weeding. (ix) 20.66". (x) 1.11.51.

2. TREATMENTS :

1. 8 C.L./ac. of F.Y.M. (control).
2. G.N.C. at 20 lb./ac. of N.
3. G.N.C. at 25 lb./ac. of N.
4. G.N.C. at 30 lb./ac. of N.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 40½'×18'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Heavy attack of Stemborer and Hispa. Affected plants removed and burnt; area dusted with gammaxene; tips of leaves removed and burnt. (iii) Straw and grain weight. (iv) (a) 1950-1951. (*Tabi* 1951-52) (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Conducted by Farm section.

5. RESULTS :

- (i) 1144 lb./ac.  
 (ii) 301.2 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	975
2.	1043
3.	1335
4.	1223
S.E./mean	= 151.0 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 51(12)/51(71, 1)/50(13, 45).

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :- To determine the effect of different doses of N obtained from G.N.C. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As under treatments. (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) N.A./29.12.51. (iv) (a) Dry ploughing, 2 puddlings and levelling before sowing. (b) Transplanting. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R.—19. (vii) N.A. (viii) One hand weeding. (ix) 6.23". (x) 26.4.52.

2. TREATMENTS :

1. Control (8 C.L./ac. of F.Y.M.)
2. G.N.C. at 20 lb./ac. of N.
3. G.N.C. at 30 lb./ac. of N.
4. G.N.C. at 40 lb./ac. of N.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 18'×40½'. (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) Gammaxene dusting for Hispa control and spraying of Perenox for Helminthosporium control.  
 (iii) Grain yield. (iv) (a) 1950 to 1951 (*Tabi* 51-52). (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Conducted by Farm section.

## 5. RESULTS :

- (i) 1357 lb./ac.  
 (ii) 182.4 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	921
2.	1390
3.	1421
4.	1697
S.E./mean	= 91.0 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 50(33).

Site :- Agri. Res Stn., Himayatsagar.

Type :- 'M'.

Object :—To compare the effects of application of different doses of Paddy-Fertilizer mixture in giving high yield.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) F.Y.M. (Quantity N.A.) (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) 11.2.50. (iv) (a) 2 puddlings and one levelling. (b) Transplanted. (c)—. (d) 6'×4'. (e) N.A. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) One hand weeding. (ix) 3.24". (x) 17.5.50.

## 2. TREATMENTS :

- Control.
- Paddy-Fertilizer mixture at 15 lb./ac. of N.
- Paddy-Fertilizer mixture at 20 lb./ac. of N.
- Paddy-Fertilizer mixture at 25 lb./ac. of N.
- Paddy-Fertilizer mixture at 30 lb./ac. of N.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 3. (iv) (a) and (b) 18'×40½'. (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) Not satisfactory due to late transplanting and heavy Stemborer attack. (ii) Heavy attack of Stemborer.  
 (iii) Grain and straw yield. (iv) (a) 1950 (*Tabi* 1949—50) to 1951 (*Tabi* 1951—52). (b) Yes. (c) N.A. (v) (a) & (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1110 lb./ac.  
 (ii) 54.0 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	25.2
2.	49.8
3.	130.2
4.	130.2
5.	220.2
S.E./mean	=31.20 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 50(44)/50(43).

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

Type :- 'M'.

Object :- To compare the effects of application of different doses of Paddy-Fertilizer mixture in giving high yield.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) *Regur* (medium). (b) Refer soil analysis, Himayatsagar. (iii) 23.6.50. (iv) (a) Dry ploughing, 2 puddlings and one levelling. (b) Transplanted. (c) —. (d) 6" × 4". (e) N.A. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) One weeding and one roguing. (ix) 42.15". (x) 25.10.50.

## 2. TREATMENTS :

1. Control.
2. Paddy-Fertilizer mixture at 15 lb./ac. of N.
3. Paddy-Fertilizer mixture at 20 lb./ac. of N.
4. Paddy-Fertilizer mixture at 25 lb./ac. of N.
5. Paddy-Fertilizer mixture at 30 lb./ac. of N.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 3. (iv) (a) and (b) 18' × 40.3'. (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Slight attack of Stemborer. Heavy attack of Hispa. (iii) Grain and straw yield. (iv) (a) 1950 (*Tabi* 1949—50) to 1951 (*Tabi* 1951—52). (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) In Telangana area, av. paddy yield is about 1,000 lb./ac.

## 5. RESULTS :

- (i) 892 lb./ac.  
 (ii) 176.4 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	680
2.	910
3.	980
4.	890
5.	1000
S.E./mean	=102.0 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 51(72)/50(43,44).

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

Type :- 'M'.

Object :- To compare the effects of application of different doses of Paddy-Fertilizer mixture in giving high yield.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) 24.1.51. (iv) (a) Dry ploughing, 2 puddlings and levelling. (b) Transplanted. (c) —. (d) 6" × 4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) One hand weeding. (ix) 0.88". (x) 30.4.51.

## 2. TREATMENTS :

1. 8 C.L./ac. of F.Y.M. (control).
2. Paddy-Fertilizer mixture at 15 lb./ac. of N.
3. Paddy-Fertilizer mixture at 20 lb./ac. of N.
4. Paddy-Fertilizer mixture at 25 lb./ac. of N.
5. Paddy-Fertilizer mixture at 30 lb./ac. of N.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 3. (iv) (a), (b) 18' × 40.3'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Heavy attack of Stemborer. (iii) Grain and straw yield. (iv) (a) 1950 (*Tabi* 49-50) to 1951 (*Tabi* 51-52). (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 594 lb./ac.  
 (ii) 112.6 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	450
2.	550
3.	600
4.	660
5.	710
S.E., mean	= 65.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 51(3)/51(72)/50(43,44).

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :—To compare the effect of different doses of Paddy-Fertilizer mixture on the yield of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As under treatments. (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) 13.7.51. (iv) (a) Dry ploughing, 2 puddlings and levelling before sowing. (b) N.A. (c) N.A. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) N.A. (viii) Hand weeding. (ix) 20.66" (during *Abi* 51-52). (x) 1.11.51.

## 2. TREATMENTS :

- 8 C.L./ac. of F.Y.M. (control).
- Paddy-Fertilizer mixture at 15 lb./ac. of N.
- Paddy-Fertilizer mixture at 20 lb./ac. of N.
- Paddy-Fertilizer mixture at 25 lb./ac. of N.
- Paddy-Fertilizer mixture at 30 lb./ac. of N.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 3. (iv) (a), (b) 18'×40.3'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) Heavy attack by Stemborer and Hispa. Affected plants removed and burnt; area dusted with Gammoxene and tops of leaves removed and burnt. (iii) Straw and grain weight. (iv) (a) 1950 to 1951. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 772 lb./ac.  
 (ii) 245.0 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	490
2.	760
3.	710
4.	930
5.	970
S. E./mean	= 142.0 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 51(14)/51(72, 3)/50(43, 44).

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :—To compare the effects of different doses of Paddy-Fertilizer mixture on the yield of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As under treatments. (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) 29.12.51. (iv) (a) Dry ploughing, 2 puddlings and levelling. (b) Transplanting. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) N.A. (viii) One weeding. (ix) 6.23" (during *Tabi* 1951—52). (x) 26.4.52.

## 2. TREATMENTS :

1. 8 C.L./ac. of F.Y.M. (control).
  2. Paddy-Fertilizer mixture at 15 lb./ac. of N.
  3. Paddy-Fertilizer mixture at 20 lb./ac. of N.
  4. Paddy-Fertilizer mixture at 25 lb./ac. of N.
  5. Paddy-Fertilizer mixture at 30 lb./ac. of N.
- Time and method of application—N.A.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 3. (iv) (a) and (b) 18'×40.3'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) Gammaxene dusting for Hispa control. Perenox spraying for [Helminthosporium control. (iii) Grain yield data. (iv) (a) 1950 to 1951 (*Tabi* 51—52). (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Conducted by Farm section.

## 5. RESULTS :

- (i) 710 lb./ac.  
 (ii) 75.6 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	510
2.	624
3.	833
4.	792
5.	791
S.E./mean	= 44.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 51(7).

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

Type :- 'M'.

Object :—To determine the green manurial requirements of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Maize. (c) N.A. (ii) (a) Red *Chalka* (Sandy loam). (b) Refer soil analysis, Himayatsagar. (iii) 29.7.51. (iv) (a) Dry ploughing, three puddlings and levelling before sowing. (b) Transplanting. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) Hand weeding. (ix) 20.66" (during *Abi* 51-52). (x) 26.10.51.

## 2. TREATMENTS :

1. Control.
2. Sannhemp followed by paddy.
3. Sannhemp receiving 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super followed by paddy.
4. Sannhemp followed by paddy receiving 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super at last puddling and 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> at ear primordium.
5. Sannhemp followed by paddy receiving 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super at last puddling and 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub>+15 lb./ac. of N as A/S at ear primordium.
6. Treat. (2)+15 lb./ac. of N as A/S at ear primordium.
7. Treat. (2)+15 lb./ac. of N as A/S+7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super at ear primordium.
8. Treat. (3)+15 lb./ac. of N as A/S at planting.
9. Treat. (3)+15 lb./ac. of N as A/S at ear primordium.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 38'×23'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) Attack of Stemborer. Affected plants removed and burnt. (iii) Grain yield. (iv) (a) 1951 (*Abi* 51-52) to 1954 (*Abi* 54-55). (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Conducted by Farm section.

## 5. RESULTS :

- (i) 2187 lb./ac.  
 (ii) 227.0 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2159
2.	2112
3.	1887
4.	2050
5.	2156
6.	2206
7.	2250
8.	2525
9.	2331
S.E./mean	= 113.5

Crop :- Paddy (*Tabi*).

Ref :- A.P. 51, 9) 51(7).

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

Type :- 'M'.

Object :—To determine the green manurial requirements of Paddy.

## 1. BASAL CONDITIONS :

(i) a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Red *Chalka* (Sandy loam). (b) Refer soil analysis, Himayatsagar. (iii) 13.12.51. (iv) (a) Four puddlings and levelling before sowing. (b) Broadcast. (c) 80 lb./ac. (d) —. (e) —. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) Weeding once. (ix) 6.23" (during *Tabi* 1951-52). (x) 19.4.52.

## 2. TREATMENTS :

- Control.
- G.N.C. to supply 30 lb./ac. of N at last puddling.
- G.N.C. at 30 lb./ac. of N+15 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super at last puddling.
- G.N.C. at 30 lb./ac. of N+7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> at last puddling+7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> at ear primordium.
- Treat. (4)+1 lb./ac. of N as A/S at ear primordium.
- G.N.C. to supply 30 lb./ac. of N at last puddling + 1 lb./ac. of N as A/S at ear primordium.
- G.N.C. to supply 30 lb./ac. of N at last puddling + 15 lb./ac. of N as A/S+7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super at ear primordium.
- G.N.C. to supply 30 lb./ac. of N + 1 lb./ac. of N as A/S+15 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super at last puddling.
- G.N.C. to supply 30 lb./ac. of N + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super at last puddling and 1 lb./ac. of N as A/S at ear primordium.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a), (b) 33'×23'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Attack by *H spa*, *Helminthosporium* and Stemborer; controlled by dusting with gammaxene, spraying of Perenox and by removing effected plants. (ii) Grain weight. (iv) (a) 1951 (*Abi* 51-52) to 1954 (*Abi* 54-55). (b) Yes. (c) N.A. (v) a) and (b) Nil. (vi) Nil. (vii) As it was not possible to grow G.M. in *Tabi* season, G.N.C. was used instead.



## 5. RESULTS :

- (i) 3063 lb./ac.  
 (ii) 365.0 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2169
2.	2769
3.	2931
4.	2775
5.	3131
6.	3456
7.	3338
8.	3306
9.	3688
S.E./mean =	183.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 52(35)/51(7,9).

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

Type :- 'M'.

Object :- To determine the green manurial requirements of Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam (*Chalka*). (b) Refer soil analysis, Himayatsagar. (iii) 22.7.52. (iv) (a) Usual ploughing and levelling. (b) Transplanted. (c) —. (d) 6' x 4'. (e) N.A. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) Weeding. (ix) 22.59'. (x) 24.10.52.

## 2. TREATMENTS :

- Control.
  - Sannhemp G.M. followed by paddy.
  - Sannhemp G.M. crop receiving 15 lb./ac. of  $P_2O_5$  followed by paddy.
  - Sannhemp followed by paddy receiving 7.5 lb./ac. of  $P_2O_5$  at last puddle + 7.5 lb./ac. of  $P_2O_5$  at first weeding.
  - Treat. (4) + 15 lb./ac. of N at first weeding.
  - Treat. (2) + 15 lb./ac. of N at first weeding.
  - Treat. (3) + 15 lb./ac. of N and 7.5 lb./ac. of  $P_2O_5$  at last puddle + 7.5 lb./ac. of  $P_2O_5$  at first weeding
  - Treat. (3) + 15 lb./ac. of N at last puddle.
  - Treat. (3) + 15 lb./ac. at first weeding.
- N as A/S and  $P_2O_5$  as Super.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a), (b) 46' x 19'. (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) Normal till the flowering stage and to some extent below normal after that. (ii) Blast attack in a mild form appeared at the grain formation stage. (iii) Grain yield. (iv) (a) 1951 (*Abi* 1951-52) to 1954 (*Abi* 1954-55). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Chemist's section.

## 5. RESULTS :

- (i) 2218 lb./ac.  
 (ii) 265.0 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1200
2.	2150
3.	2363
4.	2388
5.	2425
6.	2388
7.	2288
8.	2288
9.	2475
S.E./mean	= 132.5 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 53(50)/52(35) 51(7, 9).

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :- To determine the green manurial requirement of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Red sandy loam. (b) Refer soil analysis, Himayatsagar. (iii) 13.1.53. (iv) (a) Usual ploughings and levelling. (b) Broadcast. (c) 80 lb./ac. (d) —. (e) —. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 6.5.54.

2. TREATMENTS :

1. Control.
  2. Sannhemp followed by paddy.
  3. Sannhemp receiving 15 lb./ac. of  $P_2O_5$  followed by paddy.
  4. Sannhemp followed by paddy receiving 7.5 lb./ac. of  $P_2O_5$  at last puddling+7.5 lb./ac. of  $P_2O_5$  at weeding.
  5. Sannhemp followed by paddy receiving 7.5 lb./ac. of  $P_2O_5$  at last puddling+7.5 lb./ac. of  $P_2O_5$  at weeding+.5 lb. ac. of N at weeding.
  6. Sannhemp followed by paddy+15 lb./ac. of N at first weeding.
  7. Sannhemp followed by paddy+15 lb./ac. of N and 7.5 lb./ac. of  $P_2O_5$  at weeding+7.5 lb./ac. of  $P_2O_5$  at last puddle.
  8. Sannhemp receiving 15 lb./ac. of  $P_2O_5$  followed by paddy+15 lb./ac. of N at last puddle.
  9. Sannhemp receiving 15 lb./ac. of  $P_2O_5$  followed by paddy+15 lb./ac. of N at weeding.
- As it was not possible to raise the G.M. crop in the *Tabi* season, 30 lb. N as G.N.C. was used instead of G.M. N as A.S and  $P_2O_5$  as Super are applied.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 46'×19'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain weight. (iv) (a) 1951 (*Abi* 1951-52) to 1954 (*Abi* 1954-55). (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Conducted by Chemist's section.

5. RESULTS :

- (i) 2000 lb./ac.  
 (ii) 193.8 lb./ac.  
 (iii) Treatments differ highly significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1025
2.	2032
3.	1970
4.	1831
5.	2256
6.	2025
7.	2275
8.	2.8
9.	24.0
S.E. mean	= 194.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 53(51)/53(50)/2(35) 51(7, 9).

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :- To determine the green manurial requirement of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Red sandy loam. (b) Refer soil analysis, Himayatsagar. (iii) 27.7.53. (iv) (a) Usual ploughings and levelling. (b) Transplanted. (c) —. (d) 6'×4'. (e) N.A. (v) Nil. (vi) H.R.—19. (vii) Irrigated. (viii) Weedings. (ix) 25.65%. (x) 27.10.53.

**2. TREATMENTS :**

1. Control.
  2. Sannhemp followed by paddy.
  3. Sannhemp receiving 15 lb./ac. of  $P_2O_5$  followed by paddy.
  4. Sannhemp followed by paddy receiving 7.5 lb./ac. of  $P_2O_5$  at last puddling + 7.5 lb./ac. of  $P_2O_5$  at weeding.
  5. Sannhemp followed by paddy receiving 7.5 lb./ac. of  $P_2O_5$  at last puddling + 7.5 lb./ac. of  $P_2O_5$  at weeding + 15 lb./ac. of N at first weeding.
  6. Sannhemp followed by paddy + 15 lb./ac. of N at first weeding.
  7. Sannhemp followed by paddy + 15 lb./ac. of N + 7.5 lb./ac. of  $P_2O_5$  at last puddling + 7.5 lb./ac. of  $P_2O_5$  at weeding.
  8. Sannhemp receiving 15 lb./ac. of  $P_2O_5$  followed by paddy + 15 lb./ac. of N at last puddling.
  9. Sannhemp receiving 15 lb./ac. of  $P_2O_5$  followed by paddy + 15 lb./ac. of N at weeding.
- N as A/S and  $P_2O_5$  as Super.

**3. DESIGN :**

- (i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 46' x 19'. (v) Nil. (vi) Yes.

**4. GENERAL :**

- (i) Normal. (ii) Nil. (iii) Grain weight and yield of green matter. (iv) (a) 1951 (*Abi* 1951-52) to 1954 (*Abi* 1953-54). (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS**

- (i) 1976 lb./ac.  
 (ii) 123.5 lb./ac.  
 (iii) Treatments differ highly significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1450
2.	1690
3.	1850
4.	2190
5.	2025
6.	2150
7.	1990
8.	2315
9.	2125
S.E./mean	= 124.0 lb./ac.

**Crop :- Paddy (*Abi*).**

**Ref :- A. P. 51 (6).**

**Site :- Agri. Res. Stn., Himayatsagar.**

**Type :- 'M'.**

**Object :-** To determine the best time of applying N and  $P_2O_5$  to Paddy.

**1. BASAL CONDITIONS :**

- (i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Red black mixed *Chalka* (Sandy loam). (b) Refer soil analysis, Himayatsagar. (iii) N.A. /4.8.51. (iv) (a) 2 puddlings, levelling and dry ploughing before sowing. (b) Transplanted. (c) —. (d) 6" x 4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) Hand weeding. (ix) 20.65" (during *Abi* 1951-52). (x) 5.11.51.

**2. TREATMENTS :**

1. 30 lb./ac. of N (20 lb./ac. of N as G.N.C. + 10 lb./ac. of N as A/S) + 15 lb./ac. of  $P_2O_5$  as Super at last puddling.
2. 30 lb./ac. of N + 7.5  $P_2O_5$  at last puddling + 7.5 lb./ac. of  $P_2O_5$  at ear primordium.
3. 30 lb./ac. of N at last puddling + 15 lb./ac. of  $P_2O_5$  at ear primordium.
4. 20 lb./ac. of N as G.N.C. + 15 lb./ac. of  $P_2O_5$  at last puddling + 10 lb./ac. of N as A/S at ear primordium.
5. 20 lb./ac. of N + 7.5 lb./ac. of  $P_2O_5$  at last puddling + 7.5 lb./ac. of  $P_2O_5$  and 10 lb./ac. of N at ear primordium.
6. 20 lb./ac. of N at last puddling + 15 lb./ac. of  $P_2O_5$  and 10 lb./ac. of N at ear primordium.
7. 15 lb./ac. of  $P_2O_5$  last puddling + 30 lb./ac. of N at ear primordium.
8. 7.5 lb./ac. of  $P_2O_5$  at last puddling + 30 lb./ac. of N and 7.5 lb./ac. at ear primordium.
9. 30 lb./ac. of N + 15  $P_2O_5$  at ear primordium.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a), (b) 39'×22.3'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) Attack by Stemborer. (iii) Grain yield. (iv) (a) 1951 (*Abi.* 1951—52) to 54 (*Tabi* 1953—54). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Farm section.

## 5. RESULTS :

- (i) 2057 lb./ac.  
 (ii) 263.0 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1912
2.	2331
3.	2.81
4.	1900
5.	1932
6.	2195
7.	19.5
8.	1988
9.	214.
S.E./mean	= 131.5 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 51 (13) 51 (6).

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

Type :- 'M'.

Object :—To determine the best time of applying N and  $P_2O_5$  to Paddy.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As per treatments. (ii) a) Sandy loam. (b) Refer soil analysis, Himayatsagar. (iii) 13.12.51. (iv) (a) 3 puddlings and levelling before sowing. (b) Transplanting. (c) 6"×4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) One weeding. (ix) 5.23. (x) 28.4.52.

## 2. TREATMENTS :

- 30 lb./ac. (20 lb./ac. of N as G.N.C. + 10 lb./ac. of N as A/S) + 15 lb./ac. of  $P_2O_5$  at last puddling.
- 30 lb./ac. of N + 7.5 lb./ac.  $P_2O_5$  at last puddling + 7.5 lb./ac. of  $P_2O_5$  at ear primordium.
- 30 lb./ac. of N at last puddling + 15 lb./ac. of  $P_2O_5$  at ear primordium.
- 20 lb./ac. of N as G.N.C. + 10 lb./ac. of  $P_2O_5$  at last puddling + 10 lb./ac. of N as A/S ear primordium.
- 20 lb./ac. of N + 7.5 lb./ac. of  $P_2O_5$  at last puddling + 10 lb./ac. of N as A/S.
- 20 lb./ac. of N at last puddling + 10 lb./ac. of N as A/S and 15 lb./ac. of  $P_2O_5$  at ear primordium.
- 15 lb./ac. of  $P_2O_5$  at last puddling + 30 lb./ac. of N at ear primordium.
- 7.5 lb./ac. of  $P_2O_5$  at last puddling + 7.5 lb./ac. of  $P_2O_5$  and 30 lb./ac. of N at ear primordium.
- 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$  at ear primordium.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a), (b) 39'×22.3'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) Attack of *Hispa* Gammaxene dusting ; attack of *Helminthosporium*—Perenox spraying ; attack Stemborer-affected plants removed and burnt. (iii) Grain yield. (iv) (a) 1951 (*Abi* 51—52) to 1954 (*Tabi* 19:3—54). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Farm section

## 5. RESULTS :

- (i) 2766 lb./ac.  
 (ii) 466.0 lb./ac.  
 (iii) Treatments do not differ significantly.

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

Treatment	Av. yield
1.	2631
2.	2725
3.	2875
4.	2825
5.	2613
6.	2838
7.	2619
8.	2913
9.	2856
S.E./mean	= 233.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 52(36)/51(6,13)

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

Type :- 'M'.

Object :- To determine the best time of application of N and P<sub>2</sub>O<sub>5</sub> to Paddy crop.**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Himayat-sagar. (iii) 24.7.52. (iv) (a) Usual ploughing and levelling. (b) Transplanted. (c) —. (d) 6" x 4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) Weeding. (ix) 22.59". (x) 25.10.52.

**2. TREATMENTS :**

- 30 lb./ac. of N + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at puddling.
- 30 lb./ac. of N + 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> at puddling and 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> at weeding.
- 30 lb./ac. of N at puddling + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at weeding.
- 20 lb./ac. of N + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at puddling and 10 lb./ac. of N at weeding.
- 20 lb./ac. of N + 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> at puddling and 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> and 10 lb./ac. of N at weeding.
- 20 lb./ac. of N at puddling and 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> and 10 lb./ac. of N at weeding.
- 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at puddling and 30 lb./ac. of N at weeding.
- 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> at puddling and 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> and 30 lb./ac. of N at weeding.
- 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> and 30 lb./ac. of N at weeding.
- 20 lb./ac. of N as G.N.C. and 10 lb./ac. of N as A/S. P<sub>2</sub>O<sub>5</sub> as Super.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 46' x 19'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Mild attack of blast at flowering and at grain formation stage. (iii) Straw weight and grain weight. (iv) (a) 1951 (*Abi* 1951-52) to 1954 (*Tabi* 1953-54). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Chemist Section.

**5. RESULTS :**

- 2300 lb./ac.
- 280.0 lb./ac.
- Treatments do not differ significantly.
- Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2300
2.	2400
3.	2125
4.	2263
5.	2288
6.	2238
7.	2300
8.	2425
9.	2363
S.E./mean	= 140.0 lb./ac.

Crop :- Paddy (*Tabi*).

Ref :- A.P. 53(52)/52(36)/51(6,13).

Site :- Agri. Res. Stn., Himayatsagar. Type :- 'M'.

Object :- To determine the best time of application of N and P<sub>2</sub>O<sub>5</sub> to Paddy crop.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Sandy loam and sandy clay. (b) Refer soil analysis, Himayatsagar. (iii) 13.1.53. (iv) (a) Usual ploughing and levelling. (b) Broadcast. (c) 80 lb./ac. (d) N.A. (e) —. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 6.5.53.

## 2. TREATMENTS :

1. 30 lb./ac. of N+15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at puddling.
2. 30 lb./ac. of N+7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> at last puddling and 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> at weeding.
3. 30 lb./ac. of N last puddle and 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at weeding.
4. 20 lb./ac. of N+15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at last puddling and 10 lb./ac. of N at weeding.
5. 20 lb./ac. of N+7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> at last puddling and 10 lb./ac. of N+7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> at weeding.
6. 20 lb./ac. of N at last puddling and 15 lb./ac. of P<sub>2</sub>O<sub>5</sub>+10 lb./ac. of N at weeding.
7. 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at last puddling and 30 lb./ac. of N at weeding.
8. 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub> at last puddling and 7.5 lb./ac. of P<sub>2</sub>O<sub>5</sub>+30 lb./ac. of N at weeding.
9. 30 lb./ac. of N+15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at weeding.  
20 lb./ac. of N as G.N.C. and 10 lb./ac. of N as A/S ; P<sub>2</sub>O<sub>5</sub> as Super.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 46'×19'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain weight. (iv) (a) 1951 (*Abi* 51-52) to 1954 (*Tabi* 53-54). (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) Nil. (vii) Conducted by Chemist Section.

## 5. RESULTS :

- (i) 1743 lb./ac.  
 (ii) 321.0 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1645
2.	1825
3.	2030
4.	1562
5.	1728
6.	1618
7.	1540
8.	1845
9.	1887
S.E./mean	= 161.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 53(53)/53(52)/52(36)/51(6,13).

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

Type :- 'M'.

Object :- To determine the best time of application of N and P<sub>2</sub>O<sub>5</sub> to Paddy crop.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Himayatsagar. (iii) 26.7.53. (iv) (a) Usual ploughings and levelling. (b) Transplanted. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) Weeding. (ix) 25.65". (x) 28.10.53.

## 2. TREATMENTS :

1. 30 lb./ac. of N+15 lb./ac. of  $P_2O_5$  at last puddling.
2. 30 lb./ac. of N+7.5 lb./ac. of  $P_2O_5$  at puddling and 7.5 lb./ac. of  $P_2O_5$  at weeding.
3. 30 lb./ac. of N at last puddling+15 lb./ac. of  $P_2O_5$  at weeding.
4. 20 lb./ac. of N+15 lb./ac. of  $P_2O_5$  at last puddling and 10 lb./ac. of N at weeding.
5. 20 lb./ac. of N+7.5 lb./ac. of  $P_2O_5$  at last puddling and 7.5 lb./ac. of  $P_2O_5$ +10 lb./ac. of N at weeding.
6. 20 lb./ac. of N at last puddling and 15 lb./ac. of  $P_2O_5$ +10 lb./ac. of N at weeding.
7. 15 lb./ac. of  $P_2O_5$  at puddling+30 lb./ac. of N at weeding.
8. 7.5 lb./ac. of  $P_2O_5$  at puddling and 7.5 lb./ac. of  $P_2O_5$ +30 lb./ac. of N at weeding.
9. 15 lb./ac. of  $P_2O_5$ +30 lb./ac. of N at weeding.  
20 lb./ac. of N as G.N.C. and 10 lb./ac. of N as A/S. ;  $P_2O_5$  as Super.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 46'×19'. (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) Normal (ii) Nil. (iii) Grain yield. (iv) (a) 1951 (*Abi* 1951—52) to 1954 (*Tabi* 1953—1954). (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Conducted by Chemist Section.

## 5. RESULTS :

- (i) 1845 lb./ac.  
(ii) 378.0 lb./ac.  
(iii) Treatments do not differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1738
2.	1900
3.	2075
4.	1800
5.	1875
6.	1987
7.	1600
8.	1813
9.	1813
S.E./mean	= 189.0 lb./ac.

Crop :- Paddy (*Tabi*).

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

Ref :- A.P. 51(11).

Type :- 'M'.

Object :- To determine the efficacy of different methods of placement of manures.

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Medium black. (b) Refer soil analysis, Himayatsagar. (iii) December 1951/12.1.52. (iv) (a) One dry ploughing, 2 puddlings and levelling before sowing. (b) Transplanting. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R.-19. (vii) N.A. (viii) One hand weeding. (ix) 6.23" (during *Tabi* 1951—52). (x) 26.4.52.

## 2. TREATMENTS :

1. Control.
2. 30 lb./ac. of N as A/S+15 lb./ac. of  $P_2O_5$  as Super. Broadcast, ploughed in dry and then flooded.
3. 30 lb./ac. of N+15 lb./ac. of  $P_2O_5$  at last puddling ; incorporated thoroughly.
4. Usual split application of 15 lb./ac. of N ; 7.5 lb./ac. of  $P_2O_5$  at last puddling and the rest as top dressing.
5. 15 lb./ac. of N+7.5 lb./ac. of  $P_2O_5$  broadcast and ploughed in dry as in Treat. (2) and 15 lb./ac. of N+7.5 lb./ac. of  $P_2O_5$  made into balls with mud and placed at the roots of 10% of plants at weeding time.
6. 30 lb./ac. of N and 15 lb./ac. of  $P_2O_5$  made into slush with mud and applied to the roots of the seedlings before transplanting.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/50 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) Gammaxene dusting done for Hispa control and Perenox spraying for Helminthosporium. (iii) Grain weight. (iv) (a) No. (b) No. (c) No. (v) (a) and (b) Nil. (vi) Nil. (vii) Conducted by Farm Section.

**5. RESULTS :**

- (i) 408 lb./ac.
- (ii) 181.5 lb./ac.
- (iii) Treatments differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	27
2.	504
3.	496
4.	221
5.	354
6.	842
S.E./mean	= 74.0 lb./ac.

Crop : Paddy (Main crop).

Ref :- A.P. 50(24).

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

Type :- 'M'.

Object :—To study the effect of radio active soil stimulant alphanon on the yield of Paddy.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 28.4.50./26.6.50. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2. (v) 4030 lb./ac. of G.L. (vi) MTU 1. (vii) Irrigated. (viii) 2 weedings ; first weeding one month after trans-planting. (ix) 49.63", (x) 22.11.50.

**2. TREATMENTS :**

- 1. Control (no manure).
  - 2. Alphanon at 10 lb./ac.
  - 3. Alphanon at 20 lb./ac.
- Applied at the time of planting.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 10. (iv) (a) and (b) 12.5' × 28'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Straw and grain yield. (iv) (a) 1950—N.A. (b), (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 3776 lb./ac.
- (ii) 138.2 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	3778
2.	3799
3.	3752
S.E./mean	= 43.7 lb./ac.



Crop :- Paddy (Main Crop).

Ref :- A.P. 48(39).

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

Type :- 'M'.

Object :- To study the effect of  $P_2O_5$  in the form of Hyper phosphate, Super and B.M. over a basal dressing of G.L.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 19.5.48. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6"×6". (e) 2. (v) 5000 lb./ac. of G.L. (vi) N.A. (vii) Irrigated. (viii) 2 weedings. (ix) 31.87". (x) 26.11.48.

2. TREATMENTS :

All combinations of (1) and (2) + a control (no manure).

(1) 2 levels of  $P_2O_5$  :  $L_1=30$  and  $L_2=45$  lb./ac.

(2) 4 sources of  $P_2O_5$  :  $S_1=$ Hyper phosphate (26/27),  $S_2=$ Hyper phosphate (28/29)  $S_3=$ Super and  $S_4=B.M.$

Other details N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a), (b) 9'×61'. (v) No. (vi) Yes.

4. GENERAL :

(i) R.B.D. (ii) Nil. (iii) Straw and grain yield. (iv) (a) 1948 to 1949. (b), (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3870 lb./ac.

(ii) 280.0 lb./ac.

(iii) None of the effects is significant.

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

Control=3869 lb./ac.

	$S_1$	$S_2$	$S_3$	$S_4$	Mean
$L_1$	3710	3829	3849	3849	3809
$L_2$	3869	3928	4027	3908	3933
Mean	3789	3879	3938	3879	3871

S.E. of marginal mean of S = 99.0 lb./ac.

S.E. of marginal mean of L = 70.0 lb./ac.

S.E. of body of table = 140.0 lb./ac.

Crop :- Paddy (Second crop of 1948-49).

Ref :- A.P. 49(25).

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

Type :- 'M'.

Object :- To study the effect of  $P_2O_5$  in the form of Hyper phosphate, Super and B.M. over a basal dressing of G.L.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 7.1.49 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanting. (c) —. (d) 6"×6" (e) 2 (v) 5000 lb./ac. of G.L. (vi) N.A. (vii) Irrigated. (viii) 2 weedings. (ix) 6.63". (x) 15.5.49.

2. TREATMENTS :

All combinations of (1) & (2) + a control (no manure)

(1) 2 levels of  $P_2O_5$  :  $L_1=30$  and  $L_2=45$  lb./ac.

(2) 4 sources of  $P_2O_5$  :  $S_1=$ hyper phosphate (26/27),  $S_2=$ hyper phosphate (28/29),  $S_3=$ Super and  $S_4=B.M.$

$P_2O_5$  applied as top dressing about a month after transplanting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9 (b) N.A. (iii) 4 (iv) (a) and (b) 9'×61' (v) No (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1949 (b) N.A. (c) N.A. (v) (a) and (b) N.A. (vi) & (vii) Nil.

## 5. RESULTS :

- (i) 2256 lb./ac.  
 (ii) 276.0 lb./ac.  
 (iii) Main effect of 'Source' alone is highly significant. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

		Control=2004 lb./ac.				
		S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	Mean
L <sub>1</sub>		2147	2212	2672	2122	2288
L <sub>2</sub>		2172	2291	2574	2108	2286
Mean		2159	2251	2623	2115	2287

S.E. of marginal mean of S =97.6 lb./ac.

S.E. of marginal mean of L =69.0 lb./ac.

S.E. of body of table =138.0 lb./ac.

Crop :- Paddy (Main crop)

Ref:- A.P. 49 (79).

Site :-Agri. Res. Stn. Maruteru.

Type :-'M'

Object :- To Study the effect of P<sub>2</sub>O<sub>5</sub> in the form of Hyper phosphate, Super and B.M. over a basal dressing of G.L.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 26.5.49.  
 (iv) (a) Water let in, puddled and levelled. (b) Transplanted. (c) —. (d) 6"×6". (e) 2. (v) 5000 lb/ac. of G.L.  
 (vi) MTU-1 (vii) Irrigated (viii) One or two weedings. (ix) 41.67" (x) 19.11.49.

## 2. TREATMENTS :

All combinations of (1) & (2) + a control (no manure).

(1) 2 levels of P<sub>2</sub>O<sub>5</sub> : L<sub>1</sub>=30 and L<sub>2</sub>=45 lb./ac.

(2) 4 sources of P<sub>2</sub>O<sub>5</sub> : S<sub>1</sub>=Hyper phosphate (26/27),

S<sub>2</sub>=Hyper phosphate (28/29), S<sub>3</sub>=Super and S<sub>4</sub>=B.M.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 9'×61' (v) No (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory due to the severe cyclone during last week of October. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1949 (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1311 lb./ac.  
 (ii) 155.2 lb./ac.  
 (iii) "Control vs. others" effect is significant. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

		Control=1161 lb./ac.				
		S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	Mean
L <sub>1</sub>		1395	1292	1201	1295	1295
L <sub>2</sub>		1340	1441	1464	1213	1365
Mean		1367	1366	1333	1254	1330

S.E. of marginal mean of S =54.9 lb./ac.

S.E. of marginal mean of L =38.8 lb./ac.

S.E. of body of table =77.6 lb./ac.

Crop :- Paddy (Main crop.)

Ref :- A.P. 48(34)

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

Type :- 'M'

Object :- To study the effect of different doses of catalyst on Paddy fields.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 19.5.48. (iv) (a) Water let in, puddled thrice and levelled. (b) Bulk planting. (c) —. (d) —. (e) —. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 2 weedings. (ix) 31.87". (x) 26.11.48.

## 2. TREATMENTS :

Main-plot treatments :-

M<sub>1</sub> Manured : 2000 lb./ac. of G.L.+G.N.C. at 3 cwt/ac.M<sub>0</sub> Unmanured.

Sub-plot treatments :-

1. No Catalyst.
2. 40 lb./ac. of Catalyst.
3. 80 lb./ac. of Catalyst.
4. 16 lb./ac. of Potassium Permanganate.
5. 28 lb./ac. of Ferrous sulphate.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 8' x 42' (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Straw and grain yield. (iv) (a) 1947 to 1949 (b). N.A. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3715 lb./ac.  
 (ii) (a) 246.2 lb./ac.  
 (b) 365.5 lb./ac.  
 (iii) Only main-plot treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

	M <sub>1</sub>	M <sub>0</sub>	Mean
1	3241	4344	3793
2	2950	4182	3566
3	3209	4214	3712
4	2983	4344	3664
5	3500	4182	3841
Mean	3176	4253	3715

S.E. of difference of two

1. main-plot treatment means = 77.8 lb./ac.
2. sub-plot treatment means = 182.7 lb./ac.
3. main-plot treatment means at the same level of sub-plot treatment = 244.0 lb./ac.
4. Sub-plot treatment means at the same level of main-plot treatment = 258.4 lb./ac.

Crop :- Paddy. (Second crop.)

Ref :- A.P. 49(28)

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

Type :- 'M'

Object :- To study the effect of different doses of catalyst on Paddy fields.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) First week of Jan. 1949. (iv) (a) Water let in, puddled thrice and levelled. (b) Bulk planting. (c), (d) and (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) 6.63". (x) Second week of May, 1949.

**2. TREATMENTS :****Main-plot treatments :—**

$M_1$  Manured : 2000 lb./ac. of G.L.+G.N.C. at 3 cwt/ac.

$M_0$  No manure.

**Sub-plot treatments :—**

1. No Catalyst.
2. 40 lb./ac. of Catalyst.
3. 80 lb./ac. of Catalyst.
4. 16 lb./ac. of Potassium permanganate.
5. 28 lb./ac. of Ferrous sulphate.

**3. DESIGN :**

(i) Split-plot. (ii) (a) 2 main-plots/block ; 5 sub-plots/ main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 8'×42'.  
(v) No. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1947 to 1949. (b) N.A. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 2391 lb./ac.  
(ii) (a) 268.3 lb./ac.  
(b) 336.9 lb./ac.  
(iii) Main-plot treatments differ significantly. Sub-plot treatments do not differ significantly. Interaction 'Main × Sub' is significant.  
(iv) Av. yield of grain in lb./ac.

	$M_1$	$M_0$	Mean
1	2643	2120	2382
2	2836	1972	2404
3	2731	2067	2399
4	2809	2033	2421
5	2530	2164	2347
Mean	2710	2071	2391

**S.E. of difference of two**

1. main-plot treatment means = 84.1 lb./ac.
2. sub-plot treatment means = 168.4 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment = 238.3 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment = 229.5 lb./ac.

**Crop :- Paddy. (Main crop).**

**Ref :- A.P. 48(86)**

**Site :- Agri. Res. Stn., Maruteru.**

**Type :- 'M'.**

**Object :-** To find out the best combinations of artificial fertilizers, with and without basal dressing of G.M.

**1. BASAL CONDITIONS :**

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 24.5.48.  
(iv) (a) Water let in and puddled. (b) Transplanted. (c)—. (d) N.A. (e) 2 (v) Nil. (vi) N.A. (vii) Irrigated.  
(viii) 2 weedings. (ix) 31.87%. (x) 9.12.48.

**2. TREATMENTS :**

All combinations of (1), (2) and (3)

- (1) 6 levels of N :— $N_0=0$ ,  $N_1=5000$  lb./ac. of G.L.  $N_2=N_1+30$  lb./ac. of N,  $N_3=N_1+60$  lb./ac. of N  
 $N_4=N_1+90$  lb. N/ac. and  $N_5=N_1+120$  lb. N/ac.
- (2) 3 levels of  $P_2O_5$  :—  $P_0=0$ ,  $P_1=30$  and  $P_2=60$  lb./ac. of  $P_2O_5$
- (3) 2 levels of  $K_2O$  :—  $K_0=0$  and  $K_1=60$  lb./ac. of  $K_2O$

Other details N.A.

**3. DESIGN :**

(i) 2×3×6 Fact. in R.B.D. (ii) (a) 36. (b) N.A. (iii) 4. (iv) (a) and (b) 10'×43.5'. (v) No. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948-1949. (b) N.A. (c) Nil. (v) (a) Buchireddipalem. (b) N.A. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 2874 lb./ac.  
(ii) 306.0 lb./ac.  
(iii) Main effect of N and interactions 'N×K' and 'N×P×K' are significant. Others are not significant.  
(iv) Av. yield of grain in lb./ac.

(A) For treatments averaged over 'No' (Not receiving G.L.)

	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	Mean
K <sub>0</sub>	3132	2961	2925	3006
K <sub>1</sub>	2976	3339	3075	3130
Mean	3054	3150	3000	3068

S.E. of marginal mean of P=109.0 lb./ac.

S.E. of marginal mean of K= 88.0 lb./ac.

S.E. of body of table =153.0 lb./ac.

(B) For treatments receiving G.L.

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	N <sub>4</sub>	N <sub>5</sub>	Mean	K <sub>0</sub>	K <sub>1</sub>
P <sub>0</sub>	3005	3086	2848	2406	1748	2618	2665	2571
P <sub>1</sub>	3029	3086	3115	2562	2888	2739	2812	2667
P <sub>2</sub>	3109	2870	2919	2509	2015	2684	2644	2725
Mean	3047	3026	2960	2492	1877	2680	2707	2654
K <sub>0</sub>	3011	2918	3014	2570	2022			
K <sub>1</sub>	3083	3133	2907	2415	1732			

S.E. of marginal mean of N = 63.0 lb./ac.

S.E. of marginal mean of P = 49.0 lb./ac.

S.E. of marginal mean of K = 40.0 lb./ac.

S.E. of body of table N×P =108.0 lb./ac.

S.E. of body of table N×K = 88.0 lb./ac.

S.E. of body of table P×K = 69.0 lb./ac.

**Crop :- Paddy (1st crop)****Site :- Agri. Res. Stn., Maruteru.****Ref :- A.P. 49(82)****Type :- 'M'.****Object :- To assess the merits of ultra phosphate over super.****1. BASAL CONDITIONS :**

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis. Maruteru. (iii) N.A.  
(iv) (a) Water let in, puddled and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2. (v) G.L. 5000 lb./ac. (vi) MTU-15. (vii) Irrigated. (viii) One or two weedings. (ix) 41.67". (x) N.A.

## 2. TREATMENTS :

All combinations of (1) and (2) + a Control (no manure)

(1) 2 levels of  $P_2O_5$  :-  $P_1=30$  and  $P_2=45$  lb./ac.

(2) 2 sources of  $P_2O_5$  :-  $S_1=$ Super and  $S_2=$ ultra phosphate.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b)  $7' \times 90'$ . (v) No. (vi) Yes.

## 4. GENERAL :

i Not satisfactory. Crop lodged badly and suffered by the adverse weather conditions of the cyclone, in October. ii Nil. (iii) Grain and straw yield. (iv) (a) 1946. (I crop) to 1949 (II crop). (b) N.A. (c) Nil. (v) (a) Nil. (b) Nil. (vi) Nil. (vii) Neither the raw data nor the analysis sheets are available at the Research station. Hence only table of the means is supplied.

## 5. RESULTS :

(i) 1655 lb./ac.

(ii) N.A.

(iii) Treatments do not differ significantly.

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

Control = 1580 lb./ac.

	$S_1$	$S_2$	Mean
$P_1$	1731	1689	1710
$P_2$	1622	1655	1638
Mean	1676	1672	1668

S.E.'s = N.A.

Crop :- Paddy (2nd crop).

Ref :- A.P. 49 (78).

Site :- Agri. Res. Stn. Maruteru.

Type :- 'M'.

Object :- To assess the merits of ultra phosphate over super.

## 1. BASAL CONDITIONS :

(i) a Nil. (b) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (ii) 25.12.49. (iv) (a) Water let in, puddled and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2. (v) G.L. 5000 lb/ac. (vi) MTU-15. (vii) Irrigated. (viii) One or two weeding. (ix) 5.37' (x) 1.5.50.

## 2. TREATMENTS :

All combinations of (1) & (2) + a control (no manure)

(1) 2 levels of  $P_2O_5$  :-  $P_1=30$  and  $P_2=45$  lb/ac.

(2) 2 Sources of  $P_2O_5$  :-  $S_1=$ Super and  $S_2=$ ultra Phosphate.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a), (b)  $7' \times 90'$  (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Mild attack of swarming caterpillar. Gammexene dusted (iii) Grain and straw yield (iv) (a) 1949 (I crop) to 1949 (2nd crop) (b) N.A. (c) Nil. (v) (a) Nil. (b) No. (vi) & (vii) Nil.

## 5. RESULTS :

(i) 2766 lb./ac.

(ii) 151.1 lb./ac.

(iii) 'Control vs others' effect is highly significant. Others are not significant.

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

Control = 2564 lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	Mean
P <sub>1</sub>	2783	2806	2795
P <sub>2</sub>	2835	2841	2838
Mean	2809	2823	2816

S.E. of 'Control vs. others' = 69.0 lb/ac.

S.E. of the marginal means = 43.6 lb/ac.

S.E. of body of table = 61.7 lb/ac.

Crop:- Paddy (2nd crop).

Ref :- A.P. 49(77).

Site :- Agri. Res. Stn. Maruteru.

Type:- 'M'.

Object :- To study the relative merits of the 'Engrais' fertilizer over a mixture of A/S and Super.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 21.12.49. (iv) (a) Water let in, puddled and levelled. (b) Transplanted. (c) —. (d) 6" x 6". (e) 2. (v) G.L. 5000. lb/ac. (vi) N.A. (vii) Irrigated. (viii) One or two weedings. (ix) 5.37" (x) 4.5.50.

## 2. TREATMENTS :

1. 'Engrais' fertilizer at 300 lb/ac.  
2. A/S at 25 lb N/ac. + Super at 30 lb P<sub>2</sub>O<sub>5</sub>/ac.  
3. No fertilizer.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a), (b) 10' x 44' (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Mild attack of swarming caterpillar ; Gammoxene dusted. (iii) Grain [and straw, yield. (iv) (a) 1949 to 1950. (b) N.A. (c) Nil. (v) (a) N.A. (b) Nil. (vi) & (vii) Nil.

## 5. RESULTS :

(i) 2303 lb/ac.  
(ii) 189.5 lb/ac.  
(iii) Treatments do not differ significantly.  
(iv) Av. yield of grain in lb/ac.

Treatment	Av. yield
1.	2308
2.	2370
3.	2232
S.E./mean	= 67.0 lb/ac.

Crop :- Paddy.

Ref :- A. P. 50 (25)

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

Type: 'M'

Object :- To study the relative merits of the 'Engrais' fertilizer over a mixture of A/S and Super.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 28. 4.50 / 28.6.50. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2-3. (v) Nil. (vi) MTU-5 (vii) Irrigated. (viii) 2 weedings; first weeding one month after transplanting. (ix) 49.63" (x) 30.11.50.

## 2. TREATMENTS :

1. 'Engrais' fertiliser at 300 lb./ac.
  2. A/S at 25 lb./ac. of N+Super at 40 lb./ac. of P<sub>2</sub> O<sub>5</sub>.
  3. G.L. at 2.00 lb./ac.
- Manures applied at the time of planting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) and (b) 10'×44' (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1949—N.A. (b) N.A. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2978 lb./ac.
- (ii) 321.8 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3008
2.	3096
2.	2831
S.E./mean =	113.7 lb./ac.

Crop :- Paddy (Main Crop).

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

Ref :- A.P. 49 (75).

Type :- 'M'.

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

## f. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 26.7.49. (iv) (a) Water let in, puddled and levelled. (b) Transplanted. (c) —. (d) 6"×6" (e) 2 (v) Nil. (vi) MTU-5 (vii) Irrigated. (viii) One or two weedings. (ix) 41.67" (x) 1.12.49.

## 2. TREATMENTS :

1. Compost at 60 lb./ac. of N.
  2. F.Y.M. at 60 lb./ac. of N.
  3. No manure.
- Manures applied about a month before planting and mixed with soil.

## 3. DESIGN:

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6 (iv) (a) and (b) N.A. (v) No (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory due to cyclone in the last week of October, at the time of flowering. (ii) Nil. (iii) Grain and straw yield (iv) (a) 1949 to 1950 (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1403 lb./ac.
- (ii) 171.4 lb./ac.
- (iii) Treatments do not differ significant y.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1378
2.	1378
3.	1452
S.E./mean =	70.0 lb./ac.



Crop :- Paddy (2nd crop).

Ref :- A.P. 49(76)/49(75).

Site :- Agri Res. Stn., Maruteru.

Type :- 'M'.

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

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy block clay. (b) Refer soil analysis, Maruteru. (iii) 4.2.50.  
 (iv) (a) Water let in, puddled and levelled. (b) Transplanted. (c) —. (d) 6" x 6". (e) 2. (v) Nil. (vi) MTU-15.  
 (vii) Irrigated. (viii) One or two weedings. (ix) 5.37". (x) 5.5.50.

2. TREATMENTS :

1. No manure.
2. Compost at 60 lb./ac. of N.
3. F.Y.M. at 60 lb./ac. of N.

Manures applied about a month before planting and mixed with soil.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a), (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Mild attack of swarming caterpillar. Gammoxene dusted. (iii) Grain and straw yield.  
 (iv) (a) 1949 to 1950. (b) Yes. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

- (i) 1718 lb./ac.  
 (ii) 107.8 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1730
2.	1828
3.	1595
S.E./mean	= 44.0 lb./ac.

Crop :- Paddy (Double crop Area).

Ref :- A.P. 50(19).

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

Type :- 'M'.

Object :- To compare compost with F.Y.M. in giving high yield.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 28.4.50/  
 30.6.50. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting.  
 (e) 2 or 3. (v) Nil. (vi) M.T.U.-5. (vii) Irrigated. (viii) 2 weedings ; First weeding one month after trans-  
 planting. (ix) 49.63". (x) 29th and 30th November, 1950.

2. TREATMENTS :

1. Compost to give 60 lb./ac. of N.
2. F.Y.M. to give 60 lb./ac. of N.
3. No manure.

Manures applied prior to second puddling so as to incorporate it 3" to 4" below soil.

3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a), (b) 9' x 90'. (v) No. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1950 to 1952. (b) Yes. (c) Nil. (v) (a), (b) Nil.  
 (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2972 lb./ac.  
(ii) 181.5 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2903
2.	3173
3.	2841
S.E./mean	= 74.1 lb./ac.

Crop :- Paddy (2nd crop).

Ref :- A.P. 50(20) 50(19).

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

Type :- 'M'.

Object :- To compare compost with F.Y.M. in giving high yields.

## 1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy. (c) As under treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru.  
(iii) 24.12.50. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2 or 3. (v) Nil. (vi) M.T.U-15. (vii) Irrigated. (viii) 2 weedings ; first weeding one month after transplanting. (ix) 6.87". (x) 14.5.51.

## 2. TREATMENTS :

1. Compost to give 60 lb./ac. of N.
2. F.Y.M. to give 60 lb./ac. of N.
3. No Manure.

Manures applied prior to second puddling so as to incorporate it 3" to 4" below the soil.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a), (b) 9' x 90' (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1950 to 1952. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1568 lb./ac.  
(ii) 253.6 lb./ac.  
(iii) Treatments do not differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1613
2.	1694
3.	1398
S.E./mean	= 103.5 lb./ac.

Crop :- Paddy (Double crop Area).

Ref :- A.P. 51(54) 50(19,20).

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

Type :- 'M'.

Object :- To compare compost with F.Y.M. in giving high yields.

## 1. BASAL CONDITIONS :

- (i) a) No. (b) Paddy. (c) As under treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru.  
(iii) 5.5.51. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting.  
(e) 2 or 3 (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 2 weedings ; first weeding one month after transplanting.  
(ix) 44.99". (x) 2.12.51.

## 2. TREATMENTS :

1. Compost to give 60 lb./ac. of N.
2. F.Y.M. to give 60 lb./ac. of N.
3. No manure.

Manures applied prior to second puddling so as to incorporate it 3" to 4" below the soil.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 9'×90'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1950 to 1952. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3177 lb./ac.  
 (ii) 201.7 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	3269
2.	3095
3.	3169
S.E./mean	= 82.3 lb./ac.

Crop :- Paddy (2nd crop of 1951-52).

Ref :- A.P. 52(56)/51(54)/50(19,20).

Site :- Agri. Res. Stn., Maruteru

Type :- 'M'.

Object :- To compare compost with F.Y.M. in giving higher yields.

## 1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy. (c) Same as the treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 1.1.52. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—(d) Bulk planting. (e) 2 or 3. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 2 weedings; first weeding one month after transplanting. (ix) N.A. (x) 18.5.52.

## 2. TREATMENTS :

1. Compost at 60 lb./ac. of N.
2. F.Y.M. at 60 lb./ac. of N.
3. No manure.

Manures applied prior to second puddling so as to incorporate it 3" to 4" below the soil.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 9'×90'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1950 to 1952. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1577 lb./ac.  
 (ii) 113.5 lb./ac.  
 (iii) Treatments differ highly significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1719
2.	1705
3.	1306
S.E./mean	= 46.3 lb./ac.

Crop :- Paddy (Double crop Area). Ref :- A.P. 52(57)/52(56)/51(54)/50(19,20).

Site :- Agri. Res. Stn., Maruteru. Type :- 'M'.

Object :- To compare compost with F.Y.M. in giving high yields.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Deep black clay. (b) Refer soil analysis Maruteru. (iii) 1.6.52/16.7.52. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2 or 3. (v) Nil. (vi) MTU-5. (vii) Irrigated. (viii) 2 weedings; first weeding one month after transplanting. (ix) N.A. (x) 6.12.52.

2. TREATMENTS :

1. Compost at 60 lb./ac. of N.

2. F.Y.M. at 60 lb./ac. of N.

3. No manure.

Manures applied prior to second puddling so as to incorporate it 3" to 4" below the soil.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) and (b) 9' x 90'. (v) No. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1950 to 1952. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 37.7 lb./ac.

(ii) 143.6 lb./ac.

(iii) Treatments do not differ significantly.

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

Treatment	Av. yield
1.	3851
2.	3796
3.	3746
S.E./mean	= 58.6 lb./ac.

Crop :- Paddy (1st Crop, Single Crop Area).

Ref :- A.P. 50(21).

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

Type :- 'M'.

Object :- To compare compost with F.Y.M. giving high yields.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 28.4.50. (iv) (a) Water let in, puddled thrice, and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2 or 3. (v) Nil. (vi) MTU-5. (vii) Irrigated. (viii) 2 weedings; first weeding one month after transplanting. (ix) 49.63". (x) 27.11.50.

2. TREATMENTS :

1. Compost at 60 lb./ac. of N.

2. F.Y.M. at 60 lb./ac. of N.

3. Control (no manure).

Manures applied prior to second puddling so as to incorporate it 3" to 4" below the soil.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 15' x 72'. (v) No. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1950 to 1951. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3188 lb./ac.  
 (ii) 109.6 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3186
2.	3287
3.	3092
S.E./mean	= 44.7 lb./ac.

Crop :- Paddy (Single crop area).

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

Ref :- A.P. 51(55).

Type :- 'M'.

Object :- To compare compost with F.Y.M. in giving high yields.

## 1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 5.5.51.  
 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2 or 3.  
 (v) Nil. (vi) MTU-5. (vii) Irrigated. (viii) 2 weedings; first weeding one month after transplanting.  
 (ix) 44.99". (x) 2.12.51.

## 2. TREATMENTS :

1. Compost at 60 lb./ac. of N.  
 2. F.Y.M. at 60 lb./ac. of N.  
 3. No manure.

Manures applied one month prior to planting and puddled in.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3, (b) N.A. (iii) 6. (iv) (a) and (b) 12' x 90'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1950 to 1951. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2961 lb./ac.  
 (ii) 225.4 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2975
2.	3049
3.	2859
S.E./mean	= 92.1 lb./ac.

Crop :- Paddy (Single crop area).

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

Ref :- A.P. 52(55).

Type :- 'M'.

Object : To study the residual effect of compost and F.Y.M. applied to the previous crop.

## 1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 30 4.52/8.7.52. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2 or 3. (v) Nil. (vi) MTU-5. (vii) Irrigated. (viii) 2 weedings; first weeding one month after transplanting. (ix) N.A. (x) 5.12.52.

## 2. TREATMENTS :

1. Compost at 60 lb./ac. of N.
2. F.Y.M. at 60 lb./ac. of N.
3. No manure.

These manures are applied to the previous crop.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 12'×90' (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) and (b) Nil (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3044 lb./ac.  
 (ii) 132.1 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3128
2.	3061
3.	2944
S.E./mean	= 53.9 lb./ac.

Crop :- Paddy (Double crop area),

Ref :- A.P. 52(54).

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

Type :- 'M'.

Object :- To study the residual effect of compost and F.Y.M. applied to previous crop.

## 1. BASAL CONDITIONS :

- (i) (a) No. (b) Paddy. (c) As under treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 30.4.52/7.7.52. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2 or 3. (v) Nil. (vi) MTU-19. (vii) Irrigated. (viii) 2 weedings ; first weeding one month after transplanting (ix) N.A. (x) 18.12.52.

## 2. TREATMENTS :

1. Compost at 60 lb./ac. of N.
2. F.Y.M. at 60 lb./ac. of N.
3. No manure.

Treatments applied to previous crop.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 9'×90'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) N.A. (b) and (c) N.A. (v) (a) and (b) Nil (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3298 lb./ac.  
 (ii) 145.2 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3378
2.	3343
3.	3173
S.E./mean	= 59.2 lb./ac.

Crop :-Paddy.

Ref :-A.P. 50(18).

State :-Agri. Res. Stn., Maruteru.

Type :-'M'.

Object :—To Study the effect of P manures on Paddy crop and on succeeding GM crop.

## 1. BASAL CONDITIONS :

(i) (a) Paddy—G.M. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 28.4 50/21.6.50. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2 or 3. (v) Nil. (vi) MTU 1. (vii) Irrigated. (viii) 2 weedings ; first weeding one month after transplanting. (ix) 49.63". (x) 22.11.50.

## 2. TREATMENTS :

1. Super at 30 lb./ac. of  $P_2O_5$ .
  2. B.M. at 30 lb./ac. of  $P_2O_5$ .
  3. No manure.
- $P_2O_5$  applied at the time of planting.

## 3. DESIGN:

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 28'×30'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1950 to 1951. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) Just before the harvest of paddy crop sannhemp was sown to study the effect if any of the phosphatic manure applied to the preceding paddy crop. Due to a severe out-break of leaf-eating caterpillar damaging the standing crop of sannhemp, no reliable data could be collected.

## 5. RESULTS :

- (i) 3561 lb./ac.  
 (ii) 195.5 lb./ac.  
 (iii) Treatments do not differ significantly.  
 iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3522
2.	3501
3.	3660
S.E./mean	± 79.8 lb./ac.

Crop :-Paddy (second crop).

Ref :-A.P. 50(26).

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

Type :-'M'.

Object :—To study the effect of P manures on the succeeding rice crop when they are applied to green manure crop which is puddled in.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 15.12.50/21.1.51. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2 or 3. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) 2 weedings ; first weeding one month after transplanting. (ix) 6.87". (x) N.A.

## 2. TREATMENTS :

1. Super at 30 lb./ac. of  $P_2O_5$ .
  2. B.M. at 30 lb./ac. of  $P_2O_5$ .
  3. No manure.
- Applied to the green manure crop Sannhemp about one month before sowing of paddy and puddled in.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 12'×35'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1949 to 1950. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) The preceding sannhemp crop sown in plots treated with phosphatic manure failed to germinate.

## 5. RESULTS :

- (i) 2051 lb./ac.  
 (ii) 173.9 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2026
2.	2096
3.	2030
S.E./mean	= 71.1 lb./ac.

Crop :- Paddy.

Ref :- A.P. 51(53).

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

Type :- 'M'.

Object :—To study the effect of P manures on Paddy and on the succeeding green manure crop.

## 1. BASAL CONDITIONS :

- (i) (a) Paddy—G M. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 5.5.51. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—. (d) Bulk planting. (e) 2 to 3. (v) Nil. (vi) M.T.U-1. (vii) Irrigated. (viii) 2 weedings ; first weeding one month after transplanting. (ix) 44.99". (x) 20.11.51.

## 2. TREATMENTS :

- No manure.
  - Super at 60 lb./ac. of  $P_2O_5$ .
  - Super at 30 lb./ac. of  $P_2O_5$ .
- Manures applied at the time of planting.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a), (b) 28' × 30'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1950-1951. (b) Yes. (c) N.A. (v) (a), (b) N.A (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3641 lb./ac.  
 (ii) 146.1 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3616
2.	3616
3.	3691
S.E./mean	= 59.6 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52(61).

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

Type :- 'M'.

Object :—To study the effect of P manures on rice crop when applied direct to rice crop or through preceding G.M. crop *Daincha*.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) G.M. (c) As per treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 29.5.52/12.7.52 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—. (d) Bulk planting. (e) 2 or 3. (v) Nil. (vi) MTU-1. (vii) Irrigated. (viii) 6 weedings ; first weeding one month after transplanting. (ix) N.A. (x) 27.11.52.



**2. TREATMENTS :**

1. No manure.
2. G.M. crop alone.
3. 30 lb./ac. of  $P_2O_5$  to G.M. crop.
4. G.M.+30 lb /ac. of  $P_2O_5$  to rice crop.
5. 45 lb./ac. of  $P_2O_5$  to G.M. crop.
6. G.M. crop+45 lb./ac. of  $P_2O_5$  to rice crop.
7. 60 lb./ac. of  $P_2O_5$  to rice G.M. crop.
8. G.M. crop+60 lb./ac. of  $P_2O_5$  to rice crop.

G.M. sown on 3.3.52. and resown on 28.3.52. Green matter at 35,000 lb./ac. on average puddled in.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a), (b) 10'×22'. (v) No. (vi) Yes.

**4. GENERAL :**

(i) Rank growth in manured plots. Crop in manured plots lodged. Date of lodging not available. (ii) Nil. (iii) Grain and straw yield. (iv) (a) No. (b) No. (c) No. (v) (a) Samalkot. (b) No. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 2885 lb./ac.
- (ii) 303.5 lb./ac.
- (iii) Treatments differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3761
2.	2567
3.	2661
4.	2679
5.	2698
6.	2834
7.	3084
8.	2785
S.E./mean	= 151.7 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52(62)

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

Type :- 'M'.

Object :- To study the effect of P manures on rice crop when applied direct to rice crop or through preceding G.M. crop.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) Pillipesara. (c) As per treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 3.3.52 for G.M. 29.5.52/10, 12.7.52 for paddy (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting (e) 2 or 3. (v) Nil. (vi) MTU— (vii) Irrigated. (viii) 2 weedings, first weeding one month after transplanting. (ix) N.A. (x) 27.11.52.

**2. TREATMENTS :**

1. No manure.
  2. G.M. crop alone.
  3. 30 lb./ac. of  $P_2O_5$  to G.M. crop.
  4. G.M. crop+30 lb./ac. of  $P_2O_5$  to rice crop.
  5. 45 lb./ac. of  $P_2O_5$  to G.M. crop.
  6. G.M. crop+45 lb./ac. of  $P_2O_5$  to rice crop.
  7. 60 lb./ac. of  $P_2O_5$  to G.M. crop.
  8. G.M. crop+60 lb./ac. of  $P_2O_5$  to rice crop.
- Pillipesara green matter at 21,000 lb./ac. on an average puddled in.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) and (b) 10'×22'. (v) No. (vi) Yes

manured plots, crop in manured plots lodged. Date of lodging not available. (ii) Nil.  
 yield. (iv) (a) No. (b) No. (c) No. (v) (a) Samalkot. (b) N.A. (vi) and (vii) Nil.

b./ac.

5 lb./ac.

Treatments do not differ significantly.

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

Treatment	Av. yield
1.	3698
2.	3323
3.	3316
4.	3171
5.	3740
6.	3341
7.	3161
8.	3007
S.E./mean	= 223.7 lb./ac.

Crop :- Paddy (II crop of 49-50).

Ref :- A.P. 50(85).

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

Type :- 'M'.

Object :- To study the residual effect of phosphatic manures applied to green manure crop.

#### 1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (c) As per treatments. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 1.1.50/6.2.50. (iv) (a) Water let in, puddled and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2. (v) Nil. (vi) MTU-15. (vii) Irrigated. (viii) One or two weedings. (ix) 5.37%. (x) 9.5.50.

#### 2. TREATMENTS :

1. Super at 30 lb./ac. of  $P_2O_5$ .
2. B.M. at 30 lb./ac. of  $P_2O_5$ .
3. No manure.

Sannhemp crop was sown on 8.12.49 in plots treated with phosphates and the effect of puddling this crop on succeeding Paddy crop was studied.

#### 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) and (b) 12' x 35'. (v) No. (vi) Yes.

#### 4. GENERAL :

(i) Normal. (ii) Mild attack of swarming caterpillar. (iii) Grain and straw yield. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

#### 5. RESULTS :

(i) 2476 lb./ac.

(ii) 174.5 lb./ac.

(iii) Treatments differ significantly.

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

Treatment	Av. yield
1.	2630
2.	2407
3.	2392
S.E./mean	= 61.7 lb./ac.

**Crop :- Paddy (Main crop season).**

**Ref :- A.P. 52(58).**

**Site :- Agri. Res. Stn., Maruteru.**

**Type :- 'M'.**

**Object :-**To study the utility of *Sesbania-speciosa* in the dry form on Paddy.

**1. BASAL CONDITIONS :**

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 30.4.52/10.7.52. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—. (d) Bulk planting. (e) 2. (v) Nil. (vi) MTU—5. (vii) Irrigated. (viii) 2 weedings, first weeding one month after planting. (ix) N.A. (x) 6.12.52.

**2. TREATMENTS :**

1. Sesbania leaf—covered.
  2. Sesbania leaf—stooked.
  3. Sesbania leaf—fresh.
  4. No manure.
- Sesbania leaf applied at 4000 lb./ac. when fresh.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 24'×98'. (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952 to 1953. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 3041 lb./ac.  
 (ii) 426.3 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3329
2.	3287
3.	2681
4.	2866
S.E./mean	= 213.2 lb./ac.

**Crop :- Paddy (2nd crop of 52-53).**

**Ref :- A.P. 53(66).**

**Site :- Agri. Res. Stn. Maruteru.**

**Type :- 'M'.**

**Object :-**To study the utility of *Sesbania-speciosa* in the dry form on Paddy.

**1. BASAL CONDITIONS :**

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 2.1.53/10.2.53. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—. (d) Bulk planting. (e) 2. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) Weeding twice, first weeding one month after transplanting. (ix) N.A. (x) 8.5.53.

**2. TREATMENTS :**

1. Sesbania leaf covered.
  2. Sesbania leaf stooked.
  3. Sesbania leaf fresh.
  4. No manure.
- Sesbania leaf applied at 4000 lb./ac. when fresh.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 17'×30'. (v) No. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952 to 1953. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

**3. RESULTS :**

- (i) 1791 lb./ac.  
 (ii) 168.2 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1780
2.	1855
3.	1868
4.	1663
S.E./mean	= 68.6 lb./ac.

Crop :- Paddy (1st crop).

Ref :- A.P. 53(67).

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

Type :- 'M'.

Object :- To find out the utility of *sesbania speciosa* in the dry form on Paddy.

**1. BASAL CONDITIONS :**

- (i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 15.5.53/11.7.53. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—. (d) Bulk planting. (e) N.A. (v) Nil. (vi) MTU-1. (vii) Irrigated. (viii) Weeding thrice, first weeding one month after transplanting. (ix) 38.06°. (x) 23.11.53.

**2. TRTATMENTS :**

- Sesbania leaf covered.
  - Sesbania leaf stooked.
  - Sesbania leaf fresh.
  - No manure.
- Sesbania leaf applied at 4000 lb./ac.

**3. DESIGN :**

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a), (b) 25' x 30'. (v) No. (vi) Yes.

**4. GENERAL :**

- (i) Normal. (ii) Affected by leaf-roller. Gammaxene dusted. (iii) Grain and straw yield. (iv) (a) 1952 to 1953. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

**3. RESULTS :**

- (i) 3238 lb./ac.  
 (ii) 117.9 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3281
2.	3155
3.	3281
4.	3232
S.E./mean	= 48.1 lb./ac.

Crop :- Paddy (1st crop).

Ref :- A.P. 51(59).

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

Type :- 'M'.

Object :- To study the placement effect of A/S on Rice.

**1. BASAL CONDITIONS :**

- (i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 30.4.52/1 and 2.7.52. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—. (d) 9' x 6'. (e) 3 to 4 (v) G.L at 4000 lb./ac. (vi) MTU-1. (vii) Irrigated. (viii) 2 weedings, first weeding one month after transplanting. (ix) N.A. (x) 27.11.52.

**2. TREATMENTS :**

All combinations of (1) and (2)

(1) 5 levels of N and their method of application. :-

$N_0=0$ ,  $N_1=30$  lb./ac. of N as A/S (Placed),  $N_2=30$  lb./ac. of N as A/S (Broadcast),  $N_3=45$  lb./ac. of N as A/S (Placed) and  $N_4=45$  lb./ac. of N as A/S (Broadcast).

(2) 2 levels of  $P_2O_5$  :  $P_0=0$  and  $P_1=45$  lb./ac. of  $P_2O_5$  as Super.

For  $N_1$  and  $N_3$ , A/S applied in a single dose before planting and *mummatty* hoe worked to a depth of 2" to 3". For  $N_2$  and  $N_4$ , A/S broadcast one month after planting.

**3. DESIGN :**

(i) 2x5 Fact. in R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a), (b) 45'9" x 8'. (v) No. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) No. (b) No. (c) No. (v) (a), (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 3515 lb./ac.  
 (ii) 306.4 lb./ac.  
 (iii) The N effect is highly significant. P effect and interaction 'NP' are not significant.  
 (iv) Av. yield of grain in lb./ac.

	$N_0$	$N_1$	$N_2$	$N_3$	$N_4$	Mean
$P_0$	3530	3769	3530	2920	3769	3503
$P_1$	3620	3590	3620	3218	3590	3527
Mean	3575	3678	3575	3069	3679	3515

S.E. of marginal mean of N = 108.3 lb./ac.

S.E. of marginal mean of P = 68.5 lb./ac.

S.E. of body of table = 153.2 lb./ac.

Crop :- Paddy.

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

Ref :- A.P. 51(56).

Type :- 'M'.

Object :- To gauge the relative merits of fused phosphate fertilizer.

**1. BASAL CONDITIONS :**

- (i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 5.5.51.  
 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) -. (d) Bulk planting. (e) -.  
 (v) Nil. (vi) MTU-1. (vii) Irrigated. (viii) 2 weedings, first weeding one month after transplanting.  
 (ix) 44.99". (x) 21.11.51.

**2. TREATMENTS :**

All combinations of (1) and (2)

(1) 3 levels of N :  $N_1=G.L.$  at 2500 lb./ac.,  $N_2=A/S$  at 30 lb./ac. of N and  $N_3=G.L.$  at 2500 lb./ac. + A/S at 30 lb./ac. of N.

(2) 3 levels of  $P_2O_5$  :  $P_0=0$ ,  $P_1=Super$  at 30 lb./ac. of  $P_2O_5$  and  $P_2=Fused$  phosphate at 30 lb./ac. of  $P_2O_5$ .

**3. DESIGN :**

(i) 3x3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 45.5' x 8'. (v) No. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) No. (b) No. (c) No. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3474 lb. ac.  
 (ii) 224.0 lb./ac.  
 (iii) Only main effect of N is highly significant.  
 (iv) Av. yield of grain in lb./ac.

	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	Mean
N <sub>1</sub>	3328	3306	3321	3318
N <sub>2</sub>	3583	3470	3470	3508
N <sub>3</sub>	3635	3553	3605	3598
Mean	3515	3443	3465	3474

S.E. of marginal mean = 64.7 lb./ac.  
 S.E. of body of table = 112.0 lb./ac.

Crop :- Paddy (2nd crop of 52-53).

Ref :- A.P. 53(69)

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

Type :- 'M'.

Object :- To study the effect of placement of A/S on Rice.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 2.1.53/11.2.53. (iv) a. Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 9" × 6". (e) 2. (v) 400 lb./ac. of G.L. + 30 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super. Super applied in furrow during the last puddling. (vi) MTU-15. (vii) Irrigated. (viii) 2 weedings, first weeding one month after transplanting. (ix) N.A. (x) 5.5.53.

## 2. TREATMENTS :

All combinations of (1) and (2)+one control (no manure)

(1) 3 levels of N : N<sub>1</sub>=30, N<sub>2</sub>=45 and N<sub>3</sub>=60 lb./ac.

(2) 2 methods of application of N : M<sub>1</sub>=Placed and M<sub>2</sub>=Broadcast.

N as A/S. 'Placed' plots receiving  $\frac{2}{3}$  N in the form of balls mixed with earth placed at depth of 6" between lines after planting and the rest  $\frac{1}{3}$  N similarly placed 4 weeks after.

## DESIGN :

- (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) and (b) 44.5' × 11.5'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) No. (b) No. (c) No. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2479 lb./ac.  
 (ii) 196.3 lb./ac.  
 (iii) The differences in yield due to "control vs. others" and due to differences in methods of applying manures are significant. The effects 'N' and 'NM' are not significant.  
 (iv) Av. yield of grain in lb./ac.

Control = 2267				
	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	Mean
M <sub>1</sub>	2346	2511	2405	2421
M <sub>2</sub>	2617	2628	2579	2608
Mean	2481	2569	2492	2514

S.E. of marginal mean of N = 69.4 lb./ac.  
 S.E. of marginal mean of M = 56.7 lb./ac.  
 S.E. of body of table = 98.1 lb./ac.  
 S.E. of control vs. any mean in the body of table = 106.0 lb./ac.

Crop :- Paddy (Second Crop of 51-52).

Ref :- A. P. 52(60).

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

Type :- 'M'.

Object :- To study the effect of G.M. crops and also application of  $P_2O_5$  through G.M. crops on Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 13.1.52.  
 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2.  
 (v) Nil. (vi) MTU-15. (vii) Irrigated. (viii) 2 weedings; first weeding one month after transplanting.  
 (ix) N.A. (x) 12.5.52.

## 2. TREATMENTS :

Main-plot treatments :-

2 G.M. crops :  $G_1 = \text{Dhaincha}$  and  $G_2 = \text{Sannhemp}$ .

Sub-plot treatments :-

Application of  $P_2O_5$  and G.M.

1. Control (no manure).
2. G.M. crop alone.
3. 30 lb./ac. of  $P_2O_5$  to G.M. crop.
4. G.M. without  $P_2O_5$  + 30 lb./ac. of  $P_2O_5$  to paddy.
5. 45 lb./ac. of  $P_2O_5$  to G.M. crop.
6. G.M. without  $P_2O_5$  + 45 lb./ac. of  $P_2O_5$  to paddy.
7. 60 lb./ac. of  $P_2O_5$  to G.M. crop.
8. G.M. without  $P_2O_5$  + 60 lb./ac. of  $P_2O_5$  to paddy.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/block ; 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b)  $10' \times 44'$ .  
 (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) No. (b) and (c) No. (v) (a) Smalkot. (b) N.A.  
 (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2934 lb./ac.  
 (ii) (a) 129.6 lb./ac.  
 (b) 159.1 lb./ac.  
 (iii) All effects are significant.  
 (iv) Av. yield of grain in lb./ac.

	$G_1$	$G_2$	Mean
1	2344	2405	2374
2	2492	3311	2901
3	2839	3323	3081
4	2704	3273	2988
5	2765	3435	3100
6	2679	3286	2982
7	2679	3410	3045
8	2604	3398	3001
Mean	2638	3230	2934

S.E. of difference of two

1. main-plot treatment means = 32.4 lb./ac.
2. sub-plot treatment means = 80.5 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment = 112.5 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment = 110.1 lb./ac.

Crop :- Paddy.

Ref :- A.P. 53(70).

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

Type :- 'M'.

Object :- To study the effect of G.M. crops and also application of  $P_2O_5$  through G.M. crops on Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Paddy—G.M. crop - Paddy. (b) G.M. crop. (c) Super applied to G.M. crop as per schedule.  
 (ii) (a) Clay. (b) Refer soil analysis, Maruteru. (iii) 2.5.53/13.7.53. (iv) (a) 3 ploughings, trimming bunds, digging corners, levelling. (b) Transplanting. (c) —. (d) Bulk planting. (e) 2. (v) Nil. (vi) MTU-15.  
 (vii) Irrigated. (viii) 2 weedings, first weeding one month after transplanting. (ix) 38.06%. (x) 26/27.11.53.

## 2. TREATMENTS :

Main-plot treatments :

3 G.M. crops :  $G_1$ =Pellipesara,  $G_2$ =Sesbania and  $G_3$ =Wild Indigo.

Sub-plot treatments :—

- (1) G. M. crop alone.  
 (2) G M. crop + 45 lb /ac. of  $P_2O_5$  to Rice crop.  
 (3) 45 lb./ac. of  $P_2O_5$  to G.M. Crop

The entire quantity of G.M. obtained in each plot was ploughed in 'situ'.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 24' × 99'  
 (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Growth of wild indigo unsatisfactory— Failed completely. (ii) Attack of leaf roller. Gammaxene dusted. (iii) Grain and straw yield, plant height and tiller counts. (iv) (a) 1953 to 1956. (b) Yes. (c) N.A.  
 (v) (a) Agri. Res. Stn., Samalkot. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2450 lb./ac.  
 (ii) (a) 362.4 lb./ac.  
 (b) 180.9 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of grain in lb./ac.

	$G_1$	$G_2$	$G_3$	Mean
1	2540	2488	2084	2371
2	2540	2606	2246	2467
3	2585	2708	2246	2513
Mean	2555	2604	2192	2450

S.E. of difference of two

1. main-plot treatment means = 147.9 lb./ac.  
 2. sub-plot treatment means = 73.8 lb./ac.  
 3. sub-plot treatment means at the same level of main-plot treatment = 127.9 lb./ac.  
 4. main-plot treatment means at the same level of sub-plot treatment = 181.1 lb./ac.

Crop :- Paddy.

Ref :- A. P. 53 (64)

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

Type :- 'M'

Object :- To find out the economic dose of N and  $P_2O_5$  for Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru.  
 (iii) 4.5.1953/5 .1953 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) — (d) Bulk Planting (e) 2. (v) Nil. (vi) MTU-1. (vii) Irrigated. (viii) Weeding twice, first weeding one month after transplanting. Crop topped to prevent premature lodging. (ix) 38.06%. (x) 17.11.1953.



## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N :  $N_0=0$ ,  $N_1=30$ ,  $N_2=45$  and  $N_3=60$  lb./ac.

(2) 4 levels of  $P_2O_5$  :  $P_0=0$ ,  $P_1=30$ ,  $P_2=45$  and  $P_3=60$  lb./ac.

N as A/S and  $P_2O_5$  as Super.

## 3. DESIGN :

(i)  $4 \times 4$  Fact. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a), (b)  $14' \times 38'$ . (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Rank vegetative growth. (ii) Affected by leaf-roller. Gammoxene dusted. (iii) Grain and straw yield, plant height, tiller counts. (iv) (a) 1953. (From 1954 the expt. was converted into a split-plot design with two varieties in sub-plots) to 1958. (b) Yes. (c) N.A. (v) (a) Agri. Res. Stn. Samalkot. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 3153 lb./ac.

(ii) 307.9 lb./ac.

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

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

	$N_0$	$N_1$	$N_2$	$N_3$	Mean
$P_0$	3356	3233	3213	2844	3162
$P_1$	3601	3377	3193	2783	3239
$P_2$	3295	3274	2926	2926	3106
$P_3$	3233	3397	2947	2844	3106
Mean	3372	3321	3070	2850	3153

S.E. of marginal means = 77.0 lb./ac.

S.E. of body of table = 153.9 lb./ac.

Crop :- Paddy.

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

Ref :- A.P. 53(65).

Type :- 'M'.

Object :- To determine the organic matter requirements of the soil in the form of C.M., G.M. and compost with a basal dose of super and A/S.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 4.5.53/5.7.53. (iv) (a) Water let in, puddled thrice, levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2. (v) 60 lb./ac. of  $P_2O_5$  as super and 45 lb./ac. of N as top dressing after transplantation. (vi) M.T.U. 1. (vii) Irrigated. (viii) Weeding twice, first weeding one month after transplanting. (ix) 38.06%. (x) 17.11.53.

## 2. TREATMENTS :

All combinations of (1) and (2) + one Control (no manure).

(1) 3 levels of organic matter :  $L_1=2500$ ,  $L_2=5000$  and  $L_3=7500$  lb./ac.

(2) 3 sources :  $O_1=C.M.$ ,  $O_2=G.L.$  and  $O_3=$ compost.

G.L. and Compost applied in terms of organic matter of C.M. which is applied at the above rates.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b)  $38' \times 24'$ . (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Rank growth. (ii) Attack by leaf-roller. Gammoxene dusted. (iii) Grain and straw yield. (iv) (a) 1953 to 1955. (b) Yes. (c) N.A. (v) (a) and (b) Agri. Res. Stn., Samalkot. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3449 lb./ac.  
 (ii) 371.4 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of grain in lb./ac.

Control = 3546 lb./ac.

	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	Mean
O <sub>1</sub>	3522	3534	3832	3629
O <sub>2</sub>	3449	3356	3044	3283
O <sub>3</sub>	3438	3414	3356	3403
Mean	3470	3435	3411	3438

S.E. of the body of table = 185.7 lb./ac.  
 S.E. of marginal means = 107.2 lb./ac.

Crop :- Paddy.

Ref :- A.P. 53(71).

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

Type :- 'M'.

Object :- To find out the best method of application of P manures to Rice either by direct application to Rice or by indirect application to through preceding green manure crop. (Double crop area)

## 1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) G.M. crops. (c) Super applied to G.M. crops as per schedule. (ii) (a) Clay. (b) Refer soil analysis, Maruteru. (iii) 2.5.53/15.7.53. (iv) (a) Ploughing thrice, trimming bunds digging corners, levelling. (b) Transplanting. (c) —. (d) Bulk planting. (e) 2. (v) Nil. (vi) MTU—5. (vii) Irrigated. (viii) 2 weedings, first weeding one month after transplanting. (ix) 38.06%. (x) 30.11.53.

## 2. TREATMENTS :

Main-plot treatments :—

2 G.M. crops : G<sub>1</sub> = *Daincha* and G<sub>2</sub> = Sannhemp.

Sub-plot treatments :—

Application of P<sub>2</sub>O<sub>5</sub>.

- G.M. crop alone (No P<sub>2</sub>O<sub>5</sub>).
- G.M. + 45 lb./ac. of P<sub>2</sub>O<sub>5</sub> to Paddy crop.
- 45 lb./ac. of P<sub>2</sub>O<sub>5</sub> to G.M. crop.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 22' × 90'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Sannhemp failed to establish though the germination was good. The seedlings withered away due to severe summer. The growth of *Dhaincha* though very slow and stunted in the beginning on account of prolonged drought, had vigorous growth soon after the rain in June. (ii) Attack of leaf-roller. Gammaxene dusted. (iii) Grain and straw yield, tiller count and plant height. (iv) (a) 1953 to 1956. (b) Yes. (c) N.A. (v) (a) Agri. Res Stn., Samalkota. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) . 3008 lb./ac.  
 (ii) (a) 154.7 lb./ac.  
 (b) 121.4 lb./ac.  
 (iii) None of the effects is significant.

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

	1	2	3	Mean
G <sub>1</sub>	3106	3062	3090	3086
G <sub>2</sub>	2970	2942	2875	2929
Mean	3038	3002	2983	3008

S.E. of difference of two

1. main-plot treatment means =63.1 lb./ac.
2. sub-plot treatment means =60.7 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment=85.9 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment=94.3 lb./ac.

Crop :- Paddy (2nd crop).

Ref :- A.P. 53(89)/53(71).

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

Type :- 'M'.

Object :- To find the best method of application of P manures to Rice crop either by direct application to Rice or by indirect application through preceding G.M. manure crop.

## 1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) G.M. crops. (c) Super applied to G.M. crops as per treatment. (ii) (a) Clay. (b) Refer soil analysis, Maruteru. (iii) 19.12.53/6.2.54. (iv) (a) 3 ploughings, trimming bunds, digging corners, levelling etc. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2. (v) Nil. (vi) MTU—15. (vii) Irrigated. (viii) 2 weedings, first weeding one month after transplanting. (ix) 0.22". (x) 4.5.54.

## 2. TREATMENTS :

Main-plot treatments :

2 G.M. crops : G<sub>1</sub>=Daincha and G<sub>2</sub>=Sannhemp.

Sub-plot treatments :—

Application of P<sub>2</sub>O<sub>5</sub>.

1. G.M. crop alone (No P<sub>2</sub>O<sub>5</sub>).
2. G.M. crop+45 lb./ac. of P<sub>2</sub>O<sub>5</sub> to Paddy.
3. 45 lb./ac. of P<sub>2</sub>O<sub>5</sub> to G.M.

G.M. puddled *in situ* after estimation in each plot. P<sub>2</sub>O<sub>5</sub> as Super.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block, 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 22'×90'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain & straw yield, plant height and tiller count. (iv) (a) 1953 to 1956. (b) Yes. (c) Nil. (v) (a) Agri. Res. Stn., Samalkot. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2844 lb./ac.
- (ii) (a) 325.6 lb./ac.
- (b) 241.8 lb./ac.
- (iii) Only main-plot treatments differ significantly.

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

	1	2	3	Mean
G <sub>1</sub>	2271	2337	2363	2324
G <sub>2</sub>	3371	3352	3366	3363
Mean	2821	2845	2865	2844

S.E. of difference of two

1. main-plot treatment means = 132.7 lb./ac.
2. sub-plot treatment means = 1 0.9 lb./ac.
3. sub-plot treatment means at the same level of main-plot treatment = 171.0 lb./ac.
4. main-plot treatment means at the same level of sub-plot treatment = 19.8 lb./ac.

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Crop :- Paddy (1st crop).

Ref :- A.P. 53(97).

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

Type :- 'M'.

Object : To find out the direct manurial value of organic manures and inorganic fertilizers and to find out the necessit, of liming the soils for correcting the acidity, if any, that may be developed.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 12 5.53, 14.7.53. (iv) a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2. (v) Nil. (vi) MTU-10. (vii) Irrigated. (viii) 2 weedings. (ix) 38.06%. (x) 28,29.11.53.

## 2. TREATMENTS :

main-plot treatments :—

Application of N :  $N_0=0$ ,  $N_1=60$  lb./ac. of N as A/S,  $N_2=60$  lb./ac. of N as compost..  $N_3=60$  lb./ac. of N as C.M. and  $N_4=60$  lb./ac. of N as G.M.

Sub-plot treatments :—

All combinations of (1), (2) and (3)

- (1) 2 levels of  $P_2O_5$  :  $P_0=0$ , and  $P_1=60$  lb./ac.
- (1) 2 levels of  $K_2O$  :  $K_0=0$ , and  $K_1=60$  lb./ac.
- (3) 2 levels of lime :  $L_0=0$  and  $L_1=1500$  lb./ac.

 $P_2O_5$  as Super and  $K_2O$  as Pot. Sul.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 5 main-plots/block ; 8 sub-plots-main-plot (b) N.A. (iii) 4. (iv) (a) and (b) 11' x 43'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Rank growth in A/S plots and hence crop topped. Satisfactory for other plots. (ii) A/S plots badly infested with jassids, leaf-roller and fulgond bug ; Gammaxene dusted. (iii) Height measurements, tiller count and yield. (iv) (a) 1953-N.A. (b) Yes. (c) Nil. (v) (a) Anakapalle, Samalkot. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3253 lb./ac.
- (ii) (a) 1083.0 lb./ac.
- (b) 252.8 lb./ac.
- (iii) Main effect of N alone is significant.

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

	N <sub>0</sub>	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	N <sub>4</sub>	Mean	L <sub>0</sub>	L <sub>1</sub>	K <sub>0</sub>	K <sub>1</sub>
P <sub>0</sub>	3281	2722	3370	3351	3577	3260	3192	3328	3309	3211
P <sub>1</sub>	3002	2764	3420	3432	3662	3256	3383	3130	3186	3326
K <sub>0</sub>	3051	2764	3395	3381	3649	3248	3327	3169		
K <sub>1</sub>	3233	2722	3395	3402	3591	3269	3248	3289		
L <sub>0</sub>	3221	2784	3379	3400	3653	3287				
L <sub>1</sub>	3062	2722	3411	3383	3586	3229				
Mean	3142	2743	3395	3392	3620	3258				

S.E. of difference of two

1. N marginal means = 270.0 lb./ac.
2. P or K or L marginal means = 39.9 lb./ac.
3. P or K or L means at the same level of N = 89.3 lb./ac.
4. N means at the same level of P or K or L = 277.3 lb./ac.
5. means in the body of table P × K or P × L or L × K = 56.5 lb./ac.

Crop: Paddy (2nd crop).

Ref: A.P. 53 (96).

Site: Agri. Res. Stn., Maruteru.

Type: M.

Object:—To find out the direct manurial value of organic and inorganic manures and to find out the necessity of liming the soils for correcting the acidity, if any, that may be developed.

## 1. BASAL CONDITIONS:

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Deep black Clay. (b) Refer soil analysis, Maruteru. (iii) 19.12.53/15.2.54. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—(d) Bulk planting. (e) 2. (v) Nil. (vi) MTU-15. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 11.5.54.

## 2. TREATMENTS:

Main-plot treatments:—

Application of N: N<sub>0</sub>=0, N<sub>1</sub>=60 lb./ac. of N as A/S, N<sub>2</sub>=60 lb./ac. of N as Compost, N<sub>3</sub>=60 lb./ac. of N as C.M. and N<sub>4</sub>=60 lb./ac. of N as G.M.

Sub-plot treatments:—

All combinations of (1), (2) and (3)

- (1) 2 levels of P<sub>2</sub>O<sub>5</sub> as Super: P<sub>0</sub>=0 and P<sub>1</sub>=60 lb./ac.
- (2) 2 levels of K<sub>2</sub>O as Pot. Sul.: K<sub>0</sub>=0 and K<sub>1</sub>=60 lb./ac.
- (3) 2 levels of lime: L<sub>0</sub>=0 and L<sub>1</sub>=1500 lb./ac.

## 3. DESIGN:

(i) Split-plot. (ii) (a) 5 main-plots/block; 8 sub-plot/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 11' × 43'. (v) No. (vi) Yes.

## 4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Height measurements, tiller counts and grain and straw yield. (iv) (a) 1953—N.A. (b) Yes. (c) Nil. (v) (a) Anakapalle, Samalkot. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 2965 lb./ac.
- (ii) (a) 1061.0 lb./ac.
- (b) 509.8 lb./ac.
- (iii) Only main effect of N is significant.

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

	N <sub>0</sub>	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	N <sub>4</sub>	Mean	L <sub>0</sub>	L <sub>1</sub>	K <sub>0</sub>	K <sub>1</sub>
P <sub>0</sub>	2546	3294	2506	2889	3205	2888	2882	2894	2843	2933
P <sub>1</sub>	2736	3328	2926	2955	3264	3042	3035	3048	3006	3077
K <sub>0</sub>	2564	3265	2684	2929	3182	2925	2902	2947		
K <sub>1</sub>	2718	3357	2747	2914	3288	3005	3015	2995		
L <sub>0</sub>	2661	3283	2713	2880	3256	2959				
L <sub>1</sub>	2621	3340	2718	2963	3213	2971				
Mean	2641	3311	2716	2922	3235	2965				

S.E. of difference of two

1. N marginal means = 265.3 lb./ac.
2. P or K or L marginal means = 80.6 lb./ac.
3. P or K or L means at the same level of N = 180.2 lb./ac.
4. N means at the same level of P or K or L = 294.3 lb./ac.
5. means in the body of table P×L or P×K or L×K = 113.9 lb./ac.

Crop :- Paddy (2nd crop season of 48-49).

Ref :- A.P. 49(68).

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

Type :- 'M'.

Object :- To find out the time and best method of incorporation of P<sub>2</sub>O<sub>5</sub> into the soil for Paddy crop.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) £.1.49.  
 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2. (v) Nil.  
 (vi) N.A. (vii) Irrigated. (viii) 2 weedings, first weeding one month after transplanting. (ix) N.A. (x) 16.5.49.

## 2. TREATMENTS :

1. Super applied, levelled and seedlings planted.
  2. Super applied, puddled, levelled and then seedlings planted.
  3. No manure.
- Other details N.A.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) and (b) 14' × 62.5'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) No. (b) No. (c) No. (v) 'a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2328 lb./ac.  
 (ii) 99.0 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.
- | Treatment | Av. yield      |
|-----------|----------------|
| 1.        | 2406           |
| 2.        | 2248           |
| 3.        | 2331           |
| S.E./mean | = 35.0 lb./ac. |

Crop :- Paddy (*Tabi*).

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

Ref :- A.P. 50(10).

Type :- 'M'.

Object :- To find out a suitable dose of G.N.C. and Paddy fertilizer mixture.

## 1. BASAL CONDITIONS:

- (i) (a) Nil. (b) Paddy. (c) 15 C.L./ac. of compost + 720 lb./ac. of G.N.C. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 4.2.50. (iv) (a) One ploughing and puddling three times. (b) Transplanted. (c) —. (d) 9°. (e) N.A. (v) Nil. (vi) H.R. 19 (early). (vii) Irrigated. (viii) 5 times weedings. (ix) 1.91°. (x) 22.5.50.

## 2. TREATMENTS:

All combinations of (1) and (2)

- (1) 4 levels of N:  $N_1=15$ ,  $N_2=20$ ,  $N_3=25$  and  $N_4=30$  lb./ac.  
 (2) 2 sources of N:  $S_1=G.N.C.$  and  $S_2=Paddy$  fertilizer mixture.

## 3. DESIGN:

- (i) 2x4 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 3: (iv) (a) 59'x23'. (b) 52'x21'. (v) N.A. (vi) Yes.

## 4. GENERAL

- (i) Normal, except or stem-borer attack. (ii) Severe stem-borer attack. (iii) Grain and straw yield. (iv) (a) 1950 (*Tabi* 1949-1950) to 1951 (*Tabi* 1950-1951). (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Nil.

## 5. RESULTS:

- (i) 185 lb./ac.  
 (ii) 86.0 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of grain in lb./ac.

	$N_1$	$N_2$	$N_3$	$N_4$	Mean
$S_1$	159	127	147	273	177
$S_2$	168	193	173	232	192
Mean	164	160	160	253	185

S.E. of marginal mean of S = 24.8 lb./ac.

S.E. of marginal mean of N = 35.3 lb./ac.

S.E. of body of table = 49.0 lb./ac.

Crop :- Paddy (*Abi*).

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

Ref :- A.P. 50(11).

Type :- 'M'.

Object :- To find out a suitable dose of G.N.C. and paddy fertilizer mixture.

## 1. BASAL CONDITIONS:

- (i) (a) Nil. (b) Fallow. (c) No. (ii) (a) *Chalka* (Sandy loam). (b) Refer soil analysis, Rudrur. (iii) 13.7.50. (iv) (a) Ploughing between 1.3.50 and 27.6.50. puddling between 5.7.50 and 10.7.50. (b) Transplanted. (c) —. (d) N.A. (e) N.A. (v) Nil. (vi) H.R-19 (early) (vii) Irrigated. (viii) Weeding between 23.8.50. and 25.8.50. (ix) 40.60°. (x) 25.10.50.

## 2. TREATMENTS:

All combinations of (1) and (2) + a control (no manure).

- (1) 4 levels of N:  $N_1=15$ ,  $N_2=20$ ,  $N_3=25$  and  $N_4=30$  lb./ac.  
 (2) 2 sources of N:  $S_1=G.N.C.$  and  $S_2=Paddy$  fertilizer mixture.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 59'×23'. (b) 52'×21'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Severe attack of Hispa in August. Gammaxene dusted. (iii) Grain and straw yield. (iv) (a) 1950 (*Tabi* 49-50) to 1951 (*Tabi* 50-51). (b) No. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Nil.

## 5. RESULTS :

- (i) 1306 lb./ac.  
 (ii) 242.0 lb./ac.  
 (iii) Only "Control vs others" effect is significant.  
 (iv) Av. yield of grain in lb./ac.

	Control = 1020 lb./ac.				Mean
	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	N <sub>4</sub>	
S <sub>1</sub>	1204	1184	1380	1364	1283
S <sub>2</sub>	1400	1364	1440	1400	1401
Mean	1302	1274	1410	1382	1342

S.E. of marginal mean of S = 60.5 lb./ac.  
 S.E. of marginal mean of N = 85.5 lb./ac.  
 S.E. of body of table = 121.0 lb./ac.

Crop :- Paddy (*Abi* 50-51).

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

Ref :- A.P. 50 (48).

Type :- 'M'.

Object :- To determine the optimum dose and ratio of N and P<sub>2</sub>O<sub>5</sub> for Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Rudrur. (iii) 2nd week of July, 1950. (iv) (a) to (e) N.A. (v) Nil. (vi) H.R-19. (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 35.10". (x) 3rd week of October, 1950.

## 2. TREATMENTS :

- |   |  |
|---|--|
| 1. Control (no manure).   | 10. 45 lb./ac. of N+45 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 2. 15 lb./ac. of N+15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 11. 45 lb./ac. of N+33½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 3. 15 lb./ac. of N+11¼ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 12. 45 lb./ac. of N+22½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 4. 15 lb./ac. of N+7½ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 13. 45 lb./ac. of N+11¼ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 5. 15 lb./ac. of N+3½ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 14. 60 lb./ac. of N+60 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 6. 30 lb./ac. of N+30 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 15. 60 lb./ac. of N+45 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 7. 30 lb./ac. of N+22½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 16. 60 lb./ac. of N+30 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 8. 30 lb./ac. of N+15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 17. 60 lb./ac. of N+15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 9. 30 lb./ac. of N+7½ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |  |

The first half dose of A/S and Super applied on 31.7.50. The second dose of A/S applied on 24.3.50. and that of Super on 6.9.50.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/60 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Good. (ii) In last week of July, a moderate attack of Hispa which was controlled by dusting with gammaxene. Mild attack of gallfly. (iii) Grain and straw yield. (iv) (a) 1950-1953. (b) Yes. (c) N.A. (v) (a) Warangal. (b) N.A. (vi) Nil. (vii) Conducted by Soil Res. Stn.



## 5. RESULTS :

- (i) 1862 lb./ac.  
 (ii) 136.8 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.	Treatment	Av. yield.
1.	1185	10.	2100
2.	1740	11.	2085
3.	1545	12.	1920
4.	1425	13.	2070
5.	1395	14.	2340
6.	1875	15.	2355
7.	1755	16.	2460
8.	1665	17.	2115
9.	1620		

S.E./mean = 68.4 lb/ac.

Crop :- Paddy (*Tabi 50-51*).

Ref :- A.P. 51(75)/50(48).

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

Type :- 'M'.

Object :- To determine the optimum dose and ratio of N and P<sub>2</sub>O<sub>5</sub> for Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Rudrur.  
 (iii) Third week of January, 1951. (iv) (a) to (e) N.A. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) 2 to 3 weeding. (ix) 2.06%. (x) N.A.

## 2. TREATMENTS :

- |   |  |
|---|--|
| 1. Control (no manure).   | 10. 45 lb./ac. of N+45 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 2. 15 lb./ac. of N + 15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 11. 45 lb./ac. of N+33½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 3. 15 lb./ac. of N + 11¼ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 12. 45 lb./ac. of N+22½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 4. 15 lb./ac. of N + 7½ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 13. 45 lb./ac. of N+11¼ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 5. 15 lb./ac. of N + 3½ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 14. 60 lb./ac. of N+60 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 6. 30 lb./ac. of N + 30 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 15. 60 lb./ac. of N+45 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 7. 30 lb./ac. of N + 22½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 16. 60 lb./ac. of N+30 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 8. 30 lb./ac. of N + 15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 17. 60 lb./ac. of N+15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 9. 30 lb./ac. of N + 7½ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |  |

The first half dose of A/S and Super applied at the time of transplanting. Second half dose of A/S applied on 2.3.51 and Super on 16.3.51 just when flowering started.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/60 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Not satisfactory due to borer attack. (ii) Soon after transplanting, severe attack of borer, which persisted throughout. (iii) Grain and straw yield. (iv) (a) 1950 to 1953. (b) Yes. (c) N.A. (v) (a) Warangal. (b) N.A. (vi) Nil. (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

- (i) 1099 lb./ac.  
 (ii) 98.4 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.	Treatment	Av. yield.
1.	585	10.	1245
2.	900	11.	1275
3.	765	12.	1185
4.	735	13.	1170
5.	735	14.	1575
6.	1050	15.	1470
7.	1050	16.	1440
8.	1125	17.	1395
9.	990		

S.E./mean = 49.2 lb./ac.

Crop :- Paddy (*Abi* 1951-52).

Ref :- A.P. 51 (25)/51(75)/50(48).

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

Type :- 'M'.

Object :- To determine the optimum ratio of N and P<sub>2</sub>O<sub>5</sub> for high yield of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane and Sannhemp. (c) 225 lb./ac. of A/S. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) Last week of July, 1951. (iv) (a) 2 dry ploughings, 3 puddlings and levelling. (b) Transplanted. (c) —. (d) 6' × 4'. (e) N.A. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) One or two weeding. (ix) 30.81'. (x) 8.11.51.

## 2. TREATMENTS :

- |   |  |
|---|--|
| 1. Control (no manure).   | 10. 45 lb./ac. of N + 45 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 2. 15 lb./ac. of N + 15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 11. 45 lb./ac. of N + 33½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 3. 15 lb./ac. of N + 11¼ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 12. 45 lb./ac. of N + 22½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 4. 15 lb./ac. of N + 7½ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 13. 45 lb./ac. of N + 11¼ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 5. 15 lb./ac. of N + 3¾ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 14. 60 lb./ac. of N + 60 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 6. 30 lb./ac. of N + 30 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 15. 60 lb./ac. of N + 45 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 7. 30 lb./ac. of N + 22½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 16. 60 lb./ac. of N + 30 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 8. 30 lb./ac. of N + 15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 17. 60 lb./ac. of N + 15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 9. 30 lb./ac. of N + 7½ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |  |

N as A/S and P<sub>2</sub>O<sub>5</sub> as Super. Half the quantity of N and P<sub>2</sub>O<sub>5</sub> were applied in the puddle and the other half one month after transplanting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 46' × 19'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal; but growth uneven. (ii) Unidentified disease. (iii) Grain and straw yield. (iv) (a) 1951 (*Abi* 1951-52) to 1954 (*Tabi* 1953-54). (b) Yes. (c) N.A. (v) (a) Warangal. (b) N.A. (vi) Nil. (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

- (i) 1236 lb./ac.  
(ii) 228.5 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	737	10.	1662
2.	887	11.	1637
3.	937	12.	1237
4.	937	13.	1350
5.	887	14.	1662
6.	1600	15.	1437
7.	1037	16.	1550
8.	1050	17.	1262
9.	1125		

S.E./mean = 114.5 lb./ac.

Crop :- Paddy (*Tabi* 51-52)

Ref :- A.P. 52(25)/51(25)

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

Type :- 'M'.

Object :- To determine the optimum ratio of N and P<sub>2</sub>O<sub>5</sub> for high yield of Paddy.

## 1. BASAL CONDITIONS

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 21.1.52. (iv) (a) 2 ploughings, 3 puddlings and levelling. (b) Broadcast. (c) 80 lb./ac. (d) N.A. (e) —. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) Weeding once or twice. (ix) 2.50" (December 51 to May, 1952. (x) 1st week of May 1952.

## 2. TREATMENTS :

1. Control (no manure)
2. 15 lb./ac. of N + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
3. 15 lb./ac. of N + 11½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
4. 15 lb./ac. of N + 7½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
5. 15 lb./ac. of N + 3½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
6. 30 lb./ac. of N + 30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
7. 30 lb./ac. of N + 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
8. 30 lb./ac. of N + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
9. 30 lb./ac. of N + 7½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
10. 45 lb./ac. of N + 45 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
11. 45 lb./ac. of N + 33½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
12. 45 lb./ac. of N + 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
13. 45 lb./ac. of N + 11½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
14. 60 lb./ac. of N + 60 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
15. 60 lb./ac. of N + 45 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
16. 60 lb./ac. of N + 30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
17. 60 lb./ac. of N + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

N as A/S and P<sub>2</sub>O<sub>5</sub> as Super. Half the quantity of N and P<sub>2</sub>O<sub>5</sub> were applied in the puddle and the other half one month after sowing.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 46' × 19'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Slight attack of gall-fly, borer and unidentified tip-drying disease. (iii) Grain and straw yield. (iv) (a) 1951 (*Abi* 51-52) to 1954 (*Tabi* 1953-54) (b) Yes. (c) N.A. (v) (a) Warangal. (b) N.A. (vi) Nil (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

- (i) 1955 lb./ac.  
 (ii) 330.0 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.	Treatment	Av. yield.
1.	500	10.	2413
2.	1463	11.	2700
3.	1450	12.	2288
4.	1188	13.	2113
5.	1000	14.	3063
6.	2288	15.	2775
7.	1725	16.	2563
8.	1575	17.	2563
9.	1563		

S.E./mean = 165.0 lb./ac.

Crop :- Paddy (*Abi* 52-53)

Ref :- A.P. 52(27)/52(25)/51(25)

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

Type :- 'M'.

Object :- To determine the optimum ratio of N and P<sub>2</sub>O<sub>5</sub> for high yield of Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil (b) Paddy. (c) As under treatments. (ii) (a) Black cotton soil (b) Refer soil analysis, Rudrur. (iii) 19 to 22.7.52 (iv) (a) 2 ploughings, 3 puddlings and levelling. (b) Transplanted. (c) —. (d) 6" × 4" (e) N.A. (v) Nil. (vi) H.R. 19 (early) (vii) Irrigated. (viii) Weeding once or twice. (ix) 33.11" (x) 25 to 27.10.52.

## 2. TREATMENTS :

1. Control (no manure)
2. 15 lb./ac. of N + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
3. 15 lb./ac. of N + 11½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
4. 15 lb./ac. of N + 7½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
5. 15 lb./ac. of N + 3½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
6. 30 lb./ac. of N + 30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
7. 30 lb./ac. of N + 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
8. 30 lb./ac. of N + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
9. 30 lb./ac. of N + 7½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
10. 45 lb./ac. of N + 45 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
11. 45 lb./ac. of N + 33½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
12. 45 lb./ac. of N + 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
13. 45 lb./ac. of N + 11½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
14. 60 lb./ac. of N + 60 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
15. 60 lb./ac. of N + 45 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
16. 60 lb./ac. of N + 30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
17. 60 lb./ac. of N + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

N as A/S and P<sub>2</sub>O<sub>5</sub> as Super. Half the quantity of N and P<sub>2</sub>O<sub>5</sub> were applied in the puddle and the other half one month after planting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 46' × 19'. (v) N.A. (vi) Yes..

## 4. GENERAL :

(i) Normal (ii) Slight attack of gall-fly, borer and unidentified tip-drying disease. (iii) Grain and Straw yield. (iv) (a) 1951 (*Tabi* 51-52) to 1954 (*Tabi* 1952-54) (b) Yes (c) N.A. (v) (a) Warangal (b) N.A. (vi) Nil (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

- (i) 1579 lb./ac.  
 (ii) 4400 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	500	10.	2163
2.	1088	11.	2388
3.	1088	12.	1913
4.	888	13.	1450
5.	625	14.	2900
6.	1775	15.	2350
7.	1325	16.	1863
8.	1113	17.	2213
9.	1200		

S.E./mean = 220.0 lb./ac.

Crop :- Paddy (*Tabi* 52-53).

Ref :- A.P. 53(13) 52(27,25) 51(25).

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

Type :- 'M'.

Object :- To determine the optimum ratio of N and  $P_2O_5$  for high yield of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 8.1.53. (iv) (a) 2 ploughings, 3 puddlings and levelling. (b) Broadcast. (c) 80 lb./ac. (d) N.A. (e) —. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) Weeding once or twice. (ix) N.A. (x) 1st week of May, 1953.

## 2. TREATMENTS :

- |  |   |
|--|---|
| 1. Control (no manure).                      | 10. 45 lb./ac. of N+45 lb./ac. of $P_2O_5$ .  |
| 2. 15 lb./ac. of N+ 15 lb./ac. of $P_2O_5$ . | 11. 45 lb./ac. of N+33½ lb./ac. of $P_2O_5$ . |
| 3. 15 lb./ac. of N+11½ lb./ac. of $P_2O_5$ . | 12. 45 lb./ac. of N+22½ lb./ac. of $P_2O_5$ . |
| 4. 15 lb./ac. of N+ 7½ lb./ac. of $P_2O_5$ . | 13. 45 lb./ac. of N+11½ lb./ac. of $P_2O_5$ . |
| 5. 15 lb./ac. of N+ 3½ lb./ac. of $P_2O_5$ . | 14. 60 lb./ac. of N+60 lb./ac. of $P_2O_5$ .  |
| 6. 30 lb./ac. of N+30 lb./ac. of $P_2O_5$ .  | 15. 60 lb./ac. of N+45 lb./ac. of $P_2O_5$ .  |
| 7. 30 lb./ac. of N+22½ lb./ac. of $P_2O_5$ . | 16. 60 lb./ac. of N+30 lb./ac. of $P_2O_5$ .  |
| 8. 30 lb./ac. of N+ 15 lb./ac. of $P_2O_5$ . | 17. 60 lb./ac. of N+15 lb./ac. of $P_2O_5$ .  |
| 9. 30 lb./ac. of N+ 7½ lb./ac. of $P_2O_5$ . |   |

N as A/S and  $P_2O_5$  as Super. Half the quantity of N and  $P_2O_5$  were applied in the puddle and the other half one month after sowing.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 46' × 19'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Severe attack of tip-drying disease and borer. (iii) Grain and straw yield. (iv) (a) 1951. (*Abi* '951-52) to 1954 (*Tabi* 1953-54). (b) Yes. (c) N.A. (v) (a) Warangal. (b) N.A. (vi) Nil. (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

- (i) 771 lb./ac.  
 (ii) 234.0 lb./ac.  
 (iii) Treatments differ significantly.

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

Treatment	Av. yield	Treatment	Av. yield
1.	100	10.	1263
2.	538	11.	1275
3.	363	12.	813
4.	413	13.	500
5.	175	14.	1538
6.	1013	15.	1338
7.	613	16.	1150
8.	638	17.	900
9.	475		

S.E./mean = 117.0 lb./ac.

Crop :- Paddy *Abi* (53-54).

Ref :- A.P. 53(41)/53(13)/52(27,25)/51(25).

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

Type :- 'M'.

Object :—To determine the optimum ratio of N and P<sub>2</sub>O<sub>5</sub> for high yield of Paddy.

## BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 14,15.7.53. (iv) (a) 2 ploughings, 3 puddlings and levelling. (b) Transplanted. (c)—. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R.-19 (early). (vii) Irrigated. (viii) Weeding once. (ix) 63.07%. (x) 14.10.53.

## 2. TREATMENTS :

- |   |  |
|---|--|
| 1. Control (no manure).   | 10. 45 lb./ac. of N+45 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 2. 15 lb./ac. of N+15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 11. 45 lb./ac. of N+33½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 3. 15 lb./ac. of N+11¼ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 12. 45 lb./ac. of N+22½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 4. 15 lb./ac. of N+ 7½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 13. 45 lb./ac. of N+11¼ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 5. 15 lb./ac. of N+ 3¾ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 14. 60 lb./ac. of N+60 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 6. 30 lb./ac. of N+30 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 15. 60 lb./ac. of N+45 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 7. 30 lb./ac. of N+22½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 16. 60 lb./ac. of N+30 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 8. 30 lb./ac. of N+15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 17. 60 lb./ac. of N+15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 9. 30 lb./ac. of N+ 7½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |  |

N as A/S and P<sub>2</sub>O<sub>5</sub> as Super. Half the quantity of N and P<sub>2</sub>O<sub>5</sub> were applied in the puddle and the other half one month after planting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 46'×19'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Due to heavy rains (10"—15") in the month of September, the crop lodged badly. Growth normal. (ii) Mild attack of tip-drying disease in the last week of August. (iii) Grain and straw weight. (iv) (a) 1951 (*Abi* 1951—52) to 1954 (*Tabi* 1953—54). (b) Yes. (c) N.A. (v) (a) Warangal. (b) N.A. (vi) Nil. (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

- (i) 2935 lb./ac.  
(ii) 482.0 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	1213	10.	3375
2.	2325	11.	3950
3.	2625	12.	3300
4.	2300	13.	2975
5.	1963	14.	3788
6.	3413	15.	3850
7.	2950	16.	3338
8.	2663	17.	3275
9.	2600		

S.E./mean = 241.0 lb./ac.

Crop :- Paddy (*Abi 51-52*).  
Site :- Agri. Res. Stn., Rudrur.

Ref :- A.P. 51(19).  
Type :- 'M'.

Object :- To determine the optimum ratio of N and  $P_2O_5$  required for Paddy.

#### 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Chalka soil (sandy loam.) (b) Refer soil analysis, Rudrur.  
(iii) 21.7.51. (iv, a' to 'e) N.A. (v) N.A. (vi) H.R-19. (vii) Irrigated. (viii) One hand weeding on  
25.8.51. (ix) 35.00". (x) 25.10.51.

#### 2. TREATMENTS :

- |   |  |
|---|--|
| 1. Control (no manure.)                                   | 10. 45 lb./ac. of N+45 lb./ac. of $P_2O_5$ .               |
| 2. 15 lb./ac. of N+15 lb./ac. of $P_2O_5$ .               | 11. 45 lb./ac. of N+33 $\frac{1}{2}$ lb./ac. of $P_2O_5$ . |
| 3. 15 lb./ac. of N+11 $\frac{1}{2}$ lb./ac. of $P_2O_5$ . | 12. 45 lb./ac. of N+22 $\frac{1}{2}$ lb./ac. of $P_2O_5$ . |
| 4. 15 lb./ac. of N+7 $\frac{1}{2}$ lb./ac. of $P_2O_5$ .  | 13. 45 lb./ac. of N+11 $\frac{1}{2}$ lb./ac. of $P_2O_5$ . |
| 5. 15 lb./ac. of N+3 $\frac{1}{2}$ lb./ac. of $P_2O_5$ .  | 14. 60 lb./ac. of N+60 lb./ac. of $P_2O_5$ .               |
| 6. 30 lb./ac. of N+30 lb./ac. of $P_2O_5$ .               | 15. 60 lb./ac. of N+45 lb./ac. of $P_2O_5$ .               |
| 7. 30 lb./ac. of N+22 $\frac{1}{2}$ lb./ac. of $P_2O_5$ . | 16. 60 lb./ac. of N+30 lb./ac. of $P_2O_5$ .               |
| 8. 30 lb./ac. of N+15 lb./ac. of $P_2O_5$ .               | 17. 60 lb./ac. of N+15 lb./ac. of $P_2O_5$ .               |
| 9. 30 lb./ac. of N+7 $\frac{1}{2}$ lb./ac. of $P_2O_5$ .  |  |

First dose of manuring applied before transplantation at the time of puddling. Second dose of A/S applied on 23.8.51. and second dose of Super on 7.9.51.

#### 3. DESIGN :

(i) R.B.D. (ii) a 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/60 acre. (v) Nil. (vi) Yes.

#### 4. GENERAL :

(i) The plots which received 45 lb./ac. of N+30 lb./ac. of  $P_2O_5$  and above were excellent and the plots that received less than the above levels were stunted in growth. (ii) Severe attack of stem-borer. Control measures taken N.A. (iii) Grain and straw yield. (iv) (a) 1951 (*Abi 1951-52*) to 1953 (*Abi 1953-54*). (b) N.A. (c) N.A. (v) (a) Main farm, warangal; Agri. Res. Stn., Rudrur and Soil Res. Section, Rudrur. (b) N.A. (vi) Nil. (vii) Conducted by Farm Section.

#### 5. RESULTS :

- (i) 1632 lb./ac.  
(ii) 313.2 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	945	10.	1980
2.	1425	11.	1755
3.	1440	12.	1455
4.	1320	13.	1590
5.	1320	14.	2310
6.	1875	15.	2085
7.	1560	16.	2010
8.	1515	17.	1875
9.	1290		

S.E./mean = 156.6 lb./ac.

Crop :- Paddy (*Tabi 1951-52*).  
Site :- Agri. Res. Stn., Rudrur.

Ref :- A.P. 52(11), 51(19).  
Type :- 'M'.

Object :- To determine the optimum ratio of N and  $P_2O_5$  required for Paddy.

#### 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Chalka (sandy loam). (b) Refer soil analysis, Rudrur.  
(iii) 4.2.52. (iv) (a) to (e) N.A. (v) N.A. (vi) H.R-19. (vii) N.A. (viii) Hand weeding on 7.3.52.  
(ix) 2.50". (x) 30.4.52.

## 2. TREATMENTS :

1. Control (no manure).
2. 15 lb./ac. of N+15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
3. 15 lb./ac. of N+11½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
4. 15 lb./ac. of N+7½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
5. 15 lb./ac. of N+3¾ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
6. 30 lb./ac. of N+30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
7. 30 lb./ac. of N+22½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
8. 30 lb./ac. of N+15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
9. 30 lb./ac. of N+7½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
10. 45 lb./ac. of N+45 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
11. 45 lb./ac. of N+33¾ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
12. 45 lb./ac. of N+22½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
13. 45 lb./ac. of N+11½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
14. 60 lb./ac. of N+60 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
15. 60 lb./ac. of N+45 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
16. 60 lb./ac. of N+30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
17. 60 lb./ac. of N+15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

First dose of manure applied at the time of last puddling and before planting. Second dose of A/S applied on 8.3.52 and Second dose of Super on 24.3.52.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/60 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) Severe attack of paddy-borer pest. Nursery dusted with gammaxene and light traps were used. At the time of transplantation, seedlings were dipped in 50% D.D.T. solution. After transplantation, crop dusted with gammaxene twice and light traps arranged when moths were seen emerging. (iii) Grain and straw yield. (iv) (a) 1952(*Abi* 1951-52) to 1953 (*Abi* 1953-54) (b) N.A. (c) N.A. (v) (a) Govt. Main Farm, Warangal. (b) N.A. (vi) Nil. (vii) Conducted by Farm Section.

## RESULTS :

- (i) 708 lb./ac.  
 (ii) 161.4 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	360	10.	855
2.	555	11.	810
3.	510	12.	630
4.	450	13.	690
5.	435	14.	1080
6.	900	15.	1140
7.	735	16.	915
8.	660	17.	660
9.	690		

S.E./mean = 80.7 lb./ac.

Crop :- Paddy (*Abi* 52-53).

Ref :- A.P. 52(22)/52(11)/51(19).

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

Type :- 'M'.

Object :- To determine the optimum dose of N and P<sub>2</sub>O<sub>5</sub> for Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) *Chalka* (sandy loam). (b) Refer soil analysis, Rudrur. (iii) 22 to 14.7.52. (iv) (a) 3 ploughings including one dry ploughing. Two puddlings and once levelling. (b) Transplanted. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) 2 weedings. (ix) 33.11". (x) 23,24.10.52.

## 2. TREATMENTS :

1. Control (no manure).
2. 15 lb./ac. of N + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
3. 15 lb./ac. of N + 11½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
4. 15 lb./ac. of N + 7½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
5. 15 lb./ac. of N + 3¾ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
6. 30 lb./ac. of N + 30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
7. 30 lb./ac. of N + 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
8. 30 lb./ac. of N + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
9. 30 lb./ac. of N + 7½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
10. 45 lb./ac. of N + 45 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
11. 45 lb./ac. of N + 33¾ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
12. 45 lb./ac. of N + 22½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
13. 45 lb./ac. of N + 11½ lb./ac. of P<sub>2</sub>O<sub>5</sub>.
14. 60 lb./ac. of N + 60 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
15. 60 lb./ac. of N + 45 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
16. 60 lb./ac. of N + 30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
17. 60 lb./ac. of N + 15 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

N as A/S and P<sub>2</sub>O<sub>5</sub> as Super.

## 3. DESIGN :

(l) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 56' × 13'. (v) N.A. (vi) Yes.

## 4. GENERAL

(i) Not satisfactory. (ii) Severely attacked by stem-borer, crabs and rats. (iii) Grain yield. (iv) (a) 1951 (*Abi* 1951-52) to 1953 (*Tabi* 1953-54). (b) Yes. (c) N.A. (v) (a) Warangal. (b) N.A. (vi) Nil. (vii) Conducted by Farm Section.

## 5. RESULTS :

- (i) 1211 lb./ac.  
 (ii) 141.0 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	885	10.	1425
2.	1080	11.	1243
3.	1320	12.	1230
4.	1080	13.	1320
5.	855	14.	1410
6.	1275	15.	1335
7.	1350	16.	1455
8.	1110	17.	1245
9.	975		

S.E./mean = 70.5 lb./ac.

Crop :- Paddy (*Tabi* 52-53).

Ref :- A.P. 53(35) 52(11,22)/51(19).

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

Type :- 'M'.

Obj ct :- To determine the optimum dose of N and P<sub>2</sub>O<sub>5</sub> for Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) *Chalka* (sandy loam). (b) Refer soil analysis, Rudrur. (iii) 4.2.53. (iv) (a) 3 ploughings including one dry ploughing, 2 puddlings and once levelling. (b) Transplanted. (c) —. (d) 6" × 4". (e) N.A. (v) Nil. (vi) H.R.-19 (early). (vii) Irrigated. (viii) One weeding. (ix) 1.30". (x) 5.5.30.

## 2. TREATMENTS :

- |   |  |
|---|--|
| 1. Control (no manure).   | 10. 45 lb./ac. of N + 45 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 2. 15 lb./ac. of N + 15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 11. 45 lb./ac. of N + 33½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 3. 15 lb./ac. of N + 11¼ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 12. 45 lb./ac. of N + 22½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 4. 15 lb./ac. of N + 7½ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 13. 45 lb./ac. of N + 11½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 5. 15 lb./ac. of N + 3¼ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 14. 60 lb./ac. of N + 60 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 6. 30 lb./ac. of N + 30 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 15. 60 lb./ac. of N + 45 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 7. 30 lb./ac. of N + 22½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 16. 60 lb./ac. of N + 30 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 8. 30 lb./ac. of N + 15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 17. 60 lb./ac. of N + 15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 9. 30 lb./ac. of N + 7½ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |  |
- N as A/S and P<sub>2</sub>G<sub>3</sub> as Super.

## 3. DESIGN :

(l) R.B.D (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) 58' × 15'. (b) 56' × 13'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Severe attack of stemborer and crab. Seedlings dipped in 5% D.D.T. before transplanting. (iii) Grain weight. (iv) (a) 1951 (*Abi* 1951-52) to 1953 (*Tabi* 1953-54). (b) Yes. (c) N.A. (v) (a) Warangal. (b) N.A. (vi) Nil. (vii) Conducted by Farm Section.

## 5. RESULTS :

- (i) 850 lb./ac.  
 (ii) 78.6 lb./ac.  
 (iii) Treatments differ significantly.



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

Treatment	Av. yield	Treatment	Av. yield
1.	450	10.	915
2.	570	11.	1025
3.	720	12.	1050
4.	540	13.	795
5.	600	14.	1215
6.	870	15.	1140
7.	885	16.	1245
8.	810	17.	855
9.	765		

S.E./mean = 39.3 lb./ac.

Crop :- Paddy (*Abi* 1953-54). Ref :- A.P. 53(16)/53(35)/52(11, 22)/51(19).

Site :- Agri. Res. Stn., Rudrur. Type :- 'M'.

Object :- To determine the best ratio of N and  $P_2O_5$  for Paddy.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As under treatments. (ii) (a) *Chalka* (sandy Loam). (b) Refer soil analysis, Rudrur. (iii) 21.7.53. (iv) (a) to (e) N.A. (v) N.A. (vi) H.R. 19. (vii) N.A. (viii) Weeding; gap filling on 8.8.53 and 15.8.53. (ix) N.A. (x) 19.10.53.

## 2. TREATMENTS :

- |  |   |
|--|---|
| 1. Control (no manure).                      | 10. 45 lb./ac. of N+45 lb./ac. of $P_2O_5$ .  |
| 2. 15 lb./ac. of N+15 lb./ac. of $P_2O_5$ .  | 11. 45 lb./ac. of N+33½ lb./ac. of $P_2O_5$ . |
| 3. 15 lb./ac. of N+11½ lb./ac. of $P_2O_5$ . | 12. 45 lb./ac. of N+22½ lb./ac. of $P_2O_5$ . |
| 4. 15 lb./ac. of N+7½ lb./ac. of $P_2O_5$ .  | 13. 45 lb./ac. of N+11½ lb./ac. of $P_2O_5$ . |
| 5. 15 lb./ac. of N+3½ lb./ac. of $P_2O_5$ .  | 14. 60 lb./ac. of N+60 lb./ac. of $P_2O_5$ .  |
| 6. 30 lb./ac. of N+30 lb./ac. of $P_2O_5$ .  | 15. 60 lb./ac. of N+45 lb./ac. of $P_2O_5$ .  |
| 7. 30 lb./ac. of N+22½ lb./ac. of $P_2O_5$ . | 16. 60 lb./ac. of N+30 lb./ac. of $P_2O_5$ .  |
| 8. 30 lb./ac. of N+15 lb./ac. of $P_2O_5$ .  | 17. 60 lb./ac. of N+15 lb./ac. of $P_2O_5$ .  |
| 9. 30 lb./ac. of N+7½ lb./ac. of $P_2O_5$ .  |   |

First dose of manure applied at the time of last puddling (half of N as A/S. and entire P as super). Second dose viz. other half of N as A/S given on 17.8.53.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/60 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) During the last week of August, a disease peculiar to the tract known as tip-drying was noticed. This gradually disappeared by the end of September, 1953. (iii) Grain yield. (iv) (a) 1951 (*Abi* 1951-52) to 1953 (*Abi* 53-54). (b) Yes. (c) N.A. (v) (a) Govt. Main Farm, Warangal, and Agri. Res. Stn., Rudrur (Soil Res. Section). (vi) Nil. (vii) Conducted by Farm Section.

## 5. RESULTS :

- (i) 1722 lb./ac.  
(ii) 618.0 lb./ac.  
(iii) Treatments do not differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	630	10.	2142
2.	1662	11.	1752
3.	1812	12.	1812
4.	1398	13.	1422
5.	1122	14.	2244
6.	1824	15.	1992
7.	1824	16.	2364
8.	1554	17.	2136
9.	1584		

S.E./mean = 309.0 lb./ac.

Crop :- Paddy (*Abi* 1950-51).  
Site :- Agri. Res. Stn., Rudrur.

Ref :- A.P. 50(50).  
Type :- 'M'.

Object :- To find out the effect of G.M. on the yield of paddy in combination with G.N.C. and to determine how much of A/S and G.N.C. needs be cut down if green manuring is recommended as a regular practice.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Rudrur. (iii) Second week of Aug. 1950. (iv) (a) to (e) N.A. (v) Nil. (vi) H.R. 35. (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 35.10". (x) Second week of December, 1950.

2. TREATMENTS :

1. Control (no manure).
2. G M. alone (G.M. will receive 7.5 lb./ac. of  $P_2O_5$ ).
3. Treat. (2) + 15 lb./ac. of N as G.N.C. + 7.5 lb./ac. of  $P_2O_5$  as Super.
4. Treat. (2) + 30 lb./ac. of N as G.N.C. + 15 lb./ac. of  $P_2O_5$  as Super.
5. Treat. (2) + 45 lb./ac. of N as G.N.C. + 22.5 lb./ac. of  $P_2O_5$  as Super.
6. 30 lb./ac. of N as G.N.C. + 15 lb./ac. of  $P_2O_5$  as Super.

Only 6000 lb. of green manure will be applied in each treatment. Sannhemp grown elsewhere was buried at 6000 lb./ac. The first half dose of G.N.C. and Super applied at the time of transplanting. Second half dose of G.N.C. applied on 29.9.50 and that of Super applied on 21.10.50 when the crop just started flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/25 acre. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) In last week of August, a minor attack of hispa and gall-fly controlled by Gamma-xene dusting. In the last week of Sept., an unidentified disease caused immature drying of leaves from tips downwards. (iii) Grain weight. (iv) (a) 1950—contd. (b) N.A. (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) Conducted by Soil Res. Section.

5. RESULTS :

- (i) 2327 lb./ac.  
(ii) 331.0 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1775
2.	2205
3.	2445
4.	2480
5.	2720
6.	2335
S.E /mean	= 148.0 lb./ac.

Crop:- Paddy.  
Site :- Agri. Res. Stn., Rudrur

Ref :- A.P. 51(27).  
Type :- 'M'.

Object :- To find out the value of green manuring and therefore, how much one can economise on the artificials if green manuring becomes an established practice.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 14 to 16.8.51. (iv) (a) 2 ploughings, 3 puddlings and levelling. (b) Transplanted. (c)—(d) 6" x 4" (e) N.A. (v) Nil (vi) H.R. 35 (vii) Irrigated (viii) Weeding twice. (ix) 30.81" (x) 7 to 13.12.51.

2. TREATMENTS :

1. Control no (manure).
2. G.M. (*Pillipesara*) receiving 7.5 lb./ac. of  $P_2O_5$  grown *in situ*.
3. Treat. (2) + 15 lb./ac. of N + 7.5 lb./ac. of  $P_2O_5$ .
4. Treat. (2) + 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$ .
5. Treat. (2) + 45 lb./ac. of N + 22.5 lb./ac. of  $P_2O_5$ .
6. 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$ .  
 $P_2O_5$  as Super and N as G.N.C.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 46' x 19'. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Normal (ii) Severe attack of an unidentified disease in Sept. 1951 (iii) Grain yield. (iv) (a) 1950 to 1953. (b) Yes. (c) N.A. (v) (a) & (b) Nil (vi) Nil (vii) Conducted by Soil Res. Section.

5. RESULTS :

- (i) 1424 lb./ac.  
 (ii) 173.0 lb./ac.  
 (iii) Treatments differ highly significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	908
2.	1316
3.	1375
4.	1791
5.	1908
6.	1241
S.E./mean	= 70.5 lb./ac.

Crop :- Paddy.

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

Ref :- A.P. 52(29)/51(27).

Type :- 'M'.

Object :- To find out the value of green manuring and therefore, how much one can economise on the artificials if green manuring becomes an established practice.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (In *Tabi* 51-52 the plots were left fallow) (c) As under treatments (ii) (a) Black Cotton soil. (b) Refer Soil analysis, Rudrur (iii) 2,4,7.52 (iv) (a) 2 ploughings, 3 puddlings & levelling. (b) Transplanted. (c) (d) 6" x 4" (e) N.A. (v) Nil (vi) H.R. 35. (late) (vii) Irrigated (viii) Weeding once or twice. (ix) 33.11" (x) 1st December, 1952.

2. TREATMENTS :

1. No manure.
2. G.M. receiving 7.5 lb./ac. of  $P_2O_5$ .
3. Treat. (2) + 15 lb./ac. of N + 7.5 lb./ac. of  $P_2O_5$ .
4. Treat. (2) + 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$ .
5. Treat. (2) + 45 lb./ac. of N + 22.5 lb./ac. of  $P_2O_5$ .
6. 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$ .  
 $P_2O_5$  as Super and N as G.N.C. Green matter was incorporated in the soil at the rate of 6000 lb./ac. *Pillipesara* was the G.M. crop.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6 (b) N.A. (iii) 6. (iv) (a) N.A. (b) 46' x 19'. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Normal (ii) Nil (iii) Grain and straw yield. (iv) (a) 1951 to 1953. (b) Yes (c) N.A. (v) (a), (b) Nil (vi) Nil (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

- (i) 2267 lb./ac.  
 (ii) 409.5 lb./ac.  
 (iii) Treatments differ highly significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1259
2.	1475
3.	2409
4.	3567
5.	3484
6.	1909
S.E./mean	= 167.2 lb./ac.

Crop :- Paddy.

Ref :- A. P. 53 (44)/52(29) 51(27).

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

Type :- 'M'.

Object :- To find out the value of G.M. and therefore how much one can economise on the artificials if G.M. becomes an established practice.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Black Cotton soil. (b) Refer soil analysis, Rudrur. (iii) 11.7.53. (iv) (a) 2 ploughings, 3 puddlings and levelling. (b) Transplanted. (c) —. (d) 6' x 4'. (e) N.A. (v) Nil. (vi) H.R.-35 (late). (vii) Irrigated. (viii) Weeding once or twice. (ix) N.A. (x) 4.12.53.

## 2. TREATMENTS :

- No manure.
- G.M. receiving 7.5 lb./ac. of  $P_2O_5$ .
- Treatment (2)+15 lb./ac. of N+7.5 lb./ac. of  $P_2O_5$ .
- Treatment (2)+30 lb./ac. of N+15 lb./ac. of  $P_2O_5$ .
- Treatment (2)+45 lb./ac. of N+22.5 lb./ac. of  $P_2O_5$ .
- 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$ .

N as G.N.C. and  $P_2O_5$  as Super. 10,000 lb./ac. of green matter (*Phillipesara*) was incorporated in the soil in the first week of July.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 46' x 19'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1951 to 1953. (b) Yes. (c) N.A. (v) (a) Nil. (b) Nil. (vi) Nil. (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

- (i) 3150 lb./ac.  
 (ii) 5400 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1742
2.	2625
3.	3592
4.	3684
5.	4075
6.	3184
S.E./mean	= 220.0 lb./ac.

Crop :- Paddy. (Abi. 51-52)

Ref :- A.P. 51(18).

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

Type :- 'M'.

Object :- To find out the effect of G.M. in combination with G.N.C. and to determine how much of A/S and G.N.C. needs be cut down if G.M. manuring is recommended as a regular practice.

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Chalka soil (Sandy loam). (b) Refer soil analysis, Rudrur. (iii) 14.7.51. (iv) (a) to (e) N.A. (v) N.A. (vi) H.R.-35. (vii) Irrigated. (viii) Hand weeding on 28.7.51. (ix) 35.00". (x) N.A.

## 2. TREATMENTS :

1. No manure.
2. G.M. at 6000 lb./ac.
3. G.M. at 6000 lb./ac. + 15 lb./ac. of N + 7.5 lb./ac. of  $P_2O_5$ .
4. G.M. at 6000 lb./ac. + 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$ .
5. G.M. at 6000 lb./ac. + 45 lb./ac. of N + 22.5 lb./ac. of  $P_2O_5$ .
6. 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$ .

*Dhaincha* used for G.M. ; N as G.N.C. and  $P_2O_5$  as Super. G.N.C. applied at the time of transplantation and  $P_2O_5$  on 26.10.51.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 43.5' x 40'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Normal ; good especially in plots under treatments (4) and (5). (ii) N.A. (iii) Grain yield. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) Conducted by Farm Section.

## 5. RESULTS :

- (i) 1290 lb./ac.  
 (ii) 137.3 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	763
2.	1220
3.	1180
4.	1560
5.	1700
6.	1315
S.E./mean	= 61.3 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52(24).

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

Type :- 'M'.

Object :- To find out the effect of G.M. in combination with G.N.C. on the yield of Paddy and to determine how much of A/S and G.N.C. needs be cut down if G.M. is recommended as a regular practice.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) Same as treatments. (ii) (a) Mixture of both *regur* and *Chalka* (Sandy loam). (b) Refer soil analysis, Rudrur. (iii) 6.8.52. (iv) (a) 3 ploughings including one dry ploughing. Twice puddling and one levelling. (b) Transplanting. (c) —. (d) 6" x 4". (e) N.A. (v) Nil. (vi) H.R.-35. (vii) Irrigated. (viii) Weeding once. (ix) 33.11". (x) 15.12.52.

## 2. TREATMENTS :

1. No manure.
2. G.M. + 7.5 lb./ac. of  $P_2O_5$ .
3. G.M. + 15 lb./ac. of N + 7.5 lb./ac. of  $P_2O_5$ .
4. G.M. + 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$ .
5. G.M. + 45 lb./ac. of N + 22.5 lb./ac. of  $P_2O_5$ .
6. 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$ .  
 N as G.N.C. and  $P_2O_5$  as Super.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 43.5'×40'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1951 to 1952. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Farm Section.

## 5. RESULTS :

- (i) 915 lb./ac.  
 (ii) 73.60 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	700
2.	735
3.	975
4.	980
5.	1180
6.	925
S.E./mean	= 32.64 lb./ac.

Crop :- Paddy (*Abi* 1950-51).

Site :- Agri. Res. Stn, Rudrur.

Ref :- A.P. 50(49).

Type :- 'M'.

Object :- To study the feasibility of raising two G.M. crops a year i.e. one between *Tabi* and *Abi* and the other between *Abi* and *Tabi* and at the same time to determine the time of application of  $P_2O_5$  to Paddy crop.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Black Soil. (b) Refer soil analysis, Rudrur. (iii) 7 and 9.8.50.  
 (iv) (a) After applying *dhaincha*, plots puddled and levelled. (b) to (e) N.A. (v) *Dhaincha* sown on 20.5.50. Green matter at 9445 lb. ac. ploughed under + 15 lb./ac. of N as A/S : G.N.C. in  $\frac{1}{2}$  applied on 6.9.50.  
 (vi) H.R. 12. (vii) Irrigated (viii) 2 to 3 weedings. (ix) 35.10". (x) Middle of November, 1950.

## 2. TREATMENTS :

- 7.5 lb./ac. of  $P_2O_5$  in two doses ( $\frac{1}{2}$  at planting +  $\frac{1}{2}$  at flowering.)
- 7.5 lb./ac. of  $P_2O_5$  in one dose at planting.
- 7.5 lb./ac. of  $P_2O_5$  in one dose at flowering.  
 $P_2O_5$  as Super.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/70 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) About a fortnight after transplanting, moderate attack of hispa, which was controlled by gamma-xene dusting. Unidentified disease in the middle of September damaged the crops heavily by drying the leaves from tip down-wards. Borer attack was severe. (iii) Grain and straw yield. (iv) (a) 1950 (*Abi* 1950-51) to 1951 (*Tabi* 1950-51). (b) Yes. (c) N.A. (v) (a) N.A. (b) N.A. (vi) Nil. (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

- (i) 1192 lb./ac.  
 (ii) 291.7 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1299
2.	1157
3.	1120
S.E./mean	= 145.9 lb./ac.

Crop :- Paddy (*Tabi* 50-51).

Ref :- A. P. 51 (74)/50 (49).

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

Type :- 'M'.

Object :- To study the feasibility of raising two G. M. crops a year *i.e.* one between *Tabi* and *Abi* and other between *Abi* and *Tabi* and at the same time to determine the time of application of  $P_2O_5$  to Paddy crop.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black soil. (b) Refer soil analysis, Rudrur. (iii) 18.1.51. (iv) (a) to (e) N.A. (v) Green matter at 700-800 lb./ac. + 30 lb./ac. N as A/S : G.N.C. in 1 : 3. (vi) H. R. 19. (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 2.06%. (x) N.A.

## 2. TREATMENTS :

1. 15 lb./ac. of  $P_2O_5$  in two doses ( $\frac{1}{2}$  at planting +  $\frac{1}{2}$  at flowering).
2. 15 lb./ac. of  $P_2O_5$  in one dose at planting.
3. 15 lb./ac. of  $P_2O_5$  in one dose at flowering.

## Green Manure :

A week prior to the harvest of *Abi* crop, Sannhemp seed was broadcast on 6.11.50 in standing Paddy crop. Good germination but stunted in growth. It was ploughed under in the second week of January. It added only 700 to 800 lb./ac. of green matter. Hence Paddy crop was given 30 lb./ac. of N ( $\frac{2}{3}$  G.N.C. +  $\frac{1}{3}$  A/S) + 15 lb./ac. of  $P_2O_5$ , G.N.C. and Super applied at last puddling as per programme. When the crop was two months old, A/S applied. Second dose of Super as per programme applied in the first week of April.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/70. acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1950 (*Abi* 1950-51) to 1951 (*Tabi* 1950-51). (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) Nil. (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

- (i) 1890 lb./ac.
- (ii) 190.5 lb./ac.
- (iii) Treatments differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2117
2.	1874
3.	1679
S.E./mean	= 95.3 lb./ac.

Crop :- Paddy (*Abi* 1951-52).

Ref :- A. P. 51 (26).

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

Type :- 'M'.

Object :- To determine the best time of applying of N and  $P_2O_5$  to Paddy crop particularly whether a single application of entire manure in the puddle is superior to a split application.

## 1. BASAL CONDITIONS :

(i) (a) No. (b) Sugarcane. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 1 and 2.8.1951. (iv) (a) 2 ploughings, 3 puddlings and levelling. (b) Transplanted. (c)-(d) 6" x 4". (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) Weeding twice. (ix) 30.81%. (x) 8.11.51.

## 2. TREATMENTS :

All combinations of (1) and (2)

- (1) 3 times of application of N :  $T_1=45$  lb./ac. of N (*i.e.* 30 lb./ac. of N as G.N.C.+15 lb./ac. of N as A/S) at last puddle :  $T_2=30$  lb./ac. of N as G.N.C. at last puddle+15 lb./ac. of N as A/S at weeding :  $T_3=45$  lb./ac. of N at weeding.
- (2) 3 times of application of Super :  $T'_1=30$  lb./ac. of  $P_2O_5$  at last puddle,  $T'_2=15$  lb./ac. of  $P_2O_5$  at last puddle+15 lb./ac. of  $P_2O_5$  at weeding and  $T'_3=30$  lb./ac. of  $P_2O_5$  at weeding.

## 3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 46'×19'. (v) N.A. (vi) Yes.

## 4. GENERAL:

(i) Normal. (ii) Attack of an unidentified disease. (iii) Grain and straw weight. (iv) (a) 1951 (*Abi* 1951—52) to 1954 (*Tabi* 53—54). (b) Yes. (c) N.A. (v) (a) Himayatsagar. (b) N.A. (vi) Nil. (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

- (i) 1032 lb./ac.  
 (ii) 105.0 lb./ac.  
 (iii) Only main effect of 'application of N' is highly significant.  
 (iv) Av. yield of grain in lb./ac.

	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	Mean
T <sub>1</sub>	1262	1162	1075	1166
T <sub>2</sub>	1112	1112	1050	1091
T <sub>3</sub>	975	1025	962	987
Mean	1116	1100	1029	1082

S.E. of marginal mean = 30.3 lb./ac.  
 S.E. of body of table = 52.5 lb./ac.

Crop :- Paddy (*Tabi* 51-52).

Ref :- A.P. 52(26)/51(26).

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

Type :- 'M'.

Object :—To determine the best time of applying of N and P<sub>2</sub>O<sub>5</sub> to Paddy crop particularly whether a single application of entire manure in the puddle is superior to the split application.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (v) Paddy. (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 19.1.52. (v) (a) 2 ploughings, 3 puddings and levelling. (b) Broadcast. (c) 80 lb./ac (d) N.A. (e)—. (v) Nil. (vi) H.R-19. (vii) Irrigated. (viii) Weeding twice. (ix) 2.50". (x) 2nd week of May, 1952.

## 2. TREATMENTS

All combinations of (1) and (2)

- (1) 3 times of application of N : T<sub>1</sub>=45 lb./ac. of N (i.e. 30 lb /ac. of N as G.N.C.+15 lb /ac. of N as A/S) at last puddle., T<sub>2</sub>=30 lb./ac. of N as G.N.C. at last puddle+15 lb./ac. of N as A/S at weeding and T<sub>3</sub>=45 lb./ac. of N at weeding.  
 (2) 3 times of application of Super : T<sub>1</sub>=30 lb./ac. of P<sub>2</sub>O<sub>5</sub> at last puddle., T<sub>2</sub>=15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at last puddle+15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at weeding. and T<sub>3</sub>=30 lb./ac. of P<sub>2</sub>O<sub>5</sub> at weeding.

## 3. DESIGN :

(i) 3×3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 46'×19'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Slight attack of gal-fly, borer and tip-drying disease. (iii) Grain and straw yield. (iv) (a) 1951 (*Abi* 51-52; to 1954 (*Tabi* 1953-54). (b) Yes. (c) N.A. (v) (a) Himayatsagar. (b) N.A. (vi) Nil. (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

- (i) 2772 lb./ac.  
 (ii) 257.0 lb /ac.  
 (iii) None of the effects is significant.



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

	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	Mean
T' <sub>1</sub>	2975	2850	2788	2871
T' <sub>2</sub>	2888	2925	2675	2829
T' <sub>3</sub>	2663	2738	2450	2617
Mean	2842	2838	2638	2772

S.E. of marginal mean = 74.5 lb./ac.  
S.E. of body of table = 128.5 lb./ac.

Crop :- Paddy (Abi 52-53).

Ref :- A.P. 52(28)/52(26)/51(26).

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

Type :- 'M'.

Object :- To determine the best time of applying N and P<sub>2</sub>O<sub>5</sub> to Paddy crop particularly whether a single application of entire manure in the puddle is superior to the split application.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 15/16.7.52. (iv) (a) 2 ploughings, 3 puddlings and levelling. (b) Transplanted. (c) —. (d) 6" x 4". (e) N.A. (v) Nil. (vi) H.R-19(early). (vii) Irrigated. (viii) Weeding twice. (ix) 33.11". (x) 22, 23.10.52.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 times of application of N : T<sub>1</sub>=45 lb./ac. of N (i.e. 30 lb./ac. of N as G.N.C.+15 lb./ac. of N as A/S) at last puddle., T<sub>2</sub>=30 lb./ac. of N as G.N.C. at last puddle+15 lb./ac. of N as A/S at weeding., and T<sub>3</sub>=45 lb./ac. of N at weeding.

(2) 3 times of application of Super : T'<sub>1</sub>=30 lb./ac. of P<sub>2</sub>O<sub>5</sub> at last puddle., T'<sub>2</sub>=15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at puddle+15 lb./ac. of P<sub>2</sub>O<sub>5</sub> at weeding and T'<sub>3</sub>=30 lb./ac. of P<sub>2</sub>O<sub>5</sub> at weeding.

## 3. DESIGN :

(i) 3 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 46' x 19'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1951 (Abi 1951-52) to 1954 (Tabi 1953-54) (b) Yes. (c) N.A. (v) (a) Himayatsagar. (b) N.A. (vi) Nil. (vii) Nil.

## 5. RESULTS :

(i) 3034 lb./ac.  
(ii) 342.5 lb./ac.  
(iii) Main effects of T, T' are highly significant. Interaction T x T' is not significant.  
(iv) Av. yield of grain in lb./ac.

	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	Mean
T' <sub>1</sub>	3750	2663	2763	3059
T' <sub>2</sub>	3563	3488	3013	3355
T' <sub>3</sub>	2975	2725	2363	2688
Mean	3429	2959	2713	3034

S.E. of marginal mean = 98.9 lb./ac.  
S.E. of body of table = 171.2 lb./ac.

Crop :- Paddy (*Tabi* 1952-53).

Ref :- A.P. 53(42)/52(26, 28)/51(26).

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

Type :- 'M'.

Object :- To determine the best time of applying N and  $P_2O_5$  to Paddy crop particularly whether a single application of the entire manure in puddle is superior to the split application.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 9.1.53. (iv) (a) 2 ploughings, 3 puddlings and levelling. (b) Broadcast. (c) 80 lb./ac. (d) N.A. (e) -- (v) Nil (vi) H.R.-19. (vii) Irrigated. (viii) Weeding twice. (ix) 1.30°. (x) 1st week of May, 1953.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 times of application of N :  $T_1=45$  lb./ac. of N (*i.e.* 30 lb./ac. of N as G.N.C. + 15 lb./ac. of N as A/S) at last puddle.,  $T_2=30$  lb./ac. of N as G.N.C. at last puddle + 15 lb./ac. of N as A/S at weeding.  $T_3=45$  lb./ac. of N at weeding.

(2) 3 times of application of Super :  $T'_1=30$  lb./ac. of  $P_2O_5$  at last puddle,  $T'_2=15$  lb./ac. of  $P_2O_5$  at last puddle + 15 lb./ac. of  $P_2O_5$  at weeding. and  $T'_3=30$  lb./ac. of  $P_2O_5$  at weeding.

## 3. DESIGN :

(i)  $3 \times 3$  Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) N.A. (b)  $46' \times 19'$ . (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Severe attack of tip-drying disease and stemborer. (iii) Grain and straw yield. (iv) (a) 1951 (*Abi* 1951-52) to 1954 (*Tabi* 1953-54). (b) Yes. (c) N.A. (v) (a) Himayatsagar. (b) N.A. (vi) Nil. (vii) Conducted by Soil Res. Section.

## 5. RESULTS :

(i) 1446 lb./ac.

(ii) 168.5 lb./ac.

(iii) Only main effect of 'application of N' is significant.

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

	$T_1$	$T_2$	$T_3$	Mean
$T'_1$	1200	1550	1575	1442
$T'_2$	1263	1650	1475	1463
$T'_3$	1325	1538	1438	1434
Mean	1263	1579	1496	1446

S.E. of marginal mean = 48.8 lb./ac.

S.E. of body of table = 84.2 lb./ac.

Crop :- Paddy (*Abi* 1953-54).

Ref :- A.P. 53(43)/53(42)/52(26, 28) 51 26).

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

Type :- 'M'.

Object :- To determine the best time of applying of N and  $P_2O_5$  to Paddy crop particularly whether a single application of the entire manure in puddle is superior to the split application.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 29.7. 3. (iv) a) 2 ploughings, 3 puddlings and levelling. (b) Transplanted. (c) --. (d)  $6'' \times 4''$ . (e) N.A. (v) Nil. (vi) H.R. 19 (early). (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 28 and 31.10.53.

**TREATMENTS:**

- All combinations of (1) and (2)
- (1) 3 times of application of N :  $T_1=45$  lb./ac. of N (*i.e.* 30 lb./ac. of N as G.N.C. + 15 lb./ac. of N as A/S) at last puddle,  $T_2=30$  lb./ac. of N as G.N.C. at last puddle + 15 lb./ac. of N as A/S at weeding, and  $T_3=45$  lb./ac. of N at weeding.
- (2) 3 times of application of Super :  $T'_1=30$  lb./ac. of  $P_2O_5$  at last puddle,  $T'_2=15$  lb./ac. of  $P_2O_5$  at last puddle + 15 lb./ac. of  $P_2O_5$  at weeding, and  $T'_3=30$  lb./ac. of  $P_2O_5$  at weeding.

**3. DESIGN:**

- (i)  $3 \times 3$  Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) N.A. (b)  $46' \times 19'$ . (v) N.A. (vi) Yes.

**4. GENERAL :**

- (i) Due to heavy rains in Sept. and Oct. 1953 the crop lodged in most of the plots. (ii) Mild attack of gall-fly and tip-drying disease in August, 1953. (iii) Grain and straw yield. (iv) (a) 1951 (*Abi* 1951-52) to 1954 (*Tabi* 1953-54). (b) Yes. (c) N.A. (v) (a) Himayatsagar. (b) N.A. (vi) Nil. (vii) Conducted by Soil Res. Section.

**5. RESULTS :**

- (i) 2527 lb./ac.  
 (ii) 236.0 lb./ac.  
 (iii) Main effects of T, T' are significant. Interaction  $T \times T'$  is not significant.  
 (iv) Av. yield of grain in lb./ac.

	$T_1$	$T_2$	$T_3$	Mean
$T'_1$	2938	2638	2325	2634
$T'_2$	3340	2750	2538	2709
$T'_3$	2375	2075	2263	2238
Mean	2717	2488	2375	2527

S.E. of marginal mean = 68.2 lb./ac.  
 S.E. of body of table = 118.0 lb./ac.

Crop :- Paddy (*Abi* 1952-53).

Ref :- A.P. 52(68).

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

Type :- 'M'.

Object :- To determine the best method and optimum depth of manuring.

**1. BASAL CONDITIONS :**

- (i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red sandy loam. (b) Refer soil analysis, Rudrur. (iii) 19.6.52. (iv) (a) Two puddlings and levelling. (b) to (e) N.A. (v) Nil. (vi) H.R.19 (medium duration). (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 33.11". (x) 25.10.52.

**2. TREATMENTS :**

- No manure.
  - 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$  broadcasting manure in dry field and then puddling.
  - 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$  at last puddling incorporated thoroughly.
  - (15 lb./ac. of N + 7.5 lb./ac. of  $P_2O_5$ ) at last puddling and an equal dose as top dressing.
  - (15 lb./ac. of N + 7.5 lb./ac. of  $P_2O_5$ ) broadcast and ploughed dry as in treat. (2) and an equal dose made into balls with mud and placed at the roots of 10% of the plants at the time of weeding.
  - 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$  made into slush and applied at the roots of plants before transplanting.
- N as A/S,  $P_2O_5$  as Super.

## 3. DESIGN

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/50 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) No appreciable difference noticed in the stand of the crop. (ii) Nil. (iii) Grain yield. (iv) (a) 1952 (*Tabi* 1951-52) to 1952 (*Abi* 1952-53). (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1086 lb./ac.  
 (ii) 152.0 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Ay. yield
1.	905
2.	1070
3.	1120
4.	1115
5.	1160
6.	1145
S.E./mean	= 62.1 lb./ac.

Crop :- Paddy (*Tabi* 1952-53).

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

Ref :- A. P. 53 (36).

Type :- 'M'.

Object :—To study the effect of C/N on Paddy in increasing the yield and to study its deleterious effects on soil.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Pilli-pesara* and Mung. (c) Nil. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 10.2.53. (iv) (a) 3 ploughings including one dry ploughing, puddlings twice and levelling once. (b) Broadcast. (c) 80 lb./ac. (d) N.A. (e) —. (v) Nil. (vi) H.R. 19 (early). (vii) Irrigated. (viii) Weeding on 14.3.53. (ix) 63.07" annual rainfall. (x) 30.5.57.

## 2. TREATMENTS :

- Control (no manure).
  - A S at 20 lb./ac. of N+15 lb./ac. of  $P_2O_5$  as Super.
  - Amm. Chloride at 20 lb./ac. of N+15 lb./ac. of  $P_2O_5$  as Super.
  - C N at 20 lb./ac. of N+15 lb./ac. of  $P_2O_5$  as Super.
  - A S at 40 lb./ac. of N+30 lb./ac. of  $P_2O_5$  as Super.
  - Amm. Chloride at 40 lb./ac. of N+30 lb./ac. of  $P_2O_5$  as Super.
  - C/N at 40 lb./ac. of N+30 lb./ac. of  $P_2O_5$  as Super.
- Manures applied on 10.2.53.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 64' x 12'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953 (*Tabi* 1952-53) —N.A. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Conducted by Farm Section.

## 5. RESULTS :

- (i) 712 lb./ac.  
 (ii) 33.6 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	429
2.	824
3.	706
4.	624
5.	941
6.	765
7.	694
S.E./mean	= 13.7 lb./ac.

Crop :- Paddy (Abi 1953-54).  
Site :- Agri. Res. Stn., Rudrur.

Ref :- A. P. 53 (12)/53 (36).  
Type :- 'M'.

Object :- To study the effect of C/N on Paddy in increasing the yield and to study its deleterious effects on soil.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Black Cotton soil (Regur soil). (b) Refer soil analysis, Rudrur. (iii) 24.7.53. (iv) (a) to (e) N.A. (v) N.A. (vi) H.R. 19. (vii) N.A. (viii) Weeding on 17.8.53. (ix) 63.07 (annual rainfall) (x) 29.10.53.

2. TREATMENTS :

1. No manure
  2. 20 lb./ac. of N as A/S+15 lb./ac. of  $P_2O_5$  as Super.
  3. 20 lb./ac. of N as Amm. Chloride+15 lb./ac. of  $P_2O_5$  as Super.
  4. 20 lb./ac. of N as C/N+15 lb./ac. of  $P_2O_5$  as Super.
  5. 40 lb./ac. of N as A/S+30 lb./ac. of  $P_2O_5$  as Super.
  6. 40 lb./ac. of N as Amm. Chloride+30 lb./ac. of  $P_2O_5$  as Super.
  7. 40 lb./ac. of N as C/N+30 lb./ac. of  $P_2O_5$  as Super.
- First dose of manure applied before transplanting and second dose on 17.8.1953.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 66' x 12'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good growth except in plots where C/N was applied. Due to rains the plots receiving A/S were lodged in September. (ii) A sort of peculiar disease known as Tip-blades-drying disease making the tips of the leaf brown was noticed, till the end of Sept. 1951, which gradually disappeared as the season advanced. (iii) Grain weight. (iv) (a) 1953—N.A. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Farm Section.

5. RESULTS :

- (i) 2147 lb./ac.  
(ii) 332.8 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatments	Av. yield
1.	503
2.	2083
3.	2333
4.	1568
5.	3236
6.	2956
7.	2359
S.E./mean	= 135.8 lb./ac.

Crop :- Paddy (Second crop of 48-49).  
Site :- Agri. Res. Stn., Samalkot.

Ref :- A.P. 48 (41).  
Type :- 'M'.

Object :- To compare ultraphosphate with Super for giving high yields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 20.12.1948/22.2.1949. (iv) (a) 2 or 3 ploughings. (b) Transplanting. (c) —. (d) N.A. (e) N.A. (v) Nil. (vi) SLO-12. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 3.72". (x) 13.5.1949.

2. TREATMENTS :

All combinations of (1) and (2) + a Control (no manure)

(1) 2 levels of N :  $N_0=0$ ,  $N_1=30$  lb./ac.

(2) 2 sources of  $P_2O_5$  :  $S_1=$ Super at 30 lb./ac. of  $P_2O_5$ ,  $S_2=$ Ultra phosphate at 30 lb./ac. of  $P_2O_5$ .

**3. DESIGN :**

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 22'×15'. (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Not satisfactory due to shortage of water. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1949. (b) N.A. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Neither the raw data nor the analysis sheets is available at the Research Station. Hence only the table of means is supplied.

**5. RESULTS :**

(i) 1856 lb./ac.

(ii) N.A.

(iii) N.A.

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

	Control	= 1757 lb./ac.		
		N <sub>0</sub>	N <sub>1</sub>	Mean
S <sub>1</sub>		1757	1925	1841
S <sub>2</sub>		1777	2065	1921
Mean		1767	1995	

Crop :- Paddy.

Ref :- A.P. 49(13).

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

Type :- 'M'.

Object :- To determine the relative merits of ultraphosphate and super in giving high yield.

**1. BASAL CONDITIONS :**

(i) (a) Paddy-Gram. Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 13.5.49/5.7.49. (iv) (a) 2 ploughings. (b) Transplanting. (c) —. (d) Bulk planting. (e) N.A. (v) G.L. at 5000 lb./ac. applied one week before planting. (vi) SLO-13. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 20.11.49.

**2. TREATMENTS**

All combinations of (1) and (2) + a Control (no manure).

(1) 2 sources of P<sub>2</sub>O<sub>5</sub> : S<sub>1</sub>=Super and S<sub>2</sub>=Ultraphosphate.

(2) 2 levels of P<sub>2</sub>O<sub>5</sub> : P<sub>1</sub>=30 and P<sub>2</sub>=45 lb./ac. P<sub>2</sub>O<sub>5</sub> applied at the time of planting.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 26.4'×23.1'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Moderate growth. (ii) Yellowing of leaf blades noticed. (iii) Grain weight, tiller counts and plant height. (iv) (a) 1948 to 1949. (b) N.A. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Nil.

**5. RESULTS :**

(i) 3706 lb./ac.

(ii) 323.3 lb./ac.

(iii) None of the effects is significant.

Av. yield of grain in lb./ac.

Control = 3707 lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	Mean
P <sub>1</sub>	3760	3618	3689
P <sub>2</sub>	3725	3719	3722
Mean	3743	3669	3706

S.E. of the marginal mean = 93.3 lb./ac.  
 S.E. of body of table = 132.0 lb./ac.

Crop :- Paddy (2nd crop of 49-50).

Ref :- A.P. 49(47).

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

Type :- 'M.'

Object :—To compare ultraphosphate with super in giving high yields.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 24.12.49/ 17.2.50. (iv) (a) 2 ploughings. (b) Transplanted. (c)—. (d) Bulk planting. (e) N.A. (v) G.L. at 5000 lb./ac. applied one week before planting. (vi) SLO-12 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 18.97". (x) 11.5.50.

## 2. TREATMENTS :

All combinations of (1) and (2)+a Control (no manure).

(1) 2 sources of P<sub>2</sub>O<sub>5</sub> : S<sub>1</sub>=Super and S<sub>2</sub>=Ultraphosphate.(2) 2 levels of P<sub>2</sub>O<sub>5</sub> : P<sub>1</sub>=30 and P<sub>2</sub>=45 lb./ac. P<sub>2</sub>O<sub>5</sub> applied at the time of planting.

## DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b) 19.8' × 23.1'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain weight and tiller counts. (iv) (a) 1948 (2nd crop of 1948—49) to 1949 (2nd crop of 1949—50). (b) N.A. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Neither the raw data, nor the analysis sheets are available at the Research Station. Hence only the table of means is supplied.

## 5. RESULTS :

(i) 2158 lb./ac.

(ii) N.A.

(iii) N.A.

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

	Control = 2066 lb./ac.		Mean
	S <sub>1</sub>	S <sub>2</sub>	
P <sub>1</sub>	2122	2111	2116
P <sub>2</sub>	2262	2231	2247
Mean	2192	2171	2181

Crop :- (2nd crop of 48-49).

Ref :- A.P. 48(42).

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

Type :- 'M'.

Object :- To compare night soil compost with C.M. for giving high yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 19.12.48./12.2.49. (iv) (a) 2 or 3 ploughings. (b) Transplanted. (c)—. (d) N.A. (e) N.A. (v) Nil. (vi) SLO-12. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 3.72%. (x) 11.5.49.

2. TREATMENTS :

1. C.M. at 60 lb./ac. of N.
  2. Night soil compost at 60 lb./ac. of N.
  3. Control (no manure).
- Manures incorporated into the soil before planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 26' × 24'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Not satisfactory due to shortage of water. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1949. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

- (i) 1633 lb./ac.  
 (ii) N.A.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1728
2.	1618
3.	1554
S.E./mean	=N.A.

Crop :- Paddy.

Ref :- A.P. 49(12)'48(42).

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

Type :- 'M'.

Object :- To determine the comparative merits of F.Y.M. and night soil compost in giving high yield.

1. BASAL CONDITIONS :

(i) (a) Paddy-Gram. (b) Paddy. (c) N.A. (ii) (a) Heavy alluvial. (b) Refer soil analysis, Samalkot. (iii) 13.5.49./5.7.49. (iv) (a) 2 ploughings. (b) Transplanted. (c)—. (d) Bulk planting (e) N.A. (v) Nil. (vi) SLO-'3. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 24.11.49.

2. TREATMENTS :

1. F.Y.M. at 60 lb./ac. of N.
  2. Night soil compost at 60 lb./ac. of N.
  3. No manure.
- Manure applied before planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 33' × 26.4'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield, tiller counts and height of plants. (iv) (a) 1948 to 1949. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

- (i) 2160 lb./ac.  
 (ii) 193.0 lb./ac.  
 (iii) Treatments do not differ significantly.



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

Treatment	Av. yield
1.	2134
2.	2084
3.	2263
S.E./mean	= 78.8 lb./ac.

Crop :-Paddy (2nd crop).

Ref :-A.P. 49(48)/49(12)/48(42).

State :-Agri. Res. Stn., Samalkot.

Type :-'M'.

Object :—To compare C.M. and Night-soil-compost for giving high yields.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 24.12.49/20.2.50. (iv) (a) 2 ploughings. (b) Transplanted. (c) —. (d) Bulk planting. (e) N.A. (v) Nil. (vi) SLO-12. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 18.97". (x) 12.5.50.

## 2. TREATMENTS :

1. F.Y.M. at 60 lb /ac. of N.
  2. Night-soil-compost at 60 lb./ac. of N.
  3. No manure.
- Manure applied before planting and puddled in.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 33'×26.4'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1948 (2nd crop of 1948—1949) to 1949 (2nd crop 1949—1950) (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

- (i) 2175 lb./ac.  
(ii) N.A.  
(iii) Treatments do not differ significantly.  
(iv) Av. yield of grain in lb./ac.
- | Treatment | Av. yield |
|-----------|-----------|
| 1.        | 2181      |
| 2.        | 2323      |
| 3.        | 2021      |
| S.E./mean | = N.A.    |

Crop :-Paddy (2nd crop).

Ref :-A.P. 48(43).

Site :-Agri Res. Stn., Samalkot.

Type :-'M'.

Object :—To find out the relative manurial value of A/N compared to A/S.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy bulk. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 24.2.48. (iv) (a) 2 or 3 ploughings. (b) Transplanting. (c) —. (d) 4"×4". (e) 2. (v) 2000 lb./ac. of G.L. in puddle. (vi) N.A. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 2.54". (x) 23.5.48.

## 2. TREATMENTS :

All combinations of (1) and (2)+a control (no manure).

- (1) 2 sources of N :  $S_1=A/S$  and  $S_2=Ammonium Nitrate$ .  
(2) 4 levels of N :  $N_1=15$ ,  $N_2=30$ ,  $N_3=45$  and  $N_4=60$  lb./ac.  
Other details N.A.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 31'×21'. (b) 30½'×20½'. (v) One row round. (vi) Yes.

## 4. GENERAL :

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

## 5. RESULTS :

- (i) 1604 lb./ac.  
 (ii) 205.0 lb./ac.  
 (iii) Main effect of N alone is significant.  
 (iv) Av. yield of grain in lb./ac.

Control = 1604 lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	Mean
N <sub>1</sub>	1655	1697	1676
N <sub>2</sub>	1949	1670	1809
N <sub>3</sub>	1959	1874	1917
N <sub>4</sub>	1901	1930	1916
Mean	1866	1793	1829

S.E. of marginal mean of S = 51.5 lb./ac.  
 S.E. of marginal mean of N = 72.8 lb./ac.  
 S.E. of body of table = 103.0 lb./ac.

Crop :- Paddy (2nd Crop of 1947-48)

Ref :- A.P. 48(45)

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

Type :- 'M'.

Object :- To study the effect of graded doses of phosphatic manures on hastening maturity of second crop paddy varieties.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy bulk. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 15.2.48 (iv) (a) 2 to 3 ploughings. (b) Transplanted. (c) - (d) 6'×4' (e) 2. (v) 320 lb./ac. of G.N.C. applied in puddle before planting. (vi) SLO-2 (vii) Irrigated. (viii) 2 or 3 weedings (ix) 2.54' (x) 19.5.48.

## 2. TREATMENTS :

All combinations of (1) & (2).

- (1) 4 levels of P<sub>2</sub>O<sub>5</sub> : P<sub>1</sub>=30, P<sub>2</sub>=50, P<sub>3</sub>=60 and P<sub>4</sub>=70 lb./ac.  
 (2) sources of P<sub>2</sub>O<sub>5</sub> : S<sub>1</sub>=Super and S<sub>2</sub>=B.M.  
 Applied in puddle before planting.

## 3. DESIGN :

(i) 4×2 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) 19'×11'. (b) 18'×10'. (v) One row around (vi) Yes.

## 4. GENERAL

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1947—N.A. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) Nil. (vii) Results are presented as given in the annual report. Raw data is not available at the Research Station. Hence it is not possible to give the results in two-way table.

## 5. RESULTS :

- (i) 3417 lb./ac.  
 (ii) 288.0 lb./ac.  
 (iii) Levels and sources effects are not significant. Significance of interaction is not available.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. Yield.
P <sub>1</sub>	3372
P <sub>2</sub>	3323
P <sub>3</sub>	3437
P <sub>4</sub>	3536
S.E./mean	= 83.1
S <sub>1</sub>	3391
S <sub>2</sub>	3442
S.E./mean	= 58.7

Crop :- Paddy. (2nd crop of 1947-48)

Ref :- A.P. 48(58).

Site :- Agri. Res Stn., Samalkot.

Type :- 'M'.

Object :- To study the effect of graded doses of phosphatic manures on hastening maturity of second crop paddy varieties.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) N.A. (ii) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 15.2.48.  
 (iv) (a) 2 or 3 ploughings. (b) Transplanted. (c) —. (d) 6" × 6" (e) 2. (v) 320 lb./ac. of G.N.C. applied in before planting. (vi) SLO-16 (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 2.54" (x) 19.5.48.

## 2. TREATMENTS :

- All combinations of (1) and (2).  
 (1) 4 levels of P<sub>2</sub>O<sub>5</sub> :- P<sub>1</sub>=30, P<sub>2</sub>=50, P<sub>3</sub>=60 and P<sub>4</sub>=70 lb./ac.  
 (2) 2 sources of P<sub>2</sub>O<sub>5</sub> :- S<sub>1</sub>=Super and S<sub>2</sub>=B.M.  
 Manures applied in puddle before planting.

## 3. DESIGN :

- (i) 4 × 2 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (a) 19' × 11' (b) 18' × 10'. (v) One row around the net plot.  
 (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain and straw yield (iv) (a) No. (b) No. (c) Nil. (v) (a), (b) N.A. (vi) Nil.  
 (vii) Raw data, experimental files etc. N.A.

## 5. RESULTS :

- (i) 2623 lb./ac.  
 (ii) N.A.  
 (iii) N.A.  
 (vi) Av. yield of grain in lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	Mean
P <sub>1</sub>	2589	2739	2664
P <sub>2</sub>	2676	2482	2579
P <sub>3</sub>	2710	2587	2649
P <sub>4</sub>	2586	2659	2623
Mean	2640	2616	2628

**Crop :- Paddy.**

**Ref :- A.P. 49(17).**

**Site :- Agri. Res. Stn., Samalkot.**

**Type :- 'M'.**

**Object :-**To compare the effect on the yield of Super and B.M. as sources of  $P_2O_5$ . (Test 1).

**1. BASAL CONDITIONS :**

- (i) (a) Paddy—Gram. (b) Gram. (c) Nil. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 13.5.49/29.6.49. (iv) (a) 2 ploughings. (b) Transplanting. (c) —. (d) N.A. (e) N.A. (v) Nil. (vi) SLO-2 (late). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 16.11.49.

**2. TREATMENTS :**

1. No manure.
  2. Super at 30 lb./ac. of  $P_2O_5$ .
  3. B.M. at 30 lb./ac. of  $P_2O_5$ .
- Manures applied at planting time.

**3. DESIGN :**

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 29' × 15.8'. (v) Nil. (vi) Yes.

**4. GENERAL**

- (i) Satisfactory. (ii) Nil. (iii) Grain weight, tiller counts and plant height. (iv) (a) N.A. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 2827 lb./ac.  
 (ii) 124.0 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb. ac.

Treatment	Av. yield
1.	2688
2.	2948
3.	2844
S.E./mean	= 50.6 lb./ac.

**Crop :-Paddy.**

**Ref :-A.P. 49(16).**

**Site :- Agri. Res. Stn., Samalkot.**

**Type :-'M'.**

**Object :-**To compare the effect on the yield of Super and B.M. as sources of  $P_2O_5$ . (Test 2).

**1. BASAL CONDITIONS :**

- (i) (i) Paddy—Gram. (b) Gram. (c) As per treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 13.5.49/30.6.49. (iv) (a) 2 ploughings. (b) Transplanted. (c)—. (d) Bulk planting. (e) N.A. (v) Nil. (vi) SLO-2 (late). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 16.11.48.

**2. TREATMENTS :**

1. No manure.
  2. 30 lb./ac. of  $P_2O_5$  as Super.
  3. 30 lb./ac. of  $P_2O_5$  as B.M.
- Manure applied at planting time.

**3. DESIGN:**

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 29' × 15.8'. (v) Nil. (vi) Yes.

**4. GENERAL:**

- (i) Satisfactory. (ii) Nil. (iii) Grain weight, tiller counts and plant height. (iv) (a) N.A. (b) Yes. (c) N.A. (v) (a, b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2840 lb./ac.  
 (ii) 185.6 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2865
2.	2763
3.	2891
S.E./mean	= 75.7 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52(78).

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

Type :- 'M'.

Object :- To determine the economic doses of N and  $P_2O_5$  for Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) 3000 lb./ac. of G.L. + 100 lb./ac. of  $P_2O_5$  as Super and 100 lb./ac. of A/S. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 30.5.52./4.8.52. (iv) (a) 3 ploughings and levelling. (b) Transplanted. (c) —. (d) 6" x 6". (e) 2. (v) Nil. (vi) SLO-13 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 28.11.52.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N :  $N_0=0$ ,  $N_1=30$ ,  $N_2=45$  and  $N_3=60$  lb./ac.(2) 4 levels of  $P_2O_5$  :  $P_0=0$ ,  $P_1=30$ ,  $P_2=45$  and  $P_3=60$  lb./ac.N as A/S applied on 27.8.52 and  $P_2O_5$  as Super applied before transplanting.

## 3. DESIGN :

- (i) 4 x 4 Fact. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 11.9' x 21.8'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain weight and tiller counts. (iv) (a) 1952 to 1956. (b) Yes. (c) Nil. (v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3832 lb./ac.  
 (ii) 368.9 lb./ac.  
 (iii) Main effect of N alone is significant.  
 (iv) Av. yield of grain in lb./ac.

	$P_0$	$P_1$	$P_2$	$P_3$	Mean
$N_0$	3364	3498	3646	3693	3551
$N_1$	3836	3996	3956	4243	4008
$N_2$	3935	4093	3996	3788	3953
$N_3$	3628	3888	3907	3838	3815
Mean	3691	3869	3876	3891	3832

S.E. of marginal mean = 92.0 lb./ac.

S.E. of body of table = 184.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 53(4)/52(78).

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

Type :- 'M'.

Object :- To determine the economic dose of N and  $P_2O_5$  for Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Heavy alluvial clays. (b) Refer soil analysis, Samalkot. (iii) 23.6.53/28.7.53. (iv) (a) 3 ploughings. (b) Transplanted. (c) —. (d) 6' × 6'. (e) N.A. (v) Nil. (vi) SLO-13. (vii) Irrigated. (viii) 2 weedings. (ix) 25.7". (x) 20.11.53.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N :  $N_0=0$ ,  $N_1=30$ ,  $N_2=45$  and  $N_3=60$  lb./ac.(2) 4 levels of  $P_2O_5$  :  $P_0=0$ ,  $P_1=30$ ,  $P_2=45$  and  $P_3=60$  lb./ac.N as A/S,  $P_2O_5$  as Super.

## 3. DESIGN :

(i) 4 × 4 Fact. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) and (b) 15.8' × 25.1'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Very mild attack of stem-borer. (iii) Grain and straw yield. (iv) (a) 1952—contd. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 2280 lb./ac.

(ii) 229.6 lb./ac.

(iii) Only N effect is highly significant. P effect and interaction NP are not significant.

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

	$P_0$	$P_1$	$P_2$	$P_3$	Mean
$N_0$	2628	2918	2650	2897	2773
$N_1$	2363	2375	2511	2557	2451
$N_2$	2100	1928	1915	2004	1986
$N_3$	1875	1926	1970	1868	1909
Mean	2241	2286	2261	2331	2280

S.E. of any marginal mean = 57.3 lb./ac.

S.E. of body of table = 114.7 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52 (79).

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

Type :- 'M'.

Object :- To find out best method of application of P manures to Paddy to obtain high yield.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 4000 lb./ac. of G.L. 100 lb./ac. of Super and 100 lb./ac. of A/S. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 30.5.1952/26.7.1952. (iv) (a) 3 ploughings. (b) Transplanted. (c) —. (d) Bulk planting in lines 8' apart. (e) N.A. (v) Nil. (vi) SLO—13 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 28.11.1952.

## 2. TREATMENTS :

1. No manure.

2. G.M. grown in *situ* without  $P_2O_5$  (8725 lb./ac. of Pillipersara).3. G.M. grown with 45 lb./ac. of  $P_2O_5$  as Super before sowing.4. G.M. in *situ* without  $P_2O_5$  (11,150 lb./ac.) + 45 lb./ac. of  $P_2O_5$  as Super to paddy direct before planting. Pillipersara sown on 7.5.1952. For treatment (4),  $P_2O_5$  applied on 18.7.1952.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 8. (iv) (a) N.A. (b) 12.5' × 25.1'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield and tiller counts. (iv) (a) 1952 to 1956. (b) No. (c) Nil.  
(v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3424 lb./ac.  
(ii) 268.1 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3056
2.	3424
3.	3597
4.	3617
S.E./mean	= 94.8 lb./ac.

Crop :- Paddy.

Ref :- A.P. 53 (54).

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

Type :- 'M'.

Object :- To study the effect of application of  $P_2O_5$  along with G.M. to Paddy crop direct and through a preceding crop of G.M.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) As under treatments. (c) As under treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 23.6.1953/30.7.1953. (iv) (a) 3 ploughings. (b) Transplanting. (c) —. (d) 6" x 6". (e) N.A. (v) Nil. (vi) SLO—13. (vii) Irrigated. (viii) 2 weedings. (ix) 25.7". (x) 21.11.53.

## 2. TREATMENTS :

- No manure.
  - 45 lb./ac. of  $P_2O_5$  to Pillipesara grown *in situ*.
  - Pillipesara *in situ* + 45 lb./ac.  $P_2O_5$  to paddy at planting.
  - Pillipesara *in situ* only.
  - 45 lb./ac. of  $P_2O_5$  to sesbania grown *in situ*.
  - Sesbania grown *in situ* + 45 lb./ac. of  $P_2O_5$  to paddy at planting.
  - Sesbania alone *in situ*.
  - 45 lb./ac. of  $P_2O_5$  to indigo grown *in situ*.
  - Indigo grown *in situ* + 45 lb./ac. of  $P_2O_5$  to paddy at planting.
  - Indigo *in situ* only.
- Other details N.A.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a), (b) 17' x 42½'. (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—contd. (b) N.A. (c) N.A.  
(v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2799 lb./ac.  
(ii) 272.5 lb./ac.  
(iii) Treatments do not differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2866
2.	2634
3.	2483
4.	2506
5.	2737
6.	2861
7.	2931
8.	2905
9.	3021
10.	3047
S.E./mean	= 136.2 lb./ac.

Crop :- Paddy (Double Crop Land).

Ref :- A.P. 53(55).

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

Type :- 'M'.

Object :- To study the effect of application of  $P_2O_5$  along with G.M. to Paddy crop direct and through a preceding crop of G.M.

## 1. BASAL CONDITIONS

(i) (a) Nil. (b) Paddy, green manure crops as under treatments. (c) As under treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 6.6.53/7.7.53. (iv) (a) 3 ploughings. (b) Transplanting. (c) —. (d) 6" × 6". (e) N.A. (v) Nil. (vi) SLO-13. (vii) Irrigated. (viii) 2 weedings. (ix) 25.7". (x) 22.11.53.

## 2. TREATMENTS :

1. No manure.
2. 45 lb./ac. of  $P_2O_5$  to sunnhemp sown in *situ*.
3. Sunnhemp in *situ* + 45 lb./ac. of  $P_2O_5$  to paddy at planting.
4. Sunnhemp in *situ* only.
5. 45 lb./ac. of  $P_2O_5$  to *dhaincha* in *situ*.
6. *Dhaincha* in *situ* + 45 lb./ac. of  $P_2O_5$  to paddy at planting.
7. *Dhaincha* in *situ* only.  
 $P_2O_5$  as Super.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) and (b) 17' × 42½'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—contd. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) N.A.

## 5. RESULTS :

- (i) 3607 lb./ac.  
(ii) 102.7 lb./ac.  
(iii) Treatments differ highly significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3349
2.	3651
3.	3651
4.	3668
5.	3583
6.	3620
7.	3720
S.E./mean	= 51.4 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52(80).

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

Type :- 'M'.

Object :- To determine the organic matter requirements of the soil in the form of C.M., G.M. and compost.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 4000 lb./ac. of G.L. + 100 lb./ac. of Super and 100 lb./ac. of A/S. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 30.5.52/26.7.52. (iv) (a) 3 ploughings. (b) Transplanted. (c) —. (d) Bulk planting. (e) N.A. (v) 45 lb./ac. of N as A/S and 60 lb./ac. of  $P_2O_5$  as Super. Super applied before planting and trampled in. A/S applied on 26.8.52. (vi) SLO-13 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 26.11.52.



**TREATMENTS :**

All combinations of (1) and (2) + a control (no manure).

(1) 3 sources of organic matter :  $S_1$ =F.Y.M.,  $S_2$ =compost and  $S_3$ =G.L.

(2) 3 levels of organic matter :  $L_1$ =2500,  $L_2$ =5000 and  $L_3$ =7500 lb./ac.

Compost and G.L. applied in terms of equivalent organic matter of F.Y.M. Manures applied a month before planting and ploughed in.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) 33' x 13.2'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Grain yield and tiller count. (iv) (a) 1952 to 1954. (b) Yes. (c) Nil. (v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

**5. RESULTS :**

(i) 3437 lb./ac.

(ii) 296.0 lb./ac.

(iii) None of the effects is significant.

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

Control=3502 lb./ac.

	$L_1$	$L_2$	$L_3$	Mean
$S_1$	3297	3430	3447	3391
$S_2$	3483	3335	3508	3442
$S_3$	3720	3385	3268	3458
Mean	3500	3383	3408	3430

S.E. of marginal mean = 85.0 lb./ac.

≈ S.E. of body of table = 148.0 lb./ac.

Crop :- Paddy.

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

Ref :- A.P. 53(56)/52(80).

Type :- 'M'.

Object :- To determine the organic matter requirements of the soil in the form of C.M., G.M. and compost.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 23.6.53/27.7.53. (iv) (a) 3 ploughings. (b) Transplanted. (c) —. (d) 6" x 6". (e) N.A. (v) Nil. (vi) SLO-13. (vii) Irrigated. (viii) 2 weedings. (ix) 25.7%. (x) 19.11.53.

**2. TREATMENTS :**

All combinations of (1) and (2) + a control (no manure).

(1) 3 sources of organic matter :  $S_1$ =C.M.,  $S_2$ =Vegetable compost and  $S_3$ =G.L.

(2) 3 levels of organic matter :  $L_1$ =2500,  $L_2$ =5000 and  $L_3$ =7500 lb./ac.

Compost and G.L. applied in terms of equivalent organic matter of C.M.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) 13.2' x 33'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—contd. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

**5. RESULTS :**

(i) 2753 lb./ac.

(ii) 152.1 lb./ac.

(iii) None of the effects is significant.

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

Control = 2614 lb./ac.

	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	Mean
S <sub>1</sub>	2656	2783	2786	2742
S <sub>2</sub>	2967	2836	2684	2829
S <sub>3</sub>	2764	2763	2683	2737
Mean	2796	2794	2718	2769

S.E. of marginal mean = 43.9 lb./ac.

S.E. of body of table = 76.1 lb./ac.

Crop :- Paddy.

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

Ref :- A.P. 53(5).

Type :- 'M'.

Object :- To assess the value of application of organic and inorganic fertilizers, singly and in various combinations on the outturn of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 6.6.53/19.7.53. (iv) (a) 3 ploughings. (b) Transplanted. (c) —. (d) 6' × 6'. (e) N.A. (v) Nil. (vi) SLO-13. (vii) Irrigated. (viii) 2 weedings. (ix) 25.7'. (x) 25.11.53.

## 2. TREATMENTS :

Main-plot treatments :—

5. applications of N : N<sub>0</sub>=0, N<sub>1</sub>=A/S at 60 lb./ac. of N, N<sub>2</sub>=G.L. at 60 lb./ac. of N, N<sub>3</sub>=C.M. at 60 lb./ac. of N and N<sub>4</sub>=Vegetable compost at 60 lb./ac. of N.

Sub-plot treatments :—

All combinations of (1), (2) and (3)

(1) 2 levels of P<sub>2</sub>O<sub>5</sub> : P<sub>0</sub>=0 and P<sub>1</sub>=60 lb./ac.(2) 2 levels of K<sub>2</sub>O : K<sub>0</sub>=0 and K<sub>1</sub>=60 lb./ac.(3) 2 levels of Lime : L<sub>0</sub>=0 and L<sub>1</sub>=1500 lb./ac.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/block ; 8 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 12½' × 13'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—contd. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 2329 lb./ac.

(ii) (a) 1422.0 lb./ac.

(b) 403.0 lb./ac.

(iii) Only main effect of N is significant.

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

	N <sub>0</sub>	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	N <sub>4</sub>	Mean	L <sub>0</sub>	L <sub>1</sub>	K <sub>0</sub>	K <sub>1</sub>
P <sub>0</sub>	2245	2085	1646	2851	2740	2313	2304	2323	2340	2287
P <sub>1</sub>	2467	2311	1554	2811	2592	2347	2368	2326	2386	2306
K <sub>0</sub>	2490	2115	1731	2783	2700	2364	2400	2327		
K <sub>1</sub>	2222	2282	1468	2879	2632	2297	2271	2322		
L <sub>0</sub>	2419	2222	1552	2889	2597	2336				
L <sub>1</sub>	2293	2175	1648	2772	2735	2325				
Mean	2356	2198	1600	2831	2666	2330				

S.E. of difference of two

1. N marginal means = 355.5 lb./ac.
2. P or K or L marginal means = 64.5 lb./ac.
3. P or K or L means at the same level of N = 144.3 lb./ac.
4. N means at the same level of P or K or L = 369.9 lb./ac.
5. means in the body of table P×K or P×L or L×K = 91.2 lb./ac.

Crop :- Paddy.

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

Ref :- A.P. 53(57).

Type :- 'M'.

Object :- To study the effect of placement of A/S on Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Heavy alluvial soil. (b) Refer soil analysis, Samalkot. (iii) 25.5.53/3.7.53. (iv) (a) 3 ploughings. (b) Transplanting. (c) —. (d) 6"×6". (e) N.A. (v) Nil. (vi) SLO-15. (vii) Irrigated. (viii) 2 weedings. (ix) 25.7". (x) 29.11.53.

## 2. TREATMENTS :

All combinations of (1) and (2) + a control (no manure).

- (1) 3 levels of N as A/S : N<sub>1</sub>=30, N<sub>2</sub>=45 and N<sub>3</sub>=60 lb./ac.
- (2) 2 methods of application of A/S : M<sub>1</sub>=Placed and M<sub>2</sub>=Broadcast.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) and (b) 20½'×11½'. (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952-contd. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3570 lb./ac.
- (ii) 418.0 lb./ac.
- (iii) Main effect of N and interaction N×M are significant. Control vs. others effect is highly significant. M effect is not significant.

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

	Control =4731 lb./ac.			Mean
	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	
M <sub>1</sub>	3944	2675	3163	3261
M <sub>2</sub>	3569	3453	3456	3493
Mean	3757	3064	3309	3377

S.E. of marginal mean of N =295.0 lb./ac.  
 S.E. of marginal mean of M =121.0 lb./ac.  
 S.E. of body of table =209.0 lb./ac.

Crop :- Paddy (*Tabi* 1949-50).

Ref :- A.P. 50(51).

Site :- Govt. Exptl. Farm, Sangareddy.

Type :- 'M'.

Object :- To determine the manurial requirements of *Tabi* Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 10 C.L./ac. of F.Y.M. (ii) (a) Chalka soil. (b) Refer soil analysis, Sangareddy. (iii) 23 to 25.1.50. (iv) (a) Ploughing once, puddling and levelling four times. (b) to (e) N.A. (v) Nil. (vi) H.R.-19. (vii) Irrigated. (viii) Weeding once. (ix) 1.46". (x) 4.5.50.

## 2. TREATMENTS :

All combinations of (1) and (2)+a control (no manure)

(1) 2 sources of N : S<sub>1</sub>=G.N.C. and S<sub>2</sub>=paddy fertilizer mixture.(2) 4 levels of N : N<sub>1</sub>=15, N<sub>2</sub>=20, N<sub>3</sub>=25 and N<sub>4</sub>=30 lb./ac.

Other details N.A.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) and (b) 60' x 6'. (v) N.A. (vi) Yes.

## 4. GENERAL :

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

## 5. RESULTS :

(i) 2252 lb./ac.

(ii) 171.5 lb./ac.

(iii) Main effect of N is significant and control vs others effect is highly significant. Others are not significant.

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

	Control =1936 lb./ac.				Mean
	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	N <sub>4</sub>	
S <sub>1</sub>	2309	2289	2198	2470	2316
S <sub>2</sub>	2127	2299	2127	2511	2266
Mean	2218	2294	2163	2491	2291

S.E. of marginal mean of S =49.5 lb./ac.  
 S.E. of marginal mean of N =70.0 lb./ac.  
 S.E. of body of table =89.0 lb./ac.

Crop :- Paddy (*Abi* 50-51).

Ref :- A.P. 50(52).

Site :- Govt. Exptl. Farm, Sangareddy.

Type :- 'M'.

Object :- To determine the manurial requirements of *Abi* Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 10 C.L./ac. of F.Y.M. (ii) (a) Chalka. (b) Refer soil analysis, Sangareddy. (iii) 27.7.50. (iv) (a) Ploughing and cross ploughing. (b) Transplanted. (c)---(d) N.A. (e) N.A. (v) 10 C.L./ac. of F.Y.M. (vi) H.R. 19. (vii) Irrigated. (viii) Hand weeding. (ix) 41.99" (x) 11.11.50.

## 2. TREATMENTS :

All combinations of (1) and (2)+ a control (no manure).

(1) 2 sources of N : S<sub>1</sub>=G.N.C. and S<sub>2</sub>=paddy fertilizer mixture.(2) 4 levels of N : N<sub>1</sub>=15, N<sub>2</sub>=20, N<sub>3</sub>=25 and N<sub>4</sub>=30 lb./ac.

Other details N.A.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 60' x 7' (v) N.A. (vi) yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Hispa attack. Gammaxene dusted. (iii) Grain and straw yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1206 lb./ac.  
 (ii) 276.8 lb./ac.  
 (iii) Main effects of N and Controls vs others are highly significant. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	Control = 902 lb./ac.				Mean
	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	N <sub>4</sub>	
S <sub>1</sub>	1029	1254	1125	1133	1135
S <sub>2</sub>	1469	1282	1270	1393	1353
Mean	1249	1268	1197	1263	1244

S.E. of marginal mean of S = 56.5 lb./ac.  
 S.E. of marginal mean of N = 79.9 lb./ac.  
 S.E. of body of table = 113.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 48(52).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :- To study the manurial requirements of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) N.A. (b) Refer soil analysis, Warangal. (iii) N.A. (iv) (a) to (e) N.A. (v) Nil. (vi) H.R. 35 (late). (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 33.33" (x) N.A.

## 2. TREATMENTS :

- G.N.C. at 30 lb./ac. of N.
  - Castorcake at 30 lb./ac. of N.
  - Compost at 30 lb./ac. of N.
- Manures applied just before transplanting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/100 acre (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory due to unfavourable seasonal conditions. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1946 to 1949. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2506 lb./ac.  
 (ii) 242.5 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2615
2.	2515
3.	2188
S.E. mean	= 99.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 49(29).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :- To study the manurial requirements of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) N.A. (b) Refer soil analysis, Warangal. (iii) N.A. (iv) (a) to (e) N.A. (v) Nil. (vi) H.R.I (late). (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 45.66". (x) N.A.

## 2. TREATMENTS :

- G.N.C at 30 lb./ac. of N.
  - Castorence at 30 lb./ac. of N
  - Compost at 30 lb./ac. of N.
- Manures applied just before transplanting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/100 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Unfavourable season. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1946 to 1949. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1872 lb./ac.  
 (ii) 164.1 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1803
2.	1877
3.	1725
S.E./mean	= 67.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 49(31).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :- To study the manurial requirements of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) N.A. (b) Refer soil analysis, Warangal. (iii) N.A. (iv) (a) to (e) N.A. (v) Nil. (vi) H.R.35 (late). (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 45.66". (x) N.A.

## 2. TREATMENTS :

1. G.N.C. at 30 lb./ac. of N.
2. Castor Cake at 30 lb./ac. of N.
3. Compost at 30 lb./ac. of N  
Manures applied just before transplanting.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Unfavourable season. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1946 to 1949. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1454 lb./ac.  
 (ii) 193.5 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1513
2.	1388
3.	1460
S.E./mean	= 79.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 48 (53).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :—To compare the relative manurial values of the two G.M. crops Sannhemp and *Dhaincha* as against forest leaf.

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) N.A. (iv) (a) to (e) N.A. (v) Nil. (vi) H.R. 35. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 33.33". (x) N.A.

## 2. TREATMENTS :

1. Forest leaf.
2. *Dhaincha*.
3. Sannhemp.

The manuring was done at the rate of 6000 lb./ac. of green matter. The G.M. crops was grown in *Situ*.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/100 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Not satisfactory due to unfavourable conditions. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1946—49. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1606 lb./ac.  
 (ii) 134.7 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1601
2.	1490
3.	1758
S.E./mean	= 55.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 49 (30).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :—To compare the relative manurial values of the two G.M. crops Sannhemp and *Dhaincha* as against forest leaf.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b), (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) 7.8.1949. (iv) (a) to (c) N.A. (v) Nil. (vi) H.R. 35 (late). (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 45.66". (x) 18.12.49.

## 2. TREATMENTS :

1. Forest leaf.
2. *Dhaincha*
3. Sannhemp.

The manuring was done at the rate of 6000 lb./ac. of green matter. The G.M. crops were not raised in *Situ* but in a neighbouring plot.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/100 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Unfavourable season. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1946—49. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1257 lb./ac.  
 (ii) 344.4 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1406
2.	1184
3.	1182
S.E./mean	= 154.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 49(32).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :—To study the manurial requirements of Paddy in the form of fertilizers with the maturing strain H.S-I.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) N.A. (iv) (a) to (c) N.A. (v) Nil. (vi) H.S-I. (late). (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 45.56" (June to Nov). (x) N.A.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)

- (1) 3 levels of N :  $N_1=15$ ,  $N_2=30$  and  $N_3=45$  lb./ac.
- (2) 2 levels of  $P_2O_5$  :  $P_1=15$  and  $P_2=30$  lb./ac.
- (3) 2 levels of  $K_2O$  :  $K_0=0$  and  $K_1=15$  lb./ac.

N as A/S.,  $P_2O_5$  as Super and  $K_2O$  as Pot. Sul. Manures applied 3 weeks after transplanting.

## 3. DESIGN :

(i)  $3 \times 2 \times 2$  Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3 (iv) (a) N.A. (b) 1/100 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Unfavourable season. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1946—1949. (b) N.A. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.



## 5. RESULTS :

- (i) 1873 lb./ac.  
 (ii) 174.0 lb./ac.  
 (iii) Main effect of N is significant while that of P is highly significant. Other effects and interactions are not significant.  
 (iv) Av. yield of grain in lb./ac.

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	Mean	K <sub>0</sub>	K <sub>1</sub>
P <sub>1</sub>	1594	1805	1796	1732	1711	1752
P <sub>2</sub>	1892	2097	2055	2015	2020	2009
Mean	1743	1951	1926	1873	1866	1881
K <sub>0</sub>	1769	1905	1923			
K <sub>1</sub>	1717	1997	1928			

S.E. of marginal mean of N	= 50.0 lb./ac.
S.E. of marginal mean of P or K	= 41.0 lb./ac.
S.E. of body of table (N×P) or (N×K)	= 71.0 lb./ac.
S.E. of body of table (P×K)	= 58.0 lb./ac.

Crop :-Paddy.

Ref :-A.P. 49(33).

Site :-Govt. Main Farm, Warangal.

Type :-'M'.

Object :-To study the manurial requirements of Paddy in the form of fertilizers with very late maturing strain H.R. 35.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Chalka soil. (b) Refer soil analysis, Warangal. (iii) N.A. (iv) (a) to (e) N.A. (v) Nil. (vi) H.R. 35 (late). (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 45.66%. (x) N.A.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)

- (1) 3 levels of N : N<sub>1</sub>=15, N<sub>2</sub>=30 and N<sub>3</sub>=45 lb./ac.  
 (2) 2 levels of P<sub>2</sub>O<sub>5</sub> : P<sub>1</sub>=15 and P<sub>2</sub>=30 lb./ac.  
 (3) 2 levels of K<sub>2</sub>O : K<sub>0</sub>=0 and K<sub>1</sub>=15 lb./ac.

N as A/S, P<sub>2</sub>O<sub>5</sub> as Super and K<sub>2</sub>O as Pot. Sulphate. Manures applied 3 weeks after transplanting.

## 3. DESIGN :

- (i) 3×2×2 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Unfavourable season. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1946-1949. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1811 lb./ac.  
 (ii) 267.0 lb./ac.  
 (iii) Main effect of K alone is significant.

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

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	Mean	K <sub>0</sub>	K <sub>1</sub>
P <sub>1</sub>	1723	1819	1830	1791	1871	1710
P <sub>2</sub>	1873	1780	1844	1832	1938	1727
Mean	1798	1800	1837	1811	1905	1718
K <sub>0</sub>	1915	1915	1884			
K <sub>1</sub>	1681	1684	1790			

S.E. of marginal mean of N	= 78.0 lb./ac.
S.E. of marginal mean of P or K	= 63.0 lb./ac.
S.E. of body of table (N×K) or (N×P)	= 109.0 lb./ac.
S.E. of body of table (P×K)	= 89.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 51(79).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :- To determine the best ratio of N and P<sub>2</sub>O<sub>5</sub> for Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) N.A. (iv) (a) Ploughing and levelling. (b) Transplanted. (c) to (e) N.A. (v) N.A. (vi) H.R.-19 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 27.92%. (x) N.A.

## 2. TREATMENTS :

- |  |  |
|--|--|
| 1. Control (no manure).  | 10. 45 lb./ac. of N+45 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 2. 15 lb. ac. of N+ 15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 11. 45 lb./ac. of N+33½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 3. 15 lb. ac. of N+ 11¼ lb./ac. of P <sub>2</sub> O <sub>5</sub> . | 12. 45 lb./ac. of N+22½ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 4. 15 lb./ac. of N+ 7½ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  | 13. 45 lb./ac. of N+11¼ lb./ac. of P <sub>2</sub> O <sub>5</sub> . |
| 5. 15 lb./ac. of N+ 3¼ lb. ac. of P <sub>2</sub> O <sub>5</sub> .  | 14. 60 lb./ac. of N+60 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 6. 30 lb./ac. of N+ 30 lb. ac. of P <sub>2</sub> O <sub>5</sub> .  | 15. 60 lb./ac. of N+45 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 7. 30 lb./ac. of N+ 22½ lb. ac. of P <sub>2</sub> O <sub>5</sub> . | 16. 60 lb./ac. of N+30 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 8. 30 lb./ac. of N+ 15 lb. ac. of P <sub>2</sub> O <sub>5</sub> .  | 17. 60 lb./ac. of N+15 lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |
| 9. 30 lb./ac. of N+ 7½ lb./ac. of P <sub>2</sub> O <sub>5</sub> .  |  |

N as A/S and P<sub>2</sub>O<sub>5</sub> as Super. Half the dose of manure applied a week after transplanting and the other half at the time of primordial formation.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1951 (*Abi* 1951-52) to 1953 (*Abi* 1953-54). (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 2028 lb./ac.

(ii) 342.0 lb./ac.

(iii) Treatments differ significantly.

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

Treatment	Av. yield	Treatment	Av. yield
1.	1084	10.	2394
2.	1956	11.	2375
3.	1681	12.	2194
4.	1850	13.	1575
5.	1719	14.	2281
6.	2044	15.	2425
7.	2394	16.	2719
8.	1800	17.	2094
9.	1881		
	S.E. mean		= 171.0 lb./ac.

Crop :- Paddy (*Tabi* 1951-52).

Ref :- A.P. 51 (80).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :- To determine the best ratio of N and  $P_2O_5$  for Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) N.A. (iv) (a) Ploughing and levelling. (b) Transplanted. (c) to (e) N.A. (v) N.A. (vi) H.R.-19 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 2.05%. (x) N.A.

## 2. TREATMENTS :

- |  |   |
|--|---|
| 1. Control (no manure).                        | 10. 45 lb./ac. of N + 45 lb./ac. of $P_2O_5$ .  |
| 2. 15 lb./ac. of N + 15 lb./ac. of $P_2O_5$ .  | 11. 45 lb./ac. of N + 33½ lb./ac. of $P_2O_5$ . |
| 3. 15 lb./ac. of N + 11¼ lb./ac. of $P_2O_5$ . | 12. 45 lb./ac. of N + 22½ lb./ac. of $P_2O_5$ . |
| 4. 15 lb./ac. of N + 7½ lb./ac. of $P_2O_5$ .  | 13. 45 lb./ac. of N + 11¼ lb./ac. of $P_2O_5$ . |
| 5. 15 lb./ac. of N + 3¾ lb./ac. of $P_2O_5$ .  | 14. 60 lb./ac. of N + 60 lb./ac. of $P_2O_5$ .  |
| 6. 30 lb./ac. of N + 30 lb./ac. of $P_2O_5$ .  | 15. 60 lb./ac. of N + 45 lb./ac. of $P_2O_5$ .  |
| 7. 30 lb./ac. of N + 22½ lb./ac. of $P_2O_5$ . | 16. 60 lb./ac. of N + 30 lb./ac. of $P_2O_5$ .  |
| 8. 30 lb./ac. of N + 15 lb./ac. of $P_2O_5$ .  | 17. 60 lb./ac. of N + 15 lb./ac. of $P_2O_5$ .  |
| 9. 30 lb./ac. of N + 7½ lb./ac. of $P_2O_5$ .  |   |

N as A/S and  $P_2O_5$  as Super. Half the dose of manure applied a week after transplanting and the other half at the time of primordial formation.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/100 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1951 (*Tabi* 1951-52) to 1953 (*Abi* 1953-54). (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 938 lb./ac.  
(ii) 146.7 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	200	10.	1375
2.	800	11.	1225
3.	650	12.	1175
4.	650	13.	525
5.	600	14.	1500
6.	1275	15.	1200
7.	875	16.	1425
8.	875	17.	950
9.	650		
	S.E./mean		= 73.34 lb./ac.

Crop :- Paddy (*Abi* 1952-53).

Ref :- A.P. 52(6).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :- To determine the optimum ratio of N and  $P_2O_5$  for high yield. (fertilizer ratio test).

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) 12.6.52. (iv) (a) to (e) N.A. (v) 6000 lb./ac. of compost. (vi) H.R.-19. (vii) N.A. (viii) N.A. (ix) 22.08%. (x) N.A.

## 2. TREATMENTS :

- |  |   |
|--|---|
| 1. Control (no manure).                      | 10. 45 lb./ac. of N+45 lb./ac. of $P_2O_5$ .  |
| 2. 15 lb./ac. of N+15 lb./ac. of $P_2O_5$ .  | 11. 45 lb./ac. of N+33½ lb./ac. of $P_2O_5$ . |
| 3. 15 lb./ac. of N+11¼ lb./ac. of $P_2O_5$ . | 12. 45 lb./ac. of N+22½ lb./ac. of $P_2O_5$ . |
| 4. 15 lb./ac. of N+ 7½ lb./ac. of $P_2O_5$ . | 13. 45 lb./ac. of N+11¼ lb./ac. of $P_2O_5$ . |
| 5. 15 lb./ac. of N+ 3½ lb./ac. of $P_2O_5$ . | 14. 60 lb./ac. of N+60 lb./ac. of $P_2O_5$ .  |
| 6. 30 lb./ac. of N+30 lb./ac. of $P_2O_5$ .  | 15. 60 lb./ac. of N+45 lb./ac. of $P_2O_5$ .  |
| 7. 30 lb./ac. of N+22½ lb./ac. of $P_2O_5$ . | 16. 60 lb./ac. of N+30 lb./ac. of $P_2O_5$ .  |
| 8. 30 lb./ac. of N+15 lb./ac. of $P_2O_5$ .  | 17. 60 lb./ac. of N+15 lb./ac. of $P_2O_5$ .  |
| 9. 30 lb./ac. of N+ 7½ lb./ac. of $P_2O_5$ . |   |

N as A S and  $P_2O_5$  as super. Half the dose of manure was applied on 12.8.52 and the other half in the 1st week of November 1952.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/100 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 152½ lb./ac.  
 (ii) 317.8 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	658	10	1613
2.	1504	11.	1689
3.	1164	12.	1916
4.	1244	13.	1476
5.	966	14.	2390
6.	1602	15.	1978
7.	1609	16.	1923
8.	1295	17.	1752
9.	1216		
	S.E./mean.		=158.9 lb./ac.

Crop :- Paddy (1953-54).

Site :- Govt. Main Farm., Warangal.

Ref :- A.P. 53(8).

Type :- 'M'.

Object :- To determine the optimum ratio of N and  $P_2O_5$  for high yields.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Chalka soil. (b) Refer soil analysis, Warangal. (iii) Transplanted from 10th to 12th July, 1953. (iv) (a) to (e) N.A. (v) Compost 6000 lb./ac. (vi) H.R.-19. (vii) N.A. (viii) N.A. (ix) 30.49%. (x) 17.10.53 and 18.10.53.

## 2. TREATMENTS :

- |  |   |
|--|---|
| 1. Control (no manure)                       | 10. 45 lb./ac. of N+45 lb./ac. of $P_2O_5$ .  |
| 2. 15 lb./ac. of N+15 lb./ac. of $P_2O_5$ .  | 11. 45 lb./ac. of N+33½ lb./ac. of $P_2O_5$ . |
| 3. 15 lb./ac. of N+11¼ lb./ac. of $P_2O_5$ . | 12. 45 lb./ac. of N+22½ lb./ac. of $P_2O_5$ . |
| 4. 15 lb./ac. of N+ 7½ lb./ac. of $P_2O_5$ . | 13. 45 lb./ac. of N+11¼ lb./ac. of $P_2O_5$ . |
| 5. 15 lb./ac. of N+3½ lb./ac. of $P_2O_5$ .  | 14. 60 lb./ac. of N+60 lb./ac. of $P_2O_5$ .  |
| 6. 30 lb./ac. of N+30 lb./ac. of $P_2O_5$ .  | 15. 60 lb./ac. of N+45 lb./ac. of $P_2O_5$ .  |
| 7. 30 lb./ac. of N+22½ lb./ac. of $P_2O_5$ . | 16. 60 lb./ac. of N+30 lb./ac. of $P_2O_5$ .  |
| 8. 30 lb./ac. of N+15 lb./ac. of $P_2O_5$ .  | 17. 60 lb./ac. of N+15 lb./ac. of $P_2O_5$ .  |
| 9. 30 lb./ac. of N+ 7½ lb./ac. of $P_2O_5$ . |   |

## 3. DESIGN :

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/100 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 2703 lb./ac.  
 (ii) 308 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	2046	10.	2859
2.	2478	11.	3122
3.	2368	12.	2892
4.	2764	13.	2475
5.	2465	14.	2839
6.	2603	15.	2990
7.	2620	16.	2815
8.	2646	17.	3229
9.	2743		

S.E./mean = 154.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 50(35).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :- To study the manurial requirements of the crop.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) *Chulka* soil. (b) Refer soil analysis, Warangal. (iii) 14.7.50/16.9.50.  
 (iv) (a) to (e) N.A. (v) Nil. (vi) H.R. 35 (long duration). (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 30.82". (x) 5.12.50.

## 2. TREATMENTS :

- Sannhemp + 60 lb./ac. of N + 30 lb./ac. of  $P_2O_5$ .
- Sannhemp + 45 lb./ac. of N + 22½ lb./ac. of  $P_2O_5$ .
- Sannhemp + 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$ .
- No Sannhemp + 30 lb./ac. of N + 15 lb./ac. of  $P_2O_5$ .
- Sannhemp + 15 lb./ac. of N + 7½ lb./ac. of  $P_2O_5$ .
- No manure.

Sannhemp sown in the first week of June 50 and ploughed-in during the second week of Sept. 1950 at the rate of 6000 lb./ac. of green matter. First dose of Super and whole of N through G.M. applied on 26.9.50. Second dose of Super applied on 31.10.50.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Not satisfactory due to delayed transplanting and due to the nature of the soil. (ii) Nil. (iii) Yield data.  
 (iv) (a) 1950 to 1954. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 668 lb./ac.  
 (ii) 159.0 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	886
2.	827
3.	775
4.	638
5.	531
6.	348
S.E./mean	= 65.0 lb./ac.

Crop :- Paddy (*Abi*).  
Site :- Govt. Main Farm, Warangal.

Ref :- A.P. 51(82).  
Type :- 'M'.

Object :- To determine the manurial requirements of the crop.

### 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) N.A.  
(iv) (a) Ploughing and levelling. (b) Transplanted. (c) —. (d) N.A. (e) N.A. (v) Nil. (vi) H.R. 35 (late.)  
Irrigated. (viii) N.A. (ix) 27.92". (x) N.A.

### 2. TREATMENTS :

1. 60 lb./ac. of N+30 lb./ac. of  $P_2O_5$ +Sannhemp as G.M.
2. 45 lb./ac. of N+22½ lb./ac. of  $P_2O_5$ +Sannhemp as G.M.
3. 30 lb./ac. of N+15 lb./ac. of  $P_2O_5$ +Sannhemp as G.M.
4. 30 lb./ac. of N+15 lb./ac. of  $P_2O_5$ +No G.M.
5. 15 lb./ac. of N+7½ lb./ac. of  $P_2O_5$ +Sannhemp as G.M.
6. No manure.

Sannhemp grown in *Situ* and 6000 lb./ac. of green matter incorporated in the soil. N as G.N.C. and  $P_2O_5$  as Super.

### 3. DESIGN

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

### 4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1950 to 1952. (b) N.A. (c) Nil. (v) (a) Nil.  
(b) N.A. (vi) and (vii) Nil.

### 5. RESULTS :

- (i) 2561 lb./ac.  
(ii) 323.4 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3000
2.	3250
3.	2833
4.	2200
5.	2166
6.	1916
S.E./mean	= 132.0 lb./ac.

Crop :- Paddy (*Abi* 52-53).  
Site :- Govt. Main Farm, Warangal.

Ref :- A.P. 52(4).  
Type :- 'M'.

Object :- To see if G.M. can replace G.N.C. in supplying N economically (Organic manures test).

### 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal (iii) N.A. (iv) (a) to  
(e) N.A. (v) All treatments except no manure and the one without Sannhemp were given a basal dressing of  
G.M. at 6 C) lb./ac. and Super ( $P_2O_5$ ) at 7.5 lb./ac. (By growing Sannhemp in *Situ*) (vi) N.A. (vii) N.A.  
(viii) N.A. (ix) 22.08" (x) N.A.

### 2. TREATMENTS :

1. Sannhemp+45 lb./ac. of N.+22½ lb./ac. of  $P_2O_5$ .
  2. Sannhemp+60 lb./ac. of N+30 lb./ac. of  $P_2O_5$ .
  3. Sannhemp+30 lb./ac. of N+15 lb./ac. of  $P_2O_5$ .
  4. No Sannhemp+30 lb./ac. of N+15 lb./ac. of  $P_2O_5$ .
  5. Sannhemp+15 lb./ac. of N+ 7½ lb./ac. of  $P_2O_5$ .
  6. No manure.
- N as G.N.C. and  $P_2O_5$  as Super.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6 (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) Nil. (vii) Nil.

## 5. RESULTS :

- (i) 2994 lb./ac.  
 (ii) 302.0 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	3663
2.	3541
3.	3507
4.	2787
5.	2761
6.	1705
S.E./mean	= 123.1 lb./ac.

Crop :- Paddy

Ref :- A.P. 50(37).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :- To determine most suitable dose of compost to be administered to the Paddy crop during *Tabi* season.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) 24.1.50 (iv) (a) to (e) N.A. (v) Nil. (vi) H.R. 19. (vii) Irrigated. (viii) Weeding once. (ix) 0.8". (x) 20.4.50.

## 2. TREATMENTS :

1. Compost at 2 ton./ac.
2. Compost at 3 ton./ac.
3. Compost at 4 ton./ac

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/40 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Fairly Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1597 lb./ac.  
 (ii) 231.6 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1518
2.	1492
3.	1780
S.E./mean.	= 104.0 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 53 (104).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :- To study the manurial requirements of the crop.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) N.A. (b) Refer soil analysis, Warangal. (iii) N.A. (iv) (a) Ploughing and levelling. (b) Transplanted. (c) —. (d) N.A. (e) N.A. (v) Nil. (vi) H.R. 35 (late). (vii) Irrigated. (viii) N.A. (ix) 42.31". (x) N.A.

## 2. TREATMENTS :

Main-plot treatments :

2 levels of G.M. :— $G_0=0$  and  $G_1=G.M.$ 

Sub-plot treatments :

Application of  $(N+P_2O_5)$  :— $M_0=0$ ,  $M_1=60$  lb./ac. of N+30 lb./ac. of  $P_2O_5$ ,  $M_2=45$  lb./ac. of N+22½ lb./ac.  $P_2O_5$ ,  $M_3=30$  lb./ac. of N+15 lb./ac. of  $P_2O_5$  and  $M_4=15$  lb./ac. of N+7½ lb./ac. of  $P_2O_5$ .

G.M. as Sannhemp at the rate of 6000 lb./ac. and 7.5 lb.  $P_2O_5$  supplied to Sannhemp. N in the form of G.N.C. and  $P_2O_5$  as Super. G.M. applied in single dose a week after transplanting and Super in 2 equal doses a week after transplanting and at the time of primordial formation.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/121 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) No. (b) N.A. (c) Nil. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 2836 lb./ac.  
 (ii) (a) 468.1 lb./ac.  
 (b) 457.3 lb./ac.  
 (iii) Main-plot treatments and sub-plot treatments are significantly different. Interaction is not significant.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	$M_2$	$M_3$	$M_4$	Mean.
$G_0$	2404	2979	2847	2679	2266	2635
$G_1$	2941	3285	3034	2935	2998	3038
Mean.	2672	3132	2940	2807	2632	2836

S.E. of difference of two

1. main-plot treatment means = 120.8 lb./ac.
2. sub-plot treatment means = 186.6 lb./ac.
3. Sub-plot treatment means at the same level of main-plot treatment = 264.0 lb./ac.
4. Main-plot treatment means at the same level of sub-plot treatment = 265.2 lb./ac.

Crop :- Paddy (1st crop).

Ref :- Complex experiments (T.C.M.), 1953.

Centre :- Chalvai (A.P.).

Type :- 'M'.

Object :- (a), To study the effect of sources and levels of N and  $P_2O_5$  on non-acidic soils.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 15, 16.2.54. (iv) N.A. (v) N.A. (vi) (c) N.A.H.R. 5. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) N.A.



## 2. TREATMENTS :

All combinations of (1), (2), (3)+3 extra treatments.

(1) 3 levels of N :  $N_0=0$ ,  $N_1=20$  and  $N_2=40$  lb./ac.

(2) 3 Sources of N : A/S, A/N, and Urea.

(3) 3 levels of  $P_2O_5$  as Triple Super :  $P_0=0$ ,  $P_1=20$  and  $P_2=40$  lb./ac.  
and 3 extra treatments.

(i) 60 lb./ac. of N+40 lb./ac. of  $P_2O_5$ .

(ii) 40 lb./ac. of N+30 lb./ac. of  $P_2O_5$ .

(iii) 60 lb./ac. of N+80 lb./ac. of  $P_2O_5$ .

N as A/S and  $P_2O_5$  as Triple Super.

## 3. DESIGN :

(i)  $3^3$  confounded factorial with 3 plots for extra treatments in each block. (ii) (a) 12 plots/block and 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 1/62.05 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Crop suffered from gall-fly infestation. (iii) Yield data. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Aduthurai, Karjat, Shaspur, Burdwan, Mankhanda. (b) N.A. (vi) Nil. (vii) Nil.

## 5. RESULTS :

(i) 2513 lb./ac.

(ii) 431.3 lb./ac.

(iii) None of the effects is significant.

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

	$N_0$	$N_1$	$N_2$	Mean	A/S	A/N	Urea	Mean
$P_0$	1761	2122	1971	1951	2218	2144	1491	1951
$P_1$	2311	2726	2383	2473	2713	2388	2319	2473
$P_2$	2274	2455	2561	2430	2258	2526	2506	2430
Mean	2115	2434	2305	2285	2396	2353	2105	2285
A/S	—	2675	2295	2485				
A/N	—	2474	2404	2439				
Urea	—	2154	2215	2185				
Mean	—	2434	2305					

## Mean yield of extra treatments

(i) 60 N+40 P = 3101 lb./ac.

(ii) 40 N+80 P = 3226 lb./ac.

(iii) 60 N+80 P = 3258 lb./ac.

S.E./mean = 249.0 lb./ac.

## For table I and II

S.E. of marginal means = 143.8 lb./ac.

S.E. of body of table = 249.0 lb./ac.

## For table III

S.E. of marginal row mean = 176.1 lb./ac.

S.E. of marginal column mean = 143.8 lb./ac.

S.E. of body of table = 249.0 lb./ac.

Crop :- Paddy (1st crop). Ref :- Complex experiments (T.C.M.), 1953.

Centre :- Chalvai (A.P.) Type :- 'M'.

Object :-III, To study the effect of minor elements and K.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) N.A. /26, 27,28.2.54. (iv) N.A. (v) N.A. (vi) H.R. 5. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

A set of 32 out 256 treatment combinations formed of 8 factors at two levels each.

1. Magnesium as Magnesium Sulphate at 2 cwt./ac.

2. Iron as Ferrous Sulphate at 100 lb./ac.

3. Manganese as Manganese Sulphate at 80 lb./ac.

4. Zinc as Zinc Sulphate at 20 lb./ac.

5. Copper as Copper Sulphate at 20 lb./ac.

6. Borax as granulated Borax at 10 lb./ac.

7. Molybdeum as Sodium Molybdate at 2 oz./ac.

8. Potash as Pot. Sulphate at 20 lb./ac.

Manuring on 23.2.54. A basal dressing of 20 lb./ac of N as A/S+20 lb./ac. of  $P_2O_5$  as Triple Super given to all treatments.

3. DESIGN :

(i) Fractional replicate. (1/8 of  $2^8$  factorial design) (ii) (a) 8 Plots/block and 4 blocks. (b) N.A. (iii)—(iv) (a) N.A. (b) 1/62 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Crop suffered from gall-fly infestation. (iii) Yield data (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Burdwan, Mankhanda (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

Treatment	Mean response of grain yield in lb./ac.
1.	+202
2.	- 16
3.	+ 61
4.	+117
5.	+286
6.	- 80
7.	-213
8.	- 89
S.E./mean	= 96.00 lb./ac.

Main effect of treatment.. 5 is highly significant. Main effects of treatment. 1 and 7 are significant.

Others are not significant.

Crop :- Paddy (1st crop). Ref :- Complex experiments (T.C.M.), 1953.

Centre :- Chalvai (A.P.) Type :- 'M'.

Object :-VI, To study the residual value of phosphatic manure.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) N.A. /23, 24.2.54. (iv) N.A. (v) N.A. (v) H.R. 5. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS :

5 treatments replicated as follows ;

- |   |                |
|---|----------------|
| (1) O = Untreated                                   | 1 plot/block.  |
| (2) C = Control                                     | 6 plots/block. |
| (3) $P_{\frac{1}{2}}$ = $\frac{1}{2}$ unit dressing | 1 plot/block.  |
| (4) $P_1$ = Unit dressing                           | 2 plots/block. |
| (5) $P_2$ = Double dressing                         | 2 plots/block. |

Unit dressing=20 lb./ac. of  $P_2O_5$ .

Manuring done on 23.12.54. A basal dressing of 20 lb./ac. of N as A/S was given to all treatments except (1).

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/61.96 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Crop suffered from gall-fly infestation. (iii) yield data (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Aduthurai, Shimoga, Sahaspur, Burdwan, Mankhanda, Maruteru. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 1323 lb./ac.  
 (ii) 330.0 lb./ac.  
 (iii) Treatment differences are highly significant.  
 (iv) Av. yield of grain. in lb./ac.

Treatment	Av. yield	S.E./mean.
O	733	165.0
C	1023	67.0
$P_{\frac{1}{2}}$	1573	165.0
$P_1$	1690	116.6
$P_2$	2027	116.6

Crop :- Paddy (1st crop).

Ref :- Complex experiments (T.C.M), 1953.

Site :- Chalvai (A.P.)

Type :- 'M'.

Object :- Additional experiment. To study the effect of artificial fertilizers in conjunction with organic manures.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) N.A. /11,12.1.54. (iv) N.A. (v) N.A. (vi) H.R.-5. (vii) Irrigated. (viii) N.A. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1), (2) and (3)

- (1) 3 levels of N as A/S :  $N_0=0$ ,  $N_1=20$  and  $N_2=40$  lb./ac.  
 (2) 3 levels of  $P_2O_5$  as Triple Super :  $P_0=0$ ,  $P_1=20$  and  $P_2=40$  lb./ac.  
 (3) 3 levels of F.Y.M. :  $F_0=0$ ,  $F_1=5$  C.L./ac. and  $F_2=10$  C.L./ac.

3. DESIGN :

(i) 3<sup>3</sup> confounded factorial. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 1/62 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Crop suffered from gall-fly infestation. (iii) Yield data. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Aduthurai, Shimoga and Maruteru. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 2516 lb./ac.  
 (ii) 720.0 lb./ac.  
 (iii) None of the effects is significant.

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

	N <sub>0</sub>	N <sub>1</sub>	N <sub>2</sub>	Mean	F <sub>0</sub>	F <sub>1</sub>	F <sub>2</sub>
P <sub>0</sub>	2352	2300	2659	2404	2051	2805	2356
P <sub>1</sub>	2339	2510	2934	2594	2621	2525	2637
P <sub>2</sub>	2189	2385	3076	2550	2372	2662	2616
Mean	2260	2398	2890	2516	2348	2664	2536
F <sub>0</sub>	1902	2107	3036				
F <sub>1</sub>	2534	2563	2895				
F <sub>2</sub>	2345	2525	2738				

S.E. of marginal means = 240.0 lb./ac.  
 S.E. of body of table = 415.7 lb./ac.

Crop :- Paddy (1st crop). Ref :- Complex experiments (T.C.M.), 1953.  
 Centre :- Maruteru (A.P). Type :- 'M'.

Object :- IV To study the effect of sources, levels and method of application of P<sub>2</sub>O<sub>5</sub>.

#### 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Alluvium—clay in texture. (b) N.A. (iii) N.A. /1.7.53. (iv) N.A. (v) N.A. (vi) MTU-1. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 19.11.53.

#### 2. TREATMENTS :

All combinations of (1), (2) and (3) +2 controls (without phosphate).

(1) 2 levels of P<sub>2</sub>O<sub>5</sub> : P<sub>1</sub>=15 and P<sub>2</sub>=30 lb./ac.

(2) 3 sources of P<sub>2</sub>O<sub>5</sub> : S<sub>1</sub>=Super, S<sub>2</sub>=Nitro. Phos. and S<sub>3</sub>= Ammo. Phos.

(3) 2 methods of placement : M<sub>1</sub>=Broadcast before final cultivation and M<sub>2</sub>=2½" below seed.

N was equalised at 30 lb./ac. level by addition of A/S.

#### 3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/67.2 ac. (v) N.A. (vi) Yes.

#### 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1953—56. (b) No. (c) N.A. (v) No. (vi) and (vii) Nil.

#### 5. RESULTS :

(i) 2306 lb./ac.

(ii) 160.7 lb./ac.

(iii) "Methods of placement" and "control vs. treatments" effects are highly significant. Others are not significant.

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

	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	Mean	M <sub>1</sub>	M <sub>2</sub>
P <sub>1</sub>	2375	2342	2347	2355	2237	2472
P <sub>2</sub>	2437	2297	2604	2446	2278	2614
Mean	2406	2319	2476	2400	2257	2543
M <sub>1</sub>	2241	2112	2419			
M <sub>2</sub>	2571	2526	2532			

Control=1742 lb./ac.  
 S.E. of marginal mean of S = 46.4 lb./ac.  
 S.E. of marginal mean of P or M = 37.9 lb./ac.  
 S.E. of body of table S×P or S×M = 65.6 lb./ac.  
 S.E. of body of table P×M = 53.6 lb./ac.

Crop :- Paddy (1st crop). Ref :- Complex experiments (T.C.M.), 1953.  
Centre :- Maruteru (A.P.) Type :- 'M'.

Object :- VI, To study the residual value of phosphatic manure.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Non-acidic. (iii) N.A. 1.7.53. (iv) N.A. (v) N.A. (vi) MTU-10. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 26.11.53.

2. TREATMENTS :

5 Treatments replicated as follows :

- |   |                |
|---|----------------|
| (1) O =untreated                                    | 1 plot/block.  |
| (2) C =Control                                      | 6 plots/block. |
| (3) $P_{\frac{1}{2}}$ = $\frac{1}{2}$ unit dressing | 1 plot/block.  |
| (4) $P_1$ =unit dressing                            | 2 plots/block. |
| (5) $P_2$ =Double dressing                          | 2 plots/block. |

Unit dressing-20 lb./ac. of  $P_2O_5$ .

A basal dressing of 20 lb./ac. of N as A/S applied to all treatments except (1). Manures were broadcast before transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/60.5 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal, (ii) Nil. (iii) Yield data. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Aduthurai, Shimoga, Sahaspur, Burdwan, Mankhanda and Chalcvai. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

- (i) 3291 lb./ac.  
(ii) 224.1 lb./ac.  
(iii) Treatment differences are highly significant.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	S.E./mean
O	2949	112.0
C	3122	45.7
$P_{\frac{1}{2}}$	3583	112.0
$P_1$	3456	79.2
$P_2$	3660	79.2

Crop :- Paddy (1st crop) Ref :- Complex experiments (T.C.M.), 1953.  
Centre :- Maruteru (A.P.) Type :- 'M'.

Object :- Additional expt. To test 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) Heavy black clayey soil. (b) Non-acidic. (iii) N.A./14.7.53. (iv) N.A. (v) N.A. (vi) MTU-1. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 19.11.53.

2. TREATMENTS :

All combinations of (1), (2) and (3)

- (1) 3 levels of N :  $N_0=0$ ,  $N_1=20$  and  $N_2=40$  lb./ac.  
(2) 3 levels of  $P_2O_5$  :  $P_0=0$ ,  $P_1=20$  and  $P_2=40$  lb./ac.  
(3) 3 levels of bulky manures :  $F_0=0$ ,  $F_1=10$  C.L./ac. and  $F_2=20$  C.L./ac.

Manures broadcast before transplanting.

3. DESIGN :

(i)  $3^3$  confounded factorial. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 1/99.7 ac. (v) N.A. (vi) Yes.

GENERAL:

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Aduthurai, Shimoga, and Chalcvai. (b) N.A. (vi) Nil. (vii) Nil.

## 5. RESULTS :

(i) 3345 lb./ac.

(ii) 236.1 lb./ac.

(iii) Main effects of N and P are significant. Other effect and interactions are not significant.

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

	N <sub>0</sub>	N <sub>1</sub>	N <sub>2</sub>	Mean	F <sub>0</sub>	F <sub>1</sub>	F <sub>2</sub>
P <sub>0</sub>	2758	3223	3439	3140	3306	2990	3123
P <sub>1</sub>	3173	3456	3522	3384	3788	3173	3190
P <sub>2</sub>	3522	3439	3572	3511	3289	3456	3788
Mean	3151	3373	3511	3345	3461	3206	3367
F <sub>0</sub>	3289	3522	3572				
F <sub>1</sub>	3090	3073	3456				
F <sub>2</sub>	3074	3522	3505				

S.E. of marginal means = 78.7 lb./ac.

S.E. of body of table = 136.3 lb./ac.

Crop :- Paddy (2nd crop). Ref :- Complex experiments (T.C.M.), 1953.

Centre :- Maruteru (A.P.). Type :- 'M'.

Object :-IV. To study the effect of sources, levels and method of application of P<sub>2</sub>O<sub>5</sub> (residual effect only).

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As under treatments. (ii) (a) Heavy black clayey soil. (b) Non-acidic.  
(iii) 1.2.54./23.2.54. (iv) N.A. (v) N.A. (vi) S/o 16. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 7.5.54.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)+2 controls (no phosphate).

(1) 3 sources of P<sub>2</sub>O<sub>5</sub> : S<sub>1</sub>=Triple Super, S<sub>2</sub>=Nitro. Phos. and S<sub>3</sub>=Ammono. Phos.(2) 2 levels of P<sub>2</sub>O<sub>5</sub> : P<sub>1</sub>=15 lb./ac. and P<sub>2</sub>=30 lb./ac.(3) 2 methods of placement : M<sub>1</sub>=Broadcast before final cultivation and M<sub>2</sub>=2½" below seed.

N was equalised to 30 lb./ac.

Residual effect of treatments applied to previous crop studied.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/73.2 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1953—1956. (b) No. (c) N.A. (v) No. (vi) Nil.  
(vii) Nil.

## 5. RESULTS :

(i) 16.2 lb./ac.

(ii) 44.64 lb./ac.

(iii) Main effects of P, M and "controls vs. treatments" are highly significant. Interaction P X M is also significant. Others are not significant.

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

Control=1567 lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	Mean	M <sub>1</sub>	M <sub>2</sub>
P <sub>1</sub>	1659	1666	1666	1664	1615	1712
P <sub>2</sub>	1757	1775	1757	1763	1676	1851
Mean	1708	1720	1711	1713	1645	1781
M <sub>1</sub>	1641	1659	1635			
M <sub>2</sub>	1775	1781	1788			

S.E. of marginal mean of S = 12.89 lb./ac.

S.E. of marginal mean of P or M = 10.52 lb./ac.

S.E. of body of table S × P or S × M = 18.23 lb./ac.

S.E. of body of table P × M = 14.88 lb./ac.

Crop :- Paddy (2nd crop). Ref :- Complex experiments (T.C.M.), 1953.

Centre :- Maruteru (A.P.). Type :- 'M'.

Object :- VI. To study the residual value of phosphatic manures.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Non-acidic. (iii) N.A./11.2.54.  
(iv) N.A. (v) N.A. (vi) MTU-20. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 25.5.54.

## 2. TREATMENTS :

9 treatments replicated as follows :

OO, CP<sub>1</sub>, CP<sub>2</sub>, P<sub>1</sub>C, P<sub>2</sub>C, P<sub>1</sub>P<sub>1</sub>, P<sub>2</sub>P<sub>2</sub> (one plot each/block) and CC (4 plots/block).P<sub>1</sub>=Unit dressing of phosphate *i.e.* 20 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

Manures were applied by broadcast before transplanting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/65.4 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Aduthurai, Shimoga, Shahaspur, Burdwan, Mankhanda and Chalm. (b) N.A. (vi) Nil. (vii) Nil.

## 5. RESULTS :

(i) 2744 lb./ac.

(ii) 224.0 lb./ac.

(iii) Treatment differences are highly significant.

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

Treatment	Av. yield	S.E./mean
CC	2482	56.0
OO	2025	112.0
CP <sub>1</sub>	2939	112.0
CP <sub>2</sub>	3233	112.0
P <sub>1</sub> C	2841	112.0
P <sub>2</sub> C	2857	112.0
P <sub>1</sub> P <sub>1</sub>	2881	112.0
P <sub>1</sub> P <sub>2</sub>	2971	112.0
P <sub>2</sub> P <sub>2</sub>	3249	112.0

**Crop :- Paddy (2nd Crop). Ref :- Simple trials on Cultivators' field (T.C.M), 1953.**

**Centre :- Bodhan and Banswala (A.P.)**

**Type :- 'M'.**

**Object :-**I (b, (i), To study the effect of different levels and types of N and  $P_2O_5$ .

**1. BASAL CONDITIONS :**

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Medium black soil-loam-p.H.7.7 (iii) Nil. (iv) N.A. (v) N.A. (vi) January. (vii) Irrigated. (viii) N.A. (ix) 35°. (x) May.

**2. TREATMENTS :**

**O** = Control.

**P** = Super at 20 lb./ac. of  $P_2O_5$ .

**N<sub>1</sub>P** = A/S at 20 lb./ac. of N+20 lb./ac. of  $P_2O_5$  as Super.

**N<sub>2</sub>P** = A/S at 40 lb. ac. of N+20 lb./ac. of  $P_2O_5$  as Super.

**N<sub>1</sub>'P** = A/N at 20 lb./ac. of N+20 lb./ac. of  $P_2O_5$  as Super.

**N<sub>2</sub>'P** = A/N at 40 lb. ac. of N+20 lb./ac. of  $P_2O_5$  as Super.

All fertilizers applied broadcast before puddling.

**3. DESIGN**

(i, and (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.
<b>O</b>	1064
<b>P</b>	1163
<b>N<sub>1</sub>P</b>	1275
<b>N<sub>2</sub>P</b>	1263
<b>N<sub>1</sub>'P</b>	1327
<b>N<sub>2</sub>'P</b>	1277
<b>G.M.</b>	1228
<b>S.E./mean</b>	=57.60 lb./ac.
<b>No. of Expts.</b>	7.

**Crop :- Paddy (2nd Crop). Ref :- Simple trials on cultivators' field (T.C.M.), 1953.**

**Centre :- Bodhan and Banswala(A.P).**

**Type:- 'M'**

**Object :-**I (b) (ii), To study the effect of different levels and types of N and  $P_2O_5$ .

**1. BASAL CONDITIONS :**

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Medium black soil-loam-p.H.7.7. (iii) Nil. (iv) N.A. (v) N.A. (vi) January. (vii) Irrigated. (viii) N.A. (ix) 35°. (x) May

**2. TREATMENTS :**

**O** = Control.

**P** = 20 lb/ac. of  $P_2O_5$  as Super.

**N<sub>1</sub>P** = A/S at 20 lb./ac. of N+20 lb./ac. of  $P_2O_5$  as Super.

**N<sub>2</sub>P** = A/S at 40 lb./ac of N+20 lb./ac. of  $P_2O_5$  as Super.

**N<sub>1</sub>'P** = Urea at 20 lb./ac. of N+20 lb./ac. of  $P_2O_5$  as Super.

**N<sub>2</sub>'P** = Urea at 40 lb /ac. of N+20 lb./ac. of  $P_2O_5$  as Super.

All fertilizers applied broadcast before puddling.



## 3. DESIGN :

(i) and (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.
O	1228
P	1424
N <sub>1</sub> P	1472
N <sub>2</sub> P	1672
N <sub>1</sub> *P	1328
N <sub>2</sub> *P	1472
G M.	1433
S.E./mean	157.2 lb./ac.
No. of Expts.	5.

Crop :- Paddy (2nd crop). Ref :- Simple trials on cultivator's field (T.C.M.), 1953.  
Centre :- Bodhan and Banswala (A.P.). Type :- 'M'.

Object :- I (b) (iii), To study the effect of different levels and types of N and P<sub>2</sub>O<sub>5</sub>.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Medium black soil-loam-p.H. 7.7. (iii) Nil. (iv) N.A. (v) N.A. (vi) January. (vii) Irrigated. (viii) N.A. (ix) 35". (x) May.

## 2. TREATMENTS :

O=Control

P=20 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.

N<sub>1</sub>\*P=A/N at 20 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.

N<sub>2</sub>\*P=A/S at 40 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.

N<sub>1</sub>\*P=Urea at 20 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.

N<sub>2</sub>\*P=Urea at 40 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.

All fertilisers applied by broadcasting before puddling.

## 3. DESIGN :

(i) and (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.
O	906
P	1149
N <sub>1</sub> *P	1163
N <sub>2</sub> *P	1263
N <sub>1</sub> *P	1329
N <sub>2</sub> *P	1217
G.M.	1171
S.E./mean	116.0 lb./ac.
No. of Expts.	7

**Crop :- Paddy (2nd Crop). Ref :- Simple trials on cultivators' field (T.C.M.), 1953.**

**Centre :- Bodhan and Banswala (A.P.)**

**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) Medium black soil-loam-p.H. 7.7. (iii) Nil. (iv) N.A. (v) N.A.  
(vi) January. (vii) Irrigated. (viii) N.A. (ix) 35". (x) May.

**2. TREATMENTS :**

O=Control

N=A/S at 20 lb./ac. of N.

NP=A/S at 20 lb./ac. of N+Super at 20 lb./ac. of  $P_2O_5$ .

N'P=A/N at 20 lb./ac. of N+Super at 20 lb./ac.  $P_2O_5$ .

N''P=Urea at 20 lb./ac. of N+Super at 20 lb./ac. of  $P_2O_5$ .

All fertilizers applied by broadcasting before puddling.

**3. DESIGN :**

(i) and (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.
O	1491
N	1446
NP	1595
N'P	1603
N''P	1651
G.M.	1557
S.E./mean	67.47 lb./ac.
No. of Expts.	26

**Crop :- Paddy (2nd Crop) Ref :- Simple trials on cultivators' field (T.C.M.), 1953.**

**Centre :- Bodhan and Banswala (A.P.)**

**Type :- 'M'.**

**Object :-IV (i), To study the effect of types and levels of  $P_2O_5$  and N.**

**1. BASAL CONDITIONS :**

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Medium black soil-loam—p.H.7.7. (iii) Nil. (iv) N.A. (v) N.A. (vi) January. (vii) Irrigated. (viii) N.A. (ix) 35" (x) May.

**2. TREATMENTS :**

O =Control.

N =A/S at 40 lb./ac. of N.

NP<sub>1</sub>=A/S at 40 lb./ac of N+Super at 20 lb./ac. of  $P_2O_5$ .

NP<sub>2</sub>=A/S at 40 lb./ac. of N+Super at 40 lb./ac. of  $P_2O_5$ .

NP'<sub>1</sub>=(A/S+Nitro. phos.) at 40 lb./ac. of N+20 lb./ac. of  $P_2O_5$ .

NP'<sub>2</sub>=(A/S+Nitro. Phos.) at 40 lb./ac. of N+40 lb./ac. of  $P_2O_5$ .

All fertilizers applied by broadcasting before puddling.

**3. DESIGN :**

(i) and (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.
O	1440
N	1714
NP <sub>1</sub>	1908
NP <sub>2</sub>	2131
NP' <sub>1</sub>	1814
NP' <sub>2</sub>	1680
G.M.	1781
S.E./mean	118.5 lb./ac.
No. of Expts.	7

Crop :- Paddy (2nd Crop). Ref :- Simple trial on cultivators' field (T.C.M), 1953.

Center :- Bodhan and Banswala (A.P.) Type :- 'M'.

Object :-IV (ii), To study the effect of types and levels of N and P<sub>2</sub>O<sub>5</sub>.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Medium black soil-loam—p.H.7.7. (iii) Nil. (iv) N.A. (v) N.A. (vi) January. (vii) Irrigated (viii) N.A. (ix) 35" x May.

## 2. TREATMENTS :

O =Control.

N =A/S at 40 lb./ac. of N.

NP<sub>1</sub> =A/S at 40 lb./ac. of N +Super at 20 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

NP<sub>2</sub> =A/S at 40 lb./ac. of N +Super at 40 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

NP'<sub>1</sub> =(A/S+ Ammo. Phos.) at 40 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

NP'<sub>2</sub> =(A/S+ Ammo. Phos.) at 40 lb./ac. of N+40 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

All fertilizers applied by broadcasting before puddling.

## 3. DESIGN :

(i) and. (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.
O	1400
N	1324
NP <sub>1</sub>	1438
NP <sub>2</sub>	1502
NP' <sub>1</sub>	1216
NP' <sub>2</sub>	1382
G.M.	1377
S.E./mean	92.15 lb./ac.
No. of Expts.	10

**Crop :- Paddy (2nd Crop). Ref :- Simple trials on cultivators' field (T.C.M), 1953.**  
**Centre :- Bodhan and Banswala (A.P.). Type :- 'M'.**

Object :—IV (iii), To study the effect of types and levels of  $P_2O_5$  and N.

1. **BASAL CONDITIONS :**

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Medium black soil-loam-p.H. 7.7. (iii) Nil. (iv) N.A. (v) N.A.  
 (vi) January. (vii) Irrigated. (viii) N.A. (ix) 35°. (x) May.

2. **TREATMENTS :**

O =Control.

N =A/S at 40 lb./ac. of N.

$NP_1'$  =(A/S+Nitro. Phos.) at 40 lb./ac. of N+20 lb./ac. of  $P_2O_5$ .

$NP_2'$  =(A/S+Nitro. Phos.) at 40 lb./ac. of N+40 lb./ac. of  $P_2O_5$ .

$NP_1''$  =(A/S+Ammo. Phos.) at 40 lb./ac. of N+20 lb./ac. of  $P_2O_5$ .

$NP_2''$  =(A/S+Ammo. Phos.) at 40 lb./ac. of N+40 lb./ac. of  $P_2O_5$ .

All fertilizers applied by broadcasting before puddling.

3. **DESIGN :**

(i) and (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) and (vii) Nil.

5. **RESULTS :**

Treatment	Av. yield in lb./ac.
O	1314
N	1514
$NP_1'$	1497
$NP_2'$	1366
$NP_1''$	1405
$NP_2''$	1517
G.M.	1436
S E./mean	=69.94 lb./ac.
No. of expts.	7

**Crop :- Paddy (2nd Crop). Ref :- Simple trials on cultivators' field (T.C.M.), 1953.**  
**Centre :- Samalkot (A.P). Type :- 'M'.**

Object :—I (a) (ii), To study the effect of types and levels of N.

1. **BASAL CONDITIONS :**

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Coastal alluvium—clay—P.H. 7.7. (iii) Crops heavily manured with compost or green leaves. (iv) N.A. (v) N.A. (vi) June. (vii) Irrigated. (viii) N.A. (ix) 44°. (x) November.

2. **TREATMENTS :**

O =Control.

$N_1$  =A/S at 20 lb./ac. of N.

$N_2$  =A/S at 40 lb./ac. of N.

$N_1''$  =Urea at 20 lb./ac. of N.

$N_2''$  =Urea at 40 lb./ac. of N.

Manures applied before planting.

3. **DESIGN :**

(i) and (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) and (vii) Nil.

## 5. RESULTS :

Treatment	Av. yield in lb./ac.
O	1981
N <sub>1</sub>	2087 <sup>1</sup>
N <sub>2</sub>	2636 <sup>1</sup>
N <sub>1</sub> "	2226
N <sub>2</sub> "	2480
G.M.	2282
S.E./mean	= 153.9 lb./ac.
No. of expts.	6

Crop :- Paddy (2nd crop). Ref :- Simple trials on cultivators' fields (T.C.M.), 1953.

Centre :- Samalkot (A.P.). Type :- 'M'.

Object :- I (b), (ii) To study the effect of different levels and types of N and P<sub>2</sub>O<sub>5</sub>.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Coastal alluvium—Clay—p.H.7.7. (iii) Crops heavily manured with compost or green leaves. (iv) N.A. (v) N.A. (vi) June. (vii) Irrigated. (viii) N.A. (ix) 44". (x) November.

## 2. TREATMENTS :

O = Control.  
 P = 20 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.  
 N<sub>1</sub>P = A/S at 20 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.  
 N<sub>2</sub>P = A/S at 40 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.  
 N<sub>1</sub>"P = Urea at 20 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.  
 N<sub>2</sub>"P = Urea at 40 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.  
 Manures applied before planting.

## DESIGN :

(i) and (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
O	1949
P	2228 <sup>1</sup>
N <sub>1</sub> P	2377 <sup>1</sup>
N <sub>2</sub> P	2592
N <sub>1</sub> "P	2560
N <sub>2</sub> "P	2353
G.M.	2343
S.E./mean	= 85.57 lb./ac.
No. of Expts.	12

**Crop :- Paddy (2nd crop). Ref :- Simple trials on cultivators' fields (T.C.M.), 1953.**  
**Centre :- Samalkot (A.P.). Type :- 'M'.**

**Object :-** IV (i) To study the effect of types and levels of  $P_2O_5$  and N.

**1. BASAL CONDITIONS:**

(i) 'a) N.A. (b) N.A. (c) N.A. (ii) Coastal alluvium—Clay—p.H. 7.7. (iii) Crops heavily manured with compost or green leaves. (iv) N.A. (v) N.A. (vi) June. (vii) Irrigated. (viii) N.A. (ix) 44°. (x) November.

**2. TREATMENTS :**

O = Control  
 N = A/S at 40 lb./ac. of N.  
 NP<sub>1</sub> = A/S at 40 lb./ac. of N+Super at 20 lb./ac. of  $P_2O_5$ .  
 NP<sub>2</sub> = A/S at 40 lb./ac. of N+Super at 40 lb./ac. of  $P_2O_5$ .  
 NP'<sub>1</sub> = (A/S and Nitro. Phos.) at 40 lb./ac. of N and 20 lb./ac. of  $P_2O_5$ .  
 NP'<sub>2</sub> = (A/S and Nitro. Phos.) at 40 lb./ac. of N and 40 lb./ac. of  $P_2O_5$ .  
 Manures 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 trail 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.
O	1929
N	1747
NP <sub>1</sub>	2453
NP <sub>2</sub>	2461
NP' <sub>1</sub>	2408
NP' <sub>2</sub>	2561
G.M.	2260
S.E./mean	= 183.5 lb./ac.
No. of expts.	6

**Crop :- Paddy (2nd Crop). Ref :- Simple trials on cultivators' fields (T.C.M), 1953.**  
**Centre :- Samalkot (A.P). Type :- 'M'.**

**Object :-** IV (ii) To study the effect of types and levels of  $P_2O_5$  and N.

**1. BASAL CONDITIONS:**

(i) 'a) N.A. (b) N.A. (c) N.A. (ii) Coastal alluvium—Clay—p.H.7.7. (iii) Crops heavily manured with compost or green leaves. (iv) N.A. (v) N.A. (vi) June. (vii) Irrigated. (viii) N.A. (ix) 44°. (x) November.

**2. TREATMENTS:**

O = Control.  
 N = A/S at 40 lb./ac. of N.  
 NP<sub>1</sub> = A/S at 40 lb./ac. of N+Super at 20 lb./ac. of  $P_2O_5$ .  
 NP<sub>2</sub> = A/S at 40 lb./ac. of N+Super at 40 lb./ac. of  $P_2O_5$ .  
 NP'<sub>1</sub> = (A/S and Ammo Phos.) at 40 lb./ac. of N and 20 lb./ac. of  $P_2O_5$ .  
 NP'<sub>2</sub> = (A/S and Ammo Phos.) at 40 lb./ac. of N and 40 lb./ac. of  $P_2O_5$ .  
 Manures applied before planting.

## 3. DESIGN :

(i) and (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.
O	2188
N	2366
NP <sub>1</sub>	2297
NP <sub>2</sub>	2589
NP' <sub>1</sub>	2513
NP' <sub>2</sub>	2623
G.M.	2429
S.E./mean	= 94.62 lb./ac.
No. of expts.	6

Crop :- Paddy (2nd Crop). Ref :- Simple trials on cultivators' fields (T.C.M); 1953.

Centre :- Samalkot (A.P).

Type :- 'M'.

Object :- IV (iii) To study the effects of types and levels of P<sub>2</sub>O<sub>5</sub> and N.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) Coastal alluvium-Clay-p.H.7.7. (iii) Crops heavily manured with compost or green leaves. (iv) N.A. (v) N.A. (vi) June. (vii) Irrigated. (viii) N.A. (ix) 44°. (x) November.

## 2. TREATMENTS :

O = control.

N = A/S at 40 lb./ac. of N.

NP'<sub>1</sub> = (A/S+Nitro. Phos.) at 40 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

NP'<sub>2</sub> = (A/S+Nitro. Phos.) at 40 lb./ac. of N+40 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

NP'<sub>1</sub> = (A/S+Ammo. Phos.) at 40 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

NP'<sub>2</sub> = (A/S+Ammo. Phos.) at 40 lb./ac. of N+40 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

Manures applied before planting.

## 3. DESIGN :

(i) and (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.
O	1778
N	2241
NP' <sub>1</sub>	2087
NP' <sub>2</sub>	2128
NP' <sub>1</sub>	2182
NP' <sub>2</sub>	2205
G.M.	2104
S.E./mean	97.09 lb./ac.
No. of Expts.	8

Crop :- Paddy.

Ref :- A.P. 48 (83).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'MV'.

Object :—To study the incidence of blast in blast resistant varieties in relation to late planting.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Nil. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 18.9.1948/6.11.48. (iv) (a) 2 to 3 ploughings. (b) Transplanted. (c)—. (d) 6' × 6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 25.56". (x) 26.2.49.

## 2. TREATMENTS :

Main-plot treatments :

4 levels of A/S : L<sub>0</sub>=0, L<sub>1</sub>=112, L<sub>2</sub>=224 and L<sub>3</sub>=336 lb./ac.

Sub-plot treatments :

6 varieties : V<sub>1</sub>=BCP-1, V<sub>2</sub>=BCP-2, V<sub>3</sub>=CO. 25, V<sub>4</sub>=CO. 26, V<sub>5</sub>=Molakotukulu and V<sub>6</sub>=Iswar korra.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 17' × 4'. (v) N.L. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Severe attack of blast. (iii) Grain weight, height measurements, tiller count, etc. (iv) (a) 1943 to 1948. (b) N.A. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) 1409 lb./ac.  
 (ii) (a) 99.93 lb./ac.  
 (b) 327.3 lb./ac.  
 (iii) There is significant difference between the manures and also between the varieties (No information available regarding interaction).  
 (iv) Av. yield of grain in lb./ac.

	V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	V <sub>4</sub>	V <sub>5</sub>	V <sub>6</sub>	Mean
L <sub>0</sub>	1321	1487	1009	1712	1341	1591	1410
L <sub>1</sub>	1261	1291	1071	1541	961	1672	1299
L <sub>2</sub>	1401	1231	1491	1721	1291	1751	1481
L <sub>3</sub>	1381	1111	1491	1601	1231	1871	1448
Mean	1341	1280	1265	1644	1206	1721	1409

S E. of difference of two

1. L marginal means = 28.8 lb./ac.
2. V marginal means = 115.8 lb./ac.
3. V means at the same level of L = 231.7 lb./ac.
4. L means at the same level of V = 213.4 lb./ac.

Crop :- Paddy.

Ref :- A.P. 48 (82).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'MV'.

Object :—To study the incidence of blast in blast resistant varieties in relation to manuring and early planting.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem (iii) 5.8.48/5.9.48. (iv) (a) 2 to 3 ploughings. (b) Transplanting. (c)—. (d) 6' × 6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 26.56". (x) 4.2.49.



## 2. TREATMENTS :

## Main-plot treatments :

4 levels of A/S :  $L_0=0$ ,  $L_1=112$ ,  $L_2=224$  and  $L_3=336$  lb./ac.

## Sub-plot treatments :

6 varieties :  $V_1=BCP-1$ ,  $V_2=BCP-2$ ,  $V_3=CO. 25$ ,  $V_4=CO.26$ ,  $V_5=Molakolukulu$  and  $V_6=Iswar.korra$ .

## 3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b)  $17' \times 4'$ . (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain weight, height measurements, tiller count, etc. (iv) (a) 1943 to 1948. (b) N.A. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data; N.A.

## 5. RESULTS :

(i) 3000 lb./ac.

(ii) (a) 235.1 lb./ac.

(b) 153.1 lb./ac.

(iii) There is significant difference between the manures and also between the varieties. (No information available regarding interaction).

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

	$V_1$	$V_2$	$V_3$	$V_4$	$V_5$	$V_6$	Mean
$L_0$	2963	3303	2713	3243	3003	2352	2929
$L_1$	3103	2853	2943	2632	2933	2252	2786
$L_2$	2803	3233	3403	3453	3472	1782	3024
$L_3$	3173	3803	3143	3513	3453	2482	3261
Mean	3010	3298	3050	3210	3215	2217	3000

S.E. of difference of two

1. L marginal means = 67.9 lb./ac.

2. V marginal means = 54.2 lb./ac.

3. V means at the same level of L = 108.3 lb./ac.

4. L means at the same level of V = 119.9 lb./ac.

Crop :- Paddy.

Ref :- A.P. 50(76).

Site :- Rice. Res. Stn., Buchireddipalem.

Type :- 'MV'.

Object :- To study the incidence of blast by taking counts of neck infection on blast resistant varieties with graded doses of A/S.

## 1. BASAL CONDITIONS .

(i) (a) Nil. (b) Paddy. (c) 2 C.L./ac. of F.Y.M.+400 lb./ac. of green leaf+50 lb./ac. of G.N.C.+122 lb./ac. of B.M. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 27.7.50/29.9.50. (iv) (a) 2 to 3 dry ploughings. (b) Transplanted. (c) —. (d)  $6'' \times 6''$ . (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) N.A. (ix) 37.80". (x) 29.1.51.

## 2. TREATMENTS :

## Main-plot treatments :-

 $V_1=CO. 25$ ,  $V_2=CO. 26$ ,  $V_3=BCP-1$ ,  $V_4=BCP-2$  and  $V_5=Molakolukulu$ .

## Sub-plot treatments :-

(A/S) :  $L_0=0$ ,  $L_1=112$  lb./ac.,  $L_2=224$  and  $L_3=336$  lb./ac.

**3. DESIGN :**

(i) Split plot. (ii) (a) 5 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 4' x 20'.  
(v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Paddy blast and stem borer attack. (iii) Counts of neck infection. (iv) (a) 1950 to 1952.  
(b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data N.A. ; results copied from Annual reports.

**5. RESULTS :**

(i) to (iv)

V <sub>1</sub>	84.5
V <sub>2</sub>	83.5
V <sub>3</sub>	104.5
V <sub>4</sub>	116.4
V <sub>5</sub>	111.1
Mean	100.00

S.E./mean (%)—3.97.

Effect of varieties is significant.

Doses

(i) to (iv)

L <sub>0</sub>	99.1
L <sub>1</sub>	100.2
L <sub>2</sub>	88.4
L <sub>3</sub>	112.2
Mean	100.0

S.E./mean(%)—8.57.

There is no significant difference between the doses of A/S.

No information available regarding the significance of Interaction.

Crop :- Paddy.

Ref :- A.P. 52(46)/50(76).

Site :- Rice Res. Stn., Buchireddipalem. Type :- 'M'.

Object :-To study the incidence of blast resistant strains when manured with graded doses of A/S.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchired-dipalem. (iii) 25.7.52/29.10.52. (iv) (a) 2 to 3 dry ploughings and two puddlings. (b) Transplanted. (c) —. (d) 6' x 6'. (e) 2. (v) G.M. at 4000 lb./ac. (vi) As under treatments. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 22.63%. (x) 24.2.53.

**2. TREATMENTS :**

Main-plot treatments :—

4 levels of A/S : L<sub>0</sub>=0, L<sub>1</sub>=112, L<sub>2</sub>=224 and L<sub>3</sub>=336 lb./ac.

Sub-plot treatments :—

5 varieties : V<sub>1</sub>=CO.25, V<sub>2</sub>=CO.26, V<sub>3</sub>=BCP-1, V<sub>4</sub>=BCP-2 and V<sub>5</sub>=Local (*Molakolukulu*).

**3. DESIGN :**

(i) Split plot. (ii) (a) 4 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 4' x 20'.  
(v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Slight attack of blast. (iii) 20 plants taken at random from each plot and no. of affected earheads and healthy earheads counted. (iv) (a) 1950 to 1953. (b) Yes. (c) N.A. (v) (a) and (b) Nil.  
(vi) and (vii) Nil.

**5. RESULTS :**

(i) 1736 lb./ac.

(ii) (a) 45.4 lb./ac.

(b) 223.30 lb./ac.

(iii) Main treatments, sub treatments and their interaction are all highly significant.

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

	V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	V <sub>4</sub>	V <sub>5</sub>	Mean
L <sub>0</sub>	1421	1327	1234	1285	1302	1314
L <sub>1</sub>	1787	1736	1548	1625	1642	1668
L <sub>2</sub>	2008	2152	1897	1897	2042	1999
L <sub>3</sub>	2697	2569	1344	1548	1651	1962
Mean	1978	1946	1506	1589	1659	1736

S.E. of difference of two

1. L marginal means = 142.8 lb./ac.
2. V marginal means = 78.9 lb./ac.
3. V means at the same level of L = 157.8 lb./ac.
4. L means at the same level of V = 201.1 lb./ac.

Crop :- Paddy.

Ref :- A.P. 53(94)/52(46)/50(76).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'MV'.

Object :- To study the incidence of blast on blast resistant strains when manured with graded doses of A/S under normal (early) planting conditions.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) N.A. (iv) 2 to 3 dry ploughings. (b) Transplanted. (c) —. (d) 6" × 6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 28.47". (x) N.A.

## 2. TREATMENTS :

Main-plot treatments :—

4 levels of A/S : L<sub>0</sub>=0, L<sub>1</sub>=112, L<sub>2</sub>=224, L<sub>3</sub>=336 lb./ac.

Sub-plot treatments :—

5 varieties : V<sub>1</sub>=CO. 25, V<sub>2</sub>=CO. 26, V<sub>3</sub>=BCP-1, V<sub>4</sub>=BCP-2 and V<sub>5</sub>=Local (*Molakolukulu*).

## 3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a), (b) 20' × 4'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Blast. (iii) Height measurements, tiller count, blast intensity and grain yield. (iv) (a) 1950 to 1953. (b) Yes. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3131 lb./ac.
- (ii) (a) 474.3 lb./ac.  
(b) 227.6 lb./ac.
- (iii) Only sub treatments are significant.
- (iv) Av. yield of grain in lb./ac.

	V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	V <sub>4</sub>	V <sub>5</sub>	Mean
L <sub>0</sub>	3531	3207	3003	3029	3259	3206
L <sub>1</sub>	3683	3327	2935	2893	3215	3211
L <sub>2</sub>	3743	2624	2901	2688	3283	3048
L <sub>3</sub>	3377	3249	2467	2893	3317	3061
Mean	3583	3102	2827	2876	3269	3131

S.E. of difference of two

1. L marginal means = 149.9 lb./ac.
2. V marginal means = 80.5 lb./ac.
3. V means at the same level of L = 161.0 lb./ac.
4. L means at the same level of V = 207.9 lb./ac.

Crop :- Paddy.

Ref :- A.P. 53(95).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'MV'.

Object :- To study the incidence of blast on blast resistant strains when manured with graded doses of A S under late planting conditions.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) N.A. (iv) (a) 2 to 3 dry ploughing. (b) Transplanted. (c) —. (d) 6" × 6". (e) 2. (v) Nil. (vi) BCP-2. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 28.47". (x) N.A.

## 2. TREATMENTS :

Main-plot treatments :—

4 levels of A/S :  $L_0=0$ ,  $L_1=112$ ,  $L_2=224$ , and  $L_3=336$  lb./ac.

Sub-plot treatments :—

5 varieties :  $V_1=CO. 25$ ,  $V_2=CO. 26$ ,  $V_3=BCP-1$ ,  $V_4=BCP-2$  and  $V_5=Local (Molokolukulu)$ .

## 3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a), (b) 20' × 4'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Blast. (iii) Height measurements, grain yield, tiller counts, and blast intensity. (iv) (a) 1950 to 1953. (b) Yes. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2133 lb./ac.  
 (ii) (a) 367.5 lb./ac.  
 (b) 250.5 lb./ac.  
 (iii) Main treatments and sub-treatments are significant. Interaction is not significant.  
 (iv) Av. yield of grain in lb./ac.

	$V_1$	$V_2$	$V_3$	$V_4$	$V_5$	Mean
$L_0$	3293	2859	1191	1369	1846	2112
$L_1$	3531	2518	945	1157	1625	1955
$L_2$	3521	2875	945	1191	1925	2091
$L_3$	4024	3555	715	1412	2170	2375
Mean	3592	2952	949	1282	1891	2133

S.E. of difference of two

1. L marginal means = 116.2 lb./ac.  
 2. V marginal means = 88.6 lb./ac.  
 3. V means at the same level of L = 177.1 lb./ac.  
 4. L means at the same level of V = 196.5 lb./ac.

Crop :- Paddy (Main crop season).

Ref :- A.P. 48(78).

Site :- Agri. Res. Stn., Maruteru

Type :- 'MV'.

Object :- Trial of MTU—1 and *ryots'* Akkullu bulk to compare the relative exhausting capacities of either in double crop area.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 7.6.48. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6" × 6". (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. First weeding one month after transplanting. (ix) 33.87". (x) 27.11.48

## 2. TREATMENTS :

## Main-plot treatments :—

2 levels manure  $M_0$ =No manure.,  $M_1$ =Manured at 2000 lb./ac. of G.L.+400 lb./ac. of G.N.C.+112 lb./ac. of Super.+50 lb./ac. of A/S.

## Sub-plot treatments : -

2 Varieties :  $V_1$ =MTU—1 and  $V_2$ =Ryots' Akkullu.

## 3. DESIGN :

(i) Split plot. (ii) (a) 2. main-plots/block; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 9'×30' (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 52. (b) Yes. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3097 lb./ac.  
 (ii) (a) 723.7 lb./ac.  
 (b) 344.3 lb./ac.  
 (iii) There is significant difference between varieties. No other effect is significant.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	3193	3395	3294
$V_2$	2790	3011	2901
Mean	2992	3203	3097

## S.E. of difference of two

1. M marginal means = 295.4 lb./ac.  
 2. V marginal means = 140.4 lb./ac.  
 3. V means at the same level M = 198.7 lb./ac.  
 4. M means at the same level of V = 328.2 lb./ac.

Crop :- Paddy (Main crop season)

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

Ref :- A.P. 49(74)/48(78).

Type :- 'MV'.

Object :—To study the effect of continuously growing a strain vs. ryots' unselected bulk on the soil fertility in double crop area.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 22.5.49. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6"×6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 41.67". (x) 20.11.49.

## 2. TREATMENTS :

## Main-plot treatments :—

2 levels of Manure :—  $M_0$ =No manure and  $M_1$ =2000 lb./ac. of G.L.+400 lb./ac. of G.N.C.+112 lb./ac. of Super+50 lb./ac. of A/S

## Sub-plot treatments :—

Varieties :— $V_1$ =MTU—1 and  $V_2$ =Ryots' Akkullu.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 30'×9' (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory due to cyclone in October. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1952. (b) Yes. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1626 lb./ac.  
 (ii) (a) 394.6 lb./ac.  
 (b) 236.5 lb./ac.  
 (iii) Effect of varieties is significant. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	1834	1628	1746
V <sub>2</sub>	1527	1484	1506
Mean	1696	1536	1626

## S.E. of difference of two

- M marginal means = 161.1 lb./ac.
- V marginal mean. = 96.4 lb./ac.
- V means at the same level of M = 136.4 lb./ac.
- M means at the same level of V = 187.7 lb./ac.

Crop :- Paddy (Double crop area). Ref :- A.P. 50 (29)/49 (74)/48 (78).  
 Site :- Agri. Res. Stn., Maruteru. Type :- 'M'.

Object :- To study the effect of continuously growing a strain vs. unselected bulk on the soil fertility in manured and unmanured plots.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 15.5.1950. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6' × 6'. (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. First weeding one month after transplanting. (ix) 46.71°. (x) 21.11.1950.

## 2. TREATMENTS :

## Main-plot treatments :

2 levels of manure : M<sub>0</sub> = No manure, M<sub>1</sub> = 2000 lb./ac. of G.L. + 400 lb./ac. of G.N.C. + 112 lb./ac. of Super + 50 lb./ac. of A.S.

## Sub-plot treatments :

2 varieties : V<sub>1</sub> = MTU—1 and V<sub>2</sub> = Ryots' Akkullu.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a), (b) 30' × 20'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Straw and grain yield. (iv) (a) 1948 to 1950. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2790 lb./ac.  
 (ii) (a) 333.1 lb./ac.  
 (b) 437.9 lb./ac.  
 (iii) Effects of varieties and manures are highly significant. Interaction is significant.

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

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	2532	4038	3285
V <sub>2</sub>	1998	2593	2295
Mean	2265	3315	2790

S.E. of difference of two

1. M marginal means =135.9 lb./ac.
2. V marginal means =178.8 lb./ac.
3. V means at the same level of M =252.8 lb./ac.
4. M means at the same level of V =224.6 lb./ac.

Crop :- Paddy (Double crop area).

Ref :- A.P. 51 (63)/ 50 (29)/49 (74)/48 (78).

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

Type :- 'M'.

Object :- To study the effect of continuously growing a strain compared to *ryots* unselected bulk on the soil fertility.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Same as under treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 19.5.1951/29.6.1951. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)  $\frac{1}{2}$ . (d) 6" x 6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings, first weeding a month after transplanting. (ix) 45.18". (x) 20th and 21st November, 1951.

## 2. TREATMENTS :

Main-plot treatments :

2 levels of manure : M<sub>0</sub>=No Manure, M<sub>1</sub>=G.L. at 2000 lb./ac.+G.N.C. at 400 lb./ac.+Super at 112 lb./ac.+A/S at 50 lb. per acre.

Sub-plot treatments :

2 varieties : V<sub>1</sub>=MTU-1 and V<sub>2</sub>=*Ryots' Akkullu*.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a), (b) 29.5' x 19'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Straw and grain yield. (iv) (a) 1948 to 1952. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3110 lb./ac.
- (ii) (a) 567.2 lb./ac.
- (b) 414.9 lb./ac.
- (iii) Main effect of M is significant. Interaction V x M is also significant. Main effect of V is not significant.
- (iv) Av. yield of grain in lb./ac.

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	2968	3536	3252
V <sub>2</sub>	2290	3644	2967
Mean	2629	3590	3110

S.E. of difference of two

1. M marginal means =231.5 lb./ac.
2. V marginal means =169.3 lb./ac.
3. V means at the same level of M =239.5 lb./ac.
4. M means at the same level of V =286.9 lb./ac.

**Crop :- Paddy (Double crop area). Ref :- A.P. 52(64)/51(63)/50(29)/49(74/48(78)).**  
**Site :- Agri. Res. Stn., Maruteru. Type :- 'MV'.**

**Object** —To compare the relative exhausting capacities of the soil with varieties MTU-1 and *Ryots' Akkullu*.

### 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 28.5.52/3.7.52. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—. (d) 6' × 6'. (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 Weedings. First weeding one month after transplanting. (ix) N.A. (x) 2.12.52.

### 2. TREATMENTS :

**Main-plot treatments :—**

2 levels of manure :  $M_0$  = No manure,  $M_1$  = 2000 lb./ac. of G.L. + 400 lb./ac. of G.N.C. + 112 lb./ac. of Super + 50 lb./ac. of A/S.

**Sub-plot treatments :—**

2 varieties :  $V_1$  = MTU-1 and  $V_2$  = *Ryots' Akkullu*.

### 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a), (b) Mainplot ; 30' × 40' ; sub-plot : 30' × 10'. (v) Nil. (vi) Yes.

### 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1952. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

### 5. RESULTS :

(i) 3097 lb./ac.  
(ii) (a) 215.3 lb./ac.  
(b) 365.9 lb./ac.  
(iii) Effects of V and M are significant. Interaction  $V \times M$  is not significant.  
(iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	4319	2202	3260
$V_2$	3872	1996	2934
Mean	4096	2099	3097

S.E. of difference. of two

1. M marginal means = 87.8 lb./ac.
2. V marginal means = 148.6 lb./ac.
3. V means at the same level of M = 211.2 lb./ac.
4. M means at the same level of V = 173.2 lb./ac.

**Crop :- Paddy (Main crop season).**  
**Site :- Agri. Res. Stn., Maruteru.**

**Ref :- A.P. 48(76).**  
**Type :- 'MV'.**

**Object** : Trial of MTU-1 and *Ryots' Akkullu* bulk to compare the relative exhausting capacities of either in single crop area.

### 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 6.7.48. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—. (d) 6' × 6'. (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. First weeding one month after transplanting. (ix) 31.87'. (x) 27.11.58.

### 2. TREATMENTS :

**Main-plot treatments :—**

2 levels of manure :  $M_0$  = No manure.  $M_1$  = 2000 lb./ac. of G.L. + 400 lb./ac. of G.N.C. + 112 lb./ac. of Super + 50 lb./ac. of A/S.

**Sub-plot treatments :—**

2 varieties :  $V_1$  = MTU-1 and  $V_2$  = *Ryots' Akkullu*.



## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 9' x 30'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1952. (b) Yes. (c) Nil. (v) (a) Nil. (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 2662 lb./ac.  
 (ii) (a) 100.5 lb./ac.  
 (b) 238.9 lb./ac.  
 (iii) Effects of V and M are significant. Interaction is not significant.  
 (iv) Av. yield of grain in lb./ac.

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	3092	2581	2837
V <sub>2</sub>	2661	2312	2487
Mean	2877	2447	3662

S.E. of difference of two

1. M marginal means = 41.0 lb./ac.
2. V marginal means = 97.4 lb./ac.
3. V means at the same level of M = 137.9 lb./ac.
4. M means at the same level of V = 105.8 lb./ac.

Crop :- Paddy (Main crop season).

Ref :- A.P. 49(73)/48(76).

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

Type :- 'MV'.

Object :- To study the effect of continuously growing a strain *vs. ryots*' unselected bulk on the soil fertility in single crop area.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 22.5.49. (iv) (a) Water let in, puddled and levelled. (b) Transplanted. (c) —. (d) 6" x 6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 41.67". (x) 18.11.49.

## 2. TREATMENTS :

Main-plot treatments :-

2 levels of manure : M<sub>0</sub> = No manure and M<sub>1</sub> = 2000 lb./ac. of G.L. + 400 lb./ac. of G.N.C. + 112 lb./ac. of Super + 50 lb./ac. of A/S.

Sub-plot treatments :-

2 varieties : V<sub>1</sub> = MTU-1 and M<sub>2</sub> = *Ryots*' Akkullu.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 30' x 9'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory due to cyclone in October. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1952. (b) Yes. (c) Nil. (v) (a) Nil. (b) Nil. (vi) Nil. (vii) Nil.

## 5. RESULTS :

(i) 2265 lb./ac.  
 (ii) (a) 174.9 lb./ac.  
 (b) 195.4 lb./ac.  
 (iii) Variety effects are significant.

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

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	2514	2413	2464
V <sub>2</sub>	2123	2009	2066
Mean	2319	2211	2265

S.E. of difference of two

1. M marginal means = 71.4 lb./ac.
2. V marginal means = 79.8 lb./ac.
3. V means at the same level of M = 112.8 lb./ac.
4. M means at the same level of V = 107.1 lb./ac.

Crop :-Paddy (Single crop area).

Ref :-A.P.50(28)/49(73)/48(76).

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

Type :-'MV'.

Object :—To study the effect of continuously growing a strain *vs. ryots'* unselected bulk on the soil fertility in manured and unmanured plots.

## 1. BASAL CONDITIONS :

(i) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 15.5. 0. (iv) (a) Water let in puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6' × 6". (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. First weeding one month after transplanting. (ix) 46.71". (x) 21.11.50.

## 2. TREATMENTS :

Main-plot treatments :—

2 levels of manure : M<sub>0</sub> = No manure and M<sub>1</sub> = 2000 lb./ac. of G.L. + 400 lb./ac. of G.N.C. + 112 lb./ac. of Super + 50 lb./ac. of A/S.

Sub-plot treatments :—

2 varieties : V<sub>1</sub> = MTU-1 and V<sub>2</sub> = Ryots' Akkullu.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) Main-plot 30' × 20' ; sub-plot 30' × 10'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1952. (b) Yes. (c) N.A. (v) (a) Nil. (b) Nil. (vi) Nil. (vii) Nil.

## 5. RESULTS :

(i) 3569 lb./ac.  
 (ii) (a) 310.3 lb./ac.  
 (b) 254.1 lb./ac.  
 (iii) Effects of of main-treatments and sub-treatments are highly significant. Interaction is not significant.  
 (iv) Av. yield of grain in lb./ac.

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	4258	3956	4107
V <sub>2</sub>	3404	2657	3031
Mean	3831	3307	3569

S.E. of difference of two

1. M marginal means = 126.6 lb./ac.
2. V marginal means = 103.7 lb./ac.
3. V means at the same level of M = 163.7 lb./ac.
4. M means at the same level of V = 146.7 lb./ac.

Crop :- Paddy (Single crop area). Ref :- A.P. 51(64)/50(28)/49(73)/48(76)

Site :- Agri. Res. Stn., Maruteru. Type :- 'MV'.

Object :—To study the effect of continuously growing a strain compared to *ryots*' unselected bulk on the soil fertility.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy. (c) As under treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 19.5.51/29.6.51. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—(d) 6"×6". (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. First weeding one month after transplanting. (ix) 45.18". (x) 21.1.151.

2. TREATMENTS :

Main-plot treatments :—

2 levels of Manure :  $M_0$ =No manure.  $M_1$ =G.L. at 2000 lb./ac. + G.N.C. at 400 lb./ac. + Super at 112 lb./ac. + A/S at 50 lb. per acre.

Sub-plot treatments : 2 Varieties :  $V_1$ =MTU-1 and  $V_2$ =*Ryots*' Akkullu.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a); (b) Main-plot : 29.5'×19'; sub-plot : 29.5'×9.5'. (v) Nil. (vi) Yes.

4. GENERAL

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1952. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2722 lb./ac.  
 (ii) (a) 506.6 lb./ac.  
 (b) 219.1 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	2738	2639	2689
$V_2$	2764	2747	2755
Mean	2751	2693	2722

S.E. of difference of two

1. M marginal means =206.8 lb./ac.
2. V marginal means = 89.4 lb./ac.
3. V means at the same level of M =126.5 lb./ac.
4. M means at the same level of V =225.3 lb./ac.

Crop :- Paddy. (Single crop area).

Ref :- A.P. 52(63)/51(64)/50(28)/49(73)/48(76)

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

Type :- 'M'.

Object :—To study the effect of continuously growing a strain compared to *ryots*' unselected bulk on the soil fertility.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 19.5.51/29.6.51. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—(d) 6"×6". (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. First weeding one month after transplanting. (ix) N.A. (x) 1.12.52.

**2. TREATMENTS :****Main-plot treatments :—**

2 levels of Manure :  $M_0$ =No manure.  $M_1$ =G.L. at 200 lb./ac.+Super at 112 lb./ac.+400 lb./ac. of G.N.C. +A/S at 50 lb./ac.

**Sub plot treatments :—**

2 Varieties :  $V_1$ =MTU-1 and  $V_2$ =Ryots' Akkullu.

**3. DESIGN :**

(i) Split plot (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot (b) N.A. (iii) 6. (iv) (a) 30'×20'. (b) 30'×20'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain and straw yield (iv) (a) 1948 to 1952 (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

(i) 3774 lb./ac.

(ii) (a) 628.7 lb./ac.

(b) 334.8 lb./ac.

(iii) None of the effects is significant.

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

	$V_1$	$V_2$	Mean
$M_0$	3787	3762	3775
$M_1$	3699	3848	3774
Mean	3743	3804	3774

**S.E. of difference of two**

1. M marginal means =256.6 lb./ac.
2. V marginal means =136.6 lb./ac.
3. V means at the same level of M =193.3 lb./ac.
4. M means at the same level of V =290.8 lb./ac.

Crop :- Paddy.

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

Ref :- A.P. 49(72).

Type :- 'MV'.

Object :—To gauge the superiority of MTU-3 over MTU-3 (early I) under conditions of late planting and manuring.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 20.5.49. (iv) (a) Water let in, puddled and levelled. (b) Transplanted. (c)—. (d) 6"×6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 41.67". (x) 21.10.49.

**2. TREATMENTS :****Main-plot treatments :—**

2 levels of manure :  $M_0$ =No manure and  $M_1$ =G.L. at 400 lb./ac.+B.M. at 112 lb./ac.

**Sub-plot treatments :—**

2 varieties :  $V_1$ =MTU-3 and  $V_2$ =MTU-3(early I).

**3. DESIGN :**

(i) Split plot (ii) (a) 2 main plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) Sub-plot : 10.5'×25.5'; main-plot : 21'×25.5'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Not satisfactory. The harvest was caught in cyclone and most of the straw got wet and spoiled. (ii) Nil. (iii) Grain yield. (iv) (a) 1949 to 1951. (b) N.A. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1047 lb./ac.  
 (ii) (a) 121.5 lb./ac.  
 (b) 192.3 lb./ac.  
 (iii) Variety effects are significant. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	1411	1212	1312
V <sub>2</sub>	797	766	781
Mean	1104	989	1047

## S.E. of difference of two

1. M marginal means = 49.6 lb./ac.  
 2. V marginal means = 78.5 lb./ac.  
 3. M means at the same level of V = 111.0 lb./ac.  
 4. V means at the same level of M = 92.9 lb./ac.

Crop :- Paddy (Main crop season).

Ref :- A.P. 50(81).

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

Type :- 'MV'.

Object :- To gauge the superiority of MTU-3 and MTU-20 under late planting conditions and manuring.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 5.6.50.  
 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6" × 6". (e) 2. (v) Nil.  
 (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 49.63%. (x) MTU-20 : 28.10.50 :  
 MTU-3 : 30.10.50.

## 2. TREATMENTS :

## Main-plot treatments :-

2 levels of manure : M<sub>0</sub> = No manure, M<sub>1</sub> = 2000 lb./ac. of G.L. + 400 lb./ac. of G.N.C. + 112 lb./ac. of Super + 50 lb./ac. of A/S.

## Sub-plot treatments :-

2 varieties : V<sub>1</sub> = MTU-3 and V<sub>2</sub> = MTU-20.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a), (b) 10' × 25.5'.  
 (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Height measurements, tiller count and Grain & straw yield. (iv) (a) 1949 to 1951. (b) N.A. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2365 lb./ac.  
 (ii) (a) 150.0 lb./ac.  
 (b) 81.8 lb./ac.  
 (iii) Variety effects are highly significant. Manure effects are not significant. Interaction is significant.  
 (iv) Av. yield of grain in lb./ac.

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	2566	2575	2570
V <sub>2</sub>	2095	2225	2160
Mean	2330	2400	2365

## S.E. of difference of two

1. M marginal means = 61.1 lb./ac.  
 2. V marginal means = 33.0 lb./ac.  
 3. V means at the same level of M = 46.6 lb./ac.  
 4. M means at the same level of V = 69.5 lb./ac.

Crop :- Paddy (Late planting).  
Site :- Agri. Res. Stn., Maruteru.

Ref :- A.P. 51(66).  
Type :- 'MV'.

Object :- To gauge the superiority of MTU-3 over MTU-20 under different conditions of planting and manuring.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 3.6.51. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6' x 6'. (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. First weeding one month after transplanting. (ix) 45.18%. (x) 2.11.51.

2. TREATMENTS :

Main-plot treatments :-

2 levels of Manure :  $M_0$  = No manure.  $M_1$  = 2000 lb./ac. of G.L. + Super at 112 lb./ac + A/S at 50 lb./ac. + G.N.C. at 400 lb./ac.

Sub-plot treatments :-

2 varieties :  $V_1$  = MTU-3 and MTU-20.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 9.5' x 25'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1949 to 1952. (b) N.A. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1913 lb./ac.

(ii) (a) 63.09 lb./ac.

(b) 95.18 lb./ac.

(iii) Effects of V and M are significant. Interaction is not significant.

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

	$V_1$	$V_2$	Mean
$M_0$	2043	1577	1810
$M_1$	2206	1826	2016
Mean	2124	1701	1913

S.E. of difference of two

1. M marginal means = 25.7 lb./ac.
2. V marginal means = 38.7 lb./ac.
3. V means at the same level of M = 54.9 lb./ac.
4. M means at the same level of V = 47.6 lb./ac.

Crop :- Paddy (Main crop).  
Site :- Agri. Res. Stn., Maruteru.

Ref :- A.P. 49 (71).  
Type :- 'MV'

Object :- To gauge the superiority of MTU-3 over MTU-3 (Early I) under conditions of early planting and manuring.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 4.5.49. (iv) (a) Water let in, puddled and levelled. (b) Transplanted. (c) —. (d) 6' x 6'. (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 41.67%. (x) 22.10.49.

**2. TREATMENTS :**

Main-plot treatments :—

2 levels of manure :  $M_0$ =No manure.  $M_1$ =G.L. at 400 lb./ac. + B.M. at 112 lb./ac.

Sub-plot treatments :—

2 varieties :  $V_1$ =MTU-3 and  $V_2$ =MTU-3 (Early I).**3. DESIGN :**

(i) Split plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) Sub-plot : 10.5' × 25.5' ; main-plot : 21' × 25.5' ; (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1949 to 1951. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

(i) 2592 lb./ac.

(ii) (a) 228.6 lb./ac.

(b) 217.2 lb./ac.

(iii) Effects of M and V are significant. Interaction is not significant.

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

	$M_0$	$M_1$	Mean
$V_1$	2563	2933	2748
$V_2$	2291	2579	2435
Mean	2427	2756	2592

S.E. of difference of two

1. M marginal means = 93.3 lb./ac.
2. V marginal means = 88.7 lb./ac.
3. V means at the same level of M = 125.4 lb./ac.
4. M means at the same level of V = 128.8 lb./ac.

Crop :- Paddy ( Main crop season).

Ref :- A.P. 50(80).

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

Type :- 'MV'.

Object :—To gauge the superiority of MTU-3 and MTU-20 under early planting conditions and manuring.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 15.5.50. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6" × 6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 49.63". (x) MTU-20 : 14.10.50 ; MTU-3 : 23.10.50.

**2. TREATMENTS :**

Main-plot treatments :—

2 levels of manure :  $M_0$ =no manure.  $M_1$ =2000 lb./ac. of G.L.+400 lb./ac. of G.N.C.+112 lb./ac. of Super + 50 lb./ac. of A/S.

Sub-plot treatments :—

2 varieties :  $V_1$ =MTU-3 and  $V_2$ =MTU-20.**3. DESIGN :**

(i) Split plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 10' × 25.5'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Height measurements, tiller count and grain and straw yield. (iv) (a) 1949 to 1951. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2900 lb./ac.  
 (ii) (a) 197.4 lb./ac.  
 (b) 145.5 lb./ac.  
 (iii) Only manure and variety effects are significant.  
 (iv) Av. yield of grain in lb./ac.

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	2796	3288	3042
V <sub>2</sub>	2562	2954	2758
Mean	2679	3121	2900

## S.E. of difference of two

1. M marginal means = 80.5 lb./ac.  
 2. V marginal means = 59.4 lb./ac.  
 3. V means at the same level of M = 84.0 lb./ac.  
 4. M means at the same level of V = 100.1 lb./ac.

Crop :- Paddy (Early planting).

Ref :- A.P. 51(65).

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

Type :- 'MV'.

Object :- To gauge the superiority of MTU-3 over MTU-20 under different conditions of planting and manuring.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 16.5.51.  
 (iv) (a) Water 'et in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6'×6'. (e) 2. (v) Nil.  
 (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. First weeding one month after transplanting.  
 (ix) 45.18". (x) 16 and 26.10.51.

## 2. TREATMENTS :

## Main-plot treatments :-

- 2 levels of manure : M<sub>0</sub>=No manure. M<sub>1</sub>=2000 lb./ac. of G.L.+Super at 112 lb./ac.+A/S at 50 lb./ac.+G.N.C. at 400 lb./ac.

## Sub-plot treatments :-

- 2 varieties : V<sub>1</sub>=MTU-3 and V<sub>2</sub>=MTU-20.

## 3. DESIGN :

- (i) Split plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 10'×5'.  
 (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Straw and grain yield. (iv) (a) 1949 to 1952. (b) and (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3517 lb./ac.  
 (ii) (a) 145.5 lb./ac.  
 (b) 104.0 lb./ac.  
 (iii) Effects of V, M and V×M are all significant.



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

	V <sub>1</sub>	V <sub>2</sub>	Mean
M <sub>0</sub>	3619	2957	3288
M <sub>1</sub>	4209	3283	3746
Mean	3914	3120	3517

S.E. of difference of two

1. V marginal means = 59.4 lb./ac.
2. M marginal means = 42.4 lb./ac.
3. V means at the same level of M = 60.0 lb./ac.
4. M means at the same level of V = 72.6 lb./ac.

Crop :- Paddy (Main crop season).

Ref :- A.P. 48.(77).

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

Type :- 'MV'.

Object :- To determine a single strain of *Akkullu* as between MTU-1 and SLO-13 for Godavari delta under early planted conditions.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 22.5.1948.  
 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6" x 6". (e) 2. (v) Nil.  
 (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. First weeding one month after transplanting.  
 (ix) 31.87". (x) 27.11.1948.

## 2. TREATMENTS :

Main-plot treatments:

2 levels of manure: M<sub>0</sub> = No manure. M<sub>1</sub> = 2000 lb./ac. of G.L. + 400 lb./ac. of G.N.C. + 112 lb./ac. of Super + 50 lb./ac. of A/S.

Sub-plot treatments :

2 varieties: V<sub>1</sub> = MTU-1 and V<sub>2</sub> = SLO-13.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/block; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a), (b) 9' x 30'.  
 (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1949 to 1952. (b) N.A. (c) N.A. (v) (a)  
 (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3223 lb./ac.  
 (ii) (a) 376.7 lb./ac.  
 (b) 473.3 lb./ac.  
 (iii) There is significant difference between main treatments. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	4006	2776	3391
V <sub>2</sub>	3522	2588	3055
Mean	3764	2682	3223

S.E. of difference of two

1. M marginal means = 153.7 lb./ac.
2. V marginal means = 193.2 lb./ac.
3. V means at the same level of M = 273.2 lb./ac.
4. M means at the same level of V = 246.9 lb./ac.

Crop :- Paddy.

Ref :- A.P. 48 (79).

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

Type :- 'MV'.

Object :- To determine a single strain of *Akkullu* as between MTU-1 and SLO-13 for Godavari delta under late planted conditions.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 6.6.1948. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6' x 6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. First weeding one month after transplanting. (ix) 31.87". (x) 28.11.1948.

## 2. TREATMENTS :

## Main-plot treatments :

2 levels of manure :  $M_0$  = No manure,  $M_1$  = 2000 lb./ac. of G.L. + 400 lb./ac. of G.N.C. + 112 lb./ac. of Super + 50 lb./ac. of A/S.

## Sub-plot treatments :

2 varieties :  $V_1$  = MTU-1 and  $V_2$  = SLO-13.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a), (b) 24' x 9'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1950. (b) N.A. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 2834 lb./ac.  
 (ii) (a) 400.7 lb./ac.  
 (b) 235.9 lb./ac.  
 (iii) There is significant difference between varieties. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	2689	2529	2609
$V_2$	3000	3118	3059
Mean	2844	2824	2834

## S.E. of difference of two

1. V marginal means = 163.5 lb./ac.
2. M marginal means = 96.3 lb./ac.
3. V means at the same level of M = 136.2 lb./ac.
4. M means at the same level of V = 189.7 lb./ac.

Crop :- Paddy (main crop).

Ref :- A.P. 50(78).

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

Type :- 'MV'.

Object :- To study the performance of varieties of Paddy under manured and unmanured conditions (high level).

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 31.5.50/10.7.50. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6' x 6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 49.63". (x) 26, 27, 11, 1950.

**2. TREATMENTS :**

Main-plot treatments :—

2 levels of manure :  $M_0$ =No manure.  $M_1$ =2000 lb./ac. of G.L.+400 lb./ac. of G.N.C.+112 lb./ac. of Super+50 lb./ac. of A/S.

Sub-plot treatments :—

3 varieties :  $V_1$ =MTU-5,  $V_2$ =GEB-24 and  $V_3$ =SLO-13.**3. DESIGN :**

(i) Split plot. (ii) (a) 2 main-plots/block 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 9'×47'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) Yes 1948 to 1950. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 2649 lb./ac.  
 (ii) (a) 135.5 lb./ac.  
 (b) 214.3 lb./ac.  
 (iii) Main effect of M is highly significant. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	2467	2876	2672
$V_2$	2467	2724	2596
$V_3$	2663	2696	2680
Mean	2532	2765	2649

S.E. of difference of two

1. M marginal means = 45.1 lb./ac.  
 2. V marginal means = 87.4 lb./ac.  
 3. V means at the same level of M = 123.7 lb./ac.  
 4. M means at the same level of V = 110.6 lb./ac.

Crop :- Paddy.

Ref :- A.P. 50(79).

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

Type :- 'MV'.

Object :—To study the performance of varieties of Paddy under manured and unmanured conditions. (low level).

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 31.5.50/10.7.50.  
 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—. (d) 6"×6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 49.63". (x) 26th and 27th November 1950.

**2. TREATMENTS :**

Main-plot treatments :—

2 levels of manure :  $M_0$ =No manure.  $M_1$ =2000 lb./ac. of G.L.+400 lb./ac. of G.N.C.+112 lb./ac. of Super+50 lb./ac. of A/S.

Sub-plot treatments :—

3 varieties :  $V_1$ =MTU-5,  $V_2$ =GEB-24 and  $V_3$ =SLO-13.**DESIGN :**

(i) Split plot. (ii) (a) 2 main-plots/block ; 3 Sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 9'×7'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1950. (b) and (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 2747 lb./ac.  
 (ii) (a) 392.9 lb./ac.  
 (b) 235.2 lb./ac.  
 (iii) Main effect of V is highly significant. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	2552	2674	2613
$V_2$	2610	2749	2680
$V_3$	2945	2949	2947
Mean	2702	2791	2747

**S.E. of difference of two**

1. M marginal means = 131.0 lb./ac.
2. V marginal means = 83.7 lb./ac.
3. V means at the same level of M = 118.5 lb./ac.
4. M means at the same level of V = 162.8 lb./ac.

Crop :- Paddy.

Ref :- A.P. 50(82).

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

Type :- 'MV'.

Object :- To determine a single strain of *Akkullu* as between MTU-1 and SLO-3 for Godavari delta under manured and unmanured and late planting conditions.

**1. BASAL CONDITIONS :**

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 5.6.5C. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) - (d) 6' x 6'. (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 49.63°. (x) 22.11.50.

**2. TREATMENTS :****Main-plot treatments :**

2 levels of manure :  $M_0$  = No manure and  $M_1$  = 2000 lb./ac. of G.L. + 400 lb./ac. of G.N.C. + 112 lb./ac. of Super + 50 lb./ac. of A/S.

**Sub-plot treatments :**

2 varieties :  $V_1$  = SLO-13 and  $V_2$  = MTU-1.

**3. DESIGN :**

(i) Split plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 9.5' x 24.5'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Low yields of grain under manured conditions are due to rank vegetative growth. Consequently crop lodged badly. Date of lodging not available. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1949 to 1950. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 3695 lb./ac.  
 (ii) (a) 415.7 lb./ac.  
 (b) 228.7 lb./ac.  
 (iii) Main effects of M and V are significant. Interaction is not significant.

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

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	4309	3410	3860
V <sub>2</sub>	3903	3158	3530
Mean	4106	3284	2695

S.E. of difference of two

1. M marginal means = 169.7 lb./ac.
2. V marginal means = 93.3 lb./ac.
3. V means at the same level of M = 132.0 lb./ac.
4. M means at the same level of V = 193.7 lb./ac.

Crop :- Paddy (main crop).

Ref :- A.P. 50(83).

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

Type :- 'MV'.

Object :- To determine a single strain of *Akkullu* as between MTU-1 and SLO-13 for Godavari delta under manured and unmanured and early planting conditions.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 15.5.50. (iv) (a) N.A. (b) Transplanted. (c) —. (d) 2" × 6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings (ix) N.A. (x) 21.11.50.

## 2. TREATMENTS :

Main-plot treatments :-

2 levels of manure : M<sub>0</sub>=No manure and M<sub>1</sub>=2000 lb./ac. of G.L.+400 lb./ac. of G.N.C.+112 lb./ac. of Super+50 lb./ac. of A/S.

Sub-plot treatments :

2 varieties : V<sub>1</sub>=SLO-13 and V<sub>2</sub>=MTU-1.

## 3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) Sub-plot : 10' × 31' ; main-plot 20' × 31'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Low yield of grain under manured conditions is due to rank vegetative growth. Consequently crop lodged. Date of lodging is N.A. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1950. (b) and (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3736 lb./ac.
- (ii) (a) 142.8 lb./ac.
- (b) 379.7 lb./ac.
- (iii) Main effect of M is highly significant. Others are not significant.
- (iv) Av. yield of grain in lb./ac.

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	3970	3381	3676
V <sub>2</sub>	4141	3453	3797
Mean	4055	3417	3736

S.E. of difference of two

1. V marginal means = 63.6 lb./ac.
2. M marginal means = 169.7 lb./ac.
3. V means at the same level of M = 240.0 lb./ac.
4. M means at the same level of V = 181.0 lb./ac.

Crop :- Paddy (main crop and low level).

Ref :- A.P. 48(35).

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

Type :- 'MV'.

Object :- To gauge the influences of soil, climatic conditions, varieties, manure, etc. on the yield of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 3rd week of May, 1948. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6' x 6'. (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 31.87%. (x) Last week of Nov. 1948.

## 2. TREATMENTS :

Main-plot treatments :-

2 levels of manure :  $M_0$  = No manure.  $M_1$  = 2000 lb./ac. of G.L. + 400 lb./ac. of G.N.C. + 112 lb./ac. of Super + 50 lb./ac. of A/S.

Sub-plot treatments :-

3 varieties :  $V_1$  = MTU-5,  $V_2$  = GEB-24 and  $V_3$  = SLO-13.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (iii) 6. (iv) (a) and (b) 9.5' x 46.5'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2681 lb./ac.  
 (ii) (a) 64.09 lb./ac.  
 (b) 100.6 lb./ac.  
 (iii) Effects of M and V are significant. Interaction is not significant.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	3052	2841	2947
$V_2$	2561	1877	2219
$V_3$	3210	2543	2877
Mean	2941	2420	2681

## S.E. of difference of two

1. V marginal means = 21.4 lb./ac.  
 2. M marginal means = 41.0 lb./ac.  
 3. V means at the same level of M = 58.0 lb./ac.  
 4. M means at the same level of V = 52.0 lb./ac.

Crop :- Paddy (main crop and high level).

Ref :- A.P. 48(36).

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

Type :- 'MV'.

Object :- To gauge the influences of soil, climatic conditions, varieties, manure, etc., on the yield of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 3rd week of May 1948. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6' x 6'. (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 31.87%. (x) Last week of Nov. 1948.

**2. TREATMENTS :****Main-plot treatments :—**

2 levels of manure :  $M_0$ =No manure and  $M_1$ =2000 lb./ac. of G.L.+400 lb./ac. of G.N.C.+112 lb./ac. of Super+50 lb./ac. of A/S.

**Sub-plot treatments :—**

3 varieties :  $V_1$ =MTU-5,  $V_2$ =GEB-24 and  $V_3$ =SLO-13.

**3. DESIGN :**

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 9.5'×46.5'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1952. (b) N.A. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 3071 lb./ac.  
 (ii) (a) 165.7 lb./ac.  
 (b) 69.0 lb./ac.  
 (iii) Effects of V and M are significant. Interaction is not significant.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	2929	3333	3131
$V_2$	2936	2789	2863
$V_3$	3034	3402	3218
Mean	3966	3175	3071

**S.E. of difference of two**

1. M marginal means =55.2 lb./ac.  
 2. V marginal means =28.1 lb./ac.  
 3. V means at the same level of M =39.8 lb./ac.  
 4. M means at the same level of V =64.1 lb./ac.

**Crop :- Paddy (2nd crop of 47—48).**

**Ref :- A.P. 48 (47).**

**Site :- Agri. Res. Stn., Maruteru.**

**Type :- 'MV'.**

**Object :—**To gauge the influence of (1) size (2) climatic conditions. (3) variety. (4) manure. (5) cultural practices and (6) freedom from pests and diseases on yield of Paddy (low level).

**1. BASAL CONDITIONS :**

i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 2.1.1948. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)—. (d) N.A. (e) N.A. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 0.52". (x) 29.4.1948 and 14.5.1948.

**2. TREATMENTS :****Main-plot treatments :**

2 levels of manure :  $M_0$ =No manure and  $M_1$ =2000 lb./ac. of G.L.+400 lb./ac. of G.N.C.+112 lb./ac. of Super+50 lb./ac. of A/S.

**Sub-plot treatments :**

3 varieties :  $V_1$ =SLO-12,  $V_2$ =MTU-15 and  $V_3$ =ASD-1.

**3. DESIGN :**

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 10'×46'. (v) Nil. (vi) Yes.

## GENERAL:

(i) Growth of ASD-1 poor. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1952. (b) N.A. (c) N.A. (v) (a) Samalkot. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 1610 lb./ac.  
 (ii) (a) 184.6 lb./ac.  
 (b) 221.6 lb./ac.  
 (iii) Effects of V and M are significant. Interaction is not significant.  
 (iv) Av. yield of grain in lb./ac.

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	1464	1997	1730
V <sub>2</sub>	1399	2115	1757
V <sub>3</sub>	1071	1612	1342
Mean	1311	1908	1610

S.E. of difference of two

- V marginal means 90.4 lb./ac.
- .. marginal means =61.5 lb./ac.
- V means at the same level of M =127.9 lb./ac.
- M means at the same level of V =121.2 lb./ac.

Crop :- Paddy (2nd crop of 47—48).

Ref :- A.P. 48 (48).

Site :- Agri. Res. Sta. Maruteru.

Type :- 'MV'.

Object :- To gauge the influence of (1) soil. (2) climatic conditions. (3) varieties. (4) manures. and (5) cultural practices, etc. on yield of Paddy (high level).

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 2.1.1948.  
 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6' × 6'. (e) 2. (v) Nil.  
 (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 0.52". (x) 7.5.1948.

## 2. TREATMENTS :

Main-plot treatments :

2 levels of manure : M<sub>0</sub> = No manure and M<sub>1</sub> = 2000 lb./ac. of G.L. + 400 lb./ac. of G.N.C. + 112 lb./ac. of Super + 50 lb./ac. of A/S.

Sub-plot treatments :

3 varieties : V<sub>1</sub> = SLO-12, V<sub>2</sub> = MTU-15 and V<sub>3</sub> = MTU-9.

## 3. DESIGN:

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a), (b) 10' × 46'.  
 (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1952. (b) N.A. (c) N.A. (v) (a) Samalkot. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 18.2 lb./ac.  
 (ii) (a) 252.8 lb./ac.  
 (b) 197.9 lb./ac.  
 (iii) Main treatments alone are significant.



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

	$M_0$	$M_1$	Mean
$V_1$	1653	1885	1769
$V_2$	1629	2139	1884
$V_3$	1427	2139	1783
Mean	1570	2054	1812

S.E. of difference of two

1. M marginal means = 84.1 lb./ac.
2. V marginal means = 80.8 lb./ac.
3. V means at the same level of M = 114.3 lb./ac.
4. M means at the same level of V = 125.6 lb./ac.

Crop :- Paddy (2nd crop of 1948-49).

Ref :- A.P. 49(26).

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

Type :- 'MV'.

Object :- To gauge the influence of soil, climatic conditions, varieties, manure, etc. on the yield of Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 11.1.49.  
 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) 6" x 6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 6.63". (x) 18.5.49.

## 2. TREATMENTS :

## Main-plot treatments :

- 2 levels of manure :  $M_0$  = No Manure and  $M_1$  = 2000 lb./ac. of G.L. + 400 lb./ac. of G.N.C. + 112 lb./ac. of Super + 50 lb./ac. of A/S.

## Sub-plot treatments :

- 3 Varieties :  $V_1$  = ASD-1,  $V_2$  = SLO-12 and  $V_3$  = MTU-15.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a), (b) 9'-8" x 46'-8".  
 (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1948 to 1952. (b) N.A. (c) N.A. (v) (a) N.A. (b) N.A.  
 (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2235 lb./ac.  
 (ii) (a) 254.8 lb./ac.  
 (b) 83.0 lb./ac.  
 (iii) Effects of V and M are significant. Interaction is not significant.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	1557	2115	1836
$V_2$	2156	2626	2391
$V_3$	2339	2614	2477
Mean	2018	2452	2235

S.E. of difference of two

1. V marginal means = 33.8 lb./ac.
2. M marginal means = 84.9 lb./ac.
3. V means at the same level of M = 47.9 lb./ac.
4. M means at the same level of V = 93.5 lb./ac.

Crop :- Paddy.  
Site :- Agri. Res. Stn., Maruteru.

Ref :- A.P. 50(23).  
Type :- 'MV'.

Object :- To study the effect of silican in combination with N and P.

### 1. BASAL CONDITIONS :

(i) a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 31.5.50 (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c)---(d) 6' x 6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. First weeding one month after transplanting. (ix) 49.71". (x) 11.12.50.

### 2. TREATMENTS :

Main-plot treatments :

2 varieties :  $V_1 = \text{GEB.-24}$  and  $V_2 = \text{MTU-19}$ .

Sub-plot treatments :

4 levels of manure :  $M_0 = \text{No manure}$ ,  $M_1 = \text{Silican+P}$ ,  $M_2 = \text{Silican+N}$ , and  $M_3 = \text{Silican+N+P}$ .

Doses of manures N.A.

### 3. DESIGN :

i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 9.5' x 22'. (v) Nil. (vi) Yes.

### 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a),(b) Nil. (vi) and (vii) Nil.

### 5. RESULTS :

(i) 3451 lb./ac.  
(ii) (a) 814.8 lb./ac.  
(b) 404.3 lb./ac.  
(iii) Manurial treatments differ highly significantly. Others are not significant.  
(iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	$M_2$	$M_3$	Mean
$V_1$	2764	2954	3841	3820	3345
$V_2$	2669	3133	3977	4454	3558
Mean	2717	3044	3909	4137	3451

S.E. of difference of two

- V marginal means = 288.5 lb./ac.
- M marginal means = 201.9 lb./ac.
- V means at the same level of M = 379.8 lb./ac.
- M means at the same level of V = 285.9 lb./ac.

Crop :- Paddy.  
Site :- Agri. Res. Stn., Rudrur.

Ref :- A.P. 48(13).  
Type :- 'MV'.

Object :- To find out the economic dosage of N and P with which highest yield can be obtained and suitable Paddy strain which will suit the tract.

### 1. BASAL CONDITIONS

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Black cotton soil (*Regur*). (b) Refer soil analysis, Rudrur. (iii) 14.6.43. (iv) a. 2 ploughings, 2 puddlings and levelling. (b) Broadcasting *Molaka*. (c) 80 lb./ac. (d) N.A. (e) —. (v) N.I. (vi) As under treatments H.R.-19 and H.R.-33—(early; H.R.-1 and H.R.-35 (late). (vii) Irrigated. (viii) 4 weedings and 2 thinnings. (ix) 46.06". (x) H.R.-19 and H.R.-33 on 19.10.48; H.R.-35 on 4.12.48 and H.R.-1 on 18.11.48.

**2. TREATMENTS :****Main-plot treatments :**4 varieties :  $V_1$ =H.R.-1,  $V_2$ =H.R.-19,  $V_3$ =H.R.-33 and  $V_4$ =H.R.-35.**Sub-plot treatments :**2 levels of manure :  $M_1$ =60 lb./ac. of N+30 lb./ac. of  $P_2O_5$  and  $M_2$ =90 lb./ac. of N+45 lb./ac. of  $P_2O_5$ .

Manures applied on 3.7.48. Source and method of application N.A.

**3. DESIGN :**

(i) Split-plot. (ii) (a) 4 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) 50' x 53'. (b) 48' x 51'. (v) 4' bund between each sub-plot. One foot border on all sides. (vi) Yes.

**3. GENERAL :**

(i) Normal. (ii) Slight stem borer attack. (iii) Grain yield. (iv) (a) 1947 to 1949. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

(i) 2251 lb./ac.

(ii) (a) 197.6 lb./ac.

(b) 31.15 lb./ac.

(iii) Varieties are significant. Manures and the interaction manure x varieties are highly significant.

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

	$V_1$	$V_2$	$V_3$	$V_4$	Mean
$M_1$	2332	2011	1691	2563	2149
$M_2$	2047	2350	2100	2910	2352
Mean	2189	2181	1896	2737	2251

**S.E. of difference of two**

1. V marginal means = 197.6 lb./ac.

2. M marginal means = 22.1 lb./ac.

3. V means at the same level of M = 141.5 lb./ac.

4. M means at the same level of V = 31.1 lb./ac.

Crop :- Paddy.

Ref :- A.P. 49(9)/48(13).

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

Type :- 'MV'.

Object :- To find out the economic dosage of N and P with which highest yield can be obtained and suitable Paddy strain which will suit the tract.

**1. BASAL CONDITIONS :**(i) (a) Nil. (b) Fallow in *Tabi* 48-49 and Paddy in *Abi* 48-49. (c) Nil. (ii) (a) Black cotton soil (*Regur*).

(b) Refer soil analysis, Rudrur. (iii) 3.7.49. (iv) (a) 4 times ploughings and 3 times puddling. (b) Seedlings broadcast. (c) 80 lb./ac. (d) N.A. (e) —. (v) Nil. (vi) As under treatments ; H.R.-19 and H.R.-33—(early) H.R.-1 and H.R.-35 (late). (vii) Irrigated. (viii) Weeding twice. (ix) 51.48". (x) Nov.-Dec. 1949.

**2. TREATMENTS :****Main-plot treatments :**Varieties :  $V_1$ =H.R.-1,  $V_2$ =H.R.-19,  $V_3$ =H.R.-33 and  $V_4$ =H.R.-35.**Sub-plot treatments :**Doses of manure :  $N_1$ =60 lb./ac. of N+30 lb./ac. of  $P_2O_5$  and  $N_2$ =90 lb./ac. of N+45 lb./ac. of  $P_2O_5$ . N as A/S and  $P_2O_5$  as Super.**3. DESIGN**

(i) Split-plot. (ii) (a) 4 main-plots/block ; 2 sub-plots/main-plot. (iii) 2. (iv) (a) Sub-plot : 50' x 53'; main-plot : 50' x 110'. (b) Sub-plot : 48' x 51' main-plot : 48' x 102'. (v) 4' bund between each sub-plot one foot on all sides. (vi) Yes.

## 4. GENERAL :

(i) Normal. Due to heavy and incessant rain germination was affected. (ii) Nil. (iii) Grain weight. (iv) (a) 1947 to 1949. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1664 lb./ac.  
 (ii) (a) 68.5 lb./ac.  
 (b) 180.7 lb./ac.  
 (iii) There is highly significant difference between N levels only.  
 (iv) Av. yield of grain in lb./ac.

	V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	V <sub>4</sub>	Mean
N <sub>1</sub>	1451	1428	1460	1887	1557
N <sub>2</sub>	1700	1549	1736	2100	1771
Mean	1576	1489	1598	1994	1664

## S.E. of difference of two

1. V marginal means = 127.7 lb./ac.
2. M marginal means = 34.2 lb./ac.
3. V means at the same level of M = 136.6 lb./ac.
4. M means at the same level of V = 68.5 lb./ac.

Crop :- Paddy (2nd Crop of 1947-48).

Ref :- A.P. 48(49).

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

Type :- 'MV'.

Object :- To study the various factors that influence the Paddy yield especially the variety and manure (well drained soil).

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy bulk. (c) N.A. (ii) (a) Heavy alluvial clay (b) Refer soil analysis, Samalkot. (ii) 19.2.48 (iv) (a) 2 or 3 ploughings. (b) Transplanting. (c) —. (d) 4" × 4". (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 or 3 weeding. (ix) 2.54". (x) ASD-1 : 6.5.48 and MTU-15 : 14.5.48 SLO-12 : 14.5.48.

## 2. TREATMENTS :

## Main-plot treatments :

2 levels of manure : M<sub>0</sub> = No manure. and M<sub>1</sub> = 2000 lb./ac. of G.L. + 112 lb./ac. of Super + 400 lb./ac. of G.N.C. at planting + 50 lb./ac. of A/S applied one month after planting.

## Sub-plot treatments :

3 varieties : V<sub>1</sub> = ASD-1, V<sub>2</sub> = MTU-15 and V<sub>3</sub> = SLO-12.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 31' × 16'. (b) 30.3' × 15.3'. (v) One row around the net plot. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 N.A. (b) Same field upto 1949 but in 1950-51 field was changed. (v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1839 lb./ac.  
 (ii) (a) 1949 lb./ac.  
 (b) 71.2 lb./ac.  
 (iii) All the components of the treatments are significant.

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

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	1156	2037	1597
V <sub>2</sub>	1772	2035	2039
V <sub>3</sub>	1661	2403	2032
Mean	1530	2249	1889

S.E. of difference of two

1. V marginal means = 29.3 lb./ac.
2. M marginal means = 65.0 lb./ac.
3. V means at the same level of M = 41.5 lb./ac.
4. M means at the same level of V = 73.3 lb./ac.

Crop :- Paddy.

Ref :- A.P. 48(59)/48(49).

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

Type :- 'MV'.

Object :- To study the varietal differences under manured and unmanured conditions in well-drained soil.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) Paddy. (c) As. under treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) N.A. (iv) (a) 2 or 3 ploughings. (b) Transplanted. (c) —. (d) 4" x 4". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 34.61". (x) N.A.

**2. TREATMENTS :**

Main-plot treatments :-

2 levels of manure: M<sub>0</sub> = Not manured and M<sub>1</sub> = 2000 lb./ac. of G.L. + 112 lb./ac. of Super applied seven days before planting + 400 lb./ac. of G.N.C. applied at planting and 50 lb./ac. of A/S: one month after planting.

Sub-plot treatments :-

3 varieties : V<sub>1</sub> = MTU-5, V<sub>2</sub> = GEB-24 and V<sub>3</sub> = SLO-13.

**3. DESIGN :**

(i) Split-plot. (ii) (a) 2 main-plots/block; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 31' x 16'. (b) 30.3' x 15.3'. (v) One row around the net plot. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain weight and tiller count. (iv) (a) 1948-50. (b) Same field upto 1949-50 but in 1950-51, field was changed. (c) Nil. (v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 3088 lb./ac.
- (ii) (a) N.A.  
(b) N.A.
- (iii) Variety and manure effects are significant. Significance of interaction is N.A.
- (iv) Av. yield of grain in lb./ac.

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	3436	3183	3309
V <sub>2</sub>	2898	2561	2729
V <sub>3</sub>	3611	2839	3225
Mean	3315	2861	3088

S.E.s. N.A.

Crop :- Paddy (2nd crop of 48-49).

Ref :- A.P. 49 (27)/48 (49, 59).

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

Type :- 'MV'.

Object :-To study the varietal differences under manured and unmanured conditions in well-drained soil.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 5.1.1949. (iv) (a) 2 or 3 ploughings. (b) Transplanted. (c) —. (d) 6" × 6". (e) 2. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 3.72". (x) 7, 9 and 18.5.1949.

**2. TREATMENTS :****Main-plot treatments :**

2 levels of manure :  $M_0$  = No manure and  $M_1$  = 2000 lb./ac. of G.L. seven days before planting + 300 lb./ac. of G.N.C. + 112 lb./ac. of Super at planting + 50 lb./ac. of A/S one month after planting.

**Sub-plot treatments :**

3 varieties :  $V_1$  = SLO-12,  $V_2$  = MTU-15 and  $V_3$  = ASD-1.

**3. DESIGN :**

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 30' × 15'. (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Not satisfactory due to shortage of water especially for MTU-15 which was seriously affected. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948-N.A. (b) Same field upto 1948 but in 1950-51 field was changed. (c) N.A. (v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

**5. RESULTS :**

(i) 1477 lb./ac.  
 (ii) (a) N.A.  
 (b) N.A.  
 (iii) Variety and manure effects are significant. Interaction is not significant.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	1476	2135	1806
$V_2$	1373	1676	1525
$V_3$	792	1409	1101
Mean	1214	1740	1477

(S.E.'s are not given as the information is N.A.).

Crop :- Paddy.

Ref :- A.P. 49 (11)/49 (27)/48 (49, 59).

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

Type :- 'MV'.

Object :—To study the varietal differences under manured and unmanured conditions in well-drained soil.

**1. BASAL CONDITIONS :**

(i) (a) Nil (Paddy-Gram is the rotation generally followed). (b) Paddy. (c) As under treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 14.6.1949/10.7.1949. (iv) (a) 2 ploughings. (b) Transplanting. (c) —. (d) 6" × 6". (e) N.A. (v) Nil. (vi) As under treatments. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 26.11.1949.

**2. TREATMENTS :****Main-plot-treatments :**

2 levels of manure :  $M_0$ =No manure; and  $M_1$ =G.L. at 2000 lb./ac.+400 lb./ac. of G.N.C.+112 lb./ac. of Super at planting.

**Sub-plot treatments :**

3 varieties :  $V_1$ =MTU-5,  $V_2$ =GEB-24 and  $V_3$ =SLO-13.

**3. DESIGN :**

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 31'×15'. (b) 30'×14'. (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Grain weight, tiller count and plant height. (iv) (a) 1948-N.A. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 2610 lb./ac.  
 (ii) (a) 205.7 lb./ac.  
 (b) 206.0 lb./ac.  
 (iii) Variety and manure effects are highly significant. Interaction is not significant.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	2353	2790	2571
$V_2$	2092	2493	2293
$V_3$	2692	3243	2968
Mean	2379	2842	2610

**S.E. of difference of two**

1. V marginal means = 84.0 lb./ac.  
 2. M marginal means = 68.4 lb./ac.  
 3. V means at the same level of M = 118.9 lb./ac.  
 4. M means at the same level of V = 118.8 lb./ac.

**Crop :- Paddy (2nd crop of 1949-50). Ref :- A.P. 50(56)/49(11,27)/48(49,59).**

**Site :- Agri. Res. Stn., Samalkot. Type :- 'MV'.**

**Object :-**To study the varietal differences under manured and unmanured conditions in well-drained soil.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) Paddy. (c) As under treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 8.1.50/26.2.50. (iv) (a) 2 ploughings. (b) Transplanted. (c) —. (d) 4"×4". (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 18.97". (x) ASD-1 on 9.5.53 ; SLO-12. and MTU-15 on 21.5.50.

**2. TREATMENTS :****Main-plot treatments :**

2 levels of manure :  $M_0$ =No manure, and  $M_1$ =2000 lb./ac. of G.L. seven days before planting+300 lb./ac. of G.N.C.+112 lb./ac. of Super at planting time +50 lb./ac. of A/S one month after planting.

**Sub-plot treatments :**

3 varieties :  $V_1$ =ASD-1,  $V_2$ =SLO-12 and  $V_3$ =MTU-15.

**3. DESIGN :**

(i) Split-plot. (ii) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 31'×16'. (b) 30.3'×15.3'. (v) One row around the net plot. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield and tiller count. (iv) (a) 1948 to 1950. (b) No. (c) Nil. (v) (a) Maruteru. (b) N. A. (vi) Nil. (vii) Raw data and other experimental details N.A.

## 5. RESULTS :

- (i) 1410 lb./ac.  
 (ii) (a) N.A.  
 (b) N.A.  
 (iii) N.A.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	869	1328	1099
$V_2$	1232	1546	1389
$V_3$	1642	1838	1740
Mean	1248	1571	1410

S.E.S' N.A.

Crop :- Paddy (2nd crop of 1947-48).

Ref :- A.P. 48(46).

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

Type :- 'MV'.

Object :- To study the varietal differences under manured and unmanured conditions in ill-drained soil.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy bulk. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 21.2.48. (iv) (a) 2 or 3 ploughings. (b) Transplanted (c) —. (d) 4' x 4'. (e) 2. (v) Nil. (vi) A<sub>2</sub> per treatments. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 2.54". (x) ASD-1 : 6.5.48 ; MTU-15 : 15.5.48. and SLO-12 : 15.5.48.

## 2. TREATMENTS :

## Main-plot treatments :

2 levels of manure :  $M_0$  = No manure and  $M_1$  = 2000 lb./ac. of G.L. + 112 lb./ac. of Super + 400 lb./ac. of G.N.C. at planting time + 50 lb./ac. of A/S applied one month after planting.

## Sub-plot treatments :

3 varieties :  $V_1$  = ASD-1,  $V_2$  = MTU-15 and  $V_3$  = SLO-12.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 31' x 16'. (b) 30.3' x 15.3'. (v) One row around the net plot. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain weight and straw yield. (iv) (a) 1948—N.A. (b) N.A. (c) N.A. (v) (a) Maruteru. (b) N.A. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

- (i) 2178 lb./ac.  
 (ii) (a) 121.4 lb./ac.  
 (b) 516.6 lb./ac.  
 (iii) The main-plot treatment and sub-plot treatment effects are highly significant. The interaction is not significant.  
 (iv) Av. yield of grain in lb./ac.
- |     |           |      |
|-----|-----------|------|
| (A) | Manured   | 2393 |
|     | Unmanured | 1963 |
| (B) | MTU-15    | 2595 |
|     | SLO-12    | 2256 |
|     | ASD-1     | 1683 |



**Crop :- Paddy (main crop season).**

**Ref :- A.P. 48(60)/48(46).**

**Site :- Agri. Res. Stn., Samalkot.**

**Type :- 'MV'.**

**Object :-** To study the varietal differences under manured and unmanured conditions in ill-drained soil.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) N.A. (iv) (a) 2 or 3 ploughings. (b) Transplanting. (c) —. (d) 4" x 4". (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 34.6". (x) N.A.

**2. TREATMENTS :**

**Main-plot treatments :**

2 levels of manure :  $M_0$  = No manure and  $M_1$  = 2000 lb./ac. of G.L. + 112 lb./ac. of Super applied seven days before planting + 400 lb./ac. of G.N.C. applied at planting + A/S at 50 lb./ac. applied one month after planting.

**Sub-plot treatments :**

3 varieties :  $V_1$  = MTU-5,  $V_2$  = GEB-24 and  $V_3$  = SLO-13.

**3. DESIGN :**

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 31' x 16'. (b) 30.3' x 15.3'. (v) One row around the net sub-plot. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain yield and tiller count. (iv) (a) 1948 to 1950. (b) No. (c) Nil. (v) (a) Maruteru. (b) N.A. (vi) Nil. (vii) Raw data and other records—N.A.

**5. RESULTS :**

- (i) 2956 lb./ac.  
 (ii) (a) N.A.  
 (b) N.A.  
 (iii) Only variety effect is significant.  
 (iv) Av. yield of grain in lb./ac.

	$M_0$	$M_1$	Mean
$V_1$	3261	3267	3264
$V_2$	2645	2411	2528
$V_3$	3092	3063	3077
Mean	2999	2913	2956

S.E. N.A.

**Crop :- Paddy.**

**Ref :- A.P. 49(5)/48(60)/48(46).**

**Site :- Agri. Res. Stn., Samalkot.**

**Type :- 'MV'.**

**Object :-** To study the varietal differences under manured and unmanured conditions in ill-drained soil.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (Paddy-Gram is the rotation generally followed). (b) Paddy. (c) As per treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 14.6.49/11.7.49. (iv) (a) 2 ploughings. (b) Transplanted. (c) —. (d) 6" x 6". (e) 2. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 27.11.49.

**2. TREATMENTS :**

**Main-plot treatments :**

2 levels of manure :  $M_0$  = No manure and  $M_1$  = 2000 lb./ac. of G.L. one week before planting + 112 lb./ac. of Super + 400 lb./ac. of G.N.C. at planting time + A/S at 50 lb./ac. applied one month after planting.

**Sub-plot treatments :**

3 varieties :  $V_1$  = SLO-13,  $V_2$  = MTU-5 and  $V_3$  = GEB-24.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 30' × 14'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Good. (ii) Attack of helminthosporium to a small extent. (iii) Grain yield and tiller count and height of plant. (iv) (a) 1943-N.A. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2386 lb./ac.  
 (ii) (a) 226.1 lb./ac.  
 (b) 221.9 lb./ac.  
 (iii) There is highly significant difference between the varieties. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	2585	2853	2719
V <sub>2</sub>	2110	2368	2239
V <sub>3</sub>	2259	2140	2199
Mean	2318	2454	2386

## S.E. of difference of two

- V marginal means = 90.7 lb./ac.
- M marginal means = 75.4 lb./ac.
- V means at the same level of M = 128.1 lb./ac.
- M means at the same level of V = 128.9 lb./ac.

Crop :- Paddy (2nd crop of 1950-51). Ref:- A.P. 50(33)/49(5)/48(60), 48(46).

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

Type :- 'MV'.

Object :- To study the varietal differences under manured and unmanured conditions in ill-drained soil.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) N.A. (iv) (a) 2 or 3 ploughings. (b) Transplanted. (c) —. (d) 6" × 6". (e) 2. (v) Nil. (vi) As under treatment. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 6.97". (x) N.A.

## 2. TREATMENTS :

## Main-plot treatments :

2 levels of manure : M<sub>0</sub>=No manure and M<sub>1</sub>=2000 lb./ac. of G.L.+112 lb./ac. of Super a week before planting + 300 lb./ac. of G.N.C. at planting time + 50 lb./ac. of A/S a month after planting.

## Sub-plot treatments :

3 varieties : V<sub>1</sub>=SLO-13, V<sub>2</sub>=MTU-5 and V<sub>3</sub>=GEB-24.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) a), (b) 22' × 20'. (v) One row around. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield and tiller count. (iv) (a) 1948-N.A. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) N.A. (vii) Raw data is not available.

## 5. RESULTS :

- (i) 3228 lb./ac.  
 (ii) (a) N.A.  
 (b) N.A.  
 (iii) N.A.

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

	M <sub>0</sub>	M <sub>1</sub>	Mean
V <sub>1</sub>	3176	3203	3190
V <sub>2</sub>	3448	3490	3469
V <sub>3</sub>	2901	3147	3024
Mean	3175	3280	3228

S.E.'S N.A.

Crop :- Paddy (1st crop). Ref :- Complex experiments (T.C.M.), 1953.  
Centre :- Maruteru (A.P.) Type :- 'MV'.

Object :- VIII To study the effect of N and P<sub>2</sub>O<sub>5</sub> along with varieties.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Heavy black clay soil. (b) Non-acidic. (iii) N.A./2.7.53. (iv) N.A. (v) N.A. (vi) As under treatments. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 19,25.11.53.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N<sub>0</sub>=0, N<sub>1</sub>=20 and N<sub>2</sub>=40 lb./ac.(2) 3 levels of P<sub>2</sub>O<sub>5</sub> as Super : P<sub>0</sub>=0, P<sub>1</sub>=20 and P<sub>2</sub>=40 lb./ac.(3) 3 varieties : V<sub>1</sub>=Sannakrishna, V<sub>2</sub>=Mtd and V<sub>3</sub>=M (N-10) Ketnkabe.

Manures broadcast before transplanting.

## 3. DESIGN :

(i) 3<sup>3</sup> confounded factorial. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 1/66 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield data. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Karjat, Ponnampet, Sahaspur, Burdwan, Mankhanda and Chavai. (b) N.A. (vi) Nil. (vii) Nil.

## 5. RESULTS :

(i) 3404 lb./ac.

(ii) 175.8 lb./ac.

(iii) Main effect of P is highly significant and interaction PV is significant. Other effects and interactions are not significant.

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

	N <sub>0</sub>	N <sub>1</sub>	N <sub>2</sub>	Mean	V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>
P <sub>0</sub>	3190	3168	3443	3267	3355	3388	3058
P <sub>1</sub>	3311	3553	3454	3439	3267	3432	3619
P <sub>2</sub>	3267	3608	3641	3505	3168	3586	3762
Mean	3256	3443	3513	3404	3263	3469	3479
V <sub>1</sub>	3058	3443	3289				
V <sub>2</sub>	3300	3421	3685				
V <sub>3</sub>	3410	3465	3564				

S.E. of marginal means = 58.6 lb./ac.

S.E. of body of table = 101.5 lb./ac.

Crop :- Paddy (2nd crop).  
Centre :- Maruteru (A.P).

Ref :- Complex experiments (T.C.M.), 1953.  
Type :- 'MV'.

Object :- VIII To study the effect of N and  $P_2O_5$  along with varieties.

### 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Heavy black clayey soil. (b) Non-acidic. (iii) N.A./14.2.54.  
(iv) N.A. (v) N.A. (vi) As under treatments. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 16, 25.5.54.

### 2. TREATMENTS

All combinations of (1), (2) and (3)

- (1) 3 levels of N :  $N_0=0$ ,  $N_1=20$  and  $N_2=40$  lb./ac.  
(2) 3 levels of  $P_2O_5$  as Triple Super :  $P_0=0$ ,  $P_1=20$  and  $P_2=40$  lb./ac.  
(3) 3 varieties :  $V_1$  = Local,  $V_2$  = MTU-20 and  $V_3$  = MTU-15.

Manures were broadcast before transplanting.

### 3. DESIGN :

(i)  $3^3$  confounded factorial. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 1/73.2 acre. (v) N.A. (vi) Yes.

### 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield data. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Karjat, Ponnampet, Sahaspur, Burdwan, Mankhanda and Chalmi. (b) N.A. (vi) and (vii), Nil.

### 5. RESULTS :

- (i) 2596 lb./ac.  
(ii) 16.7 lb./ac.  
(iii) Main effects of N, P and V are highly significant. Interaction NV is significant. Others are not significant.  
(iv) Av. yield of grain in lb./ac.

	$N_0$	$N_1$	$N_2$	Mean	$V_1$	$V_2$	$V_3$
$P_0$	2014	2611	2562	2396	2013	2489	2634
$P_1$	2184	2660	2880	2575	2440	2697	2587
$P_2$	2611	2709	3136	2819	2660	2855	2941
Mean	2270	2660	2859	2596	2371	2680	2737
$V_1$	1745	2684	2684				
$V_2$	2575	2562	2904				
$V_3$	2489	2733	2989				

S.E. of marginal means = 53.9 lb./ac.  
S.E. of body of table = 93.4 lb./ac.

Crop :- Paddy (1st crop).  
Centre :- Chalmi (A.P).

Ref :- Complex experiments (T.C.M.), 1953.  
Type :- 'MV'.

Object :- VIII To study the effect of N and  $P_2O_5$  along with varieties.

### 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) N.A./17 to 19.2.54. (iv) N.A. (v) N.A. (vi) As under treatments. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) N.A.

### 2. TREATMENTS :

All combinations of (1), (2) and (3)

- (1) 3 levels of N :  $N_0=0$ ,  $N_1=20$  and  $N_2=40$  lb./ac.  
(2) 3 levels of  $P_2O_5$  as Triple Super :  $P_0=0$ ,  $P_1=20$  and  $P_2=40$  lb./ac.  
(3) 3 varieties :  $V_1$  = Local,  $V_2$  = R.D.R. and  $V_3$  = UR-5.

## 3. DESIGN:

- (i) 3<sup>3</sup> confounded factorial. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 1/62 acre. (v) N.A. (vi) Yes.

## 4. GENERAL:

- (i) Normal. (ii) Crop suffered from gall-fly infestation. (iii) Grain yield data. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Karjat, Ponnampet, Sahaspur, Burdwan, Mankhanda and Maruteru. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 2139 lb./ac.  
 (ii) 192.0 lb./ac.  
 (iii) Main effects of N, P<sub>2</sub> and V are highly significant. Interaction V×P is significant. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	N <sub>0</sub>	N <sub>1</sub>	N <sub>2</sub>	Mean	V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>
P <sub>0</sub>	1637	1707	1833	1726	2282	1859	1036
P <sub>1</sub>	1960	2369	2422	2250	2653	1981	2117
P <sub>2</sub>	1961	2715	2648	2441	2553	2374	2395
Mean	1853	2264	2301	2139	2496	2071	1849
V <sub>1</sub>	1934	2709	2845				
V <sub>2</sub>	1860	2191	2164				
V <sub>3</sub>	1764	1891	1894				

S.E. of marginal mean. = 64.0 lb./ac.  
 S.E. of body of table = 110.8 lb./ac.

Crop :- Paddy.

Ref :- A.P. 48 (62).

Site :- Demonstration Stn., Araku Valley.

Type :- 'C'.

Object :- To find out the optimum seed rate for sowing dry Paddy.

## 1. BASAL CONDITIONS:

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Clayey loam. (b) Refer soil analysis, Araku Valley. (iii) 10.7.1948. (iv) (a) 2 or 3 ploughings and levelling. (b) Broadcast. (c) As under treatments. (d) N.A. (e) N.A. (v) 2 bags/ac. of G.N.C. (vi) Local *Battadhan*. (vii) Unirrigated. (viii) 2 or 3 weedings. (ix) 34.73" (June to Dec.). (x) 15.12.1948.

## 2. TREATMENTS:

6 seed rates : R<sub>1</sub>=50, R<sub>2</sub>=60, R<sub>3</sub>=70, R<sub>4</sub>=80, R<sub>5</sub>=90 and R<sub>6</sub>=100 lb./ac.

## 3. DESIGN:

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) and (b) 33'×13'. (v) Nil. (vi) Yes.

## 4. GENERAL:

- (i) Satisfactory. Some plots lodged on 14.10.1948 due to heavy rains (ii) Nil. (iii) Yield of grain. (iv) (a) 1947 to 1949. (b) No. (c) Nil. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 1292 lb./ac.  
 (ii) 196.0 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
R <sub>1</sub>	1250
R <sub>2</sub>	1250
R <sub>3</sub>	1383
R <sub>4</sub>	1250
R <sub>5</sub>	1267
R <sub>6</sub>	1350
S.E./mean	= 80.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 49 (16).

Site :- Demonstration Stn., Araku Valley.

Type :- 'C'.

Object :- To find out the optimum seed rate for sowing dry Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Clayey loam. (b) Refer soil analysis, Araku Valley. (iii) 5.7.1949. (iv) (a) 2 or 3 ploughings and levelling. (b) Broadcast. (c) As under treatments. (d) N.A. (e) N.A. (v) 2 bags/ac. of G.N.C. (vi) Local *Battadhan* (early). (vii) Unirrigated. (viii) 2 or 3 weedings. (ix) 47.92" (June to Nov.). (x) 5.11.1949.

## 2. TREATMENTS :

6 Seed rates :  $R_1=50$ ,  $R_2=60$ ,  $R_3=70$ ,  $R_4=80$ ,  $R_5=90$  and  $R_6=100$  lb./ac.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) and (b) 33' × 13.2'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1947 to 1949. (b) No. (c) Nil. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 1597 lb./ac.

(ii) 340.5 lb./ac.

(iii) Treatments do not differ significantly.

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

Treatment	Av. yield
$R_1$	1477
$R_2$	1608
$R_3$	1467
$R_4$	1654
$R_5$	1714
$R_6$	1663
S.E./mean	= 139.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52(20).

Site :- Agri. College Farm, Bapatla.

Type :- 'C'.

Object :- To find the optimum spacing and number of seedlings per hole for Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) G.L. at 4000 lb./ac. + Super at 150 lb./ac. and A/S at 150 lb./ac. (i) (a) Sandy loam. (b) Refer soil analysis, Bapatla. (iii) 3.5.52/27.7.52. (iv) (a) N.A. (b) Transplanting. (c) —. (d) and (e) As per treatments. (v) 4000 lb./ac. of G.L. + 150 lb./ac. of Super + 150 lb./ac. of A/S as top dressing. (vi) MTU-7. (vii) Irrigated. (viii) 2 weedings. (ix) 24.5". (x) 15.12.52.

## 2. TREATMENTS :

Main-plot treatments :

3 spacings :  $S_1=4' \times 4'$ ,  $S_2=8' \times 8'$  and  $S_3=12' \times 12'$ .

Sub-plot treatments :

No. of seedlings/hole :  $S_1'=1$ ,  $S_2'=2$  and  $S_3'=3$ .

## 3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 8.6' × 14.5'. (b) 6.6' × 12.5'. (v) 1' left as border on all sides. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—contd. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2513 lb./ac.  
 (ii) (a) 946.4 lb./ac.  
 (b) 605.3 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of grain in lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	Mean
S' <sub>1</sub>	2780	2613	2099	2497
S' <sub>2</sub>	2667	2552	2523	264
S' <sub>3</sub>	2633	2494	2159	2429
Mean	2693	2586	2260	2513

## S.E. of difference of two

1. spacings marginal means = 315.5 lb./ac.  
 2. seedlings/hole marginal means = 201.8 lb./ac.  
 3. seedlings/hole means at the same level of spacing = 349.5 lb./ac.  
 4. spacing means at the same level of seedlings/hole = 425.4 lb./ac.

Crop :- Paddy.

Ref :- A.P. 53(28)/52(20).

Site :- Agri. College Farm, Bapatla.

Type :- 'C'.

Object :- To find out the optimum spacing and number of seedlings per hole for Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 4000 lb./ac. of G.L.+150 lb./ac. of Super+150 lb./ac. of A/S. (ii) (a) Sandy loam. (b) Refer soil analysis, Bapatla. (iii) 12.6.53/10.8.53. (iv) (a) N.A. (b) Transplanting. (c) —. (d) and (e) As per treatments. (v) 4000 lb./ac. of G.L.+150 lb./ac. of Super+150 lb./ac. of A/S. G.L. and Super as basal dressing and A/S top dressed. (vi) MTU-7. (vii) Irrigated. (viii) 2 weedings. (ix) 16.2". (x) 29.12.53.

## 2. TREATMENTS :

## Main-plot treatments :

3 spacings : S<sub>1</sub>=4"×4", S<sub>2</sub>=8"×8" and S<sub>3</sub>=12"×12".

## Sub-plot treatments :

No. of seedlings/hole : S'<sub>1</sub>'=1, S'<sub>2</sub>'=2 and S'<sub>3</sub>'=3

## 3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 0.288 cent. (b) 0.189 cent. (v) Yes ; measurements N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—contd. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3307 lb./ac.  
 (ii) (a) 746.0 lb./ac.  
 (b) 439.1 lb./ac.  
 (iii) None of the effects is significant.

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

	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	Mean
S <sub>1</sub> '	3529	3605	3198	3444
S <sub>2</sub> '	3274	3406	3119	3266
S <sub>3</sub> '	2854	3333	3449	3212
Mean	3219	3448	3255	3307

S.E. of difference of two

1. spacing marginal means = 248.7 lb./ac.
2. seedlings/ hole marginal means = 145.7 lb./ac.
3. seedlings/ hole means at the same level of spacing = 252.3 lb./ac.
4. spacing means at the same level of seedlings/ hole = 323.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 48 (24).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :—To study the infection of blast in the nursery and transplanted crop of nurseries raised under semi-dry and wet conditions.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 12.8.48/ 29.10.48. (iv) (a) 2 to 3 dry ploughings. (b) Transplanting. (c)—. (d) 6" × 6". (e) 2. (v) 100 lb./ac of G.N.C. + 100 lb./ac of B.M. over a basal dressing of 2000 lb./ac of G.L. (vi) 2555 (Late). (vii) Irrigated. (viii) 2 to 3 weedings (ix) 25.56". (x) 15.2.49.

## 2. TREATMENTS :

1. Seedlings raised under wet conditions.
2. Seedlings raised under semi-dry conditions.

## 3. DESIGN :

(i) Paired-plot. (ii) (a) 2. (b) N.A. (iii) 10. (iv) (a) and (b) 15' × 6'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Unfavourable season. (ii) Severe attack of paddy blast and *Kodu*. (iii) Grain yield. (iv) (a) 1948 to 1953. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1409 lb./ac.
- (ii) 1612 lb. ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1370
2.	1449
S.E./mean	= 50.7 lb./ac.



Crop :- Paddy.

Ref :- A.P. 49(24).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :—To study the incidence of blast on Paddy crop planted with seedlings raised under semi-dry and wet conditions.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) N.A. (iv) (a) 2 to 3 dry ploughings. (b) Transplanting. (c)—(d) 6"×6". (e) 2. (v) 4000 lb./ac. of G.L. followed by 50 lb./ac. of G.N.C. and 112 lb./ac. of B.M. (vi) 2555. (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 25.82%. (x) N.A.

## 2. TREATMENTS :

1. Seedlings raised under semi-dry conditions.
2. Seedlings raised under wet conditions.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a), (b) 10'×33'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain weight. 20 plants taken at random from each plot and the number of healthy and affected earheads counted. (iv) (a) 1948 to 1953. (b) No. (c) N.A. (v) (a), (b) Nil (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3381 lb./ac.
- (ii) 153.1 lb./ac.
- (iii) Treatments differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	3498
2.	3264
S.E./mean =	62.5 lb./ac.

Crop:- Paddy.

Ref :- A.P. 50(15).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :—To study the incidence of blast on Paddy crop planted with seedlings raised under semi-dry and wet conditions.

## 1. BASAL CONDITIONS :

(i) (a) Paddy after Paddy. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 18.9.50. (iv) (a) 3 dry ploughings and two puddlings. (b) Transplanting. (c) —. (d) 6"×6". (e) 2. (v) 10 C.L./ac. of G.M.+4000 lb./ac. of G.L. followed by 112 lb./ac. of B.M.+ 150 lb./ac. of G.N.C. (vi) BCP-1 (late). (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 37.80%. (x) 7.2.51.

## 2. TREATMENTS :

1. Paddy planted with seedlings raised under semi-dry conditions.
2. Paddy planted with seedlings raised under wet conditions.

## 3. DESIGN :

(i) Paired plot. (ii) (a) 2. (b) N.A. (iii) 10. (iv) (a) and (b) 5'×25'. (v) No. (vi) No.

## 4. GENERAL :

(i) Normal. (ii) Paddy blast and stem-borer appeared in mild scale. (iii) From each plot, 20 plants taken at random and the no. of affected and healthy earheads noted. (iv) (a) 1948 to 1953. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2798 lb./ac.  
 (ii) 407.7 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2818
2.	2779
S.E./mean	= 129.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 51(37).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :- To study the incidence of blast on Paddy crop planted with seedlings raised under semi-dry and wet conditions.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 6000 lb./ac. of sannhemp ploughed in *Situ*+112 lb./ac. of B.M.+150 lb./ac. of G N C. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 20.7.51. (iv) (a) 2 to 8 dry ploughings and two puddlings. (b) Transplanted. (c) —. (d) 6"×6". (e) 2. (v) B.M. applied at 112 lb./ac. at the time of planting and A.S applied as top dressing at 100 lb./ac. (vi) BCP-1 (late). (vii) Irrigated. (viii) 3 weedings. (ix) 18.4". (x) 4.2.52.

## 2. TREATMENTS :

1. Seedlings raised under semi-dry conditions and then planted.
2. Seedlings raised under wet conditions and then planted.

## 3. DESIGN :

(i) Paired plot. (ii) (a) 2. (b) N.A. (iii) 10. (iv) (a) and (b) 5'×10'. (v) Nil. (vi) No.

## 4. GENERAL :

(i) Normal. (ii) Slight attack of borer and blast. (iii) Grain weight, number of healthy and affected ear-heads in 20 plants taken at random from each plot. (iv) (a) 1948 to 1953. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) The incidence of blast was negligible during the year and hence no conclusive results could be obtained.

## 5. RESULTS :

- (i) 2936 lb. ac.  
 (ii) 400.8 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2858
2.	3014
S.E./mean	= 126.8 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52(47).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :- To study the incidence of blast on Paddy crop planted with seedlings raised under semi-dry and wet conditions.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) B.M. at 112 lb./ac.+A/S at 100 lb./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 12.7.52. (iv) (a) 2 to 3 dry ploughings and two puddlings. (b) Transplanted. (c) —. (d) 6"×6". (e) 2. (v) Super at 112 lb./ac. at the time of last puddling+A/S as top dressing at 500 lb./ac. in two doses to induce blast. (vi) BCP-1 (late). (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 22 65". (x) 2.2.53

## 2. TREATMENTS :

1. Seedlings raised under semi-dry conditions and then planted.
2. Seedlings raised under wet conditions and then planted.

## 3. DESIGN :

- (i) Paired plot. (ii) (a) 2, (b) N.A. (iii) 10. (iv) (a) and (b) 10' x 10'. (v) No. (vi) No.

## 4. GENERAL :

- (i) Normal. (ii) Moderate attack of blast. (iii) Grain weight. 20 plants were taken at random from each plot and number of healthy and affected earheads were counted. (iv) (a) 1948 to 1953. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) There is no significant difference between the treatments for percentage of neck infection also.

## 5. RESULTS :

- (i) 2224 lb./ac.
- (ii) 196.0 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2467
2.	2581
S.E./mean	= 62.0 lb /ac.

Crop :- Paddy.

Ref :- A.P. 53(77).

Site :- Rice. Res. Stn., Buchireddipalem

Type :- 'C'.

Object :—To study the incidence of blast on Paddy crop planted with seedlings raised under semi-dry and wet conditions .

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) N.A. (iv) (a) 2 to 3 dry ploughings and two puddlings. (b) Transplanted. (c)—. (d) 6" x 6". (e) 2. (v) 4000 lb/ac. of G.L. with 150 lb./ac. of Super before last puddling + A/S at 100 lb./ac. a month after planting. (vi) BCP-1 (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 28.47". (x) N.A.

## 2. TREATMENTS :

1. Seedlings raised under semi-dry conditions.
2. Seedlings raised under wet conditions and then planted.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 2, (b) N.A. (iii) 10. (iv) (a) and (b) 10' x 10'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Blast attack was not severe. (iii) Grain weight. 20 plants taken at random from each plot and number of healthy and affected earheads noted. (iv) (a) 1948 to 1953. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1629 lb./ac.
- (ii) 290.6 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1494
2.	1764
S.E./mean	= 91.9 lb./ac.

Crop :- Paddy.  
Site :- Rice Res. Stn., Buchireddipalem

Ref :- A.P. 51(40)  
Type :- 'C'.

Object : To study the incidence of blast under different systems of planting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Sannhemp crop was puddled in *Situ*+G.N.C.+B.M. (quantity N.A.) (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 20.7.51. (iv) (a) 2 to 3 dry ploughings and two puddlings. (b) Transplanted. (c) —. (d) 6" x 6". (e) 2. (v) Sannhemp raised in the fields was puddled in at 4000 lb./ac. and the field was prepared. G.N.C. at 150 lb./ac. and B.M. at 112 lb./ac. was applied. (vi) BCP-2 (vii) Irrigated. (viii) 3 hand weedings. (ix) 18.04". (x) 26.2.52.

2. TREATMENTS :

1. Planting on plain level land.
2. Planting on top of ridges 1 foot apart on one side.
3. Planting on both sides of the ridges 1 foot apart.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a), (b) 3' x 25' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Very slight attack of blast and stem borer. (iii) Grain weight. From each plot 20 plants were taken at random and no. of healthy and affected earheads counted. (iv) (a) 1949 to 1953. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) The incidence of blast was negligible during the season and hence no conclusive results could be obtained.

5. RESULTS :

- (i) 1106 lb./ac.  
(ii) 139.4 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1191
2.	970
3.	1156
S.E./mean	= 50.9 lb./ac.

Crop :- Paddy.  
Site :- Rice Res. Stn., Buchireddipalem.

Ref :- A.P. 52(44)  
Type :- 'C'.

Object :— To study the incidence of blast with different methods of planting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Green-gram. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 25.7.52. (iv) (a) 2 to 3 dry ploughings and two puddlings. (b) Transplanted. (c) —. (d) 6" x 6" (e) 2. (v) Super at 112 lb./ac. + old G.M. seed at 250 lb./ac. (vi) BCP-2. (late) (vii) Irrigated. (viii) 3 hand weedings. (ix) 22.63" (x) 23.2.1952.

2. TREATMENTS :

1. Planting on plain level land.
2. Planting 1 foot apart on top of ridges.
3. Planting 1 foot apart on both sides of the ridges

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) & (b) 44' x 6'. (v) No. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight attack of blast. (iii) Grain weight. From each plot 20 plants were taken at random and no. of healthy and affected earheads counted. (iv) (a) 1949 to 1953. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) There is no significant difference between the treatments for neck infection also.

## 5. RESULTS:

- (i) 1535 lb./ac.  
 (ii) 148.5 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1537
2.	1526
3.	1542
S.E./mean	= 60.6 lb./ac.

Crop :- Paddy.

Ref :- A.P. 53 (75).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :- To study the incidence of blast with different methods of planting.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) N.A. (iv) (a) 2 to 3 dry ploughings and two puddlings. (b) Transplanted. (c) —. (d) 6" x 6". (e) 2. (v) 4000 lb./ac. of G.L. with 150 lb./ac. of Super before last puddling + A/S at 100 lb./ac. a month after planting (vi) BCP-2 (late). (vii) Irrigated. (viii) 3 hand weedings. (ix) 28.47". (x) N.A.

## 2. TREATMENTS :

1. Planting on plain level.
2. Planting one foot apart on top of ridges.
3. Planting one foot apart on both sides of the ridges.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a), (b) 6' x 44'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Blast attack-not severe. (iii) Grain weight. From each plot 20 plants were taken at random and no. of healthy and affected earheads noted. (iv) (a) 1949 to 1953. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2531 lb./ac.  
 (ii) 156.8 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2643
2.	2465
3.	2484
S.E./mean	= 64.0 lb./ac

Crop :- Paddy.

Ref :- A.P. 48(27).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :- To compare dibbling with other methods of planting.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 19.8.48/29.9.48. (iv) (a) 2 to 3 dry ploughings. (b) As per treatments. (c) 30 lb./ac. (d) 6" x 6". (e) 2. (v) 100 lb./ac. of G.N.C. and 100 lb./ac. of B.M. over a basal dressing of 2000 lb./ac. of G.L. (vi) 2555. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 25.56". (x) 16.2.49.

## 2. TREATMENTS :

1. Broadcasting.
2. Transplanting.
3. Dibbling.
4. Dibbling sprouted seeds treated with dung.

## 3. DESIGN

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a), (b) 39.5' x 5' (v) No. (vi) Yes.

## 4. GENERAL

(i) Unfavourable season. (ii) Severe attack of paddy blast and *kodu*. (iii) Grain yield (iv) (a) 1948 to 1949. (b) N.A. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1951 lb./ac.  
 (ii) 317.9 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1593
2.	1946
3.	2083
4.	2182
S.E./mean	= 129.8 lb./ac.

Crop :- Paddy.

Site :- Rice Res. Stn., Buchireddipalem.

Ref :- A.P. 49(1).

Type :- 'C'.

Object :- To ascertain the relative merits of different methods of sowing.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 29.8.49. (iv) (a) 2 to 3 dry ploughings. (b) As under treatments. (c) 30 lb./ac. (d) 6" x 6". (e) 2. (v) 4000 lb./ac. of G.L. followed by 50 lb./ac. of G.N.C.+112 lb./ac. of B.M. (vi) N.A. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 25.82". (x) 26.1.50.

## 2. TREATMENTS :

1. Broadcasting.
2. Transplanting.
3. Dibbling sprouted seed.
4. Dibbling sprouted seed smeared with dung.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 5' x 48'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1948 to 1949. (b) N.A. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 4017 lb./ac.  
 (ii) 274.1 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	3725
2.	3944
3.	4308
4.	4089
S.E./mean	= 111.9 lb./ac.

Crop :- Paddy.

Ref :- A.P. 49(69).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :—To study the incidence of blast with different methods of planting.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) N.A. (iv) (a) 2 to 3 dry ploughings. (b) Transplanting. (c) —. (d) As per treatments. (e) 2. (v) N.A. (vi) 2202. (vii) Irrigated. (viii) 1 or 2 weedings. (ix) 25.82%. (x) N.A.

## 2. TREATMENTS :

1. Planting on plains at 6" spacing.
2. Planting on rows at 6" spacing.
3. Planting on mounds at 6" spacing.
4. Planting on rows at 1' spacing.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 10' × 44'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Blast incidence. (iii) Grain yield. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1976 lb./ac.  
 (ii) 380.1 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2016
2.	1920
3.	1927
4.	2042
S.E./mean	= 190.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 48 (25).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :—To compare transplanting with broadcasting.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 18.8.1948/16.11.1948. (iv) (a) 2 to 3 dry ploughings. (b) As under treatments. (c) —. (d) 6" × 6". (e) 2. (v) 100 lb./ac. of G.N.C. and 100 lb./ac. of B.M. over a basal dressing of 2000 lb./ac. of G.L. (vi) 1834. (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 25.56%. (x) 13 and 25.2.1949.

## 2. TREATMENTS :

1. Transplanting.
2. Broadcasting.

Broadcasting done on the same day as sowing of the nursery for the transplanted.

## 3. DESIGN :

(i) Paired plot. (ii) (a) 2. (b) N.A. (iii) 10. (iv) (a), (b) 4' × 40'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Unfavourable season. (ii) Severe attack of Paddy blast and Kodu. (iii) Grain yield. (iv) (a) 1946 to 1948. (b) N.A. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 3. RESULTS :

- (i) 1219 lb./ac.  
 (ii) 94.47 lb./ac.  
 (iii) Treatments differ highly significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	750
2.	1686
S.E./mean	= 29.8 lb./ac.

Crop :- Paddy.

Ref :- A.P. 48 (30).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :- To study the effect of different spacings and different number of seedlings per hole.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) 100 lb./ac. of G.N.C. and 100 lb./ac. of B.M. over a basal dressing of 2000 lb./ac. of G.L. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 29.10.1948. (iv) (a) 2 to 3 ploughings. (b) Transplanting. (c) —. (d) As under treatments. (e) As under treatments. (v) 100 lb./ac. of G.N.C. + 100 lb./ac. of B.M. over a basal dressing of 2000 lb./ac. of G.L. (vi) 2555. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 25.56%. (x) 15.2.1949.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 spacings :  $S_1 = 6' \times 6'$ ,  $S_2 = 9' \times 9'$  and  $S_3 = 12' \times 12'$ .(2) 4 No. of seedlings/hole :  $S_1' = 1$ ,  $S_2' = 2$ ,  $S_3' = 3$  and  $S_4' = 4$ .

## 3. DESIGN :

- (i)  $3 \times 4$  Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a), (b)  $15' \times 6'$ . (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Unfavourable season. (ii) Severe attack of Paddy blast and *Kodu*. (iii) Grain yield. (iv) (a) 1946 to 1948. (b) Yes. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1458 lb./ac.  
 (ii) 125.8 lb./ac.  
 (iii) Only the main effects of spacing and seedlings/hole are significant.  
 (iv) Av. yield of grain in lb./ac.

	$S_1'$	$S_2'$	$S_3'$	$S_4'$	Mean
$S_1$	1470	1724	1702	1573	1617
$S_2$	1354	1369	1490	1512	1431
$S_3$	1149	1407	1301	1452	1327
Mean	1324	1500	1498	1512	1458

S.E. of marginal mean of spacing = 31.45 lb./ac.  
 S.E. of marginal mean of seedlings/hole = 36.32 lb./ac.  
 S.E. of body of table = 62.90 lb./ac.



Crop :- Paddy.

Ref :- A.P. 48(29).

Site :- Rice. Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :- To find out the relative performances of planting seedlings of different ages.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 8.8.48/As per treatments. (iv) (a) 2 to 3 dry ploughings. (b) Transplanting. (c) —. (d) 6" × 6". (e) 2. (v) 100 lb./ac. of G.N.C. + 100 lb./ac. of B.M. over a basal dressing of 2000 lb./ac. of G.L. (vi) 2202. (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 25.56". (x) 16 and 21.2.49.

## 2. TREATMENTS :

Planting different ages of seedlings.

S<sub>1</sub>=45, S<sub>2</sub>=60, S<sub>3</sub>=75 and S<sub>4</sub>=90 days old seedlings.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) and (b) 6" × 30'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Unfavourable season. (ii) Severe attack of Paddy blast and kodu. (iii) Grain yield. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 1752 lb./ac.  
 (ii) 277.3 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
S <sub>1</sub>	2096
S <sub>2</sub>	1863
S <sub>3</sub>	1567
S <sub>4</sub>	1482
S.E./mean	=124.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 49(22).

Site :- Rice. Res. Stn., Buchireddipalem.

Type :- 'C'.

Object :- To study the incidence of blast by planting seedlings of different ages.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) N.A. (iv) (a) 2 to 3 dry ploughings. (b) Transplanting. (c) —. (d) 6" × 6". (e) 2. (v) 4000 lb./ac. of G.L. followed by 50 lb./ac. of G.N.C. + 112 lb./ac. of B.M. (vi) 2555. (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 25.82". (x) N.A.

## 2. TREATMENTS :

Age of seedlings.

S<sub>1</sub>=30, S<sub>2</sub>=45, S<sub>3</sub>=60, S<sub>4</sub>=75 and S<sub>5</sub>=90 days old seedlings.

## 3. DESIGN :

(i) R.B.D (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 16' × 20'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain weight, 20 plants were taken at random from each plot and the number of affected and healthy earheads counted. (iv) (a) 1943 to 1949. (b) N.A. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 2324 lb./ac.  
 (ii) 264.9 lb./ac.  
 (iii) Treatments differ significantly.

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

Treatment	Av. yield
S <sub>1</sub>	762
S <sub>2</sub>	2799
S <sub>3</sub>	2769
S <sub>4</sub>	2620
S <sub>5</sub>	2665
S.E./mean	= 132.4 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 52(33).

Site :- Agri. Farm, Dindi.

Type :- 'C'.

Object :- To find out the optimum seed rate for broadcasting of Paddy, H.R-19.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy soil. (b) Refer soil analysis, Dindi. (iii) 11.9.52. (iv) (a) 4 puddlings and levelling, cutting bunds. (b) Broadcast. (c) As under treatments. (d) —. (e) —. (v) N.A. (vi) H.R-19 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 9.90". (x) 13.1.53.

## 2. TREATMENTS :

4 seed rates : S<sub>1</sub>=60, S<sub>2</sub>=80, S<sub>3</sub>=100 and S<sub>4</sub>=120 lb./ac.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a), (b) 64' × 6'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1951 to 1952. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 335 lb./ac.  
 (ii) 107.8 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
S <sub>1</sub>	260
S <sub>2</sub>	333
S <sub>3</sub>	359
S <sub>4</sub>	388
S.E./mean	= 44.0 lb./ac.

Crop :- Paddy

Ref :- A.P. 52(74).

Site :- Agri. Farm, Dindi.

Type :- 'C'.

Object :- To find out the optimum seed-rate for broadcasting of Paddy, H.R-33.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) N.A. (b) Refer soil analysis, Dindi. (iii) 11.9.52. (iv) (a) 4 puddlings and levelling, cutting bunds. (b) Broadcast. (c) As under treatments. (d) —. (e) —. (v) N.A. (vi) H.R-33 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 9.90". (x) 13.1.53.

## 2. TREATMENTS :

4 seed rates : S<sub>1</sub>=60, S<sub>2</sub>=80, S<sub>3</sub>=100 and S<sub>4</sub>=120 lb./ac.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a), (b) 64' × 6'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Not satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1951 to 1952. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 349 lb./ac.  
 (ii) 123.1 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
S <sub>1</sub>	331
S <sub>2</sub>	217
S <sub>3</sub>	463
S <sub>4</sub>	388
S.E./mean	= 50.2 lb./ac.

Crop :- Paddy (II crop of 1947-48).

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

Ref :- A.P. 48(38).

Type :- 'C'.

Object :- To compare the effect of dibbling, transplanting and broadcasting on yield of Paddy.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 2.1.48.  
 (iv) (a) Water let in, puddled thrice and levelled. (b) to (e) As per treatments. (v) 100 C.L./ac. of F.Y.M.+112 lb./ac. of B.M.+30 lb./ac. of G.N.C. (vi) MTU-15. (vii) Irrigated. (viii) 2 weedings.  
 (ix) 0.52". (x) 5,26.5.48.

## 2. TREATMENTS :

- Broadcasting ; seed rate same as in (2) and (3) below.
- Dibbling sprouted seed at 6" x 6" spacing, 3 seeds/hole.
- Dibbling sprouted seed smeared with cowdung at 6" x 6" spacing, 3 seeds/hole.
- Transplanting seedlings from the nursery sown on the date of dibbling.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 8. (iv) (a) and (b) 20' x 23'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1949 (second crop of 1947-48). (b) and (c) N.A. (v) (a) Samalkot. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1717 lb./ac.  
 (ii) 152.5 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1476
2.	1632
3.	1731
4.	2030
S.E./mean	= 53.9 lb./ac.

Crop :- Paddy ( I crop of 48-49).

Ref :- A.P. 48 (46).

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

Type :- 'C'.

Object :—To compare the effect of dibbling, transplanting and broadcasting on yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 3rd week of May, 1948. (iv) (a) Water let in, puddled thrice and levelled. (b) to (e) As under treatments. (v) 10 C.L./ac. of F.Y.M.+B.M. at 112 lb./ac. (vi) N.A. (vii) Irrigated. (viii) 2 weedings. (ix) 31.87". (x) Last week of Nov. 1948.

2. TREATMENTS :

1. Broadcasting with the same seed rates as in treatment (3).
2. Dibbling sprouted seed at 6" × 6" spacing, 3 seeds/hole.
3. Dibbling the sprouted seed after smearing with dung at 6" × 6" spacing with 3 seeds/hole.
4. Transplanting seedlings from the nursery sown on the date of dibbling.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 20' × 23'. (v) No. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1949. (b) No. (c) N.A. (v) (a) Samalkot. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1815 lb./ac.

(ii) 490.6 lb./ac.

(iii) Treatments differ significantly.

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

Treatment	Av. yield
1.	1722
2.	1545
3.	1278
4.	2717
S.E./mean	=245.3 lb./ac.

Crop :- Paddy. (main crop)

Ref :- A.P. 49(80)

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

Type :- 'C'.

Object :—To study the different methods of sowing Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) As under treatments (iv) (a) Water let in, puddled and levelled. (b) to (e) As under treatments. (v) N.A. (vi) MTU-5. (vii) Irrigated. (viii) One or two weedings. (ix) 41.67". (x) 29.12.49.

2. TREATMENTS :

1. Transplanted (10.8.49)
2. Dibbled sprouted seed (10.7.49)
3. Broadcast sprouted seed (10.7.49.)
4. Dibbled sprouted seed smeared with dung (10.7.49)

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a), (b) 10' × 30'. (v) No. (vi) Yes.

4. GENERAL :

(i) Not satisfactory due to cyclone in October 1949. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 to 1949 (b) No. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1037 lb./ac.  
 (ii) 116.6 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1137
2.	997
3.	971
4.	1041
S.E./mean	= 47.6 lb./ac.

Crop :- Paddy. (*Abi 48-49*)

Ref :- A.P. 48(9)

Site :- Agri. Res. Stn., Rudrur

Type :- 'C'.

Object :- To ascertain the best method of sowing Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 4000 lb./ac. of G.N.C. on 22.12.47; (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 20.6.1948 (iv) (a) 3 ploughings and one harrowing. (b) As under treatments. (c) 80 lb./ac. (d) 1' between rows. (e) —. (v) 800 lb./ac. of G.N.C. (vi) H.R.-19. (early) (vii) Irrigated. (viii) 2 weedings and gap filling and hoeing. (ix) 46.06". (x) 24.10.1948.

## 2. TREATMENTS :

1. Broadcasting dry seeds.
2. Dry drilling.
3. Drilling soaked seeds. (soaked for 24 hours) 1' apart.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 60' × 99'. (iii) 6. (iv) (a) 60' × 33'. (b) 55' × 27'. (v) 3 rows on either side and 2½' on either ends. (vi) Yes.

## 4. GENERAL :

(i) Excepting the soaked seeds drilled, the germination and stand of crop of all other treatments was satisfactory in the beginning. But curiously enough, after filling up of gaps and weeding, the soaked seed plots made striking progress and topped the rest in yield. (ii) Nil. (iii) Grain yield. (iv) (a) 1947. (*Abi 47-48*) to 1948 (*Abi 48-49*) (b) No. (c) N.A. (v) (a), (b) Nil. (vi) & (vii) Nil.

## 5. RESULTS :

- (i) 1228 lb./ac.  
 (ii) 354.9 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1129
2.	1276
3.	1279
S.E./mean	= 144.9 lb./ac.

Crop :- Paddy (*Abi 48-49*).

Ref :- A.P. 48(10).

Site :- Agri Res. Stn., Rudrur.

Type :- 'C'.

Object :- To determine a profitable method of sowing Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 30 lb./ac. of N as F.Y.M. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 8.7.1948. (iv) (a) Cleaning plot, ploughing and repairing bunds. (b) As under treatments. (c) 80 lb./ac. (d) As under treatments. (e) —. (v) 12 C.L./ac. of F.Y.M. (vi) H.R. 19 (early). (vii) Irrigated. (viii) Weeding 3 times and hoeing 3 times. (ix) 46.06". (x) Drilled plot on 10.11.1948; Ridges and furrows on 3.11.1948; *Molka* on 3.11.1948; Flat beds on 9.10.1948.

## 2. TREATMENTS :

## 4 methods of sowing :

1. Transplanting on ridges and furrows (ridges 1' apart and 6" between plants).
2. Transplanting on flat bed at 6" x 4" spacing.
3. *Molka* broadcast.
4. By dry drilling—6" row to row.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 52' x 21'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory, except for crop in plots sown by dry drilling. (ii) Attack of hispa, beetle. (iii) Grain yield. (iv) (a) 1944 to 1948. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS

- (i) 1260 lb./ac.  
 (ii) 320.4 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.
- | Treatment | Av. yield      |
|-----------|----------------|
| 1.        | 1288           |
| 2.        | 1732           |
| 3.        | 1272           |
| 4.        | 752            |
| S.E./mean | = 130.8 lb./ac |

Crop :- Paddy (*Tabi* 1947—48).

Ref :- A.P. 48 (11).

Site :- Agri. Res Stn., Rudrur.

Type :- 'C'.

Object :- To determine a profitable method of sowing Paddy.

## 1. BASAL CONDITIONS ;

(i) (a) Nil. (b) Paddy. (c) 30 lb./ac. of N as F.Y.M. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 17 and 18.1.1948. (iv) (a) Cleaning the plots on 3.1.1948 ; 5 ploughings between 2.1.1948 and 15.1.1948 ; Repairing bunds on 16.1.1948. (b) As under treatments. (c) 80 lb./ac. (d) As per treatments. (e) N.A. (v) 30 lb./ac. of N as F.Y.M. (vi) H.R.-19. (vii) Irrigated. (viii) Weeding 5 times. (ix) 1.34". (x) 24.4.1948.

## 2. TREATMENTS :

## 4 methods of sowing :

1. Transplanting on ridges and furrows (ridges 1' apart and 6" between plants).
2. Transplanting on flat bed at 6" x 4" spacing.
3. *Molka* broadcast.
4. By dry drilling—6" row to row.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 52' x 21'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory in the early stages. Later satisfactory, except in dry drilled plots. (ii) In dry drilled plots the crop was gappy due to heavy attack of *It karogum*. (iii) Grain yield. (iv) (a) 1944 to 1948. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1360 lb./ac.  
 (ii) 294.8 lb./ac.  
 (iii) Treatments differ highly significantly.  
 (iv) Av. yield of grain in lb./ac.
- | Treatment | Av. yield       |
|-----------|-----------------|
| 1.        | 1260            |
| 2.        | 1667            |
| 3.        | 1987            |
| 4.        | 527             |
| S.E./mean | = 120.4 lb./ac. |

Crop :- Paddy. (II crop of 47-48).

Ref :- A.P. 48(44).

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

Type :- 'C'.

Object :- To compare actual dibbling of sprouted seeds with transplanted seedlings.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy bulk. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 11.2.48. (iv) (a) 2 or 3 ploughings. (b) As per treatments. (c) About 21 lb./ac. (d) and (e) As per treatments (v) 112 lb./ac. of Super.+120 lb./ac. of G.N.C. applied just before dibbling or transplanting. (vi) SLO-12. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 2.54". (x) N.A.

## 2. TREATMENTS :

1. Sprouted seed dibbled at three seeds/hole, 6" apart.
2. Sprouted seed smeared with cowdung and then dibbled three seeds/hole, 6" apart.
3. Sprouted seed broadcast using same seedrate (worked out to 40 lb./ac.) Date of dibbling 10.1.48.
4. Transplanting (Control).

## 3. DESIGN

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a), (b) N.A. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948—N.A. (b) N.A. (c) N.A. (v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2706 lb./cc.  
 (ii) 65.0 lb./ac.  
 (iii) Treatments are significantly different.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2669
2.	2491
3.	2803
4.	2861
S.E./mean	= 26.5 lb./ac.

Crop :- Paddy (I crop of 48-49.)

Ref :- A.P. 48(33)/48(44).

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

Type :- 'C'.

Object :- To compare actual dibbling of sprouted seeds with transplanted seedlings.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 27.6.48/27.7.48. (iv) (a) 2 ploughings. (b) to (e) As per treatments. (v) 300 lb./ac. of G.N.C.+112 lb./ac. of B.M. just before dibbling or transplanting. (vi) SLO-15 (Late). (vii) Irrigated. (viii) 2 weedings. (ix) 34.61" (x) 27.11.48.

## 2. TREATMENTS :

1. Dibbling sprouted seed at 6"×6" spacing, 3 seeds/hole.
2. Dibbling sprouted seed smeared with cowdung at 6"×6" spacing, 3 seeds/hole.
3. Broadcasting sprouted seed, using the same seed rates as in (1) and (2).
4. Transplanting seedlings from the nursery sown on the date of dibbling.

## 3. DESIGN

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a), (b) 30"×14". (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948 (II crop of 47-48)—N.A. (b) No. (c) N.A. (v) (a) Maruteru. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 3729 lb./ac.  
 (ii) 303.8 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	3788
2.	3489
3.	3946
4.	3694
S.E./mean	= 124.0 lb./ac.

Crop :- Paddy (1st crop of 1949-50).

Ref :- A.P. 49(18).

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

Type :- 'C'.

Object :—To study the comparative merits of drilling paddy with transplanting.

## 1. BASAL CONDITIONS :

- (i) a) Paddy—Gram. (b) N.A. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot.  
 (iii) 21.6.49. (iv) (a) 2 ploughings. (b) As under treatments. (c)—. (d) and (e) As under treatments.  
 (v) G.N.C. at 3000 lb./ac. applied at planting. (vi) SLO-15 (late). (vii) Irrigated. (viii) 2 weedings.  
 (ix) N.A. (x) 24.11.49.

## 2. TREATMENTS :

- Sprouted seeds dibbled at 6"×6" spacing, 3 seeds/hole.
- Sprouted seeds smeared with cowdung and dibbled with 6"×6" spacing.
- Sprouted seeds broadcast.
- Transplanted (age of seedlings equal to the age of sprouted seed).

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 31'×15'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Good. (ii) Slight attack of helminthosporium. (iii) Grain weight and tiller counts and height of plant.  
 (iv) (a) 1947—N.A. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2307 lb./ac.  
 (ii) 301.3 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2226
2.	2311
3.	2130
4.	2562
S.E./mean	= 123.0 lb./ac.

Crop :- Paddy.

Ref :- A.P. 48(31).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :—To find out the optimum seed-rate in the nursery to plant an acre under highly manured and normal manured conditions without loss in yield.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 18.8.48, 26.11.48. (iv) (a) 2 to 3 ploughings. (b) Transplanting. (c)—. (d) 6"×6". (e) 2. (v) Nil. (vi) 2555. (vii) Irrigated. (viii) 2 or 3 hand weedings. (ix) 25.56". (x) 16.2.49.



## 2. TREATMENTS :

## Main-plot treatments :

2 manurings :  $M_1$ =Heavy manure : G.M. at 7000 lb./ac.+G.N.C. at 90 lb./ac. of N+Super at 15 lb./ac. of  $P_2O_5$  and  $M_2$ =Normal manure : G.L. at 7000 lb./ac.+G.N.C. at 45 lb./ac. of N.

## Sub-plot treatments :

3 seed rates in the nursery :  $R_1=2$ ,  $R_2=3$  and  $R_3=4$  lb./cent.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a), (b) 18'×20'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Unfavourable season. (ii) Attack of paddy-blast and *kudu*. (iii) Grain yield. (iv) (a) 1947 to 1949. (b) N.A. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1393 lb./ac.  
 (ii) (a) 169.6 lb./ac.  
 (b) 224.1 lb./ac.  
 (iii) Only main effect of M is highly significant. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	$R_1$	$R_2$	$R_3$	Mean
$M_1$	1505	1531	1641	1559
$M_2$	1291	1248	1142	1227
Mean	1398	1389	1391	1393

## S.E. of difference of two

1. M marginal means = 69.2 lb./ac.  
 2. R marginal means = 111.9 lb./ac.  
 3. R means at the same level of M = 158.4 lb./ac.  
 4. M means at the same level of R = 146.7 lb./ac.

Crop :- Paddy.

Ref :- A. P. 49(3).

Site :- Rice. Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :- To determine the optimum seedrate required in the nursery to transplant under heavily manured and under normal manured conditions.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 13.7.49/29.8.49. (iv) (a) 2 to 3 ploughings. (b) Transplanting. (c) —. (d) 6"×6". (e) 2. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 2 to 3 hand weedings. (ix) 25.82". (x) 26.1.50.

## 2. TREATMENTS :

## Main-plot treatments :

2 manurings :  $M_1$ =Heavy manuring : G.M. at 7000 lb./ac.+G.N.C. at 90 lb./ac. of N+Super at 15 lb./ac. of  $P_2O_5$ . and  $M_2$ =Normal manuring : G.M. at 7000 lb./ac.+G.N.C. at 45 lb./ac. of N.

## Sub-plot treatments :

3 Seedrates in the nursery :  $R_1=2$ ,  $R_2=3$  and  $R_3=4$  lb./cent.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 18'×20'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1947 to 1949. (b) N.A. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2393 lb./ac.  
 (ii) (a) 349.7 lb./ac.  
 (b) 158.5 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of grain in lb./ac.

	R <sub>1</sub>	R <sub>2</sub>	R <sub>3</sub>	Mean
M <sub>1</sub>	2558	2505	2522	2528
M <sub>2</sub>	2397	2174	2202	2258
Mean	2478	2339	2362	2393

## S.E. of difference of two

1. M marginal means = 142.7 lb./ac.
2. R marginal means = 79.2 lb./ac.
3. R means at the same level of M = 112.1 lb./ac.
4. M means at the same level of R = 169.6 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52(41).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :- To ascertain the relative merits of dry ploughing compared with green manuring and puddling.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Green-gram and Paddy. (c) F.Y.M. at 20 C.L./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 29.7.52/2,3.11.52. (iv) (a) 3 dry ploughings and 2 puddlings. (b) Transplanted. (c) —, (d) 6" x 6". (e) 2. (v) Nil. (vi) BCP-1 (Late). (vii) Irrigated. (viii) 3 hand weedings. (ix) 22.78". (x) 14.2.53

## 2. TREATMENTS :

1. Ploughed dry.
2. Ploughed dry + 4000 lb./ac. of G.L. from out side.
3. Raising G.M. crop, puddling and then transplanting.
4. Keeping the field fallow, puddling after receipt of water and then planting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 55' x 22'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Slight attack of blast. (iii) Grain yield. (iv) (a) 1952 to 1956. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1073 lb./ac.  
 (ii) 255.6 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1033
2.	1307
3.	1098
4.	857
S.E./mean	= 104.4 lb./ac.

Crop :- Paddy.

Ref :- A.P. 53(68)/52(41):

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CM'.

Object :- To ascertain the relative merits of dry ploughing compared with green manuring and puddling.

## 1. BASAL CONDITIONS :

- (i) (a) No. (b) Fallow for dry ploughing plots and sannhemp for G.M. plots. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 9.8.53/10.9.53. (iv) (a) 2 to 3 dry ploughing and 2 puddlings. (b) Transplanting. (c) —. (d) 6" x 6". (e) 2. (v) N.A. (vi) BCP-1. (vii) Irrigated. (viii) 3 weedings. (x) 28.47". (x) 27.1.54.

## 2. TREATMENTS :

1. Ploughed dry.
2. Ploughed dry + 4000 lb./ac. of G.L. from outside.
3. Raising G.M. and puddling in.
4. Keeping the field found, puddling after receipt of water.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 55' x 22'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1952 to 1956. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS.:

- (i) 1597 lb./ac.  
 (ii) 268.6 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1474
2.	1742
3.	1350
4.	1821
S.E./mean	= 109.6 lb./ac.

Crop :- Paddy (*Abi*).

Ref :- A.P. 53(1).

Site :- Govt. Main Agri. Stn., Himayatsagar.

Type :- 'CM'.

Object :- To determine the efficacy of Japanese method over Local method of paddy cultivation.

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Himayatsagar. (iii) N.A./27.7.53. (iv) (a) One dry ploughing, 3 puddlings and levelling before sowing. (b) Transplanting. (c) —. (d) 6" x 6". (e) N.A. (v) Nil. (vi) H.R.-19. (vii) N.A. (viii) N.A. (ix) 25.65". (x) 17.11.53.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)

- (1) Manure levels : J<sub>1</sub> = Japanese dosage in puddle, 64 lb./ac. of N + 32 lb./ac. of P<sub>2</sub>O<sub>5</sub>.  
 J = Japanese dosage split, 22 lb./ac. of N + 32 lb./ac. of P<sub>2</sub>O<sub>5</sub> in puddle and two top dressings each 21 lb./ac. of N.  
 O = Local dosage in puddle, 22 lb./ac. of N + 12 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
- (2) Spacing levels : J' = Japanese spacing, 10" x 10" planting.  
 O' = Local spacing, 6" x 4" planting.
- (3) Interculture levels : J'' = Japanese interculture, 2 intercultures.  
 O'' = Local interculture, one weeding.

## 3. DESIGN

- (i) 3 x 2 x 2 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) 1.74 cents. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Due to unusual heavy rainfall in Oct. 1953 heavy lodging and shedding was noticed. (ii) Slight attack of hispa ; attack by Fusarium ; Dusting gammexene, spraying of Perenox. (iii) Grain and straw weight. (iv) (a) 1953-N.A. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Heavy rainfall in October, 1953. (vii) Nil.

## 5. RESULTS :

- (i) 1173 lb./ac.  
 (ii) 408.3 lb./ac.  
 (iii) Main effects of manure, spacing and interaction "manure×spacing" are significant. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	J <sub>1</sub>	J	O	Mean	J'	O'
J'	1093	1164	661	973	858	1088
O'	1937	1323	859	1373	1373	1373
J'	1491	1200	564	1115		
O'	1538	1197	955	1230		
Mean	1515	1244	760	1173		

S.E. of marginal mean of manure	=102.1 lb./ac.
S.E. of marginal mean of spacing or interculture	= 83.3 lb./ac.
S.E. of body of table "manure×spacing" or "manure×interculture"	=144.0 lb./ac.
S.E. of body of table "spacing×manure"	=117.8 lb./ac.

Crop :- Paddy (Main crop of 51-52).

Ref :- A.P. 51 (68).

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

Type :- 'CM'.

Object :- To find out the efficacy of the Japanese cultural methods on rice over local methods.

## 1. BASAL CONDITIONS:

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru.  
 (iii) 5.5.1951/22.7.1951. (iv) (a) to (e) As under treatments. (v) Nil. (vi) MTU-1. (vii) Irrigated.  
 (viii) N.A. (ix) 45.15". (x) 18.11.1951.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 Methods of cultivation : J=Japanese method and L=Local method.

(2) 4 levels of manure : M<sub>1</sub>=No manure, M<sub>2</sub>=G.L. at 4000 lb./ac.+Super at 45 lb./ac. of P<sub>2</sub>O<sub>5</sub>, M<sub>3</sub>=G.L. at 4000 lb./ac.+Super at 45 lb./ac. of P<sub>2</sub>O<sub>5</sub>+30 lb./ac. of N as A/S and M<sub>4</sub>=G.L. at 4000 lb./ac. +Super at 45 lb. P<sub>2</sub>O<sub>5</sub>/ac.+A/S at 45 lb./ac. of N.

*Japanese method* : Planting in lines 1' apart with 9" spacing within a line. 3 to 4 seedlings per hole ; weeding once in a fortnight ; the soil was stirred with a rake in between lines.  $\frac{2}{3}$  of N as A/S given before planting and the balance  $\frac{1}{3}$  after one month. *Local Method* : Planting in bulk. A/S applied in one dose four weeks after planting. No weeding or stirring.

## 3. DESIGN :

(i) 2×4 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a), (b) 18'×24'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1951-N.A. (b) N.A. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2867 lb./ac.  
 (ii) 160.3 lb./ac.  
 (iii) Main effects of manures and methods and their interaction are significant.  
 (iv) Av. yield of grain in lb./ac.

	J	L	Mean
M <sub>1</sub>	2885	2990	2938
M <sub>2</sub>	3155	2958	3057
M <sub>3</sub>	3121	2500	2811
M <sub>4</sub>	3401	1923	2662
Mean	3141	2593	2867

S.E. of marginal mean of method = 40.1 lb./ac.  
 S.E. of marginal mean of manure = 56.6 lb./ac.  
 S.E. of body of table = 80.1 lb./ac.

Crop :- Paddy (2nd crop of 1951—52).

Ref :- A.P. 51 (67).

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

Type :- 'CM'.

Object :—To find out the efficacy of the Japanese cultural methods on rice over local methods.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 26.12.1951.  
 (iv) (a) to (e) As under treatments. (v) Nil. (vi) MTU-1. (vii) Irrigated. (viii) As per treatments. (ix)  
 (x) 8 and 12.5.1952.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 methods of cultivation : J=Japanese method and L=Local method.

(2) 4 levels of manure : M<sub>1</sub>=No manure, M<sub>2</sub>=G.L. at 4000 lb./ac.+Super at 45 lb./ac. of P<sub>2</sub>O<sub>5</sub>, M<sub>3</sub>=  
 G.L. at 4000 lb./ac.+Super at 45 lb./ac. of P<sub>2</sub>O<sub>5</sub>+A/S at 30 lb./ac. of N and  
 M<sub>4</sub>=G.L. at 4000 lb./ac.+Super at 45 lb./ac. of P<sub>2</sub>O<sub>5</sub>+A/S at 45 lb./ac. of N.

Japanese method : Planting in lines 9" apart with 6" spacing in the row. 3 to 4 seedlings per hole. Once in a fortnight weeding was done and the soil was stirred with a rake in between lines.  $\frac{2}{3}$  of N given before planting and the rest  $\frac{1}{3}$  after one month and L= Local method : Planting in bulk. A/S applied in one dose three weeks after planting. No weeding or stirring.

## 3. DESIGN :

- (i) 2×4 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a), (b) 18'×24'. (v) No. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1951-N.A. (b) N.A. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2771 lb./ac.  
 (ii) 233.8 lb./ac.  
 (iii) Only main effect of manure is significant.  
 (iv) Av. yield of grain in lb./ac.

	J	L	Mean
M <sub>1</sub>	2431	2533	2482
M <sub>2</sub>	3048	3060	3054
M <sub>3</sub>	2909	2696	2803
M <sub>4</sub>	2595	2897	2746
Mean	2746	2797	2771

S.E. of marginal mean of method = 58.4 lb./ac.  
 S.E. of marginal mean of manure = 82.6 lb./ac.  
 S.E. of body of table = 116.9 lb./ac.

Crop :- Paddy.  
Site :- Agri. Res. Stn., Rudrur.

Ref :- A.P. 51 (24).  
Type :- 'CM'.

Object :—To find out a suitable G.M. crop and its optimum period of sowing for high yields.

### 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Sugarcane. (c) N.A. (ii) (a) *Chalka* (sandy loam). (b) Refer soil analysis, Rudrur. (iii) 18.7.1951. (iv) (a) 3 ploughings, puddling, and levelling. (b) Transplanting. (c) —. (d) 6"×6". (e) N.A. (v) Nil. (vi) H.R.-35 (long duration). (vii) Irrigated. (viii) Hand weeding on 27.8.1951. (ix) 30.81". (x) 3.12.51.

### 2. TREATMENTS :

- |   |  |
|---|--|
| 1. No manure.                                   | 7. <i>Pillipesra</i> sown in 2nd week of May.            |
| 2. Sunhemp sown in 4th week of April.           | 8. Sunhemp sown in standing <i>Abi</i> Paddy.            |
| 3. <i>Daincha</i> sown in 4th week of April.    | 9. <i>Daincha</i> sown in standing <i>Abi</i> Paddy.     |
| 4. <i>Pillipesra</i> sown in 4th week of April. | 10. <i>Pillipesra</i> sown in standing <i>Abi</i> Paddy. |
| 5. Sunhemp sown in 2nd week of May.             | 11. Paddy fertilizer mixture at 30 lb./ac. of N.         |
| 6. <i>Daincha</i> sown in 2nd week of May.      | 12. F.Y.M. at 30 C.L./ac.                                |

Treatments 8, 9 and 10 completely failed in all replications.

### 3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 48.5'×18'. (b) 45.5'×16'. (v) Buffer of 1' width and 1.5' bunds on either side. (vi) Yes.

### 4. GENERAL :

(i) Normal. (ii) Attack of gall-fly ; silver shoots appeared. (iii) Grain yield. (iv) (a) 1951 to 1954. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Farm Section.

### 5. RESULTS :

- (i) 1587 lb./ac.  
(ii) 168.1 lb./ac.  
(iii) Treatment differences are highly significant.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	1246	7.	1655
2.	1316	8.	failed
3.	1760	9.	failed
4.	1809	10.	failed
5.	1665	11.	1680
6.	1515	12.	1635

S.E./mean = 68.6 lb./ac.

Crop :- Paddy.  
Site :- Agri. Res. Stn., Rudrur.

Ref :- A.P. 52 (23)/51 (24).  
Type :- 'CM'.

Object :—To find out a suitable G.M. crop and its optimum period of sowing for high yields.

### 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As under treatments. (ii) (a) *Chalka* (sandy loam). (b) Refer soil analysis, Rudrur. (iii) 1.7.1952. (iv) (a) 3 ploughings, puddling and levelling. (b) N.A. (c) —. (d) 6"×4". (e) N.A. (v) Nil. (vi) H.R.-35 (long duration). (vii) Irrigated. (viii) N.A. (ix) 33.11". (x) 2.12.1952.

### 2. TREATMENTS :

- |   |  |
|---|--|
| 1. No manure.                                   | 7. <i>Pillipesra</i> sown in 2nd week of May.            |
| 2. Sunhemp sown in 4th week of April.           | 8. Sunhemp sown in standing <i>Abi</i> Paddy.            |
| 3. <i>Daincha</i> sown in 4th week of April.    | 9. <i>Daincha</i> sown in standing <i>Abi</i> Paddy.     |
| 4. <i>Pillipesra</i> sown in 4th week of April. | 10. <i>Pillipesra</i> sown in standing <i>Abi</i> Paddy. |
| 5. Sunhemp sown in 2nd week of May.             | 11. Paddy fertilizer mixture at 30 lb./ac. of N.         |
| 6. <i>Daincha</i> sown in 2nd week of May.      | 12. F.Y.M. at 30 C.L./ac.                                |

## 3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 48.5'×18'. (b) 45.5'×16'. (v) Buffer of 1' width and 1.5' bunds on either side. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1951 to 1954. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Farm Section.

## 5. RESULTS :

(i) 2951 lb./ac.

(ii) 510.0 lb./ac.

(iii) Treatments differ significantly.

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

Treatment	Av. yield	Treatment	Av. yield
1.	2010	7.	2628
2.	3042	8.	2802
3.	2718	9.	3498
4.	2730	10.	3648
5.	3342	11.	2982
6.	3330	12.	2688

S.E./mean = 208.2 lb./ac.

Crop :- Paddy (*Abi* 1953-54).

Ref :- A.P. 53(17)/52(23)/51(24).

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

Type :- 'CM'.

Object :- To find out whether the application of G.M. crop to paddy will increase the yields and to determine the time of its sowing, and also to find out whether the G.M. can completely replace the usage of compost and paddy fertilizer mixture etc.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As under treatments. (ii) (a) *Chalka* (b) Refer soil analysis, Rudrur. (iii) 18.7.53. (iv) (a) to (e) N.A. (v) N.A. (vi) H.R-31 (early). (vii) N.A. (viii) Weeding twice. (ix) N.A. (x) 3.12.53.

## 2. TREATMENTS :

1. No manure.
2. Sunhemp sown in the 4th week of April.
3. *Pillipesra* sown in the 4th week of April.
4. *Daincha* sown in the 4th week of April.
5. Sunhemp sown in the 2nd week of May.
6. *Pillipesra* sown in the 2nd week of May.
7. *Daincha* sown in the 2nd week of May.
8. Sunhemp sown just before the harvest of previous *Abi* crop.
9. *Pillipesra* sown just before the harvest of previous *Abi* crop.
10. *Daincha* sown just before the harvest of previous *Abi* crop.
11. F.Y.M. at 30 C.L./ac.
12. Paddy fertilizer mixture at 30 lb./ac. of N.

(Half the dose of paddy fertilizer mixture and full dose of F.Y.M. given at last puddling ; other half of paddy fertilizer mixture given on 17.8.53).

## 3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 48.5'×18'. (b) 45.5'×16'. (v) Buffer of 1' width and 1.5' bunds on either side. (vi) Yes.

## 4. GENERAL :

(i) Good. (ii) Tip-drying disease noticed here and there in patches but did not prove detrimental to crop. (iii) Grain yield. (iv) (a) 1951 to 1954. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Farm Section.

## 5. RESULTS :

- (i) 3456 lb./ac.  
 (ii) 559.2 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av yield of grain in lb. ac.

Treatment	Av. yield	Treatment	Av. yield
1.	2928	7.	3966
2.	3246	8.	3198
3.	3486	9.	3246
4.	3558	10.	3528
5.	3450	11.	3786
6.	3448	12.	3630
S.E./mean		=	228.3 lb./ac.

Crop :- Paddy (*Tabi* 1947-48).

Ref :- A.P. 48(8).

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

Type :- 'CM'.

Object :- To determine the optimum dosage of manure along with suitable methods of sowing.

## 1. BASAL CONDITIONS :

(i) (a) Nil (b) Paddy. (c) 416 lb./ac. of G.N.C. and 35 lb./ac. of Super. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 5.1.48. (iv) (a) 2 ploughings and 2 puddlings. (b) As under treatments. (c) 80 lb. ac. (d) N.A. (e) —. (v) Nil. (vi) H.R-19. (vii) Irrigated. (viii) One thinning and 2 weedings between 5.2.48 to 1.4.48. (ix) 1.48". (x) 27.4.48.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of manure :  $M_1=30$  lb./ac. of N+15 lb./ac. of  $P_2O_5$ ,  $M_2=45$  lb./ac. of N+22½ lb./ac. of  $P_2O_5$  and  $M_3=60$  lb./ac. of N+30 lb./ac. of  $P_2O_5$ .

(2) 2 methods of sowing :  $S_1$ =Broadcasting *molka* and  $S_2$ =Drilling soaked seed (soaked 36 hrs).

Manures applied on 22.1.48. N as G.N.C. and  $P_2O_5$  as Super.

## 3. DESIGN :

(i) 2×3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a), (b) 22'×18'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory in early stages, In later stages there was attack of *itkarogum* due to which the growth received a set back. (ii) Nil (iii) Grain yield. (iv) (a) 1947 (*Abi* 1947-48) to 1950 (*Abi* 1949-50). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 647 lb./ac.  
 (ii) 253.9 lb./ac.  
 (iii) Main effects of M, S are highly significant. Interaction is not significant.  
 (iv) Av. yield of grain in lb. ac.

	$M_1$	$M_2$	$M_3$	Mean
$S_1$	660	779	1174	871
$S_2$	303	476	486	421
Mean	482	627	830	647

S.E. of marginal mean of manures = 73.1 lb./ac.  
 S.E. of marginal mean of methods = 59.7 lb./ac.  
 S.E. of body of table = 103.7 lb./ac.



Crop :- Paddy (*Abi* 1948-49).

Ref :- A.P. 48(7)/48(8).

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

Type :- 'CM'.

Object :- To determine the optimum dosage of manure along with suitable methods of sowing.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Same as under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 8.7.1948. (iv) (a) 2 ploughings and 2 puddlings. (b) As under treatments. (c) 80 lb./ac. (d) N.A. (e) —. (v) Nil. (vi) H.R.-19 (early). (vii) Irrigated. (viii) Weeding two times. (ix) 46.06%. (x) 10.11.48.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of manure :  $M_1=30$  lb./ac. of N+15 lb./ac. of  $P_2O_5$ ,  $M_2=45$  lb./ac. of N+22½ lb./ac. of  $P_2O_5$ , and  $M_3=60$  lb./ac. of N+30 lb./ac. of  $P_2O_5$ .

(2) 2 methods of sowing :  $S_1$ =Broadcasting *Molka*. and  $S_2$ =Drilling soaked seed (soaked 36 hrs.)  
N as G.N.C. and  $P_2O_5$  as super.

## 3. DESIGN :

(i) 2×3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) and (b) 22'×18'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Germination was satisfactory but later progress of the crop was not encouraging. Further set back was received by an attack of *Iika rogam*. After the disease was brought under control, there was slight improvement. But, in general the crop was not satisfactory. (ii) Attack of *Itaka rogum*. Control measures N.A. (iii) Grain yield. (iv) (a) 1947 (*Abi* 1947—48) to 1950 (*Tabi* 1949—50). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 867 lb./ac.  
(ii) 259.6 lb./ac.  
(iii) Only the main effect of 'M' is significant.  
(iv) Av. yield of grain in lb./ac.

	$M_1$	$M_2$	$M_3$	Mean
$S_1$	697	880	1091	889
$S_2$	687	816	1036	846
Mean	692	848	1063	867

S.E. of marginal mean of manures = 74.9 lb./ac.  
S.E. of marginal mean of methods = 61.2 lb./ac.  
S.E. of body of table = 106.0 lb./ac.

Crop :- Paddy (*Tabi* 1948-49).

Ref :- A.P.49(8)/48(8, 7).

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

Type :- 'CM'.

Object :- To determine the optimum dosage of manure along with suitable methods of sowing.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Same as under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 25.1.49. (iv) (a) 2 ploughings and 2 puddlings. (b) As under treatments. (c) 80 lb./ac. (d) N.A. (e) —. (v) Nil. (vi) H.R.-19 (early). (vii) Irrigated. (viii) 2 weedings. (ix) 1.20%. (x) 31.5.49.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of manure :  $M_1=30$  lb./ac. of N+15 lb./ac. of  $P_2O_5$ ,  $M_2=45$  lb./ac. of N+22½ lb./ac. of  $P_2O_5$ , and  $M_3=60$  lb./ac. of N+30 lb./ac. of  $P_2O_5$

(2) 2 methods of sowing :  $S_1=$  *Molka* broadcast. and  $S_2=$  Drilling soaked seed (soaked 35 hrs.)  
N as G.N.C. and  $P_2O_5$  as Super.

## 3. DESIGN :

(i)  $2 \times 3$  Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) and (b)  $22' \times 18'$ . (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) On account of late sowing, the crop became a victim to several pests which could not be brought under control. (iii) Grain yield. (iv) (a) 1947 (*Abi* 1947—48) to 1950 (*Tabi* 1949—50). (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 242 lb./ac.  
(ii) 135.3 lb./ac.  
(iii) Main effects and interaction are significant.  
(iv) Av. yield of grain in lb./ac.

	$M_1$	$M_2$	$M_3$	Mean
$S_1$	281	305	527	371
$S_2$	50	156	134	113
Mean	166	230	331	242

S.E. of marginal mean of manures =39.0 lb./ac.  
S.E. of marginal mean of methods =31.8. lb./ac.  
S.E. of body of table =55.2 lb./ac.

Crop :- Paddy (*Abi* 49-50)

Ref :- A.P. 49 (7)/49(8)/48(8, 7).

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

Type :-CM.

Object :- To find out the optimum dose of manure along with suitable methods of sowing.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Same as under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 6.7.49, 9.7.49- (iv) (a) 4 times ploughing, once *guntaka*, twice puddling. (b) As under treatments. (c) 80 lb ac. (d) N.A. (e) —. (v) Nil. (vi) H.R.—19 (early). (vii) Irrigated. (viii) One weeding (x) 51.48". (x) 20.11.49.

## 2. TREATMENTS :

All combinations of (1) & (2)

(1) 3 levels of manure :  $M_1=30$  lb/ac. of N+15 lb/ac. of  $P_2O_5$ ,  $M_2=45$  lb/ac. of N+22½ lb/ac. of  $P_2O_5$  and  $M_3=60$  lb/ac. of N+30lb/ac. of  $P_2O_5$ .

(2) 2 methods of sowing :  $S_1=$  Broadcasting by *Molka* and  $S_2=$  Drilling Soaked seed (soaked 36hrs.)  
N and  $P_2O_5$  as Ammo. Phos.

## 3. DESIGN :

(i)  $2 \times 3$  Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b)  $22' \times 18'$ . (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Continuous rains affected the growth to some extent. (ii) Attack of gall-fly, Thripe (spraying tobacco decoction) and Hispa—(D.D.T. spraying). (iii) Grain yield. (iv) (a) 1947 (*Abi* 47-48) to 1950 (*Tabi* 1949-50). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) & (vii) Nil.

## 5. RESULTS :

- (i) 850 lb./ac.  
 (ii) 268.4 lb/ac.  
 (iii) Main effect of manure alone is significant.  
 (iv) Av. yield of grain in lb /ac.

	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	Mean.
S <sub>1</sub>	560	678	1080	773
S <sub>2</sub>	770	925	1090	928
Mean	665	802	1085	850

S.E. of marginal mean of manures = 77.6 lb/ac,  
 S.E. of marginal mean of methods = 63.3 lb/ac.  
 S.E. of body of table = 110.0 lb/ac.

Crop :- Paddy (*Tabi* 49-50).

Ref :- A.P. 50(9)/49(8, 7)/48(8, 7).

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

Type :- 'CM'.

Object :- To find out the optimum dose of manure along with suitable methods of sowing.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) Same as treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 25.1.50/27.1.50. (iv) (a) 2 ploughings & 1 repairing of bunds. (b) As under treatments: (c) 80 lb./ac. (d) 1' for drilling soaked seed. (e) —. (v) Nil. (vi) H.R. 19 (early). (vii) Irrigated. (viii) 3 times weeding. (ix) 1.91". (x) 18.5.50.

## 2. TREATMENTS :

All combinations of (1) & (2)

- (1) 3 levels of manure : M<sub>1</sub>=30 lb/ac. of N+15 lb/ac. of P<sub>2</sub>O<sub>5</sub>, M<sub>2</sub>=45 lb/ac. of N+22½ lb/ac. of P<sub>2</sub>O<sub>5</sub> and M<sub>3</sub>=60 lb/ac. of N+30 lb/ac. of P<sub>2</sub>O<sub>5</sub>.  
 (2) 2 methods of sowing : S<sub>1</sub>=Broadcasting by *Molka*, and S<sub>2</sub>=Drilling soaked seed.  
 N and P<sub>2</sub>O<sub>5</sub> as Ammo. Phos.

## 3. DESIGN :

- (i) 2×3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 18'×22'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Germination not satisfactory. (ii) Attack of stemborer. (iii) Grain yield. (iv) (a) 1957 (*Abi* 1947-48) to 1950 (*Tabi* 1949-50). (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) & (vii) Nil.

## 5. RESULTS :

- (i) 385 lb/ac.  
 (ii) 144.1 lb/ac.  
 (iii) Main effects and interaction are significant.  
 (iv) Av. yield of grain in lb/ac.

	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	Mean
S <sub>1</sub>	255	454	767	492
S <sub>2</sub>	77	214	540	277
Mean	166	334	654	385

S.E. of marginal mean of manures = 41.6 lb/ac.  
 S.E. of marginal mean of methods = 34.0 lb/ac.  
 S.E. of body of table = 58.8 lb/ac.

Crop :- Paddy.

Ref :- A.P. 48(63).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CV'.

Object :—To find out the best method of planting Paddy.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Sannhemp. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 10.7.1948. (iv) (a) 2 or 3 ploughings. (b) As per treatments. (c) —. (d) 6" × 6" for transplanted crop. (e) 2 to 3. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) 1 or 2 weedings. (ix) 33.55". (June to Dec.) (x) 15.12.1948.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties :  $V_1$  = AKP-12 and  $V_2$  = BAM-3.(2) 4 methods of planting :  $M_1$  = Sprouted seeds dibbled. $M_2$  = Sprouted seeds dibbled smearing with cowdung. $M_3$  = Broadcasting the sprouted seed using the same seed rate as above.and  $M_4$  = Transplanting on 23.8.1948. $M_1$ ,  $M_2$  and  $M_3$  planted on 10.7.1948.

## 3. DESIGN :

(i) 2 × 4 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) 29.5' × 15.5' (b) 28.5' × 14.5'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1948 to 1949. (b) No. (c) Nil. (v) (a) Buchireddipalem. (b) N.A. (vi) & (vii) Nil.

## 5. RESULTS :

(i) 2202 lb./ac.

(ii) 345.4 lb./ac.

(iii) Main effects of V and M are significant but their interaction is not significant.

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

	$M_1$	$M_2$	$M_3$	$M_4$	Mean
$V_1$	2546	2381	2498	2093	2379
$V_2$	2185	2228	2046	1645	2026
Mean	2366	2305	2272	1869	2202

S.E. of marginal mean of M = 99.7 lb./ac.

S.E. of marginal mean of V = 70.5 lb./ac.

S.E. of body of table = 141.0 lb./ac.

Crop :- Paddy.

Ref :- A P.49(62).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CV'.

Object :—To find out the best method of planting Paddy.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Sannhemp. (c) N.A. (ii) (a) Clayey loam. (b) Refer soil analysis, Anakapalle. (iii) 18.7.1949. (iv) (a) 2 or 3 ploughings. (b) As under treatments. (c) N.A. (d) As under treatments. (e) 2 to 3. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) 1 or 2 weedings. (ix) 40.95" (July to Dec.) (x) 24.12.1949.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties :  $V_1$  = AKP-12 and  $V_2$  = BAM-3.(2) 4 methods of planting :  $M_1$  = Sprouted seeds dibbled. $M_2$  = Sprouted seeds dibbled after smearing with cowdung. $M_3$  = Sprouted seeds broadcast.and  $M_4$  = Transplanting. (23.8.1949)

Broadcasting and dibbling on 18.7.1949.

## 3. DESIGN :

(i) 2×4 Fact. in R.B.D. (ii) (a) 8. (b) N.A., (iii) 6. (iv) (a) N.A. (b) 33' 4"×13' 4" (v) N.A. (vi) Yes

## 4. GENERAL :

(i) Not satisfactory due to floods in October 1949. (ii) Nil. (iii) Grain yield and growth measurements. (iv) (a) 1943 to 1949. (b) No. (c) Nil. (v) (a) Buchireddipalem. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2526 lb./ac.  
 (ii) 61.2 lb./ac.  
 (iii) Main effects of V and M and interaction V×M are significant.  
 (iv) Av. yield of grain in lb./ac.

	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>	Mean
V <sub>1</sub>	2177	2434	2391	2389	2348
V <sub>2</sub>	2853	2900	2473	2604	2707
Mean	2515	2667	2432	2496	2526

S.E. of marginal mean of M = 18.0 lb./ac.

S.E. of marginal mean of V = 13.0 lb./ac

S.E. of body of table = 25.0 lb./ac.

Crop :- Paddy (Main crop season).

Site :- Rice Res. Stn., Buchireddipalem.

Ref :- A.P. 48(81).

Type :- 'CV'.

Object :- To study the incidence of blast in relation to planting seedlings of different ages and on different varieties.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 20.9.48.  
 (iv) (a) 2 to 3 ploughings. (b) Transplanted. (c) —. (d) 6"×6". (e) 2. (v) N.A. (vi) As per treatments  
 (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 25.56". (x) 22.2. 49 to 15.3.49.

## 2. TREATMENTS :

## Main-plot treatments :

5 ages of seedlings: D<sub>1</sub>=45, D<sub>2</sub>=60, D<sub>3</sub>=70, D<sub>4</sub>=80 and D<sub>5</sub>=90 days.

## Sub-plot treatments :

6 varieties: V<sub>1</sub>=BCP-1, V<sub>2</sub>=BCP-2, V<sub>3</sub>=CO-25, V<sub>4</sub>=CO-26, V<sub>5</sub>=Molakulukulu and V<sub>6</sub>=Iswarkorra.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/block; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 4'×20'.  
 (v) No. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) N.A. (iii) Hight measurements, grain yield and blast intensity. (iv) (a) 1943 to 1948.  
 (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1113 lb./ac.  
 (ii) (a) 207.5 lb./ac.  
 (b) 169.9 lb./ac.  
 (iii) Main effects of D, V and interaction D×V are significant.

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

	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	D <sub>5</sub>	Mean
V <sub>1</sub>	1021	852	519	425	340	631
V <sub>2</sub>	1234	927	655	323	332	694
V <sub>3</sub>	1276	1472	1685	1004	1089	1305
V <sub>4</sub>	1285	1584	1642	1021	927	1292
V <sub>5</sub>	927	1225	791	970	1505	1084
V <sub>6</sub>	1719	1897	1753	1676	1336	1674
Mean	1244	1326	1174	903	921	1113

S.E. of difference of two.

1. D marginal means = 59.8 lb./ac.
2. V marginal means = 53.7 lb./ac.
3. V marginal means at the same level of D = 120.0 lb./ac.
4. D marginal means at the same level of V = 124.8 lb./ac.

Crop :- Paddy (Main crop season).

Ref :- A.P. 48(80).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'CV'.

Object :- To study the incidence of blast in relation to planting seedlings of different ages and on different varieties.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 8.8.48.  
 (iv) (a) 2 to 3 ploughings. (b) Transplanted. (c) —. (d) 6"×6". (e) 2. (v) N.A. (vi) As under treatments.  
 (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 25.56%. (x) 22.2.49.

**2. TREATMENTS :**

Main-plot treatments :

3 ages of seedlings : D<sub>1</sub>=70, D<sub>2</sub>=80 and D<sub>3</sub>=90 days.

Sub-plot treatments :

6 varieties : V<sub>1</sub>=BCP-1, V<sub>2</sub>=BCP-2, V<sub>3</sub>=CO-25, V<sub>4</sub>=CO-26, V<sub>5</sub>=Molakuluku and V<sub>6</sub>=Iswarkorra.**3. DESIGN :**

(i) Split-plot. (ii) (a) 3 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 4'×20'.  
 (v) No. (v) Yes.

**4. GENERAL :**

(i) Not satisfactory. (ii) Blast intensity. (iii) Height measurement and grain yield (iv) (a) 1943 to 1948.  
 (b) N.A. (c) Nil. (v) (a) Nil. (b) Nil. (vi) and (vii) Nil.

**5. RESULTS .**

- (i) 1150 lb./ac.
- (ii) (a) 282.5 lb./ac.
- (b) 187.9 lb./ac.
- (iii) Only the main effect of V and interaction D×V are significant.

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

	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	Mean
V <sub>1</sub>	1012	1191	783	995
V <sub>2</sub>	978	876	664	839
V <sub>3</sub>	1285	1497	1387	1389
V <sub>4</sub>	1004	1191	1242	1146
V <sub>5</sub>	927	800	927	885
V <sub>6</sub>	1676	1651	1616	1648
Mean	1147	1201	1103	1150

S.E. of difference of two

1. D marginal means = 81.6 lb./ac.
2. V marginal means = 76.7 lb./ac.
3. V means at the same level of D = 132.8 lb./ac.
4. D means at the same level of V = 146.1 lb./ac.

Crop :- Paddy.

Ref :- A.P. 49 (36).

Site :- Agri. Farm, Dindi.

Type :- CV.

Object :- To determine the best variety along with the best time of sowing (early planting).

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) No. (c) No. (ii) (a) Sandy loam. (b) Refer soil analysis, Dindi. (iii) As per treatments. (iv) (a) 2 ploughings and two puddlings. (b) N.A. (c) 30 lb/ac. (d) 6"×4". (e) —. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) N.A. (ix) 20.27" (Total rain fall for the year) 10.73" (in September). (x) N.A.

## 2. TREATMENTS

Main-plot treatments :

4 dates of sowing : D<sub>1</sub>=15.8.49, D<sub>2</sub>=24.8.49, D<sub>3</sub>= 4.9.49. and D<sub>4</sub>=14.9.49.

Sub-plot treatments :

5 varieties :

V<sub>1</sub>=H.R. 19, V<sub>2</sub>=KalaDhan, V<sub>3</sub>=Palamuchalu, V<sub>4</sub>=Dubba Sanwalu, and V<sub>5</sub>=Maita Sannalu.

## 3. DESIGN

- (i) Split-plot. (ii) (a) 4 main-plots/block, 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 17'×4.5'. (v) N.A. (vi) Yes.

## 4. GENERAL ;

- (i) Not satisfactory. (ii) N.A. (iii) Grain and straw yield. (iv) (a) No. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) & (vii) Nil.

## 5. RESULTS :

- (i) 718 lb/ac.  
(ii) (a) 224.8 lb./ac.  
(b) 184.9 lb./ac.  
(iii) Main effects of D, V and interaction D×V are significant.

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

	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	Mean
V <sub>1</sub>	649	907	809	516	720
V <sub>2</sub>	400	365	427	365	389
V <sub>3</sub>	854	800	738	613	751
V <sub>4</sub>	1182	1076	889	542	922
V <sub>5</sub>	1014	987	782	445	807
Mean	820	827	729	496	718

S.E. of difference of two

1. D marginal means = 71.1 lb/ac.
2. V marginal means = 65.3 lb/ac.
3. V means at the same level of D = 130.8 lb/ac.
4. D means at the same level of V = 131.9 lb/ac.

Crop :- Paddy.

Ref :- A.P. 49 (37).

Site :- Agri. Farm, Dindi.

Type :- CV.

Object :- To determine the best variety along with the best time of sowing (late planting).

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) No. (c) No. (ii) (a) Sandy loam. (b) Refer soil analysis, Dindi. (iii) As per treatments. (iv) (a) 2 ploughings and 2 puddlings. (b) Transplanting. (c) —. (d) 6" × 4". (e) N.A. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) N.A. (ix) 20.27". (x) N.A.

## 2. TREATMENTS :

Main-plot treatments :

4 dates of sowing :—D<sub>1</sub>=15.8.49, D<sub>2</sub>=24.1.49, D<sub>3</sub>=4.9.49 and D<sub>4</sub>=14.9.49.

Sub-plot treatments :

5 varieties : V<sub>1</sub>=H.R. 35, V<sub>2</sub>=H.R. 38, V<sub>3</sub>=H.R. 42, V<sub>4</sub>=H.R. 63 and V<sub>5</sub>=Ishwarkara.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication, 5 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 17' × 4.5'. (v) N.A. (vi) Yes.

## 4. GENERAL :

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

## 5. RESULTS :

(i) 1519 lb/ac.

(ii) (a) N.A.

(b) N.A.

(iii) N.A.

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

	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	Mean
V <sub>1</sub>	1823	1228	1130	1282	1366
V <sub>2</sub>	1816	1611	1113	516	1264
V <sub>3</sub>	2243	2065	908	881	1524
V <sub>4</sub>	2376	2350	1638	783	1787
V <sub>5</sub>	2626	2189	2261	1531	2152
Mean	2177	1889	1410	999	1619

S.E'S. N.A.



Crop :- Paddy (*Abi*).

Ref :- A.P. 50(58).

Site :- Agri. Farm, Dindi.

Type :- 'CV'.

Object :- To find out the optimum seed rate for broadcasting along with varieties.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy soil. (b) Refer soil analysis, Dindi. (iii) 7.8.50. (iv) (a) 3 puddlings. (b) Broadcast. (c) As under treatments. (d) —. (e) —. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) One hand weeding. (ix) N.A. (x) 6.12.50.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties :  $V_1 = \text{H.R.}-19$  and  $V_2 = \text{H.R.}-33$  (both medium)(2) 4 seedrates :  $S_1 = 60$ ,  $S_2 = 80$ ,  $S_3 = 100$  and  $S_4 = 120$  lb. per acre.

## 3. DESIGN :

(i)  $2 \times 4$  Fact. in R.B.D. (ii) (a) 8. (b) N.A. (c) N.A. (iii) 6. (iv) (a) and (b)  $64' \times 6'$ . (v) No. (vi) Yes.

## 4. GENERAL :

(i) Good. (ii) Attack of Hispa. Gammoxene dusted. (iii) Grain and straw yield. (iv) (a) 1950 (*Abi*) to 1951 (*Tabi*). (b) Yes. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 1043 lb./ac.

(ii) 144.1 lb./ac.

(iii) Main effect of V alone is significant.

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

	$V_1$	$V_2$	Mean
$S_1$	915	1133	1024
$S_2$	889	1212	1050
$S_3$	934	1159	1046
$S_4$	993	1108	1050
Mean	933	1153	1043

S.E. of marginal mean of V = 29.4 lb./ac.

S.E. of marginal mean of S = 41.5 lb./ac.

S.E. of body of table = 58.8 lb./ac.

Crop :- Paddy (*Tabi* 1950-51).

Ref :- A.P. 51(29)/50(58).

Site :- Agri. Farm, Dindi.

Type :- 'CV'.

Object :- To find out the optimum seedrate for broadcasting along with varieties.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 128 lb./ac. of G.N.C. + 64 lb./ac. of paddy mixture. (ii) (a) Sandy soil. (b) Refer soil analysis, Dindi. (iii) 28.1.51. (iv) (a) 3 puddlings. (b) Broadcast. (c) As under treatments. (d) and (e) —. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) 2 hand weedings. (ix) N.A. (x) 24.5.51.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties :  $V_1 = \text{H.R.}-19$  and  $V_2 = \text{H.R.}-33$  (both medium).(2) 4 seedrates :  $S_1 = 60$ ,  $S_2 = 80$ ,  $S_3 = 100$  and  $S_4 = 120$  lb. per acre.

## 3. DESIGN :

(i)  $2 \times 4$  Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a), (b)  $64' \times 6'$ . (v) No. (vi) Yes.

## 4. GENERAL :

(i) Good. (ii) Stem-borer attack. Removal of attacked stems by hand. (iii) Grain weight and straw yield. (iv) (a) 1950 (*Abi* 1950-51) to 1951 (*Tabi* 1950-51). (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1281 lb./ac.  
 (ii) 243.4 lb./ac.  
 (iii) Main effect of V is highly significant. Main effect of S is significant while interaction V×S is not significant.  
 (iv) Av. yield of grain in lb./ac.

	V <sub>1</sub>	V <sub>2</sub>	Mean
S <sub>1</sub>	1377	789	1082
S <sub>2</sub>	1375	1227	1300
S <sub>3</sub>	1496	1055	1275
S <sub>4</sub>	1602	1327	1464
Mean	1463	1100	1281

S.E. of marginal mean of V = 49.6 lb./ac.  
 S.E. of marginal mean of S = 70.2 lb./ac.  
 S.E. of body of table = 99.3 lb./ac.

Crop :- Paddy (2nd crop of 1950-51).

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

Ref :- A. P. 51 (76).

Type :- 'CV'.

Object :- To compare dry nursery with wet nursery seedlings.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (i) 5.1.51/13.2.51. (iv) (a) 2 or 3 ploughings. (b) Transplanted. (c) —. (d) 6"×6". (e) 2. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 6.97". (x) 14.5.51.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties : V<sub>1</sub>=SLO-12 and V<sub>2</sub>=MTU-15.

(2) 2 methods of planting : M<sub>1</sub>=Planting dry nursery seedlings and M<sub>2</sub>=Planting wet nursery seedlings.

## 3. DESIGN

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a), (b) 33'×6.6'. (v) No. (vi) Yes.

## 4. GENERAL:

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1951 to 1952. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2771 lb./ac.  
 (ii) 316.0 lb./ac.  
 (iii) None of the effects is significant.

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

	M <sub>1</sub>	M <sub>2</sub>	Mean
V <sub>1</sub>	2788	2944	2866
V <sub>2</sub>	2604	2751	2677
Mean	2696	2847	2771

S.E. of marginal mean of V or M = 91.2 lb./ac.

S.E. of body of table = 129.0 lb./ac.

Crop :- Paddy (2nd crop of 1951-52).

Ref :- A.P. 52(75)/51(76).

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

Type :- 'CV'.

Object :- To compare dry nursery with wet nursery seedlings.

## 1. BASAL CONDITIONS.

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 11.1.52/- 13.2.52. (iv) (a) 2 to 3 ploughings and levelling. (b) Transplanted. (c) —. (d) 4"×4". (e) 2. (v) G.L. at 2000 lb./ac.+50 lb./ac. of Super at puddling+50 lb./ac. of A/S three weeks after planting. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 7.17". (x) MTU-15—20.5.52, SLO-12—30.5.52.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties : V<sub>1</sub>=SLO-12 and V<sub>2</sub>=MTU-15.(2) 2 methods of planting : M<sub>1</sub>=Dry nursery seedlings and M<sub>2</sub>=Wet nursery seedlings.

## 3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) (a), (b) 33'×6.9'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory due to adverse seasonal conditions. (ii) Nil. (iii) Grain yield and flowering duration. (iv) (a) 1951 to 1952. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) 280 lb./ac.  
(ii) N.A.  
(iii) N.A.  
(iv) Av yield of grain in lb./ac.

	M <sub>1</sub>	M <sub>2</sub>	Mean
V <sub>1</sub>	59	106	83
V <sub>2</sub>	394	559	477
Mean	227	333	280

S.E. N.A.

Crop :- Paddy.

Ref :- A.P. 53(7).

Site :- Govt. Main Agri. Farm, Warangal.

Type :- 'CV'.

Object :- To test the suitability of strains to late sowing.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) As per treatments. (sowing regulated 3 weeks in advance of transplanting). (iv) (a) to (e) N.A. (v) N.A. (vi) As under treatments. (vii) Irrigated. (viii) N.A. (ix) 30.49%. (x) January, 1954.

## 2. TREATMENTS :

Main-plot treatments :

6 varieties :  $V_1$  = CO-25,  $V_2$  = Adt-5,  $V_3$  = H.R.-42,  $V_4$  = H.R.-63,  $V_5$  = *Konamni* and  $V_6$  = Mtu-19.

Sub-plot treatments :

3 dates of transplanting :  $D_1$  = 31.7.53,  $D_2$  = 10.8.53 and  $D_3$  = 20.8.53.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/176 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1952—N.A. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 1475 lb./ac.

(ii) (a) 220.7 lb./ac.

(b) 312.5 lb./ac.

(iii) Main effect of V alone is significant.

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

	$D_1$	$D_2$	$D_3$	Mean
$V_1$	1999	1628	2086	1904
$V_2$	1513	1688	1702	1634
$V_3$	1408	1622	1419	1483
$V_4$	1468	1364	1592	1474
$V_5$	1646	1416	1122	1394
$V_6$	1154	726	996	958
Mean	1531	1407	1486	1475

S.E. of difference of two

1. V marginal means = 90.3 lb./ac.
2. D marginal means = 90.1 lb./ac.
3. D means at the same level of V = 220.8 lb./ac.
4. V means at the same level of D = 201.8 lb./ac.

Crop :- Paddy.

Ref :- A.P. 50 (36).

Site :- Govt. Main Agri. Farm, Warangal.

Type :- 'CV'.

Object :- To test the suitability of strains to late sowing.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Warangal. (iii) As per treatments. (iv) (a) to (e) N.A. (v) G.N.C. and Super at 30 lb./ac. of N and  $7\frac{1}{2}$  lb./ac. of  $P_2O_5$ . (vi) As per treatments. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 30.82%. (x) N.A.

## 2. TREATMENTS :

## Main-plot treatments :

3 dates of transplanting :  $D_1=31.7.50$ ,  $D_2=10.8.50$  and  $D_3=20.8.50$ .

## Sub-plot treatments :

6 varieties :  $V_1=H.R.-35$ ,  $V_2=H.R.-42$ ,  $V_3=H.R.-63$ ,  $V_4=Iswarkorra$ ,  $V_5=Palamuchyalu$  and  $V_6=Kaladan$ .

Sowing at the nursery was regulated three weeks in advance of the transplanting.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/76 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) H.R -35 alone badly affected by gall-fly. (iii) Grain yield. (iv) (a) 1949 to 1954. (b) and (c) N.A. (v) (a) Nil (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1270 lb./ac.  
 (ii) (a) 38.37 lb./ac.  
 (b) 21.65 lb./ac.  
 (iii) Only variety levels are significantly different. Others are not significant.  
 (iv) Av. yield of grain in lb./ac.

	$D_1$	$D_2$	$D_3$	Mean
$V_1$	165 <sup>4</sup>	105	63	111
$V_2$	2101	1950	1777	1943
$V_3$	1801	2203	1606	1870
$V_4$	1947	2142	1887	1992
$V_5$	946	1240	567	918
$V_6$	957	784	608	783
Mean	1320	1404	1086	1270

## S.E. of difference of two

1. D marginal means = 11.06 lb./ac.  
 2. V marginal means = 8.82 lb./ac.  
 3. V means at the same level of D = 15.28 lb./ac.  
 4. D means at the same level of V = 17.80 lb./ac.

Crop :- Paddy (*Abi*)

Ref :- A.P. 51(81).

Site :- Govt. Main Agri. Farm, Warangal.

Type :- 'CV'.

Object :- To test the suitability of strains to late sowing.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) N.A. (b) N.A. (iii) As per treatments. (iv) (a) Ploughing, levelling. (b) Transplanted. (c) to (e) N.A. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) N.A. (ix) 27.92%. (x) N.A.

## 2. TREATMENTS :

## Main-plot treatments :

3 dates of sowing :  $D_1=31.7.51$ ,  $D_2=10.8.51$  and  $D_3=20.8.51$ .

## Sub-plot treatments :

6 varieties :  $V_1=CO-25$ ,  $V_2=H.R.-42$ ,  $V_3=H.R.-63$ ,  $V_4=MTU-9$ ,  $V_5=Konamani$  and  $V_6=Adt-5$ .

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/176 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1951 to 1953. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1737 lb./ac.  
 (ii) (a) 473.4 lb./ac.  
 (b) 271.0 lb./ac.  
 (iii) Only main effect of V is significant.  
 (iv) Av. yield of grain in lb./ac.

	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	Mean
V <sub>1</sub>	1892	1826	1848	1855
V <sub>2</sub>	2002	1782	1738	1841
V <sub>3</sub>	1672	1870	1980	1841
V <sub>4</sub>	1474	1936	1804	1738
V <sub>5</sub>	1496	1628	1804	1643
V <sub>6</sub>	1342	1738	1430	1503
Mean	1646	1797	1767	1737

## S.E. of difference of two

1. D marginal means = 136.6 lb./ac.
2. V marginal means = 110.9 lb./ac.
3. V means at the same level of D = 192.1 lb./ac.
4. D means at the same level of V = 222.3 lb./ac.

Crop :- Paddy (*Abi*).

Site :- Govt. Main Agri. Farm, Warangal.

Ref :- A.P. 52(5).

Type :- CV.

Object :—To test the suitability of strains for late sown conditions.

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) N.A. (b) N.A. (iii) As per treatments. (iv) (a) to (e) N.A. (v) N.A. (vi) As per treatments. (vii) N.A. (viii) N.A. (ix) 22.08%. (x) N.A.

## 2. TREATMENTS :

## Main-plot treatments :

6 varieties :—

V<sub>1</sub>=Adt.—5, V<sub>2</sub>=CO.—25, V<sub>3</sub>=H.R.—42, V<sub>4</sub>=H.R.—63, V<sub>5</sub>=MTU—19 and V<sub>6</sub>=Konamani.

## Sub-plot treatments -

2 dates of transplanting :—D<sub>1</sub>=10.8.52 and D<sub>2</sub>=20.8.52.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 6 main-plots/blocks ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/176 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) N.A. (iii) Grain yield data. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) & (vii) Nil.

## 5. RESULTS :

- (i) 1578 lb./ac.  
 (ii) (a) 337.5 lb./ac.  
 (b) 278.3 lb./ac.  
 (iii) Main effect of V alone is significant.  
 (iv) Av. yield of grain in lb./ac.

	D <sub>1</sub>	D <sub>2</sub>	Mean
V <sub>1</sub>	1857	1814	1835
V <sub>2</sub>	1622	1721	1671
V <sub>3</sub>	1839	1420	1629
V <sub>4</sub>	1437	1758	1597
V <sub>5</sub>	1237	1568	1402
V <sub>6</sub>	1119	1548	1333
Mean	1518	1638	1578

## S.E. of difference of

1. V marginal means = 168.8 lb./ac.  
 2. D marginal means = 109.2 lb./ac.  
 3. D means at the same level of V = 268.4 lb./ac.  
 4. V means at the same level of D = 253.4 lb./ac.

Crop :- Paddy.

Site :- Sugarcane Res. Stn., Anakapalle.

Ref :- A.P. 53 (88).

Type :- 'CMV'.

Object :- To compare Japanese method with Farm method of Paddy cultivation for high yield.

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) Cotton P 216-F. (c) N.A. (ii) (a) Clayey loam. (b) Refer soil analysis, Anakapalle.  
 (iii) 18.7.1952/21.8.1953. (iv), (v) and (vi) As under treatments. (vii) Irrigated. (viii) As under treatments.  
 (ix) 20.73". (x) 14.12.1953.

## 2. TREATMENTS :

## Main-plot treatments :

2 varieties : V<sub>1</sub>=AKP-4 and V<sub>2</sub>=MTU-19.

## Sub-plot treatments :

(i) Japanese method and (ii) Normal method.

## Japanese Method :

Spacing : 6" in the row and 10" between rows. Seed bed manuring : F.Y.M. at 20 ton/ac.+A.S.N. at 2000 lb./ac.+Sieved Compost at 2000 lb./ac.+manure mixture of A/S and Super in 1 : 1 ratio at 2 lb per lb. of seed. Manuring of main field : F.Y.M. at 10 ton/ac. on 20.8.1953+A/S at 30 lb./ac. of N on 20.8.1953+Super at 30 lb./ac. of P<sub>2</sub>O<sub>5</sub> on 20.8.1953+A/S at 15 lb./ac. of N on 21.9.1953+Super at 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> on 21.9.1953+A/S at 15 lb./ac. of N on 3.11.1953+Super at 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> on 3.11.1953. Interculture : Weeding on 15.9.1953, raking on 21.9.1953 and 7.10.1953.

## Normal Method :

Spacings : 6" in the row and 6" between rows. Manuring of main field : G.M. at 5000 lb./ac.+Super at 30 lb./ac. of P<sub>2</sub>O<sub>5</sub>+A/S at 30 lb./ac. of N : Interculture : Weeding once.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 8. (iv) (a), (b) 32' x 15'.  
 (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Grain weight and tiller count, etc. (iv) (a) 1953-N.A. (b) N.A. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data is not traceable at the station and hence two way table is not given.

## 5. RESULTS :

(i) to (iv)

Treatment	Av. yield of grain lb./ac.
V <sub>1</sub>	3469
V <sub>2</sub>	3921
S.E./mean	= 143.6 lb./ac.
Japanese method	4000
Normal method	3405
S.E. 'mean	= 321.1 lb./ac.

Only main effect of methods is significant.

Crop :- Paddy (2nd crop of 1952—53).

Ref :- A.P. 53 (90).

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

Type :- 'CMV'.

Object :- To study the comparative merits and demerits of Japanese method and Farm method of Paddy cultivation.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 2.1.1953/15 and 16.2.1953. (iv), (v) and (vi) As per treatments. (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) MTU-9 : 8.5.1953. MTU-15 : 9.5.1953.

## 2. TREATMENTS :

Main-plot treatments :

2 varieties : V<sub>1</sub> = MTU-9 and V<sub>2</sub> = MTU-15.

Sub-plot treatments :

2 methods : M<sub>1</sub> = Japanese method and M<sub>2</sub> = Farm method.

Japanese Method :

Preparatory cultivation : 3 ploughings. Seed rate : 200 lb./ac. (Thick tillered seedling). Basal dressing : F.Y.M. at 20 C.L., Nitrogen at 30 lb./ac. of N as A/S and P<sub>2</sub>O<sub>5</sub> at 30 lb./ac. as Super. A/S and Super applied in plough furrows before last ploughing. Top dressing : 15 lb./ac. of N as A/S and 15 lb./ac. P<sub>2</sub>O<sub>5</sub> as Super broadcast 15 days after transplantation and another similar dose 15 days after the first dose. Spacing : 10' × 10'. Two seedlings per hole. Interculture : Raking and stirring the soil with hand done twice, once 15 days after transplantation and again 2 weeks later. After care : Thin planting ropes were tied every 4 feet across the field at 2 feet height to prevent loss due to lodging.

Farm Method :

Preparatory cultivation : 3 ploughings. Seed rate : 300 lb./ac. (thin untillered seedling). Basal dressing : G.L. at 5000 lb./ac. and P<sub>2</sub>O<sub>5</sub> at 30 lb./ac. as Super at final puddling. Top dressing : 30 lb./ac. of N as A/S broadcast 3 weeks after transplantation. Spacing 4' × 4' single seedling per hole. Interculture : 2 weedings. After care :—.

## 5. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 8. (iv) (a) N.A. (b) 13'-4' × 23'-4'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield, height measurements and tiller counts. (iv) (a) 1953 (2nd crop of 1952-53) to 1953 (main crop of 1953-54). (b) N.A. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 3048 lb./ac.

(ii) (a) 91.8 lb./ac.

(b) 148.7 lb./ac.

(iii) Only main effect of V is significant.



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

	V <sub>1</sub>	V <sub>2</sub>	Mean
M <sub>1</sub>	2912	3130	3021
M <sub>2</sub>	3009	3139	3074
Mean	2960	3135	3048

S.E. of difference of two

1. V marginal means = 32.4 lb./ac.
2. M marginal means = 52.6 lb./ac.
3. M means at the same level of V = 74.4 lb./ac.
4. V means at the same level of M = 61.8 lb./ac.

Crop :- Paddy (main crop of 1953-54).

Ref :- A.P. 53(91).

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

Type :- 'CMV'.

Object :- To compare the Japanese method with Farm method of Paddy cultivation.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 22.6.53/22.7.53. (iv) As per treatments. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) As per treatments. (ix) 38 06". (x) MTU-1 : 24.11.53 ; MTU-19 : 3.12.53.

## 2. TREATMENTS :

Main-plot treatments :

2 varieties : V<sub>1</sub>=MTU-1 and V<sub>2</sub>=MTU-19.

Sub-plot treatments :

2 methods : M<sub>1</sub>=Japanese method and M<sub>2</sub>=Farm method.*Japanese Method :*

Preparatory cultivation : 3 ploughings. Seedrate : 200, lb./ac. (Thick tillered seedling). Basal dressing F.Y.M. at 20 C.L., Nitrogen at 30 lb./ac. as A/S, P<sub>2</sub>O<sub>5</sub> at 30 lb./ac. as Super. A/S and Super applied in plough furrows before last ploughing. Top dressing : 15 lb./ac. of N as A.S and 15 lb./ac. of P<sub>2</sub>O<sub>5</sub>, as super broadcast 15 days after transplantation and another similar dose 15 days after the first dose in one month after transplantation. Spacing : 10" × 10". 4 seedling per hole. interculture : Racking and stirring the soil with hand done twice once 15 days after transplantation and again two weeks after. After care : Thin planting ropes were tied every 4 feet across the field at 2' height to prevent loss due to lodging.

*Farm Method :*

Preparatory cultivation : 3 ploughings. Seed rate : 300 lb./ac. (Thin untiltered seed). Basal dressing : 5000 lb./ac. of G.L. and P<sub>2</sub>O<sub>5</sub> at 30 lb./ac. as Super at final puddling. Top dressing : 30 lb./ac. of N as A/S broadcast 3 weeks after transplantation. Spacing : 6" × 6". Two seedlings per hole. Interculture : 2 weedings. After care:— N.A.

## 3. DESIGN :

(i) Split plot. (ii) (a) 2 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 8. (iv) (a) N.A.; (b) 11'-4" × 88-4". (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953 (2nd crop of 1952-53.)— 1953 (1st crop of 1953-54). (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3424 lb./ac.
- (ii) (a) 205.4 lb./ac.
- (b) 109.5 lb./ac.
- (iii) All effects are significant.

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

	V <sub>1</sub>	V <sub>2</sub>	Mean
M <sub>1</sub>	2831	3815	3323
M <sub>2</sub>	3352	3698	3525
Mean	3092	3757	3424

S.E. of difference of two

1. V marginal means = 72.7 lb./ac.
2. M marginal means = 38.7 lb./ac.
3. M means at the same level of V = 54.8 lb./ac.
4. V means at the same level of M = 82.3 lb./ac.

Crop :- Paddy.

Ref :- A.P. 49(23).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'I'.

Object :—To study the incidence of blast under different irrigational treatments.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) N.A. (iv) (a) 2 to 3 dry ploughings. (b) Transplanting. (c) —. (d) 6" × 6". (e) 2. (v) 4000 lb./ac. of G.L. followed by 50 lb./ac. of G.N.C. and 112 lb./ac. of B.M. (vi) 2202. (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 25.82". (x) N.A.

## 2. TREATMENTS :

1. Application of water as and when required.
2. Application of water as in (1) upto short blade stage and then intermittant irrigations with one week interval.
3. Application of water as in (1) up to full flowering stage and then intermittant irrigation with one week interval.
4. Application of water as in (1) upto semi-flowering stage and then intermittant irrigation with one week interval.
5. Application of water as in (1) upto milky stage and then intermittant irrigation with one week interval.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a), (b) 15' × 20'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) 20 plants taken at random from each plot and the number of healthy and affected earheads counted. (iv) (a) 1949 to 1956. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 30:7 lb./ac.
- (ii) 361.6 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of grain in lb./ac.
 

Treatment	Av. yield
1.	2645
2.	2945
3.	3164
4.	3228
5.	3101
S.E./mean	= 180.8 lb./ac.

Crop :- Paddy.

Ref :- A.P. 51(38).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'T'.

Object :—To study the incidence of blast under different irrigational treatments.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) 10 ton/ac. of C.M. +400 lb./ac. of G.L. +112 lb./ac. of B.M. +50 lb./ac. of G.N.C.  
 (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 9.7.51. (iv) (a) 2 to 3 dry ploughings and two puddlings. (b) Transplanting. (c)—(d) 6"×6". (e) 2. (v) G.N.C. at 150 lb./ac. and B.M. at 112 lb./ac.  
 (vi) BCP-2 (late). (vii) Irrigated. (viii) 3 weedings. (ix) 18.04". (x) 21.1.52.

## 2. TREATMENTS :

1. Application of water as and when required.
2. Application of water as in (1) upto short blade stage and then intermittant irrigation with one week interval.
3. Application of water as in (1) upto full-flowering stage and intermittant irrigation with one week interval.
4. Application of water as in (1) upto milky stage and then intermittant irrigation with one week interval.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 16'×12'. (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) slight attack of Blast and Stemborer. (iii) Number of healthy and affected ear heads in 20 plants taken at random from each plot. Grain weight. (iv) (a) 1949 to 1956. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1412 lb./ac.  
 (ii) 528.9 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (vi) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	1294
2.	1387
3.	1528
4.	1441
S.E./mean	= 215.9 lb./ac.

Crop :- Paddy.

Ref :- A.P. 52(43).

Site :- Rice Res. Stn., Buchireddipalem.

Type :- 'T'.

Object :—To study the incidence of blast with different irrigational treatments.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) G.N.C. at 150 lb./ac. + B.M. 112 lb./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) 27.6.52. (iv) (a) 3 dry ploughings and twice puddling. (b) Transplanted. (c)—(d) 6"×6". (e) 2. (v) C.M. at 10 C.L. /ac. and old G.M. seed at 250 lb./ac. (vi) BCP-2 (late) (vii) Irrigated. (viii) 3 hand weedings. (ix) 22.68". (x) 3.2.53.

## 2. TREATMENTS :

1. Application of water as and when required.
2. Application of water as in (1) upto short blade stage and then intermittant irrigations with one week interval.
3. Application of water as in (1) upto full flowering stage and then intermittant irrigations with one week interval.
4. Application of water as in (1) upto milky stage and then intermittant irrigations with one week interval.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 12' × 16'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Slight attack of Blast. (iii) Grain weight from each plot. 20 plants were taken at random and no. of healthy and affected earheads noted. (iv) (a) 1949 to 1956. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2936 lb./ac.  
 (ii) 363. lb. ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2990
2.	2947
3.	2697
4.	3108
S.E./mean	= 148.2 lb./ac.

Crop :- Paddy.

Site :- Rice Res. Stn., Buchireddipalem.

Ref :- A.P. 53(74).

Type :- 'I'.

Object :—To study the incidence of blast under different irrigational treatments.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Buchireddipalem. (iii) First week of Aug. 1953. (iv) (a) Dry ploughing with tractor once and then one ploughing with country plough. Puddling before transplanting and levelling. (b) Transplanted. (c)—. (d) 6' × 6". (e) 2. (v) 4000 lb./ac. of G.L. and 150 lb./ac. of Super before last puddling. A/S at 100 lb./ac. a month after planting. (vi) BCP-2 (Late) (vii) Irrigated. (viii) Weeding whenever necessary. (ix) 28.47" (x) First week of Feb. 1954.

## 2. TREATMENTS :

- Application of water as and when required.
- Application of water as in (1) upto short blade stage and then intermittant irrigation with one week interval.
- Application of water as in (1) upto full flowering stage and then intermittant irrigations with one week interval.
- Application of water as in (1) upto milk stage and then intermittant irrigations with one week interval.

## 3. DESIGN

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 12' × 16'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Blast attack not severe. (iii) Grain yield. 20 plants taken at random from each plot and the number of healthy and affected earheads noted. (iv) (a) 1949 to 1956. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2305 lb./ac.  
 (ii) 300.4 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield.
1.	2307
2.	2319
3.	2333
4.	2364
S.E./mean	= 122.6 lb./ac.

Crop :- Paddy.

Ref :- A.P. 50(27).

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

Type :- 'T'.

Object :- To study the optimum water requirements of Paddy.

## 1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) As per treatments. (iv) (a) Water let in, puddled thrice and levelled. (b) Transplanted. (c) —. (d) Bulk planting. (e) 2. (v) N.A. (vi) MTU-5. (vii) Irrigated. (viii) 2 weedings, first weeding one month after transplanting. (ix) 49.63". (x) 28th and 29th Nov. 1950.

## 2. TREATMENTS :

Main-plot treatments : 3 times of plantings :  $T_1=1.7.50$ ,  $T_2=8.7.50$  and  $T_3=15.7.50$ .

Sub-plot treatments : 4 duties of water at different crop period.

Crop period/Duties	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>
1. Nursery period	35"	30"	25"	20"
2. Puddling to planting	29"	25"	21"	17"
3. Planting to flowering	38"	34"	30"	26"
4. Flowering to harvesting.	12"	10"	8"	6"

## 3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 98'×24'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1949 to 1950. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3048 lb./ac.  
 (ii) (a) 187.2 lb./ac.  
 (b) 170.5 lb./ac.  
 (iii) Only the main effect of T is significant.  
 (iv) Av. yield of grain in lb./ac.

	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	Mean
D <sub>1</sub>	3149	2995	2773	2972
D <sub>2</sub>	3250	3130	2843	3078
D <sub>3</sub>	3256	3149	2968	3124
D <sub>4</sub>	3121	3014	2913	3016
Mean	3197	3072	2874	3048

S.E. of difference of two

1. T marginal means = 66.2 lb./ac.  
 2. D marginal means = 69.6 lb./ac.  
 3. D means at the same level of T = 120.6 lb./ac.  
 4. T means at the same level of D = 123.6 lb./ac.

Crop :- Paddy (*Kharif*).

Ref :- A.P. 52(91).

Site :- Agri. Res. Institute, Rajendranagar.

Type :- 'D'.

Object :- To see comparative efficacy of different seed treatments to control Helmenthosporium on Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Rajendranagar. (iii) N.A. (iv) (a) 3 ploughings. (b) Transplanted. (c) —. (d) 6"×6". (e) N.A. (v) N.A. (vi) H.R-19. (vii) Irrigated. (viii) 2 weedings. (ix) 22.59". (x) Nov. 1952.

## 2. TREATMENTS :

1. Agrosan G.N.
2. Harvesan.
3. Fernasan.
4. Landisan.
5. Sulphur.
6. Hot water treatment.
7. Control.

6 ozs. of seed dresser per cwt. of seed. Hot water treatment consisted of soaking the seed in water for 8 hours and then exposing it to 55° C constant lamp (wet heat) for 10 minutes. The seeds after treatment germinated in bags and then put in nursery bed.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 76'×14'. (b) 72'×10'. (v) 2' around the net plot. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) No helminthosporium attack. Blast attack. (iii) Grain and straw yield. (iv) (a) 1952 to 1954. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 92.60 lb./ac.  
 (ii) 38.72 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	104.0
2.	100.0
3.	87.9
4.	82.9
5.	80.4
6.	100.2
7.	92.6
S.E./mean	=18.86 lb./ac.

Crop :- Paddy (*Kharif*).

Site :- Agri. Res. Institute, Rajendranagar.

Ref :- A.P. 53(101).

Type :- 'D'.

Object :- To test the efficacy of various seed dressers in controlling Helminthosporium disease.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Rajendranagar. (iii) N.A. (iv) (a) 3 ploughings. (b) Transplanted. (c) —. (d) 6'×6". (e) N.A. (v) N.A. (vi) H.R-19. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 25.65". (x) N.A.

## 2. TREATMENTS :

1. Landisan.
2. Sulphur.
3. Fernasan.
4. Harvesan.
5. Agrosan.
6. Ceresan.
7. Control.

5 ozs. of seed dresser per cwt. of seed. The seeds after treatment were germinated in bag and then put in nursery bed.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 97'×8'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1952 to 1954. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 2458 lb./ac.
- (ii) 541.7 lb./ac.
- (iii) Treatments differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2923
2.	2530
3.	2526
4.	2455
5.	2423
6.	2100
7.	2248
S.E./mean	= 221.2 lb./ac.

Crop :- Jowar.

Ref :- A.P. 48(4).

Site :- Lam Farm., Guntur.

Type :- 'M'.

Object .—To compare the effect of F.Y.M. and G.N.C. on the yield of the crop.

## 1. BASAL CONDITIONS :

- (i) (a) Jowar—country tobacco—*Variga*—Chillies. (b) Chillies. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) N.A. (iv) (a) 6 to 7 ploughings. (b) Dibbled in the rows. (c) About 8 lb./ac. (d) 11" between rows. (e) —. (v) Nil. (vi) G-2. (vii) Irrigated. (viii) 3 to 4 weedings. (ix) N.A. (x) N.A.

## 2. TREATMENTS :

- 1. G.N.C. at 500 lb./ac.
- 2. F.Y.M. at 10,000 lb./ac.
- 3. No manure (control).

F.Y.M. applied one month prior to sowing and ploughed in. G.N.C. applied just before sowing and puddled.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 33' × 16.5'. (b) 26.4' × 9.2'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1944—1948. (b) and (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

- (i) 533.3 lb./ac.
- (ii) N.A.
- (iii) There is no significant difference between the treatments.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	530
2.	490
3.	580
S.E./mean	= N.A.

Crop :- Jowar.

Ref :- A.P. 48(20).

Site :- Lam Farm, Guntur.

Type :- 'M'.

Object :—To study the residual effect of G.N.C. and F.Y.M. on the yield of crop.

## 1. BASAL CONDITIONS :

- (i) (a) Jowar—country tobacco—*Variga*—Chillies. (b) Chillies. (c) As per treatments. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) N.A. (iv) (a) 7 ploughings. (b) Dibbled in rows. (c) About 8 lb./ac. (d) 11" between rows. (e) —. (v) Nil. (vi) G-2. (vii) Unirrigated. (viii) 3 to 4 weedings. (ix) N.A. (x) N.A.

## 2. TREATMENTS

1. G.N.C. at 500 lb./ac.
2. F.Y.M. at 10,000 lb./ac.
3. No manure (control).  
Manures applied to the previous crop.

## 3. DESIGN :

- ( ) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 33'×16.5'. (b) 26.4'×9.2'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1945 to 1948. (b) and (c) No. (v) (a) and (b) Nil. (vi) Nil (vii) Raw data N.A.

## 5. RESULTS :

- (i) 558 lb./ac.  
(ii) N.A.  
(iii) There is no significant difference between the treatments  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	607
2.	494
3.	603
S.E., mean	= N.A.

Crop :- Jowar.

Ref :- A.P. 53(72).

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

Type :- 'M'.

Object :- To find out the variety of legume suitable for the dry tract under rainfed conditions with and without the application of  $P_2O_5$ .

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 5.10.53. (iv) (a) Working *gorru* and *gumtaila* alternatively. (b) Line sowing with *gorru*. (c) 5 lb./ac. (d) Between rows : 10". (e) —. (v) Nil. (vi) N-1. (vii) Unirrigated. (viii) One interculture with *metta guntaka* and one weeding. (ix) N.A. (x) 13.2.54.

## 2. TREATMENTS :

Main-plot treatments :

2 levels of  $P_2O_5$  :  $P_0=0$ , and  $P_1=30$  lb./ac.

Sub-plot treatments :

5 legumes as G.M. :  $M_0$ =No G.M.,  $M_1$ =*Dhaincha*,  $M_2$ =Cowpea,  $M_3$ =Sannhemp and  $M_4$ =Green-gram.

$P_2O_5$  was applied as Super. Date of sowing of G.M. crops : 19.6.53. Date of incorporation : 6.8.53.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 26.4'×46.2'. (b) 21.1'×41.25'. (v) 3 rows on either side. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1953-1954. (b) Yes. (c). N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 460 lb./ac.  
(ii) (a) 274.0 lb./ac.  
(b) 123.0 lb./ac.  
(iii) None of the effects is significant.



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

	M <sub>0</sub>	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>	Mean
P <sub>0</sub>	500	513	488	425	438	473
P <sub>1</sub>	450	475	438	475	400	448
Mean	475	494	463	450	419	460

S.E. of difference of two

1. P marginal means = 86.5 lb./ac.
2. M marginal means = 61.4 lb./ac.
3. M means at the same level of P = 86.9 lb./ac.
4. P means at the same level of M = 116.5 lb./ac.

Crop :- Jowar.

Ref :- A.P. 53(99).

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

Type :- 'M'.

Object :—To study the efficacy of the green manure as soil amendment as compared to F.Y.M.

## 1. BASAL CONDITIONS :

- (i) (a) Cotton-Jowar. (b) Cotton. (c) Nil. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 6.10.53. (iv) (a) Field worked twice with *gorru* and *guntaka*. (b), (c), (d) and (e) N.A. (v) 45 lb./ac. of N and 30 lb./ac. of P<sub>2</sub>O<sub>5</sub> were given to the whole experiment by drilling the manure with seed drill. (vi) N-1 (late). (vii) Unirrigated. (viii) Interculture with *metta guntaka* and hand weeding. (ix) 7.36°. (x) 2.2.54.

## 2. TREATMENTS :

All combinations of (1) and (2)

- (1) 2 sources of manure : S<sub>1</sub>=F.Y.M. and S<sub>2</sub>=G.L.
- (2) 4 levels of manure : M<sub>0</sub>=0, M<sub>1</sub>=2,500, M<sub>2</sub>=5,000 and M<sub>3</sub>=7,500 lb./ac.

## 3. DESIGN :

- (i) 4×2 Fact. in R.B.D. (ii) (a) 8 (2 control plots for each block). (b) N.A. (iii) 4. (iv) (a) 46.2'×26.4'. (b) 41.25'×25.4'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Due to late sowing and continuous rains after sowing the growth of the crop was stunted. (ii) Crop suffered from sugary disease and shoot long attack in the initial stages of crop growth. (iii) Grain and straw yield. (iv) (a) Yes, 1953—N.A. (b) (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1077 lb./ac.
- (ii) 77.61 lb./ac.
- (iii) Main effect of S is highly significant. Main effect of M is significant. Interaction S×M is not significant.
- (iv) Av. yield of grain in lb./ac.

	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	Mean
S <sub>1</sub>	1160	1134	1179	1158
S <sub>2</sub>	937	1048	1063	1016
Mean	1049	1091	1121	1087

S.E. of marginal mean of S = 22.4 lb./ac.

S.E. of marginal mean of M = 27.4 lb./ac.

S.E. of body of table = 38.8 lb./ac.

Crop :- Jowar.  
Site :- Govt. Millet Farm, Ongole.

Ref :- A.P. 52 (70).  
Type :- 'M'.

Object :- To compare G.N.C. with A/S in giving high yield.

### 1. BASAL CONDITIONS :

(i) (a) *Variga-Jonna* and Non millets—one crop in first year. (b) *Variga*. (c) F.Y.M. at 3½ ton/ac. (ii) (a) Loamy soil. (b) Refer soil analysis, Ongole. (iii) 6.11.1952. (iv) (a) 3 or 4 ploughings. (b) Drill sown and working *gorru* twice. (c) 10 to 12 lb./ac. (d) 4"×6". (e)—. (v) F.Y.M. at 3½ C.L./ac. incorporated with 1st ploughing. (vi) G-2 *Jonna* (medium). (vii) Unirrigated. (viii) Weeding. (ix) 16.84". (x) 2.3.1953.

### 2. TREATMENTS :

(1) No manure (control).  
(2) G.N.C. at 260 lb./ac. to give 17 lb. of N.  
(3) A/S at 83 lb./ac. to give 17 lb. of N.  
Manures applied as basal dressing before sowing.

### 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 52.8'×59.4' (iii) 4. (iv) (a) 52.8'×19.8'. (b) 52.8'×16.5'. (v) N.A. (vi) Yes.

### 4. GENERAL :

(i) Growth of the crop was adversely affected due to want of rains at the proper time. (ii) Nil. (iii) Grain and straw yield. (iv) (a) No. (b) No. (c) No. (v) (a) Nil. (b) Nil. (vi) Nil. (vii) Nil.

### 5. RESULTS :

(i) 884 lb./ac.  
(ii) 95.5 lb./ac.  
(iii) Treatment differences are not significant.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	940
2.	790
3.	925
S.E./mean	=47.8 lb./ac.

Crop :- Jowar.  
Site :- Agri. Res. Stn., Rudrur

Ref :- A.P. 49 (6)  
Type :- 'M'.

Object :- To study the residual effect of manures applied to the previous wheat crop on Jowar.

### 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) As per treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 24.11.1949. (iv) (a) One harrowing, 3 ploughings. (b) Sown behind the country plough. (c)—. (d) 1' apart. (e)—. (v) Nil. (vi) P.B.4-R (early). (vii) Irrigated. (viii) Hoing by cultivator once. (ix) 1.91". (x) 14.4.1950.

### 2. TREATMENTS :

All combinations of (1) and (2)  
(1) 2 sources of N : S<sub>1</sub>=Castorcake and S<sub>2</sub>=G.N.C.  
(2) 3 levels of N : N<sub>1</sub>=20, N<sub>2</sub>=40 and N<sub>3</sub>=60 lb./ac.  
Manure applied in Oct. 1948 to the previous wheat crop.

### 3. DESIGN :

(i) 2×3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 53'×15'. (b) 48'×11'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Slight attack of Stemborer. (iii) Grain yield. (iv) (a) 1946-1950. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 236 lb./ac.  
 (ii) 101.5 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of grain in lb./ac.

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	Mean
S <sub>1</sub>	180	258	212	217
S <sub>2</sub>	225	225	318	256
Mean	202	242	265	236

S.E. of marginal mean of N = 29.3 lb./ac.

S.E. of marginal mean of S = 23.9 lb./ac.

S.E. of body of table = 41.6 lb./ac.

Crop :- Jowar.

Ref :- A.P. 50(8)/49(6)

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

Type :- 'M'.

Object: --To study the residual effect of manures applied to the previous wheat crop on Jowar.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Wheat. (c) As per treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 17.10.50. (iv) (a) One harrowing and 3 ploughings. (b) Sown behind the country plough. (c) —. (d) 1' apart. (e) —. (v) Nil. (vi) P.J.4-R (early). (vii) Irrigated. (viii) Weedings and hoeings. (ix) 3.11". (x) Second week of March 1951.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 sources of N : S<sub>1</sub>=Castor cake and S<sub>2</sub>=G.N.C.

(2) 3 levels of N : N<sub>1</sub>=20, N<sub>2</sub>=40 and N<sub>3</sub>=60 lb./ac.

Manure was applied to the previous wheat crop in October 1949.

## 3. DESIGN :

- (i) 2×3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 53'×15'. (b) 48'×11'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1946-1950. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 345 lb./ac.  
 (ii) 107.3 lb./ac.  
 (iii) None of the effects is significant.

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

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	Mean
S <sub>1</sub>	326	358	357	347
S <sub>2</sub>	287	341	402	343
Mean	306	349	380	345

S.E. of marginal mean of N = 31.0 lb./ac.

S.E. of marginal mean of S = 25.3 lb./ac.

S.E. of body of table = 44.0 lb./ac.

Crop :- Jowar.

Ref :- A.P. 50(39).

Site :- Govt. Main Farm, Warangal.

Type :- 'C'.

Object :- To ascertain the residual effect of mixed cropping on succeeding crop of Jowar.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) and (c) As per treatments. (ii) (a) and (b) N.A. (iii) 6.7.1950. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) Unirrigated. (viii) one or two weedings. (ix) 30.82". (x) 26.10.1950.

**2. TREATMENTS :**Treatments (previous mixed crops *ie.* mixed crops of 1949-50 *fasli*).

1. Jowar 6 rows + *Tur* one row.
2. Jowar 4 rows + *Tur* one row.
3. Jowar alone.
4. Groundnut 6 rows + *Tur* one row.
5. Groundnut alone.
6. Groundnut 4 rows + *Tur* one row.
7. *Tur* alone.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 78' x 19'. (b) 72' x 15'. (v) N.A. (vi) Yes.

**4. GENERAL :**

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

**5. RESULTS :**

(i) 530 lb./ac.

(ii) 274.0 lb./ac.

(iii) Treatments do not differ significantly.

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

Treatment	Av. yield
1.	696.0
2.	370.0
3.	241.0
4.	448.0
5.	677.0
6.	584.0
7.	691.0
S.E./mean	= 137.0 lb./ac.

Crop :- Wheat.  
Site :- Agri. Res. Stn., Rudrur.

Ref :- A.P. 49(10).  
Type :- 'M'.

Object :- To find out a suitable oil cake for lightly Irrigated Wheat crop.

1. BASAL CONDITIONS :

- (i) (a) N.A. (b) Fallow. (c) No. (ii) (a) Black cotton soil. (b) Refer soil analysis, Rudrur. (iii) 10.11.49. (iv) (a) 4 times ploughing; blade harrow run once. (b) Sown behind the cultivator. (c) 60 lb./ac. (d) Rows 9" apart. (e) —. (v) Nil. (vi) P.B.-12. (vii) Irrigated. (viii) Hoeing by cultivator once. (ix) 1.19". (x) 10.3.50.

2. TREATMENTS :

All combinations of (1) and (2)

- (1) 2 sources of N : S<sub>1</sub>=Castor cake and S<sub>2</sub>=G.N.C.  
(2) 3 levels of N : N<sub>1</sub>=20, N<sub>2</sub>=40 and N<sub>3</sub>=60 lb./ac.

3. DESIGN :

- (i) 2×3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 53'×15'. (b) 48'×11'. (v) 2½'×2'. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Mild attack of rust was observed in the advanced stages of the crop. Sulphur dusting was done. (iii) Yield data. (iv) (a) 1945—1949. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

- (i) 589 lb./ac.  
(ii) 103.1 lb./ac.  
(iii) Only main effect of 'level of N' is highly significant. Others are not significant.  
(iv) Av. yield of grain in lb./ac.

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	Mean
S <sub>1</sub>	485	595	674	584
S <sub>2</sub>	476	626	679	594
Mean	481	611	677	589

S.E. of marginal mean of source =24.3 lb./ac.  
S.E. of marginal mean of level =29.7 lb./ac.  
S.E. of body of table =42.1 lb./ac.

Crop :- Ragi.  
Site :- Sugarcane Res. Stn., Anakapalle.

Ref :- A.P. 51(42).  
Type :- 'M'.

Object :- To study the effects of continuous application of A/S on the yield of Sugarcane and its effects on normal rotational crops Ragi and paddy.

1. BASAL CONDITIONS :

- (i) (a) Ragi—paddy—Sugarcane. (b) Sugarcane. (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 25.5.51/26.5.51. (iv) (a) 3 ploughings and forming beds. (b) Transplanting. (c) —. (d) 4" between rows. (e) 2—3. (v) Nil. (vi) AKP-2 (early). (vii) Irrigated. (viii) One weeding and twice hoeing. (ix) 4.67". (x) 26.7.51 and 27.7.51.

2. TREATMENTS :

- Control (no manure).
- A/S at 40 lb./ac. of N
- G.N.C. at 40 lb./ac. of N.
- F.Y.M. at 40 lb./ac. of N.
- Mixture of G.N.C. and A/S in 2 : 1 at 40 lb./ac. of N.  
Manures applied 15 days after transplanting.

## 3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 39.6'×37'. (b) 33'×26'. (v) 3.3'×5½'. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain weight, growth measurement. (iv) (a) 1951—contd. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) While the form of manure applied to the sub-plots is the same year after year, the dose of manure is varied with the crop. If *Ragi* and paddy are grown this year, sugarcane is grown in the same plots next year and again *Ragi* and paddy in the third year and so on.

## 5. RESULTS :

(i) 1773 lb./ac.

(ii) 104.5 lb./ac.

(iii) Treatments do not differ significantly.

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

Treatment	Av. yield
1.	1668
2.	1759
3.	1973
4.	1788
5.	1679
S.E./mean	= 46.6 lb./ac.

Crop :- *Ragi*.

Ref :- A.P. 52(50)/51(42).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effects of continuous application of A/S on the yield of sugarcane and its effect on normal rotational crops *Ragi* and Paddy.

## 1. BASAL CONDITIONS :

(i) (a) *Ragi*—Paddy—Sugarcane. (b) Sugarcane (c) 100 lb./ac. of N in different forms as under treatments. (ii) (a) Loamy soil. (b) Refer soil analysis, Anakapalle. (iii) 17.6.1952 and 18.6.1952. (iv) (a) 4 times ploughing with victory plough and forming beds. (b) Planting in lines. (c) —. (d) 4" between rows. (e) 2—3. (v) Nil. (vi) AKP-2. (vii) Irrigated. (viii) Once weeding and twice hoeing. (ix) N.A. (x) 16.8.1952.

## 2. TREATMENTS :

- Control (no manure).
- A/S at 40 lb./ac. of N.
- G.N.C. at 40 lb./ac. of N.
- F.Y.M. at 40 lb./ac. of N.
- G.N.C.+A/S in 2:1 at 40 lb./ac. of N.  
Manures applied 15 days after transplanting.

## 3. DESIGN :

(i) L. sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 39.6'×37'. (b) 33'×26'. (v) 3.3'×5½'. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain weight and growth measurements. (iv) (a) 1951—continued (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) while the form of manure applied to the plots is the same year after year, the dose of manure is varied with the crops. If *Ragi* and paddy are grown this year, sugarcane is grown in the same plots next year and again *Ragi* and paddy in the third year and so on.

## 5. RESULTS :

(i) 1240 lb./ac.

(ii) 210.5 lb./ac.

(iii) Treatments differ significantly.

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

Treatment	Av. yield
1.	859
2.	1544
3.	1384
4.	1030
5.	1334
S.E./mean	= 94.1 lb./ac.

Crop :- Ragi.

Ref :- A.P. 53(63)/52(50)/51(42).

Site :- Sugarcane Res. Stn., Anakapalle. Type :- 'M'.

Object :—To study the effect of application of A/S (series I) on the yield of Sugarcane and its effect on normal rotation crops *Ragi* and Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Ragi*—Paddy—Sugarcane. (b) Sugarcane. (c) 100 lb./ac. of N as A/S etc. as under treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 1st week of June 1953. (iv) (a) 3 times ploughing and forming beds. (b) Planting in lines. (c) —. (d) 4" between rows. (e) 2—3. (v) Nil. (vi) AKP-2. (vii) Irrigated. (viii) Hoeing once. (ix) 15.24". (x) 1st week of August 1953.

## 2. TREATMENTS :

1. Control (no manure).
2. A/S at 40 lb./ac. of N.
3. G.N.C. at 40 lb./ac. of N.
4. F.Y.M. at 40 lb./ac. of N.
5. G.N.C.+A/S in 2:1 ratio at 40 lb./ac. of N.  
N applied in single dose 15 days after transplanting.

## 3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 39.6'×37'. (b) 33'×26'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1951—continued. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) While the form of manures is the same every years, the doses of N vary with the crop.

## 5. RESULTS :

- (i) 927 lb./ac.  
 (ii) 132.5 lb./ac.  
 (iii) Treatments differ highly significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	653
2.	1160
3.	1018
4.	798
5.	1005
S.E./mean	= 59.2 lb./ac.

Crop :- Ragi.

Ref :- A.P. 53(45).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the effect of continuous application of A/S (series 2).

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Ragi*—Paddy—Sugarcane. (b) Sugarcane. (c) 100 lb./ac. of N as A/S etc. as under treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 4.6.53. (iv) (a) 3 times ploughing and forming beds. (b) Planting in lines. (c) —. (d) 4" between rows. (e) 2 to 3. (v) Nil. (vi) AKP-2. (vii) Irrigated. (viii) Hoeing once. (ix) 15.24". (x) 2.8.53.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 sources of N (at 40lb./ac.) :  $S_1 = A/S$  and  $S_2 = G.N.C. + A/S$  in 2 : 1 ratio.

(2) 2 levels of lime :  $L_0 = 0$  and  $L_1 = 1500$  lb./ac.

Lime applied prior to planting and N in single dose 15 days after planting.

## 3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 39.6'×26'. (b) 33'×19.8'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1953—1955. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) While the form of manure applied to the plots is the same year after year, the doses vary according to the crop.

## 5. RESULTS :

- (i) 1707 lb./ac.  
 (ii) 94.7 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of grain in lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	Mean
L <sub>0</sub>	1673	1656	1665
L <sub>1</sub>	1782	1715	1749
Mean	1728	1686	1707

S.E. of marginal mean =30.0 lb./ac.  
 S.E. of body of table =42.3 lb./ac.

Crop :- Ragi.

Site :- Sugarcane Res. Stn., Anakapalle.

Ref :- A.P. 48(65).

Type :- 'M'.

Object :—To determine the manurial requirements of *Ragi*.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Jowar* (fodder). (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 14.12.48/8.1.49. (iv) (a) 2 or 3 ploughings and forming beds. (b) Transplanted. (c) —. (d) 6'×6'. (e) 2-3. (vi) Nil. (vii) AKP-3 (*Pyru*). (viii) Unirrigated. (ix) N.A. (x) 2.08". (xi) 10.4.49.

## 2. TREATMENTS :

- G.N.C. at 20 lb./ac. of N.
- G.N.C. at 30 lb./ac. of N.
- G.N.C. at 40 lb./ac. of N.
- G.N.C. at 50 lb./ac. of N.
- F.Y.M. at 5 ton/ac.
- F.Y.M. at 10 ton/ac.

G.N.C. applied before planting by broadcast and mixed with the soil. F.Y.M. applied a month before planting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 27.7'×18.5'. (b) 26.0'×16.5'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1946—1948. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 885 lb./ac.  
 (ii) 88.7 lb./ac.  
 (iii) Treatments differ significantly.



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

Treatment	Av. yield
1.	781
2.	878
3.	1059
4.	1120
5.	746
6.	725
S.E./mean	= 36.2 lb./ac.

Crop :- Ragi.

Ref :- A.P. 52(71):

Site :- Demonstration Farm, Araku Valley.

Type :- 'M'.

Object :- To compare C/N with A/S for giving high yields Ragi.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy (dry). (c) N.A. (ii) (a) N.A. (b) N.A. (iii) 26.6.52. (iv) (a) to (e) N.A. (v) Nil. (vi) Jagarla Mandya (mass selected). (vii) Unirrigated. (viii) N.A. (ix) 34.39. (x) 10.11.52.

## 2. TREATMENTS :

1. Lime at 450 lb./ac. + C.M. at 3 ton/ac. + Super at 30 lb./ac. of  $P_2O_5$ .
2. Treatment (1) + A/S at 40 lb./ac. of N.
3. Treatment (1) + A/S at 60 lb./ac. of N.
4. A/S at 40 lb./ac. of N.
5. A/S at 60 lb./ac. of N.
6. Treatment (1) + C/N at 40 lb./ac. of N.
7. Treatment (1) + C/N at 60 lb./ac. of N.
8. C/N to give more than 40 lb./ac. of N (i.e. 50 lb./ac. of N).
9. C/N to give more than 60 lb./ac. of N (i.e. 70 lb./ac.)

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 5. (iv) (a), (b) 1/100 ac. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1952-1953. (b) No. (c) No. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1490 lb./ac.
- (ii) 418.1 lb./ac.
- (iii) Treatments differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1200
2.	1300
3.	1960
4.	1060
5.	1580
6.	1660
7.	1810
8.	1110
9.	1230
S.E./mean	= 186.9 lb./ac.

Crop :- Ragi.

Ref :- A.P. 53(82).

Site :- Demonstration Farm, Araku Valley.

Type :- 'M'.

Object :—To compare C,N with A/S in giving high yield of dry *Ragi*.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy (dry). (c) N.A. (ii) (a) N.A. (b) N.A. (iii) 15.7.53. (iv) (a) to (e) N.A. (v) Nil. (vi) *Jagarla* Mandya (mass selected). (vii) Unirrigated. (viii) N.A. (ix) 39.42". (x) 14.11.53.

## 2. TREATMENTS :

1. Lime at 450 lb./ac. + C.M. at 3 ton/ac. + Super at 30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
2. Treatment (1) + A/S at 40 lb./ac. of N.
3. Treatment (1) + A/S at 60 lb./ac. of N.
4. A/S at 40 lb./ac. of N.
5. A/S at 60 lb./ac. of N.
6. Treatment (1) + C/N at 40 lb./ac. of N.
7. Treatment (1) + C/N at 60 lb./ac. of N.
8. C/N to give more than 40 lb./ac. of N.
9. C/N to give more than 60 lb./ac. of N.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 5. (iv) (a) (b) 1/100 ac. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1952-1953. (b) No. (c) Nil. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1051 lb./ac.
- (ii) N.A.
- (iii) Treatments differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av yield
1.	1060
2.	1260
3.	1560
4.	800
5.	860
6.	1100
7.	1260
8.	760
9.	800
S.E./mean	= N.A.

Crop :- Ragi.

Ref :- A.P. 52 (17).

Site :- Agri College Farm, Bapatla.

Type :- 'M'.

Object :—To study the effect of application of Tobacco stems as a manure to *Ragi* as compared with F.Y.M. and A/S.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Ragi*. (c) N.A. (ii) (a) Sandy. (b) Refer soil analysis, Bapatla. (iii) 11.6.1952/5.7.1952. (iv) (a) 2 ploughings. (b) Transplanting. (c) —. (d) 4" x 4". (e) N.A. (v) Nil. (vi) AKP-6. (vii) Rainfed. (viii) One weeding. (ix) 16.0". (x) 12.10.1952.

## 2. TREATMENTS :

1. Tobacco stems at 5 ton/ac.
2. F.Y.M. at 5 ton/ac.
3. Tobacco stems at 2½ ton/ac.
4. Local method of applying A/S at 100 lb./ac.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 15.8'×29.0'. (b) 13.2'×26.4'. (v) 1.3' left as border on all sides. (vi) Yes.

## 4. GENERAL :

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

## 5. RESULTS :

- (i) 1523 lb./ac.  
 (ii) 200.0 lb./ac.  
 (iii) Treatment differences are not significant.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	1587
2.	1490
3.	1617
4.	1397
S.E./mean	= 81.7 lb./ac.

Crop :- Ragi.

Ref :- A.P. 52 (18).

Site :- Agri. College Farm, Bapatla.

Type :- 'M'.

Object :- To test the response of *Ragi* to the application of C/N and A/S at different doses and at different times.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Ragi*. (c) N.A. (ii) (a) Sandy. (b) Refer soil analysis, Bapatla. (iii) 18.12.1952/18.1.1953.  
 (iv) (a) 2 ploughings. (b) Transplanting. (c) —. (d) 4"×4". (e) N.A. (v) Nil. (vi) AKP-6 (late).  
 (vii) Irrigated. (viii) One weeding. (ix) 9.5". (x) 26.3.1953.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 2 sources of N :  $S_1 = A/S$  and  $S_2 = C/N$ .

(2) 4 methods of application of N and their doses :

$M_1 = 40$  lb./ac. of N in single dose (10 days after sowing)

$M_2 = 60$  lb./ac. of N in single dose (10 days after sowing)

$M_3 = 60$  lb./ac. of N in 2 doses (10, 20 days after sowing) and

$M_4 = 60$  lb./ac. of N in 3 doses (10, 20, 30 days after sowing)

(3) 2 basal dressings :  $B_0 =$  No basal dressing,  $B_1 =$  Lime at 450 lb./ac. + F.Y.M. at 3 ton/ac. + Super at 30 lb./ac. of  $P_2O_5$ .

and one plot having only basal dressing i.e. at  $B_1 =$  lime at 450 lb./ac. + F.Y.M. at 3 ton/ac. + Super at 30 lb./ac. of  $P_2O_5$ .

## 3. DESIGN :

(i) R.B.D. (ii) (a), (b) N.A. (iii) 4. (iv) (a) 15.8'×29.0'. (b) 13.2'×26.4'. (v) 1.3' on all sides left as border. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—1956. (b) Yes. (c) Nil. (v) (a) (b) N.A. (vi) and (vii) N.A.

## 5. RESULTS :

(i) 2133 lb./ac.

(ii) 338.0 lb./ac.

(iii) The effect " $B_1$  vs. Others" is highly significant. Other effects and interactions are not significant.

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

B <sub>1</sub> =1359 lb./ac.							
	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>	Mean	B <sub>0</sub>	B <sub>1</sub>
S <sub>1</sub>	1871	2335	2359	2113	2169	2322	2016
S <sub>2</sub>	2040	2131	2320	2281	2193	2202	2184
Mean	1955	2233	2339	2197	2181	2262	2100
B <sub>0</sub>	2133	2303	2450	2161			
B <sub>1</sub>	1778	2163	2228	2233			

S.E. of marginal mean of S or B	= 59.8 lb./ac.
S.E. of marginal mean of M	= 84.5 lb./ac.
S.E. of body of table M×S or M×B	= 119.5 lb./ac.
S.E. of body of table S×B	= 84.5 lb./ac.

Crop :- Ragi (1st season).

Ref :- A.P. 53(10)/52(18).

Site :- Agri College Farm, Bapatla.

Type :- 'M'.

Object :- To test the response of *Ragi* to the application of C/N and A/S at different doses and at different times.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Ragi*. (c) As per treatments. (ii) (a) Sandy. (b) Refer soil analysis, Bapatla. (iii) 9.6.1953/3.7.53. (iv) (a) *Mummy* digging of individual plot. (b) Transplanting. (c) —. (d) 4'×4'. (e) N.A. (v) Nil. (vi) AKP-6 (late). (vii) Irrigated. (viii) Weeding once. (30 days after planting). (ix) 12.5'. (x) 22.9.53.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 2 sources of N : S<sub>1</sub>=A/S and S<sub>2</sub>=C/N.

(2) 4 methods of application of N with their doses :

M<sub>1</sub>=40 lb./ac. of N in single dose (10 days after sowing).M<sub>2</sub>=60 lb./ac. of N in single dose (10 days after sowing).M<sub>3</sub>=60 lb./ac. of N in 2 doses (10, 20 days after sowing).M<sub>4</sub>=60 lb./ac. of N in 3 doses (10, 20, 30 days after sowing).(3) 2 basal dressings : B<sub>0</sub>=No basal dressing and B<sub>1</sub>=lime at 450 lb./ac.+F.Y.M. at 3 ton/ac. + Super at 30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.and one plot receiving only basal dressing, i.e. B<sub>1</sub>=lime at 450 lb./ac. + F.Y.M. at 3 ton/ac. + Super at 30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.

## 3. DESIGN :

(i) R.B.D. (ii) a) 17. (b) N.A. (iii) 4. (iv) (a) 15.8'×29.0'. (b) 13.2'×26.4'. (v) 1.3' on all sides. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—1956. (b) Yes. (c) Nil (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 1253 lb./ac.

(ii) 104.0 lb./ac.

(iii) Main effects M, S and interaction M×S, 'B<sub>1</sub> vs. others' effects are highly significant. Others are not significant.

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

 $B_1=560$  lb./ac.

	$M_1$	$M_2$	$M_3$	$M_4$	Mean	$B_0$	$B_1$
$S_1$	1143	1247	1205	1394	1247	1291	1203
$S_2$	1094	1429	1410	1455	1347	1347	1347
Mean	1119	1338	1307	1425	1297	1319	1275
$B_0$	1152	1385	1315	1425	1319		
$B_1$	1086	1291	1299	1425	1275		

S.E. of marginal mean of S or B = 18.4 lb./ac.  
 S.E. of marginal mean of M = 26.0 lb./ac.  
 S.E. of body of table  $M \times S$  or  $M \times B$  = 36.8 lb./ac.  
 S.E. of body of table  $S \times B$  = 26.0 lb./ac.

Crop :- Ragi (2nd season).

Ref :- A.P. 53(11).

Site :- Agri. College Farm,, Bapatla.

Type :- 'M'.

Object :- To test the response of Ragi to the application of C/N and A/S at different doses and at different times.

## 1. BASAL CONDITIONS:

(i) (a) Nil. (b) Ragi. (c) As per treatments. (ii) (a) Sandy. (b) Refer soil analysis, Bapatla. (iii) 24.10.1953/19.11.1953. (iv) (a) Mummy digging of individual plot. (b) Transplanting. (c) —. (d) 4' x 4'. (e) N.A. (v) Nil. (vi) AKP-6 (late). (vii) Irrigated. (viii) Weeding once. (ix) 15.5". (x) 7.2.1953.

## 2. TREATMENTS:

All combinations (1), (2) and (3)

(1) 2 sources of N:  $S_1=A/S$  and  $S_2=C/N$ .

(2) 4 methods of application of N with their doses:

 $M_1=40$  lb./ac. of N in single dose (10 days after sowing). $M_2=60$  lb./ac. of N in single dose (10 days after sowing). $M_3=60$  lb./ac. of N in 2 doses (10, 20 days after sowing). $M_4=60$  lb./ac. of N in 3 doses (10, 20, 30 days after sowing).(3) 2 basal dressings:  $B_0=$ No dressing and  $B_1=$ Lime at 450 lb./ac. + F.Y.M. at 3 ton/ac. + Super at 30 lb./ac. of  $P_2O_5$ .and one plot receiving only basal dressing i.e.,  $B_1=$ Lime at 450 lb./ac. + F.Y.M. at 3 ton/ac. + Super at 30 lb./ac. of  $P_2O_5$ .

## 3. DESIGN:

(i) R.B.D. (ii) (a) 17. (b) N.A. (iii) 4. (iv) (a) 15.8' x 29.0'. (b) 13.2' x 26.4'. (v) 1.3' on all sides. (vi) Yes.

## 4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—1956. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS:

(i) 2215 lb./ac.

(ii) 330.5 lb./ac.

(iii) ' $B_1$  vs. others' effect is highly significant and that of 'source of N' effect is significant. Others are not significant.

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

B<sub>1</sub>=1607 lb./ac.

	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>	Mean	B <sub>0</sub>	B <sub>1</sub>
S <sub>1</sub>	2409	2317	2473	2189	2347	2387	2307
S <sub>2</sub>	1917	2347	2191	2183	2159	2063	2255
Mean	2163	2332	2332	2186	2253	2225	2281
B <sub>0</sub>	2045	2457	2267	2134	2225		
B <sub>1</sub>	2281	2207	2397	2238	2281		

S.E. of marginal mean of S or B = 58.3 lb./ac.  
 S.E. of marginal mean of M = 82.5 lb./ac.  
 S.E. of body of table M × S or M × B = 116.7 lb./ac.  
 S.E. of body of table S × B = 82.5 lb./ac.

Crop :- Ragi.

Ref :- A.P. 53(14).

Site :- Agri. College Farm, Bapatla.

Type :- 'M'.

Object :- To study the response of *Ragi* to the application of G.L., compost and F.Y.M.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy. (b) Refer soil analysis, Bapatla. (iii) 16.6.1953/ 23.7.1953.  
 (iv) (a) 3 ploughings with country plough. (b) Transplanting. (c) —. (d) 4' × 4' (e) N.A. (v) 45 lb./ac. of N as A/S and 30 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super. (vi) AKP-6. (vii) Rain fed. (viii) 2 weedings. (ix) 16.2". (x) 30.10.1953.

## 2. TREATMENTS :

All combinations of (1), (2) + a control (no manure).

(1) 3 levels of organic matter : L<sub>1</sub>=2500, L<sub>2</sub>=5000 and L<sub>3</sub>=7500 lb./ac.(2) 3 sources of organic matter : O<sub>1</sub>=F.Y.M., O<sub>2</sub>=G.L. and O<sub>3</sub>=Compost.

## 3. DESIGN

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 27.7' × 19.8'. (b) 26.7' × 13.8'. (v) 6" left as border on all sides. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—1954. (b) No. (c) Nil. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

i) 1189 lb./ac.

(ii) 133.0 lb./ac.

(iii) Only the interaction 'level × source' is significant.

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

Control = 1226 lb./ac.

	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	Mean
O <sub>1</sub>	1000	1405	1113	1173
O <sub>2</sub>	1140	1200	1040	1127
O <sub>3</sub>	1340	1130	1295	1255
Mean	1160	1245	1149	1185

S.E. of marginal mean = 39.8 lb./ac.  
 S.E. of body of table = 69.0 lb./ac.

Crop :- Ragi.

Ref :- A.P. 53(15).

Site :- Agri. College Farm, Bapatla.

Type :- 'M'.

Object :—To find out the optimum dose of organic manure as soil corrective for sandy soil.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy. (b) Refer soil analysis, Bapatla. (iii) 16.6.1953/12.7.1953.  
 (iv) (a) 3 ploughings. (b) Transplanting. (c) —. (d) 4"×4". (e) N.A. (v) Nil. (vi) AKP-6. (vii) Rainfed.  
 (viii) 2 weedings. (ix) 16.2". (x) 14.10.1953.

## 2. TREATMENTS :

1. No manure.
2. 2500 lb./ac. of G.L. (Gliricidia).
3. 5000 lb./ac. of G.L. (Gliricidia).
4. 7500 lb./ac. of G.L. (Gliricidia).

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 8. (iv) (a) 33'×16.5' (b) 32'×15.5'. (v) 6" left as border around.  
 (vi) Yes.

## 4. GENERAL :

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

## 5. RESULTS :

- (i) 1067 lb./ac.  
 (ii) 142.1 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	894
2.	1037
3.	1126
4.	1210
S.E./mean	= 50.2 lb./ac.

Crop :- Maize (*Khari*).

Ref :- A.P. 52(1).

Site :- Agri. Res. Stn. Himayatsagar.

Type :- 'M'.

Object :—To determine the manurial requirements of the crop for giving high yields.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Himayatsagar. (iii) N.A.  
 (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) N.A. (viii) N.A. (ix) 22.59". (x) N.A.

## 2. TREATMENTS :

1. 40 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
2. 40 lb./ac. of N+40 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
3. 60 lb./ac. of N+30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
4. 60 lb./ac. of N+60 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
5. 80 lb./ac. of N+40 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
6. 80 lb./ac. of N+80 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
7. 100 lb./ac. of N+50 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
8. 100 lb./ac. of N+100 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
9. Control (no manure).

N as G.N.C. and P<sub>2</sub>O<sub>5</sub> as Super. Half of G.N.C. and entire Super applied at the time of sowing. The other half dose of G.N.C. applied 3 weeks later.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/94 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1953—N.A. (b) N.A. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Rice Specialists' Section.

## 5. RESULTS :

- (i) 2308 lb./ac.  
 (ii) 315.8 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2186
2.	2406
3.	2406
4.	2197
5.	2764
6.	2218
7.	2641
8.	2312
9.	1636
S.E. mean	= 157.9 lb./ac.

Crop :- Maize (Rabi).

Ref :- A.P. 52(3).

Site :- Agri. Res. Stn. Himayatsagar.

Type :- 'M'.

Object :- To determine the manurial requirements of the crop.

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil (b) Refer soil analysis, Himayatsagar. (iii) N.A. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) N.A. (viii) N.A. (ix) 4.76% (during Rabi 1952-1953.) (x) N.A.

## 2. TREATMENTS :

- 40 lb./ac. of N+20 lb./ac. of  $P_2O_5$ .
- 40 lb./ac. of N+40 lb./ac. of  $P_2O_5$ .
- 60 lb./ac. of N+30 lb./ac. of  $P_2O_5$ .
- 60 lb./ac. of N+60 lb./ac. of  $P_2O_5$ .
- 80 lb./ac. of N+40 lb./ac. of  $P_2O_5$ .
- 80 lb./ac. of N+80 lb./ac. of  $P_2O_5$ .
- 100 lb./ac. of N+50 lb./ac. of  $P_2O_5$ .
- 100 lb./ac. of N+100 lb./ac. of  $P_2O_5$ .
- Control (no manure).  
 N as G.N.C. and  $P_2O_5$  as Super. Half of G.N.C. and entire Super applied at the time of sowing. The other half dose of G.N.C. applied 3 weeks later.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/94 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1952—N.A. (b) N.A. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Conducted by Rice Specialists' Section.

## 5. RESULTS :

- (i) 2583 lb./ac.  
 (ii) 487.9 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	2200
2.	2096
3.	2660
4.	2670
5.	2670
6.	2782
7.	3317
8.	3660
9.	1175
S.E./mean	= 244.0 lb./ac.



Crop :- Maize (*Kharif*).

Ref :- A.P. 53 (100).

Site :- Agri. Res. Stn. Himayatsagar.

Type :- 'M'.

Object :—To determine the best combination of N and P<sub>2</sub>O<sub>5</sub> for Maize.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Himayatsagar. (iii) N.A.  
 (iv) (a) Ploughing, levelling. (b) Transplanted. (c)—. (d) N.A. (e) N.A. (v) Nil. (vi) N.A. (vii) N.A.  
 (viii) Light wooden plough worked in the early stages of the crop. (ix) 25.60". (x) N.A.

## 2. TREATMENTS

1. 40 lb./ac. of N+20 lb./ac. of P<sub>2</sub>O<sub>5</sub>
2. 40 lb./ac. of N+40 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
3. 60 lb./ac. of N+30 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
4. 60 lb./ac. of N+60 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
5. 80 lb./ac. of N+40 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
6. 80 lb./ac. of N+80 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
7. 100 lb./ac. of N+50 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
8. 100 lb./ac. of N+100 lb./ac. of P<sub>2</sub>O<sub>5</sub>.
9. Control (no manure).

N as G.N.C. and P<sub>2</sub>O<sub>5</sub> as Super. Half of G.N.C. and full dose of Super applied at the time of sowing and the other half of G.N.C. 3 weeks later. Manures applied in furrows 1.5" deep and 3" away from rows.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/94th of acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Crop suffered in earlier stages and later turned out normal. (ii) Slight attack of leaf-blight. (iii) Grain yield. (iv) (a) 1952-1953. (b) N.A. (c) Nil. (v) (a) Nil. (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1216 lb./ac.  
 (ii) 225.6 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	837
2.	902
3.	1344
4.	978
5.	1748
6.	1344
7.	1701
8.	1344
9.	743
S.E./mean	=112.8 lb./ac.

Crop :- Maize (*Rabi*).

Ref :- A.P. 53 (22).

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

Type :- 'M'.

Object :—To find out the most economical manurial dose for Maize crop in *chalka* soils.

## 1. BASAL CONDITIONS:

(i) (a) No. (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Karimnagar. (iii) 9.12.1953.  
 (iv) (a) Two ploughings, harrowing and levelling. (b) Sown by hand dibbling. (c) N.A. (d) 2' x 1'. (e) One grain/hole. (v) Nil. (vi) Jaunpore (early). (vii) Irrigated. (viii) Twice cultivator run and once weeded.  
 (ix) Nil. (x) 15.4.1954.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)

- (1) 3 levels of N :  $N_0=0$ ,  $N_1=50$  and  $N_2=100$  lb./ac.  
 (2) 3 levels of  $P_2O_5$  :  $P_0=0$ ,  $P_1=50$  and  $P_2=100$  lb./ac.  
 (3) 3 levels of  $K_2O$  :  $K_0=0$ ,  $K_1=50$  and  $K_2=100$  lb./ac.

N as A, S,  $P_2O_5$  as Super and  $K_2O$  as Pot. Sul. Half of N and full doses of  $P_2O_5$  and  $K_2O$  were applied at sowing ; and the other half of N applied one month later. Manures were broadcast on the surface and then worked into the soil with cultivator and spades.

## 3. DESIGN :

- (i)  $3^3$  factorial confounded. (j) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 1 70 ac. (b) 1/109 ac. (v) One row to right ; two plants from ends of each row. (vi) Yes.

## 4. GENERAL :

- (i) Normal, 20% lodging at harvest. (ii) Stem borer 8-10%. Dead hearts removed and burnt. (iii) Grain yield. (iv) (a) 1953-1954. (b) Yes. (c) N.A. (v) (a), (b) No. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1954 lb./ac.  
 (ii) 407.7 lb./ac.  
 (iii) Only main effect of N is significant.  
 (iv) Av. yield of grain in lb./ac.

	$P_0$	$P_1$	$P_2$	Mean	$K_0$	$K_1$	$K_2$
$N_0$	1635	1481	1668	1595	1675	1550	1559
$N_1$	1938	2225	2198	2121	2123	2071	2168
$N_2$	1930	2006	2505	2147	2399	2066	1974
Mean	1834	1904	2124	1954	2065	1896	1900
$K_0$	2038	1992	2168				
$K_1$	1565	1914	2210				
$K_2$	1901	1806	1994				

S.E. of marginal means = 96.0 lb./ac.  
 S.E. of body of table = 166.0 lb./ac.

Crop :- Maize (*Kharif*).

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

Ref :- A.P. 53(3).

Type :- 'C'.

Object :- To determine the optimum spacing in combination with dates of sowing.

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil (sandy loam). (b) Refer soil analysis, Himayatsagar.  
 (iii) As per treatments. (iv) (a) Ploughing the field before sowing. (b) to (e) N.A. (v) N.A. (vi) N.A. (vii) N.A. (viii) A light wooden plough was worked in the early stages of the crop growth. (ix) N.A. (x) N.A.

## 2. TREATMENTS :

Main-plot treatments :

2 dates of sowing :  $D_1=18.6.1953$  and  $D_2=9.7.1953$ .

Sub-plot treatments :

4 spacings :  $S_1=$  Broadcast,  $S_2=1' \times 1'$ ,  $S_3=1.5' \times 1'$  and  $S_4=2' \times 1'$ .

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/block ; 4 sub-plots/main-plot. (b) Nil. (iii) 4. (iv) (a) and (b) 1/270 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) Slight attack of leaf blight (*Helminthosporium turcium*). (iii) Grain yield. (iv) (a) 1952—N.A. (b) N.A. (c) N.A. (v) (a) and (b) Nil. (vi) Heavy rains were received only in the last week of July 1953 and hence the crop had an initial set back in growth. (vii) Conducted by Rice Specialists' Section.

## 5. RESULTS :

- (i) 2481 lb./ac.  
 (ii) (a) 734.4 lb./ac.  
 (b) 526.5 lb./ac.  
 (iii) Dates and spacing effects are significant. Interaction effect is not significant.  
 (iv) Av. yield of grain in lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	Mean
D <sub>1</sub>	4185	3105	3409	3105	3451
D <sub>2</sub>	1823	1148	1316	1755	1510
Mean	3004	2126	2362	2430	2481

## S.E. of difference of two

1. D marginal means = 259.6 lb./ac.  
 2. S marginal means = 263.3 lb./ac.  
 3. S means at the same level of D = 372.3 lb./ac.  
 4. D means at the same level of S = 414.0 lb./ac.

Crop :- Maize (*Kharif*).

Ref :- A.P. 52(86).

Site :- Agri Res. Stn., Himayatsagar.

Type :- 'C'.

Object :- To determine the optimum spacing in combination with dates of sowing.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Himayatsagar. (iii) As under treatments. (iv) (a) Ploughing and levelling. (b) Transplanted. (c) —. (d) As under treatments. (e) 1. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) In the early stages of the crop growth, a light wooden plough was worked. (ix) 22.59". (x) N.A.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 dates of sowing : D<sub>1</sub>=11.6.1952 and D<sub>2</sub>=30.7.1952.(2) 4 spacings : S<sub>1</sub>=Broadcast, S<sub>2</sub>=1'×1', S<sub>3</sub>=1.5'×1' and S<sub>4</sub>=2'×1'.

## 3. DESIGN :

(i) 2×4 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 6'×27'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1952—1953. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Means for dates N.A. Even raw data is not traceable at the Research Station. (vii) Nil.

## 5. RESULTS :

- (i) 1110 lb./ac.  
 (ii) 213.2 lb./ac.  
 (iii) Only spacings effect is significant.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Mean
S <sub>1</sub>	742
S <sub>2</sub>	1247
S <sub>3</sub>	1445
S <sub>4</sub>	1004
S.E./mean	= 106.6 lb./ac.

Crop :- Maize (*Rabi*).

Ref :- A.P. 52(87).

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

Type :- 'C'.

Object :- To determine the optimum spacing in combination with dates of sowing.

## 1. BASAL CONDITIONS:

(i) (a) Nil. (b) and (c) N.A. (ii) (a) *Chalka* soil. (b) Refer soil analysis, Himayatsagar. (iii) As under treatments. (iv) (a) Ploughing and levelling. (b) Transplanted. (c) —. (d) As under treatments. (e) I. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) In the early stages of growth, a light wooden plough was worked. (ix) N.A. (x) N.A.

## 2. TREATMENTS:

All combinations of (1) and (2)

(1) 4 spacings :  $S_1$ =Broadcast,  $S_2=1' \times 1'$ ,  $S_3=1.5' \times 1'$  and  $S_4=2' \times 1'$ .(2) 2 dates of sowing :  $D_1=15.12.1952$  and  $D_2=7.1.1953$ .

## 2. DESIGN:

(i)  $2 \times 4$  Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) N.A. (b)  $6' \times 27'$ . (v) N.A. (vi) Yes.

## 4. GENERAL:

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1952-53. (b) and (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data is N.A. at the Res. Stn.

## 5. RESULTS:

(i) 2535 lb./ac.

(ii) 695.8 lb./ac.

(iii) Main effects of S and D are significant. Interaction is not significant.

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

Treatment	Mean	Treatment	Mean
$S_1$	2219	$D_1$	3021
$S_2$	2978	$D_2$	2049
$S_3$	2633	S.E./mean	= 174.0 lb./ac.
$S_4$	2311		
S.E./mean	= 246.0 lb./ac.		

Crop :- Maize (*Rabi* 1953-54).

Ref :- A.P. 53(58).

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

Type :- 'C'.

Object :- To find out the most high yielding economical spacing for Maize crop on *Chalka* soils and the optimum time for sowing Maize.

## 1. BASAL CONDITIONS:

(i) (a) Mung-Maize. (b) Mung. (c) Nil. (ii) (a) Sandy loam (*chalka*). (b) Refer soil analysis, Karimnagar. (iii) 1.12.1953 and 21.12.1953. (iv) (a) Twice ploughed, harrowed and levelled. (b) Dibbled by hand. (c) N.A. (d) As under treatments. (e) I. (v) Compost at 20 C.L./ac. + A/S at 100 lb./ac. (vi) H.M.-1 (medium). (vii) Irrigated. (viii) Once weeding. (ix) Nil. (x) 26.3.1954 and 8.4.1954.

## 2. TREATMENTS:

All combinations of (1) and (2)

(1) 4 spacings :  $S_1$ =Broadcast (control),  $S_2=1' \times 1'$ ,  $S_3=1.5' \times 1'$  and  $S_4=2' \times 1'$ .(2) 2 dates of sowing :  $D_1=1.12.1953$  and  $D_2=21.12.1953$ .

## 3. DESIGN:

(i)  $2 \times 4$  Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/121 ac. (v) One row on either side of each plot and 2 plants from each side per row as end plants. (vi) Yes.

## 4. GENERAL:

(i) Good. Normal growth in first sown crop and rather poor in 2nd sown one. Lodging 20-25% at harvesting. (ii) Stemborer 10%. Dead hearts removed and burnt. (iii) Grain yield. (iv) (a) 1953 (*Rabi* 1953-54) —1954. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 1397 lb./ac.  
 (ii) 286.8 lb./ac.  
 (iii) Main effects of spacing and dates of sowing are highly significant. Interaction is not significant.  
 (iv) Av. yield of grain in lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	Mean
D <sub>1</sub>	2172	1698	1528	1458	1713
D <sub>2</sub>	1506	1020	996	799	1081
Mean	1838	1359	1262	1128	1397

S.E. of marginal mean of S = 101.1 lb./ac.  
 S.E. of marginal mean of D = 71.7 lb./ac.  
 S.S. of body of table = 143.4 lb./ac.

Crop :- Maize. (Rabi).

Ref :- A.P. 52(88).

Site :- Agri. Res. Institute, Rajendranagar.

Type :- 'D'.

Object :- To determine the effect of different seed treatments for controlling leaf blotch disease.

## 1. BASAL CONDITIONS:

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Chalka. (b) Refer soil analysis, Rajendranagar. (iii) Nov. 1952.  
 (iv) (a) Ploughing and levelling. (b) Transplanted. (c) About 20 lb./ac. (d) N.A. (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) March, 1953.

## 2. TREATMENTS:

All combinations of (1), (2)+a control (no chemical).

(1) 5 seed dressers : C<sub>1</sub>=Harvesan, C<sub>2</sub>=Landisan, C<sub>3</sub>=Tritisan, C<sub>4</sub>=Ceresan and C<sub>5</sub>=Agrosan.

(2) 3 doses of seed dressers : D<sub>1</sub>=5, D<sub>2</sub>=6 and D<sub>3</sub>=7 ozs.

Other details N.A.

## 3. DESIGN:

- (i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 1/60.5 ac. (v) N.A. (vi) Yes.

## 4. GENERAL:

- (i) Normal. (ii) No leaf blotch throughout growth. (iii) Grain yield. (iv) (a) No. (b) No. (c) No.  
 (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 547 lb./ac.  
 (ii) 99.2 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of grain in lb./ac.

Control=597 lb./ac.

	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>5</sub>	Mean
D <sub>1</sub>	617	499	557	453	371	499
D <sub>2</sub>	772	679	582	558	475	613
D <sub>3</sub>	544	442	623	440	544	519
Mean	644	540	587	484	463	544

S.E. of marginal mean of C = 40.5 lb./ac.  
 S.E. of marginal mean of D = 31.3 lb./ac.  
 S.E. of body of table = 70.1 lb./ac.

Crop :- Variga.  
Site :- Lam Farm, Guntur.

Ref :- A.P. 50(63).  
Type :- 'M'.

Object :- To compare the values of night soil compost and F.Y.M. in stepping up productivity of *Variga*.

1. BASAL CONDITIONS :

(i) a) N.A. (b), (c) N.A. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) 23.10.50. (iv) (a) N.A. (b) Drilled. (c) N.A. (d) N.A. (e) N.A. (v) Nil. (vi) *Variga*. (vii) Unirrigated. (viii) 2 or 3 hand weedings. (ix) 5.78". (x) 18.1.51.

2. TREATMENTS :

1. No manure.
  2. F.Y.M. at 60 lb./ac. of N.
  3. Night soil compost at 60 lb./ac. of N.
- Manures applied on 3.10.50.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 38.1'×18.2'. (b) 29.7'×11.9'. (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

- (i) 427 lb./ac.
- (ii) 154.0 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	350
2.	430
3.	500
S.E./mean	= 77.0 lb./ac.

Crop :- Variga.  
Site :- Lam Farm, Guntur.

Ref :- A.P. 51 (49).  
Type :- 'M'.

Object :- To compare the relative manurial value of night soil compost and F.Y.M. to *Variga*.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 3.11.1951. (iv) (a) 2 or 3 ploughings. (b) to (e) N.A. (v) Nil. (vi) *Variga*. (vii) Rainfed. (viii) 2 weedings. (ix) 0.13". (x) 18.1.1952.

2. TREATMENTS :

1. Control (no manure).
  2. F.Y.M. at 60 lb./ac. of N.
  3. Night soil compost at 60 lb./ac. of N.
- Manures applied before sowing, spread on the surface and puddled in.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 38.1'×18.2'. (b) 29.7'×11.9'. (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

- (i) 384 lb./ac.
- (ii) 85.8 lb./ac.
- (iii) Treatments do not differ significantly.

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

Treatment	Av. yield
1.	411
2.	388
3.	353
S.E./mean	= 35.0 lb./ac.

Crop :- Variga.

Ref :- A.P. 51 (48).

Site :- Lam Farm, Guntur.

Type :- 'M'.

Object :- To study the comparative residual effect of application of night soil compost and F.Y.M. on *Variga*.

## 1. BASAL CONDITIONS ;

(i) (a) Nil. (b) Chillies. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 24.10.1951. (iv) (a) 2 or 3 ploughings. (b) to (e) N.A. (v) Nil. (vi) *Variga*. (vii) Rainfed. (viii) 2 weedings. (ix) 0.13". (x) 18.1.1952.

## 2. TREATMENTS :

- No manure (control).
  - F.Y.M. at 60 lb./ac. of N
  - Night soil compost at 60 lb./ac. of N
- Manures applied before ploughing, spread on the surface and puddled in.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 38.1' × 18.2'. (b) 29.7' × 11.9'. (v) N.A. (vi) Yes.

## 4. GENERAL

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1951—N.A. (b) No. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- 708 lb./ac.
- 317.5 lb./ac.
- Treatments do not differ significantly.
- Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	688
2.	656
3.	781
S.E./mean	= 129.6 lb./ac.

Crop :- Gram.

Ref :- A.P. 49(14).

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

Type :- 'M'.

Object :- To study the residual effect on gram of Phosphatic manures applied to the previous Paddy crop.

## 1. BASAL CONDITIONS :

(i) (a) Paddy—Gram. (b) Paddy. (c) As under treatments. (ii) (a) Heavy Alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 14.11.1949. (iv) (a) to (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 2 weedings (ix) N.A. (x) 10.2.1950.

## 2. TREATMENTS:

- No manure.
  - 30 lb./ac. of  $P_2O_5$  as Super.
  - 30 lb./ac. of  $P_2O_5$  as B.M.
- Manures applied to the previous paddy crop.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a), (b) 29.0' × 15.8' (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) N.A. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 304 lb./ac.  
 (ii) 66.3 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (vi) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	295
2.	319
3.	298
S.E./mean	= 27.1 lb./ac.

Crop :- Gram.

Ref :- A.P. 49(15).

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

Type :- 'M'.

Object :—To study the effect of P manure applied direct to Gram.

**1. BASAL CONDITIONS :**

(i) (a) Paddy—Gram. (b) Paddy. (c) As under treatments. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) 14.11.1949. (iv) (a) to (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 11.2.1950.

**2. TREATMENTS :**

- No manure.
- 30 lb./ac. of  $P_2O_5$  as Super.
- 30 lb./ac. of  $P_2O_5$  as B.M.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 29.0' × 15.8'. (v) Nil. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) N.A. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 326 lb./ac.  
 (ii) 61.9 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	357
2.	331
3.	289
S.E./mean	= 25.2 lb./ac.



Crop :- Sugarcane.

Ref A.P. 48(68).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To find out the optimum time of application of manure to Sugarcane.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) March, 1948. (iv) (a) 3 to 4 ploughings, making ridges and furrows, deepening trenches. (b) Planted. (c) 15000, three budded setts/ac. (d) 2' 8" between rows. (v) 10 ton/ac. of F.Y.M. (vi) CO-419. (vii) Irrigated. (viii) Earthing up, trenching. (ix) 34.94" (March 1948 to March 1949). (x) N.A.

## 2. TREATMENTS :

150 lb./ac. of N as mixture of G.N.C. and A/S (2:1) applied :

1. at the time of planting.
2. half at planting and half at earthing up in June.
3. at two months after planting.
4. at four months after planting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 49'-6" x 26'-6". (b) 42'-3" x 15'-10". (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of sugarcane and Sugar. (iv) (a) 1946 to 1948. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 32.20 ton/ac.
- (ii) 2.86 ton/ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	32.72
2.	33.40
3.	32.20
4.	30.49
S.E./mean	= 1.17 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 49(56).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To test the relative merits of night soil compost and F.Y.M. on Sugarcane.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy—. (b) Paddy. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Anakapalle. (iii) 12.4.49. (iv) (a) 3 to 4 ploughings, making ridges and furrows, deepening trenches. (b) Planted. (c) 15000, three budded setts/ac. (d) Rows 2' 8" apart. (e) N.A. (v) Nil. (vi) CO-419. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 49.29" (April 1949 to Feb. 1950). (x) 20.2.50.

## 2. TREATMENTS :

1. No manure.
2. Night soil compost to supply 250 lb./ac. of N ( $\frac{1}{3}$  at planting on 12.4.1949. +  $\frac{2}{3}$  at earthing up on 11.6.49.
3. F.Y.M. to supply 250 lb./ac. of N ( $\frac{1}{3}$  at planting on 12.4.1949. +  $\frac{2}{3}$  at earthing up on 11.6.1949.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 64' x 18'-8". (b) 58'-4" x 13'-4". (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of Sugarcane and growth measurements. (iv) (a) 1949 to 1950. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 43.55 ton/ac.  
 (ii) 1.94 ton/ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	41.66
2.	45.22
3.	43.77
S.E./mean	= 0.79 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 50(66).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To test the relative merits of night soil compost and F.Y.M. on Sugarcane.

## 1. BASAL CONDITIONS :

- (i) (a) Sugarcane—Paddy. (b) Paddy. (c) As per treatments. (Dose of N is 60 lb./ac.) (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 9.4.50. (iv) (a) 3 to 4 ploughings, making ridges and furrows, deepening trenches. (b) Planted. (c) 15000, three budded setts/ac. (d) Rows 2'-8" apart. (v) Nil. (vi) CO-419. (vii) Irrigated. (viii) Earthing up, trenching, etc. (ix) 32.81". (x) 19.3.1951.

## 2. TREATMENTS :

- No manure.
- Night soil compost to supply 250 lb./ac. of N.
- N applied at planting on 7.4.50.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 64'×18' 8". (b) 58'4"×13' 4." (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Growth measurements. (iv) (a) 1949-1950. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 48.98 ton/ac.  
 (ii) 4.48 ton/ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	41.01
2.	53.14
3.	52.78
S.E./mean	= 1.83 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 49(57).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the optimum proportion between organic and inorganic forms of N on Sugarcane.

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 28.3.49. (iv) (a) 3 to 4 ploughings, making ridges and furrows, deepening trenches. (b) Planted. (c) 15000, three budded setts/ac. (d) Rows planted 2'-8" apart. (e) —. (v) 10 tons/ac. of F.Y.M. (vi) N.A. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 49.29". (x) 28th February 1950.

**2. TREATMENTS :**

150 lb./ac. of N applied as mixture of G.N.C. and A/S in the ratio

$R_1=1:0$ ,  $R_2=0:1$ ,  $R_3=1:1$ ,  $R_4=1:2$ ,  $R_5=2:1$  (control),  $R_6=1:3$ ,  $R_7=3:1$ ,  $R_8=2:3$  and  $R_9=3:2$ .

Manure applied half at planting and half at trenching.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a)  $87'-9" \times 13'-2"$ . (b)  $82'-6" \times 7'-11"$ . (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) No. (iii) Yield of cane. (iv) (a) 1949 to 1951. (b) No (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS:**

- (i) 47.64 ton/ac.  
 (ii) 4.00 ton/ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
$R_1$	46.26
$R_2$	48.91
$R_3$	44.50
$R_4$	48.17
$R_5$	47.83
$R_6$	49.90
$R_7$	47.47
$R_8$	48.67
$R_9$	47.07
S.E./mean	= 2.00 ton/ac.

**Crop :- Sugarcane.**

**Ref :- A.P. 50 (22).**

**Site :- Sugarcane Res. Stn., Anakapalle.**

**Type :- 'M'.**

**Object :-** To study the optimum proportion between organic and inorganic forms of N on Sugarcane.

**1. BASAL CONDITIONS :**

- (i) (a) Sugarcane-Paddy. (b) Paddy. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Anakapalle. (iii) 9.3.1950. (iv) (a) digging trenches and planting in trenches. (b) Planting of Setts. (c) 15000, three budded setts/ac. (d) Between rows  $2'-8"$ . (e) —. (v) 10 ton/ac. of F.Y.M. (vi) N.A. (vii) Irrigated. (viii) Periodical weeding. (ix) 27.30". (x) 20.4.1951 to 6.5.1951.

**2. TREATMENTS :**

150 lb./ac. of N applied as mixture of G.N.C. and A/S in the ratio

$R_1=1:0$ ,  $R_2=0:1$ ,  $R_3=1:1$ ,  $R_4=1:2$ ,  $R_5=2:1$  (control),  $R_6=1:3$ ,  $R_7=3:1$ ,  $R_8=2:3$  and  $R_9=3:2$ .

Manure applied half at planting and half at trenching.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a)  $89' \times 13'$ . (b)  $82.5' \times 7.9'$ . (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Sugarcane yield and juice content. (iv) (a) 1949-1951. (b) No. (c) N.A. (v) (a), (b) No. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 49.90 ton/ac.  
 (ii) 4.04 ton/ac.  
 (iii) Treatments do not differ significantly.

(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
R <sub>1</sub>	50.09
R <sub>2</sub>	50.29
R <sub>3</sub>	50.03
R <sub>4</sub>	51.21
R <sub>5</sub>	50.34
R <sub>6</sub>	48.62
R <sub>7</sub>	51.73
R <sub>8</sub>	46.70
R <sub>9</sub>	50.12
S.E./mean	=2.02 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 51 (45).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :—To study the optimum proportion between organic and inorganic forms of N on Sugarcane.

**1. BASAL CONDITIONS :**

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 2.4.1951. (iv) (a) 5 times ploughing, digging corners and making ridges and furrows. (b) Planted. (c) 15000, three budded setts/ac. (d) 2'-8" between rows. (e) —. (v) 10 ton/ac. of F.Y.M. (vi) N.A. (vii) Irrigated. (viii) 5 weedings and twice hoeing with junior hoe, wrapping and propping. (ix) 32.75%. (x) 17 to 21.4.1952.

**2. TREATMENTS :**

150 lb./ac. of N applied as mixture of G.N.C. and A/S in the ratio

R<sub>1</sub>=1 : 0, R<sub>2</sub>=0 : 1, R<sub>3</sub>=1 : 1, R<sub>4</sub>=1 : 2, R<sub>5</sub>= 2, 1 (control), R<sub>6</sub>=1 : 3, R<sub>7</sub>=3 : 1, R<sub>8</sub>= 2 : 3 and R<sub>9</sub>=3 : 2.

Manure applied half at planting and half at trenching.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 89'×13'. (b) 82.5'×7.9'. (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Yield of sugarcane. (iv) (a) 1949 to 1951. (b) No. (c) N.A. (v) (a), (b) Nil (vi) and (vii) Nil.

**5. RESULTS :**

(i) 40.67 ton/ac.

(ii) 3.08 ton/ac.

(iii) Treatments do not differ significantly.

(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
R <sub>1</sub>	38.55
R <sub>2</sub>	40.61
R <sub>3</sub>	40.02
R <sub>4</sub>	40.06
R <sub>5</sub>	41.12
R <sub>6</sub>	42.43
R <sub>7</sub>	41.78
R <sub>8</sub>	38.77
R <sub>9</sub>	42.71.
S.E./mean	= 1.54 ton/ac.

Crop :- Sugarcane.  
Site :- Sugarcane Res. Stn., Anakapalle.

Ref :- A.P. 49(58).  
Type :- 'M'.

Object :- To test the claims made regarding the beneficial effect of Alphatron (a radio active soil stimulant) in increasing crop production and inducing early maturity.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Anakapalle. (iii) 20.4.1949. (iv) (a) 3 to 4 ploughings, making ridges and furrows and deepening trenches. (b) Planted. (c) 15000, three budded setts/ac. (d) Spacing between rows 2' 8". (e) —. (v) 100 lb./ac. of N as G.N.C. and A/S in 2: 1 proportion on N basis applied on 19.4.1949 and 27.7.1949. (vi) CO. 419. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 49.43" (April 1949 to March 1950). (x) 21 to 25.3.1950.

2. TREATMENTS :

1. No Alphatron.
2. 5 lb./ac. Alphatron.
3. 10 lb./ac. of Alphatron.
4. 20 lb./ac. of Alphatron.

Applied to the soil by broadcast before planting and mixed with the soil.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a), (b) 49'6" x 10'7". (v) Nil (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Germination count, juice analysis and cane weight. (iv) (a) 1949 to 1952. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 37.57 ton/ac.  
(ii) 36.68 ton/ac.  
(iii) Treatments do not differ significantly.

(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	38.47
2.	36.49
3.	38.62
4.	36.70
S.E./mean	= 1.50 ton/ac.

Crop :- Sugarcane.  
Site :- Sugarcane Res. Stn., Anakapalle.

Ref :- A.P. 50(69).  
Type :- 'M'.

Object :- To test the claims made regarding the beneficial effect of Alphatron (a radio active soil stimulant) in increasing crop production and inducing early maturity.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 2.4.1950. (iv) (a) 3 to 4 ploughings, making ridges and furrows and deepening trenches. (b) planted. (c) 15000, three budded setts/ac. (d) 2'-8" between rows. (e) —. (v) 100 lb./ac. of N in the form of G.N.C. and in 2:1 ratio on N basis. (vi) CO. 419. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 33.47". (x) 14.15.4.1951.

2. TREATMENTS :

1. No Alphatron.
2. 5 lb./ac. of Alphatron.
3. 10 lb./ac. of Alphatron.
4. 20 lb./ac. of Alphatron.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 55'-5" x 16'. (b) 49'-6" x 10'-7". (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Cane weight and growth measurements at harvest. (iv) (a) 1949 to 1950. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

(i) 48.10 ton/ac.

(ii) 4.79 ton/ac.

(iii) Treatments do not differ significantly.

(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	48.1
2.	49.2
3.	48.7
4.	46.5
S.E./mean	= 1.96 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 50(71).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To find out the effect of graded doses of N on Sugarcane.

**1. BASAL CONDITIONS :**

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Anakapalle. (iii) 27.3.50. (iv) (a) 3 to 4 ploughings, making ridges and furrows and deepening trenches. (b) Planted. (c) 16000, three budded setts/ac. (d) 2'-8" between rows. (e) —. (v) 10 ton/ac. of F.Y.M. (vi) CO-419. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 33.85". (x) 25,26.3.51.

**2. TREATMENTS :**

1. Control (no manure).

2. 100 lb./ac. of N.

3. 200 lb./ac. of N.

4. 300 lb./ac. of N.

N as mixture of G.N.C. and A/S in the ratio 2 : 1 applied in two equal doses, one at planting and one at earthing up.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 30.4' × 18.5'. (b) 29.7' × 13.2'. (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Leaf samples by punch method at fortnightly intervals up to July and later at monthly intervals upto harvest time and cane yield. (iv) (a) 1950-51. (b) and (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

(i) 41.80 ton/ac.

(ii) 4.51 ton/ac.

(iii) Treatments do not differ significantly.

(iv) Av. yield of cane in ton/ac.

Treatment	Av. yield
1.	38.45
2.	44.11
3.	41.43
4.	43.21
S.E./mean	= 2.26 ton/ac.

Crop :- Sugarcane.  
Site :- Sugarcane Res. Stn., Anakapalle.

Ref :- A.P. 51(77).  
Type :- 'M'.

Object :- To study the effect of graded doses of N on Sugarcane.

1. BASAL CONDITIONS :

- (i) (a) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Anakapalle. (iii) 21.2.51. (iv) (a) N.A. (b) Planted: (c) 16000, three budded setts/ac. (d) 2' 8" between rows. (e) —. (v) 10 ton/ac. of F.Y.M. (vi) CO-419. (vii) Irrigated. (viii) Weeding, wrapping and propping up. (ix) 32.75". (x) 12 to 19.3.1952.

2. TREATMENTS :

1. Control (no manure).
  2. 100 lb./ac. of N.
  3. 200 lb./ac. of N.
  4. 300 lb./ac. of N.
- N as mixture of G.N.C. and A/S in ratio 2 : 1 applied in two equal doses one at planting and one at earthing up.

3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 49.5' × 21.1'. (b) 42.9' × 15.8'. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Cane yield and population count. (iv) (a) 1950 to 1951. (b) and (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

- (i) 44.54 ton/ac.  
(ii) 3.14 ton/ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of grain in lb./ac.

Treatment	Av. yield
1.	38.28
2.	47.43
3.	45.20
4.	47.25
S.E./mean	= 1.57 ton/ac.

Crop :- Sugarcane.  
Site :- Sugarcane Res. Stn., Anakapalle.

Ref :- A.P. 51(43).  
Type :- 'M'.

Object :- To study the effects of continuous application of A/S on the yield of Sugarcane and its normal rotational crops *Ragi* and Paddy.

1. BASAL CONDITIONS :

- (i) (a) Sugarcane—*Ragi*—Paddy. (b) Paddy. (c) N.A. (ii) (a) Loamy soil. (b) Refer soil analysis, Anakapalle. (iii) 4, 5.5.51. (iv) (a) 4 times ploughing, making ridges and furrows, rectifying ridges and furrows and deepening trenches. (b) Planting in trenches. (c) 15000, three budded setts/ac. (d) 2'-8" between rows; continuous planting in a row. (e) —. (v) Nil. (vi) CO-419. (vii) Irrigated. (viii) 5 weedings, one hoeing and four times filling up gaps. Twice trenching, wrapping and propping. (ix) 32.75". (x) 22 to 25.4.1952.

2. TREATMENTS :

1. No manure (control).
2. 100 lb./ac. of N as A/S.
3. 100 lb./ac. of N as G.N.C.
4. 100 lb./ac. of N as F.Y.M.
5. 100 lb./ac. of N as mixture of G.N.C. and A/S (2 : 1) N basis.  
N applied in two equal doses,  $\frac{1}{2}$  at planting and  $\frac{1}{2}$  at the time of earthing up in June and July.

## 3. DESIGN :

(i) L. sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 39.6' × 37.0'. (b) 33.0' × 36.4'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Sugarcane yield and periodical sampling for juice analysis from Dec. till harvest every month. Yield and population per acre, Jaggery recovery and quality at harvest. (iv) (a) 1951—still continuing. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) While the form of manure applied to the plots is the same year after year, the dose of N is varied with the crop. If sugarcane is grown this year *ragi* and paddy are grown in the next year in the same plots and again sugarcane in the third year and so on.

## 5. RESULTS :

- (i) 35.50 ton/ac.  
 (ii) 5.16 ton/ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	27.66
2.	40.42
3.	39.75
4.	30.45
5.	40.74
S.E./mean	= 2.31 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 52(49).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effects of continuous application of A/S on the yield of Sugarcane and its effect on normal rotational crops *Ragi* and Paddy.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Ragi*—Paddy. (b) Paddy. (c) 60 lb./ac. of N. (ii) (a) Loamy soil. (b) Refer soil analysis, Anakapalle. (iii) 31.3.1952 to 2.4.1952. (iv) (a) 4 or 5 times ploughing with country plough, making ridges and furrows and deepening trenches. (b) Planting in trenches. (c) 15000, three budded setts/row. (d) 2'-5" between rows. (e)—. (v) Nil. (vi) CO-419. (vii) Irrigated. (viii) Filling up gaps, hoeing twice and weeding once. (ix) N.A. (x) 8, 9.3.1953.

## 2. TREATMENTS

- No manure (control).
- 100 lb./ac. of N as A/S.
- 100 lb./ac. of N as G.N.C.
- 100 lb./ac. of N as F.Y.M.
- 100 lb./ac. of N as mixture of G.N.C. and A/S (2 : 1) N basis.  
N applied in two equal doses,  $\frac{1}{2}$  at planting and  $\frac{1}{2}$  at the time of earthing up in June and July.

## 3. DESIGN :

(i) L. sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 39.6' × 37.0'. (b) 33.0' × 26.4'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Growth satisfactory but stand poor, Lodged on 30.9.1952. due to heavy rains. (ii) Nil. (iii) Sugarcane weight and periodical sampling for juice analysis from Dec., till harvest every month. Yield and population per ac. Jaggery recovery and quality at harvest. (iv) (a) 1951—still continuing. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) While the form of manure applied to the plots is the same year after year the dose of nitrogen is varied with the crop. If sugarcane is grown this year, *ragi* and paddy are grown in the same plots in the next year and again sugarcane in the third year and so on.

## 5. RESULTS :

- (i) 33.50 ton/ac.  
 (ii) 3.98 ton/ac.  
 (iii) Treatments differ significantly.



(iv) Av. yield of sugarcane in ton./ac.

Treatment	Av. yield
1.	24.62
2.	38.39
3.	37.54
4.	29.24
5.	37.72
S.E./mean	= 1.78 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 53 (37).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S to Sugarcane (series I).

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane-Ragi-Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 22.3.1953. (iv) (a) Digging trenches and deepening drains. (b) Planting in trenches 8" deep. (c) 15000, three budded setts/ac. (d) 3'-4" between rows. (e) —. (v) Nil. (vi) CO:419. (vii) Irrigated. (viii) 2 hoeings and 5 weedings. (ix) 51.35%. (x) 16, 18.3.1954.

## 2. TREATMENTS :

- No manure (control).
  - 100 lb./ac. of N as A/S.
  - 100 lb./ac. of N as G.N.C.
  - 100 lb./ac. of N as F.Y.M.
  - 100 lb./ac. of N as mixture of G.N.C. and A/S. (2 : 1) N basis.
- N applied in two equal doses,  $\frac{1}{2}$  at planting and  $\frac{1}{2}$  at the time of earthing up in June and July.

## 3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 39.6' x 36.3'. (b) 33.0' x 26.4". (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Periodical sampling for juice analysis, Jaggery recovery, cane yield and population. (iv) (a) 1951—still continuing. (b) Yes. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) While the form of manure applied to the plots is the same year after year the dose of nitrogen is varied with the crop.

## 5. RESULTS :

- 36.19 ton/ac.
- 5.53 ton/ac.
- Treatments differ significantly.
- Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	28.54
2.	39.09
3.	39.05
4.	34.59
5.	39.68
S.E./mean	= 2.47 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 53 (38).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S (series 2).

## 1. BASAL CONDITIONS :

- (i) (a) Sugarcane-Punasa Ragi-Paddy-Sugarcane. (b) Paddy. (c) 60 lb./ac. of N as under treatments.  
 (ii) (a) Clay loam (b) Refer soil analysis, Anakapalle. (iii) Last week of March, 1953. (iv) (a) Digging  
 trenches and deepening drains. (b) Plants in trenches 8" deep. (c) 15,000, three budded setts/ac. (d) 3'-4"  
 apart. (e) —. (v) Nil. (vi) CO.4:9. (vii) Irrigated. (viii) 2 hoeings and 5 weedings. (ix) 51.35".  
 (x) Third week of March, 1954.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) Two sources of 100 lb./ac. of N :  $A_1 = A/S$  and  $A_2 = \text{mix. of G.N.C. and A/S in } 2 : 1 \text{ ratio.}$ (2) Two doses of lime :  $L_0 = 0$  and  $L_1 = 1500 \text{ lb./ac. of lime prior to planting}$ N applied in two equal doses  $\frac{1}{2}$  at 45 days after planting and  $\frac{1}{2}$  at the time of earthing up.

## 3. DESIGN :

- (i) 2x2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 39.6'x26.4'. (b) 33'x19.8'. (v) N.A.  
 (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Cane yield, periodical sampling for juice analysis, Jaggery recovery and  
 population. (iv) (a) 1953 to 1955. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) While the form of  
 manure applied to the plots is the same year after year the doses vary according to the crop.

## 5. RESULTS :

- (i) 29.07 ton/ac.  
 (ii) 2.83 ton/ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of sugarcane in ton/ac.

	$A_1$	$A_2$	Mean
$L_0$	30.19	27.00	28.59
$L_1$	29.26	29.85	29.55
Mean	29.72	28.42	29.07

S.E. of any marginal mean = 0.89 ton/ac.  
 S.E. of body of table = 1.27 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 52(52).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To compare the relative efficiency of C/N and A/S in giving higher yield.

## 1. BASAL CONDITIONS :

- (i) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle.  
 (iii) 10.5.1952. (iv) (a) 4 times ploughing including once tractor ploughing, breaking clods. Making ridges  
 and furrows. Deepening trenches. (b) Setts planting. (c) 15000, three budded setts/ac. (d) 2.-8" between  
 cane rows. (e) —. (v) Nil. (vi) CO.-419. (vii) Irrigated. (viii) Gap filling, weeding and hoeing twice. (ix) N.A.  
 (x) 8.5.1953.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)+1 extra treatment

(1) 2 levels of N :  $N_1=100$  and  $N_2=150$  lb./ac.

(2) 2 sources of N :  $S_1=A/S$  and  $S_2=C/N$ .

(3) 2 basal dressings :  $B_0$ =No basal dressing and  $B_1=1000$  lb./ac. of lime+Super 60 lb./ac. of  $P_2O_5$ +5 ton/ac. of C.M.+Pot. Sulphate at 60 lb./ac. of  $K_2O$ .

Extra treatment *i.e.* A=1000 lb./ac. of lime+60 lb./ac. of  $P_2O_5$  as Super+C.M. at 5 ton/ac.+60 lb./ac. of  $K_2O$  as Pot. Sulphate.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 5. (iv) (a)  $73.9' \times 13.2'$ . (b)  $66' \times 7.9'$ . (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. Lodging on 2.10.1952. (ii) Slight incidence of Regulia. (iii) Cane yield and population phase. (iv) (a) 1952—N.A. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 39.28 ton/ac.

(ii) 6.06 ton/ac.

(iii) A vs. other treatments and B effect are significant. Sources, levels of N and their interaction are not significant.

(iv) Av. yield of sugarcane in ton/ac.

A=32.72 ton/ac.					
	$N_1$	$N_2$	Mean	$B_0$	$B_1$
$S_1$	42.86	40.45	41.65	42.96	40.34
$S_2$	40.48	36.61	38.55	41.38	35.72
Mean	41.67	38.53	40.10		
$B_0$	43.00	41.33	42.17		
$B_1$	40.34	35.73	38.03		

1. S.E. of A vs. others

=2.87 ton/ac.

2. S.E. of any marginal mean

=1.35 ton/ac.

3. S.E. of body of table

=1.92 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 53(34).

Site :- Sugarcane. Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To compare the relative efficiency of C/N and A/S.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 29,30.4.1953. (iv) (a) Digging trenches. Deepening drain. (b) Planting in trenches 8" deep. (c) 15,000 three budded setts/ac. (d) 3'-4" between cane rows. (e) —. (v) Nil. (vi) CO.-419. (vii) Irrigated. (viii) 2 hoeings and 5 weedings. (ix) 51.35%. (x) 27 to 31.3.1954.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)+1 extra treatment.

(1) 2 levels of N :  $N_1=100$ ,  $N_2=150$  lb./ac.

(2) 2 sources of N :  $S_1=A/S$ ,  $S_2=C/N$ .

(3) 2 basal dressings :  $B_0$ =No basal dressing and  $B_1=1000$  lb./ac. of lime+Super at 60 lb./ac. of  $P_2O_5$ +C.M. at 5 ton/ac.+Pot. Sulphate at 60 lb./ac. of  $K_2O$ .

Extra treatment *i.e.* A=Lime at 1000 lb./ac.+Super at 60 lb./ac. of  $P_2O_5$ +C.M. at 5 ton/ac.+Pot. Sul at 60 lb./ac. of  $K_2O$ .

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 5. (iv) (a) 46.2' × 23.1'. (b) 39.6' × 16.5'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Cane weight, periodical sampling for juice analysis, jaggery recovery, yield and population (iv) (a) 1952—N.A. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 35.71 ton/ac.

(ii) 3.47 ton/ac.

(iii) Only A vs. others is highly significant. Other effects are not significant.

(iv) Av. yield of sugarcane in ton/ac.

	S <sub>1</sub>	A S <sub>2</sub>	Mean	B <sub>0</sub>	B <sub>1</sub>
	37.23	34.95	36.09	36.21	35.97
N <sub>2</sub>	36.60	36.14	36.37	35.73	37.01
Mean	36.91	35.55	36.23	35.97	36.49
B <sub>0</sub>	36.08	35.87	35.97		
B <sub>1</sub>	37.74	35.23	36.49		

1. S.E. of A vs. others = 1.64 ton/ac.  
 2. S.E. of marginal means = 0.77 ton/ac.  
 3. S.E. of body of table = 1.10 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 53(86).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To find out the effect of different doses of N applied at different times on the yield of Sugarcane.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Clayey loam. (b) Refer soil analysis, Anakapalle. (iii) 31.3.53 to 2.4.53. (iv) (a) N.A. (b) Setts planted. (c) 15000, three budded setts/ac. (d) Rows 3'-4" apart. (e) —. (v) Nil. (vi) CO-419. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 23 to 25.3.1954.

## 2. TREATMENTS :

All combinations of (1) and (2) + one control (no manure).

(1) 2 levels of N as A/S : N<sub>1</sub>=100 and N<sub>2</sub>=200 lb./ac.

(2) 7 times of application of N :

T<sub>1</sub> = Half dose applied at 6 weeks after planting and half at 90—100 days after planting.

T<sub>2</sub> = Half dose applied at 6 weeks after planting and half at 130—140 days after planting.

T<sub>3</sub> = Half dose applied at 6 weeks after planting and half at 170—180 days after planting.

T<sub>4</sub> = Half dose applied at 90—100 days after planting and half at 130—140 days after planting.

T<sub>5</sub> = Half dose applied at 90—100 days after planting and half at 170—180 days after planting.

T<sub>6</sub> = Half dose applied at 130—140 days after planting and half at 170—180 days after planting.

T<sub>7</sub> = Full dose to be applied at 90—100 days after planting.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) (a) 44.9' × 29.7'. (b) 34.3' × 19.8'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Cane weight and growth measurements. (iv) (a) 1953—N.A. (b) and (c) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 40.85 ton/ac.  
 (ii) 5.14 ton/ac.  
 (iii) Only control vs. others effect is significant while N, T and N×T are not significant.  
 (iv) Av. yield of sugarcane in ton/ac.

Control=34.72 ton/ac.

	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	T <sub>4</sub>	T <sub>5</sub>	T <sub>6</sub>	T <sub>7</sub>	Mean
N <sub>1</sub>	41.94	41.55	41.39	40.56	40.23	38.82	42.37	40.98
N <sub>2</sub>	41.72	43.06	40.39	44.72	44.11	37.73	39.43	41.60
Mean	41.83	42.31	40.89	42.64	42.17	38.27	40.90	41.29

S.E. of marginal means of N = 0.97 ton/ac.

S.E. of marginal means of T = 1.82 ton/ac.

S.E. of body of table = 2.57 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 48(70).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'MV'.

Object :—To determine the manurial requirements for different varieties.

## 1. BASAL CONDITIONS :

- (i) (a) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) and (b) N.A. (iii) 28 and 29.3.48. (iv) (a) N.A. (b) Planted. (c) 16000, three budded setts/ac. (d) 2'-8" between rows. (e) N.A. (v) 10 ton/ac. of F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) Trenching on 9th and 10th July 1948. (ix) 34.94%. (x) N.A.

## 2. TREATMENTS :

Main-plot treatments :

2 varieties : V<sub>1</sub>=CO-419 and V<sub>2</sub>=CO-507.

Sub-plot treatments :

3 levels of N : N<sub>1</sub>=100, N<sub>2</sub>=150 and N<sub>3</sub>=200 lb./ac.

N as G.N.C. and A/S in the ratio 1 : 1 applied in 2 equal doses one at planting and one at trenching.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 59.4'×26.4'. (b) 52.8'×21.1'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Yield of cane and sugar. (iv) (a) 1948 to 1950. (b) and (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 36.08 ton/ac.  
 (ii) (a) 5.83 ton/ac.  
 (b) 4.74 ton/ac.  
 (iii) None of the effects is significant.

(iv) Av. yield of sugarcane in ton/ac.

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	Mean
V <sub>1</sub>	36.96	37.11	34.12	36.06
V <sub>2</sub>	37.68	36.93	33.70	36.10
Mean	37.32	37.02	33.91	36.08

S.E. of difference of two

1. V marginal means =1.95 ton/ac.
2. N marginal means =1.92 ton/ac.
3. N means at the same level of V =2.74 ton/ac.
4. V means at the same level of N =2.96 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 49 (65).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'MV'.

Object :-To determine the manurial requirements for different varieties.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) N.A. (ii) (a) N.A. (b) Refer soil analysis, Anakapalle. (ii) 25.3.1949. (iv) (a) N.A. (b) Setts planted. (c) 16000, three budded setts/ac. (d) 2' 8" between rows. (e) N.A. (v) 10 ton/ac. of F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 49.13". (x) N.A.

## 2. TREATMENTS :

Main-plot treatments :

2 varieties : V<sub>1</sub>=CO.419 and V<sub>2</sub>=CO.527.

Sub-plot treatments :

3 levels of N : N<sub>1</sub>=100, N<sub>2</sub>=150 and N<sub>3</sub>=200 lb./ac.

N applied as G.N.C. and A/S in 2 : 1 ratio in two equal doses one at planting and one at trenching (7.6.1949).

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 56' 10" × 26' 4". (b) 52'-10" × 21.2'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Growth measurements, yield of sugarcane and Jaggery. (iv) (a) 1948 to 1950. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 53.55 ton/ac.
- (ii) (a) 6.00 ton/ac.
- (b) 4.45 ton/ac.
- (iii) V effect and interaction N×V is significant.
- (iv) Av. yield of sugarcane in ton/ac.

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	Mean
V <sub>1</sub>	46.17	51.46	52.16	49.93
V <sub>2</sub>	58.15	59.21	54.17	57.18
Mean	52.16	55.33	53.16	53.55

S.E. of difference between two

1. V marginal means =2.00 ton/ac.
2. N marginal means =1.81 ton/ac.
3. N means at the same level of V =2.57 ton/ac.
4. V means at the same level of N =2.90 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 50 (74).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'MV'.

Object :- To determine manurial requirement for different varieties.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) N.A. (ii) Loam. (b) Refer soil analysis, Anakapalle. (iii) 27th and 28th January, 1951. (iv) N.A. (b) Planted. (c) 16000, three-budded setts/ac. (d) 2' 8" between rows. (e) —. (v) 10 ton/ac. of F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 32.81". (x) 28th to 31st March, 1951.

## 2. TREATMENTS :

Main-plot treatments :

2 varieties :  $V_1=CO.419$  and  $V_2=CO.527$ .

Sub-plot treatments :

3 levels of N :  $N_1=100$ ,  $N_2=150$  and  $N_3=200$  lb./ac.

N applied as G.N.C. and A/S in 2 : 1 ratio on N basis in two equal doses one at planting and one at earthing up.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 59.4' × 26.4'. 52.8' × 21.1'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Growth measurements, yield of sugarcane and jaggery. (iv) (a) 1948 to 1950. (b) N.A. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 42.04 ton/ac.  
 (ii) (a) 3.29 ton/ac.  
 (b) 3.14 ton/ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of sugarcane in ton/ac.

	$N_1$	$N_2$	$N_3$	Mean
$V_1$	42.90	43.49	42.32	42.90
$V_2$	40.09	41.54	41.88	41.17
Mean	41.50	42.52	42.10	42.04

S.E. of difference between two

1. V marginal means = 1.10 ton/ac.  
 2. N marginal means = 1.29 ton/ac.  
 3. N means at the same level of V = 1.82 ton/ac.  
 4. V means at the same level of N = 1.84 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 53(33).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'C'.

Object :- To find out the suitability of *rayangan* as seed material as compared to top setts and also to fix the optimum spacing between plants.

## 1. BASAL CONDITIONS

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Anakapalle. (iii) 30.1.1953 to 14.2.1953. (iv) (a) Digging trenches and deepening drain. (b) Planted in trenches. (c) N.A. (d) 3'-4" between rows. in a row : As under treatments. (e) —. (v) 100 lb./ac. of 'N' as A/S applied in 2 doses : 30 lb. at the time of planting and the rest in the 8th week after planting. (vi) CO-419. (vii) Irrigated. (viii) 2 hoeings and 5 weedings. (ix) 51.35". (x) 2nd week of Feb. 1954.

## 2. TREATMENTS :

## Main-plot treatments :

2 seed materials :  $T_1$ =*Royangan* and  $T_2$ =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 ; 3 sub-plots/main-plot. (iii) 6. (iv) (a)  $41.6' \times 26'$ . (b)  $35.6' \times 19.8'$ . (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Good. (ii) Nil. (iii) Sugarcane yield and periodical sampling for juice analysis and jaggery recovery. (iv) (a) 1953—contd. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 43.56 ton./ac.  
 (ii) (a) 5.39 ton./ac.  
 (b) 4.85 ton./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of cane in ton/ac.

	$S_1$	$S_2$	$S_3$	Mean
$T_1$	44.44	44.10	39.44	42.66
$T_2$	42.47	45.75	45.14	44.45
Mean	43.46	44.92	42.29	43.56

## S.E. of difference between two

1. T marginal means = 1.80 ton/ac.  
 2. S marginal means = 1.98 ton/ac.  
 3. S means at the same level of T = 2.80 ton/ac.  
 4. T means at the same level of S = 2.90 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 48(69).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CM'.

Object :- To find out the optimum dose of N and P manures for plant and ratoon crops.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Loam to clay. (b) Refer soil analysis, Anakapalle. (iii) March 1949. (iv) (a) N.A. (b) Planted. (c) 15000, three-budded setts/ac. (d)  $2'-8''$  apart. (e) —. (v) N.A. (vi) CO-419. (vii) Irrigated. (viii) Earthing up and trenching. (ix)  $34.94''$ . (x) March 1949.

## 2. TREATMENTS :

## Main-plot treatments :

2 crops :  $R_1$ =Plant crop and  $R_2$ =1st ratoon crop.

## Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 levels of N :  $N_1=100$ ,  $N_2=150$  and  $N_3=200$  lb./ac.(2) 3 levels of  $P_2O_5$  :  $P_0=0$ ,  $P_1=50$  and  $P_2=100$  lb./ac.N as G.N.C. and A/S in the ratio 2 : 1 on N basis and  $P_2O_5$  as Super applied in two doses half at planting and half at trenching.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 9 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a)  $36'-4'' \times 29'-1''$ . (b)  $24'-5'' \times 23'-9''$ . (v) N.A. (vi) Yes.



## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of sugarcane and sugar. (iv) (a) 1947-1949. (b) N.A. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) In sub-block (1) sugarcane was planted during 1947-1948 and ratoon was kept during 1948-1949 and 1949-50. In sub-block (2) Cholam was planted between August to December and sugarcane was planted during 1948-1949. Its ratoon was kept during 1949-50. In sub-block (3) Cholam and Paddy were planted during 1947-48 and 1949-50. Sugarcane was planted during 1949-50. So, during 1949-50 there were 3 main plots consisting of 2nd ratoon in sub-block (1), 1st ratoon in sub-block (2) and plant crop in sub-block (3).

## 5. RESULTS :

- (i) 36.25 ton/ac.  
 (ii) (a) 9.26 ton/ac.  
 (b) 4.04 ton/ac.  
 (iii) Only the interaction NP is significant. Other effects are not significant.  
 (iv) Av. yield of grain in ton/ac.

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	Mean	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>
R <sub>1</sub>	34.17	37.39	36.44	36.00	35.20	37.11	35.70
R <sub>2</sub>	35.38	36.97	37.16	36.50	35.56	36.59	37.37
Mean	34.76	37.17	36.79	36.25			
P <sub>0</sub>	31.01	37.47	37.60	35.38			
P <sub>1</sub>	36.31	37.57	36.62	36.85			
P <sub>2</sub>	36.96	36.46	36.14	36.53			

S.E. of marginal means of N or P = 0.74 ton/ac.

S.E. of body of table N × P = 1.28 ton/ac.

S.E. of difference between two

1. R marginal means = 1.95 ton/ac.
2. N or P means at the same level of R = 1.47 ton/ac.
3. R means at the same level of N or P = 2.29 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 49(66)/48(69).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CM'.

Object :- To study the comparative effect of combination of graded doses of N and P manures on plant crop and first and second ratoons of Sugarcane.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) As per treatments. (c) As per treatments. (ii) (a) Loam to clay. (b) Refer soil analysis, Anakapalle. (iii) Ratoon II—16.3.47. Ratoon I—25.3.48. Plant crop—18.3.49. (iv) (a) N.A. (b) As per treatments. (c) 15000, three budded setts/ac. (d) 2'-8" between rows. (e) —. (v) 10 ton/ac. of F.Y.M. (vi) CO-419. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 49.13%. (x) 19.2.50.

## 2. TREATMENTS :

Main-plot treatments :

3 crops : R<sub>1</sub>=Plant crop, R<sub>2</sub>=I ratoon crop and R<sub>3</sub>=II ratoon crop.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 levels of N: N<sub>1</sub>=100, N<sub>2</sub>=150 and N<sub>3</sub>=200 lb/ac.

(2) 3 levels of P<sub>2</sub>O<sub>5</sub>: P<sub>0</sub>=0, P<sub>1</sub>=50 and P<sub>2</sub>=100 lb/ac.

N as G.N.C. and A/S mixed in ratio 2:1 and P<sub>2</sub>O<sub>5</sub> as Super, both applied in 2 equal doses one at planting and one at trenching.

## 3. DESIGN :

(i) Split-plot (ii) (a) 3 main-plots/block ; 9 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) 36'-4" × 49'  
(b) 24'-5" × 23'-9". (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Growth measurements, yield of cane and jaggery. (iv) (a) 1947-1949. (b) Yes.  
(c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 38.61 ton/ac.  
(ii) (a) 8.99 ton/ac.  
(b) 4.18 ton/ac.  
(iii) Main-plot treatments effect, and N effect are highly significant.  
(iv) Av. yield of sugarcane in ton/ac.

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	Mean	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>
R <sub>1</sub>	43.71	46.44	46.91	45.68	46.09	44.74	46.23
R <sub>2</sub>	35.86	39.35	39.06	38.10	36.76	38.89	38.61
R <sub>3</sub>	26.94	35.65	33.52	32.04	30.27	33.30	32.52
Mean	35.51	40.48	39.83	39.61			
P <sub>0</sub>	34.13	40.50	38.49	37.71			
P <sub>1</sub>	36.19	40.36	40.42	38.99			
P <sub>2</sub>	36.21	40.58	40.57	39.12			

- S.E. of marginal means of N or P = 0.62 ton/ac.  
S.E. of body of table N × P = 1.08 ton/ac.  
S.E. of difference between two  
1. R marginal means = 1.90 ton/ac.  
2. N or P means at the same level of R = 1.53 ton/ac.  
3. R means at the same level of N or P = 2.27 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 51(12).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CM'.

Object :- To study the effect of time of application, dose of N and population on the efficient utilisation of 'N'.

## 1. BASAL CONDITIONS

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle.  
(iii) 20,21.4.1951. (iv) (a) Digging trenches, planting in trench. (b) Planting. (c) As under treatments.  
(d) 2'-8" between rows. (e) —. (v) 10 ton/ac. of F.Y.M. (vi) CO-419. (vii) Irrigated. (viii) Weeding,  
propping up, etc. (ix) 37.62". (x) 4 to 17.4.51.

## 2. TREATMENTS :

All combinations of (1) and (2) + an extra treatment

- (1) 2 levels of seed rate : R<sub>1</sub> = 16,000 three budded setts/ac. and R<sub>2</sub> = 20,000 three budded setts/ac.  
(2) 4 levels of manure : M<sub>1</sub> = 75 lb./ac. of N applied in single dose at 50 days after planting. M<sub>2</sub> = 75  
lb./ac. of N applied in 2 doses half at 50 days after planting and half at 100 days after  
planting. M<sub>3</sub> = 100 lb./ac. of N applied in one dose at 50 days after planting and M<sub>4</sub> =  
100 lb./ac. of N applied in two doses half at 50 days after planting and half at  
100 days after planting.

Extra treatment : 100 lb./ac. of N,  $\frac{1}{2}$  at planting and  $\frac{1}{2}$  at the time of earthing up with seedrate  
16,000 three budded setts/ac.

## 3. DESIGN:

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 67.3' × 21.1'. (b) 62.7' × 10.6'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Sugarcane yield. (iv) (a) 1951—N.A. (b) and (c) N.A. (v) (a) and (b) Nil, (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 43.00 ton/ac.  
 (ii) 4.06 ton/ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of sugarcane in ton/ac.

Extra treatment = 41.34 ton/ac.					
	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>	Mean
R <sub>1</sub>	42.13	40.82	47.85	46.33	44.28
R <sub>2</sub>	40.85	40.70	43.26	43.68	42.12
Mean	41.49	40.76	45.55	45.00	43.20

S.E. of marginal means of M = 1.43 ton/ac.  
 S.E. of marginal means of R = 1.02 ton/ac.  
 S.E. of body of table = 2.03 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 52(82).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'MV'.

Object :—To study the effect of time of application, dose of N and population on the efficient utilisation of N.

## 1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) N.A. (iv) (a) N.A. (b) Planted. (c) As under treatments. (d) 2'-8" between rows. (e) —. (v) 10 ton/ac. of F.Y.M. (vi) CO-419. (vii) Irrigated. (viii) Weeding, propping up, etc. (ix) N.A. (x) N.A.

## 2. TREATMENTS :

All combinations of (1) and (2) + an extra treatment

(1) 2 levels of seed rate : R<sub>1</sub> = 16,000 three budded setts/ac. and R<sub>2</sub> = 20,000 three budded setts/ac.

(2) 4 manures : M<sub>1</sub> = 75 lb./ac. of N applied in one dose 50 days after planting, M<sub>2</sub> = 75 lb./ac. of N applied in 2 doses half at 50 days after planting and half at 100 days after planting, M<sub>3</sub> = 100 lb./ac. of N applied in one dose 50 days after planting and M<sub>4</sub> = 100 lb./ac. of N applied in two doses half at 50 days after planting and half at 100 days after planting.

Extra treatment : 100 lb./ac. of N applied  $\frac{1}{2}$  at planting and  $\frac{1}{2}$  at the time of earthing up with seed rate 16,000 three budded setts/ac.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 67.3' × 21.1'. (b) 62.7' × 10.6'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Sugarcane yield and population count. (iv) (a) 1951—1952. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS .

- (i) 37.70 ton/ac.  
 (ii) 4.06 ton/ac.  
 (iii) None of the effects is significant.

v) Av. yield of sugarcane in ton/ac.

Extra treatment=37.25 ton/ac.					
	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>	Mean
V <sub>1</sub>	34.25	35.13	37.79	39.66	36.71
V <sub>2</sub>	39.92	38.42	38.72	38.16	38.80
Mean	37.08	36.77	38.25	38.91	37.75

S.E. of marginal mean of M = 1.43 ton/ac.  
 S.E. of marginal mean of R = 1.02 ton/ac.  
 S.E. of body of table = 2.03 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 48(66).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CV'.

Object :—To study the incidence of borer (*Argyria*) in plots planted at monthly intervals from March to June.

#### 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Anakapalle. (iii) As per treatments. (iv) (a) 3 to 4 times ploughing, making ridges and furrows and deepening trenches. (b) Setts planted. (c) 15,000, three budded setts/ac. (d) 2'-7" between rows. (v) 10 ton/ac. of F.Y.M. on 29.2.1948. 100 lb./ac. of N( $\frac{1}{2}$  G.N.C.+ $\frac{1}{2}$  A/S) half at the time of planting and half on 28.7.1948 and 4.9.1948. (vi) As per treatments. (vii) Irrigated. (viii) Earthing up, trenching. (ix) 34.94". (x) 15 to 17.3.1949.

#### 2. TREATMENTS:

Main-plot treatments :

4 times of planting : D<sub>1</sub>=March 1948, D<sub>2</sub>=April 1948, D<sub>3</sub>=May 1948 and D<sub>4</sub>=June 1948.

Sub-plot treatments :

2 varieties V<sub>1</sub>=CO.-419 and V<sub>2</sub>=CO.-475.

#### 3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 2 sub-plots/main-plot. (iii) 4. (iv) (a) 42'×21'. (b) 37.6'×15.8'. (v) N.A. (vi) Yes.

#### 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of cane and jaggery. (iv) (a) 1948—1450. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) Only one S.E. is given in the Annual Report as for R.B.D. The raw data is also not traceable at the Research Station.

#### 5. RESULTS :

(i) 31.79 ton/ac.  
 (ii) N.A.  
 (iii) N.A.  
 (iv) Av. yield of sugarcane in ton/ac.

	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	Mean
V <sub>1</sub>	41.88	35.51	32.26	21.64	32.82
V <sub>2</sub>	39.80	33.37	26.26	23.64	30.77
Mean	40.84	34.44	29.26	22.64	31.79

Crop :- Sugarcane.

Ref :- A.P. 49(55).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CV'.

Object :- To study the incidence of borer (*Argyria*) in plots planted at monthly intervals from March 27th to June 27th.

## 1. BASAL CONDITIONS :

(i) N.A. (b) Paddy. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Anakapalle. (iii) As per treatments. (iv) (a) 3 to 4 ploughings making ridges and furrows. Deepening trenches. (b) Setts planted. (c) 15000, three budded setts/ac. (d) 2'-8" between rows. (e) —. (v) 8 C.L./ac. of F.Y.M. on 25.27.2.1949. 100 lb./ac. of N as G.N.C. and A/S in ratio 2:1 applied in 2 equal doses. First half dose on the date of planting and second half on 13.3.1949 for D<sub>1</sub>, D<sub>2</sub> plantings and on 10.4.1949 for D<sub>3</sub>, D<sub>4</sub> plantings. (vi) As per treatments. (vii) Irrigated. (viii) Wrapping operations on 16.7.1949 and 7.10.1949 for D<sub>1</sub> and D<sub>2</sub> plantings. (ix) 49.81". (x) D<sub>1</sub> and D<sub>2</sub> plantings : 15,16.4.1950.

## 2. TREATMENTS :

Main-plot treatments :

4 dates of planting : D<sub>1</sub>=27.3.1949, D<sub>2</sub>=27.4.1949, D<sub>3</sub>=27.5.1949 and D<sub>4</sub>=27.6.1949.

Sub-plot treatments :

2 varieties : V<sub>1</sub>=CO.-419 and V<sub>2</sub>=CO.-475.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 41'-11" × 21'-2" (b) 37'-7" × 15'-10". (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Cane weight, population count, etc. juice analysis and jaggery recovery. (iv) (a) 1948—1950. (b) No. (c) Nil. (v) (a), (b) Nil, (vi) and (vii) Nil.

## 5. RESULTS :

(i) 27.76 ton/ac.  
 (ii) (a) 4.24 ton/ac.  
 (b) 7.20 ton/ac.  
 (iii) Main effect of dates of planting is significant.  
 (iv) Av. yield of sugarcane in ton/ac.

	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	Mean
V <sub>1</sub>	40.30	33.50	24.90	17.60	29.08
V <sub>2</sub>	33.10	30.30	27.00	15.40	26.45
Mean	36.70	31.90	25.95	16.50	27.76

S.E. of difference between two

1. D marginal means = 2.12 ton/ac.
2. V marginal mean = 2.55 ton/ac.
3. V means at the same level of D = 5.9 ton/ac.
4. D means at the same levels of V = 4.18 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 50(72).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CV'

Object :- To study the incidence of borer in plots planted at monthly intervals from March 27th to June 27th.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Sandy Loam. (b) Refer soil analysis, Anakapalle. (iii) As per treatments. (iv) (a) 3 to 4 ploughing, making ridges and furrows deepening trenches. (b) Setts planted. (c) 15000, three budded setts/ac. (d) 2'8" between rows. (e) —. (v) 20 C.L./ac. of F.Y.M. applied on 22.3.50. 100 lb./ac. of N as mixture of G.N.C. and A/S in 2 : 1 ratio applied in two equal doses. First half dose applied at planting and the second half applied on 22.6.1950 in D<sub>1</sub>, D<sub>2</sub> plantings and on 18.7.1950 in D<sub>3</sub>, D<sub>4</sub> plantings at the time of trenching. (vi) As per treatments. (vii) Irrigated. (viii) Trenching and earthing up. (ix) 33.85". (x) D<sub>1</sub>, D<sub>2</sub> : 17.4.1951 and D<sub>3</sub>, D<sub>4</sub> : 28, 29.4.1951.

**TREATMENTS :****Main plot treatments :**

4 dates of planting :  $D_1=27.3.1950$ ,  $D_2=27.4.1950$ ,  $D_3=27.5.1951$  and  $D_4=27.6.1951$ .

**Sub-plot treatments :**

2 varieties :  $V_1=CO. 419$  and  $V_2=CO. 475$ .

**3. DESIGN :**

(i) Split-plot. (ii) (a) 4 main-plots/block ; 2 sub-plots/main-plot (b) N.A. (iii) 4. (iv) (a)  $42' \times 21'$ . (b)  $37.6' \times 15.3'$  (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Growth measurements and cane weight. (iv) (a) 1948 to 1950. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

- (i) 37.95 ton/ac.  
 (ii) (a) 2.29 ton/ac.  
 (b) 2.72 ton/ac.  
 (iii) All effects are significant.  
 (iv) Av. yield of sugarcane in ton/ac.

	$D_1$	$D_2$	$D_3$	$D_4$	Mean
$V_1$	49.38	46.09	36.59	28.51	40.14
$V_2$	43.94	40.62	28.48	29.93	35.73
Mean	46.66	43.36	32.54	29.22	37.95

**S.E. of difference between two**

1. D marginal means =1.15 ton/ac.  
 2. V marginal means =0.96 ton/ac.  
 3. V means at the same level of D =1.92 ton/ac.  
 4. D means at the same level of V =1.78 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 48 (71).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'CV'.

Object :—To determine the optimum time of harvest for Sugarcane for yield, jaggery, etc.

**I. BASAL CONDITIONS :**

(i) a) Sugarcane-Paddy. (b) Paddy. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Anakapalle. (iii) 13.3.1948 (iv) (a) N.A. (b) Planted. (c) 15,000 three budded setts/ac. (d) Rows  $2' 8''$  apart. (e) —. (v) 10 ton ac. of F.Y.M. and 100 lb./ac. of N as G.N.C and A/S in the ratio of 2 : 1 applied in two equal doses at planting and at trenching. (vi) As per treatments. (vii) Irrigated. (viii) Earthing up, trenching. (ix)  $34' 94''$ . (x) As per treatments.

**2. TREATMENTS :****Main-plot treatments :**

6 times of harvest :  $D_1$ =mid. December 1948,  $D_2$ =mid. January 1949,  $D_3$ =mid. February 1949,  $D_4$ =mid. March 1949,  $D_5$ =April 1949 and  $D_6$ =May 1949.

**Sub-plot treatments :**

2 varieties :  $V_1=CO. 419$  and  $V_2=CO. 527$ .

**3. DESIGN :**

(i) Split-plot (ii) (a) 6 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a)  $49'-6'' \times 21'-1''$  (b)  $41'3'' \times 15'10''$ . (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Yield of cane and jaggery. (iv) (a) 1946 to 1948. (b) N.A. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 31.70 ton/ac.  
 (ii) (a) 4.84 ton/ac.  
 (b) 3.33 ton/ac.  
 (iii) V effect is highly significant. Other effects are not significant.  
 (iv) Av. yield of cane in ton/ac.

	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	D <sub>5</sub>	D <sub>6</sub>	Mean
V <sub>1</sub>	32.71	36.80	34.98	39.50	36.47	39.62	36.68
V <sub>2</sub>	25.24	28.45	23.45	25.60	27.39	30.24	26.73
Mean	28.97	32.62	29.22	32.55	31.93	34.93	31.70

S.E. of the difference between two

1. D marginal means = 2.42 ton/ac.  
 2. V marginal means = 0.96 ton/ac.  
 3. V means at the same level of D = 2.36 ton/ac.  
 4. D means at the same level of V = 2.94 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 48 (67).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'T'.

Object :- To determine the water requirements of Sugarcane.

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) Jowar. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 10.5.1948.  
 (iv) (a) 3 to 4 ploughings, making ridges and furrows, deepening trenches. (b) Planted. (c) 15,000, three budded setts/ac. (d) 2'-8" rows. (e) —. (v) 10 ton/ac. of F.Y.M. and 100 lb./ac. of N ( $\frac{2}{3}$  G.N.C. +  $\frac{1}{3}$  A/S) applied in two doses on 10.5.1948 and 21.7.1948. (vi) CO.-419. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 34.92". (x) 6 and 7.4.1949.

## 2. TREATMENTS :

1. Irrigation once in 12 days. (Total quantity of water by irrigation 33.86"/ac.)  
 2. Irrigation once in 18 days. (Total quantity of water by irrigation 21.02"/ac.)  
 3. Irrigation once in 24 days. (Total quantity of water by irrigation 19.93"/ac.)

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 62'-8" x 26'-6". (b) 51'-6" x 15'-10". (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Yield of sugarcane and jaggery. (iv) (a) 1948 to 1950. (b) No. (c) Nil.  
 (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 35.00 ton/ac.  
 (ii) 2.94 ton/ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of sugarcane in ton/ac.

Treatments	Av. yield
1.	34.34
2.	36.63
3.	34.03
S.E./mean	= 1.20 ton/ac.

**Crop :- Sugarcane.**

**Ref :- A.P. 49 (59).**

**Site :- Sugarcane Res. Stn., Anakapalle.**

**Type :- 'I'.**

**Object :-**To evaluate the water requirements of Sugarcane.

**1. BASAL CONDITIONS :**

(i) (a) N.A. (b) Jowar. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 6.4.1949. (iv) (a) 3 to 4 ploughings, making ridges and furrows and deepening trenches. (b) Planted. (c) 15,000 three budded setts/ac. (d) 2' 8" apart. (e) —. (v) 10 ton/ac. of F.Y.M. and 100 lb./ac. of N ( $\frac{3}{4}$  G.N.C. +  $\frac{1}{4}$  A/S) applied in two doses on 6.4.1949 and 15.6.1949. (vi) CO. 419. (vii) As per treatments. (viii) Earthing up and trenching. (ix) 49.34%. (x) 28, 29.3.1950.

**2. TREATMENTS :**

1. Irrigation once in 12 days. (Total quantity of water by irrigation 18.37"/ac.)  
2. Irrigation once in 18 days. (Total quantity of water by irrigation 11.65"/ac.)  
3. Irrigation once in 24 days. (Total quantity of water by irrigation 11.23"/ac.)

**3. DESIGN :**

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 89'-1" × 25'-1". (b) 75'-11" × 10'-3". (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Growth measurements, yield of sugarcane and Jaggery. (iv) (a) 1948 to 1950. (b) No. (c) Nil. (v) (a) Nil. (b) Nil. (vi) and (vii) Nil.

**5. RESULTS :**

(i) 35.92 ton/ac.  
(ii) 2.23 ton/ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	39.28
2.	34.91
3.	33.58
S.E./mean	= 0.91 ton/ac.

**Crop :- Sugarcane.**

**Ref :- A.P. 50(70).**

**Site :- Sugarcane Res. Stn., Anakapalle.**

**Type :- 'I'.**

**Object :-**To find out the water requirements of Sugarcane plant crop.

**1. BASAL CONDITIONS :**

(i) (a) N.A. (b) Jowar. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 8.4.1950. (iv) (a) 3 to 4 ploughings, making ridges and furrows and deepening trenches. (b) Planted. (c) 15,000 three budded setts/ac. (d) Sugarcane rows 2' 8" apart. (e) —. (v) 10 ton/ac. of F.Y.M. and 100 lb./ac. of N ( $\frac{3}{4}$  as G.N.C. and  $\frac{1}{4}$  as A/S) applied in two equal doses on 8.4.50 and 27.6.53. (vi) CO. 419. (vii) As per treatments (viii) Earthing up and trenching. (ix) 33.85%. (x) 4 to 12.4.51.

**2. TREATMENTS :**

1. Irrigation once in 12 days. (Total quantity of water by irrigation 15.79"/ac.)  
2. Irrigation once in 18 days. (Total quantity of water by irrigation 13.76"/ac.)  
3. Irrigation once in 24 days. (Total quantity of water by irrigation 10.87"/ac.)

**3. DESIGN :**

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 62.7' × 26.4'. (b) 51.5' × 15.8'. (v) N.A. (vi) Yes.

**4. GENERAL :**

(i) Satisfactory. (ii) Nil. (iii) Sugarcane weight and growth measurements at harvest. (iv) (a) 1948 to 1950. (b) and (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.



## 5. RESULTS :

- (i) 44.80 ton/ac.  
 (ii) 6.34 ton/ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	47.96
2.	45.37
3.	41.06
S.E./mean	= 2.59 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 50(67).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'P'.

Object :- To determine the water requirements of the ratoon Sugarcane crop.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane (planted). (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 18.4.1950 (ratooning). (iv) (a) 3 to 4 ploughings, making ridges and furrows and deepening trenches. (b) Plant crop ratooned. (c) 15,000 three budded setts/ac. for the plant crop. (d) Sugarcane rows 2' 8" apart. (e) —. (v) 10 ton/ac. of F.Y.M. applied just before planting and 100 lb./ac. of N ( $\frac{2}{3}$  G.N.C. and  $\frac{1}{3}$  A/S) applied in two equal doses on 8.5.50 and 30.6.1950. (vi) CO-419. (vii) As per treatments. (viii) Earthing up and trenching. (ix) 33.47". (x) 29.3.1951 to 3.4.1951.

## 2. TREATMENTS :

- Irrigation once in 12 days. (Total quantity of water by irrigation 8.53"/ac.)
- Irrigation once in 18 days. (Total quantity of water by irrigation 6.21"/ac.)
- Irrigation once in 24 days. (Total quantity of water by irrigation 5.34"/ac.)

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 21.1' x 8.9'. (b) 15.6' x 7.6'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of sugarcane and growth measurements at harvest. (iv) (a) 1950-1951. (b) and (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 38.64 ton/ac.  
 (ii) 3.12 ton/ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
1.	37.84
2.	39.54
3.	38.53
S.E./mean	= 1.27 ton/ac.

Crop :- Sugarcane. (ratoon)

Ref :- A.P. 51(51).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'P'.

Object :- To study the water requirement of first ratoon Sugarcane crop.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane (plant crop). (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 12.4.1951 (ratooning date). (iv) (a) Making ridges. (b) Planting in ridge. (c) 15,000 three budded setts/ac. (d) 2' 8" (e) —. (v) 10 ton/ac. of F.Y.M. and 100 lb./ac of N ( $\frac{2}{3}$  as G.N.C. and  $\frac{1}{3}$  as A/S) in two equal doses applied on 9.5.1951. and 20.6.1951. (vi) CO.-419. (vii) As per treatments. (viii) Weeding, propping up, etc. (ix) 46.54". (x) 23, 28.12.1951.

## 2. TREATMENTS :

1. Irrigation once in 12 days. (Total quantity of water by irrigation 13.15"/ac.).
2. Irrigation once in 13 days. (Total quantity of water by irrigation 6.56"/ac.).
3. Irrigation once in 24 days. (Total quantity of water by irrigation 5.98"/ac.).

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 62.7' × 26.4' (b) 51.5' × 15.8'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Crop lodged very badly due to heavy rains and gale during November. (ii) Nil. (iii) Cane weight, mill-yard data, juice analysis, etc. (iv) (a) 1950-1951. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 42.20 ton/ac.  
 (ii) 2.30 ton/ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of Sugarcane in ton/ac.

Treatment	Av. yield
1.	44.93
2.	40.85
3.	40.81
S.E./mean	= 0.94 ton/ac.

Crop :- Sugarcane.

Site :- Sugarcane Res. Stn , Anakapalle.

Ref :- A.P. 51(34).

Type :- 'IM'.

Object :- To study the water requirements of Sugarcane plant crop in relation to manure.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Fodder Jowar. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 6.2.1951.  
 (iv) (a) N.A. (b) planted. (c) 15,000, three-budded setts/ac. (d) 2'8" between rows. (e) —. (v) Nil.  
 (vi) CO-419. (vii) Irrigated. (viii) Weeding, wrapping and propping up. (ix) 47.07%. (x) 12, 14.2.52.

## 2. TREATMENTS :

## Main-plot treatments :

2 intervals of Irrigation : I<sub>1</sub> = Once in 12 days and I<sub>2</sub> = Once in 24 days.

## Sub-plot treatments :

3 manures : M<sub>1</sub> = 100 lb./ac. of N as A/S, M<sub>2</sub> = 100 lb./ac. of N as G.N.C. and M<sub>3</sub> = 100 lb./ac. of N as A/S and G.N.C. in 1:2 ratio on the basis of N.

Manures applied in 2 equal doses, half at planting and half at earthing up time.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 42.9' × 31.7'. (b) (b) 36.3' × 21.1'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Cane yield and population count. (iv) (a) 1951—1953. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 52.43 ton/ac.  
 (ii) (a) 4.47 ton/ac.  
 (b) 2.10 ton/ac.  
 (iii) None of the effects is significant.

(iv) Av. yield of cane in ton/ac.

	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	Mean
I <sub>1</sub>	55.62	53.15	55.22	54.70
I <sub>2</sub>	48.38	49.99	52.12	50.16
Mean	52.00	51.57	53.72	52.43

S.E. of difference between two

1. I marginal means = 1.82 ton/ac.
2. M marginal means = 1.05 ton/ac.
3. M means at the same level of I = 1.49 ton/ac.
4. I means at the same level of M = 2.19 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 52(81).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'IM'.

Object :- To study the water requirements of Sugarcane plant crop in relation to manure.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) N.A. (iv) (a) N.A. (b) Planted. (c) 15,000, three-budded setts/ac. (d) 2'8" between sugarcane rows. (e) —. (v) Nil. (vi) CO.419. (vii) Irrigated. (viii) Weeding, wrapping and propping up. (ix) N.A. (x) N.A.

## 2. TREATMENTS :

Main-plot treatments:

2 irrigations : I<sub>1</sub> = Once in 12 days and I<sub>2</sub> = Once in 24 days.

Sub-plot treatments :

3 manures : M<sub>1</sub> = 100 lb./ac. of N as A/S, M<sub>2</sub> = 100 lb./ac. of N as G.N.C. and M<sub>3</sub> = 100 lb./ac. of N as A/S and G.N.C. in 1 : 2 ratio on the basis of N.

Manures applied in 2 equal doses half at planting and half at earthing up time.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 37.6' × 34.3'. (b) 28.4' × 23.8'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Sugarcane yield and population count. (iv) (a) 1951—1953. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 59.77 ton/ac.  
 (ii) (a) 6.80 ton/ac  
 (b) 5.59 ton/ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of sugarcane in ton/ac.

	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	Mean
I <sub>1</sub>	62.52	60.30	60.90	61.17
I <sub>2</sub>	59.28	55.85	59.94	58.36
Mean	60.80	58.08	60.42	59.77

S.E. of difference of two

1. I marginal means = 2.78 ton/ac.
2. M marginal means = 2.80 ton/ac.
3. M means at the same level of I = 3.95 ton/ac.
4. I means at the same level of M = 4.26 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 53(84).

Site :- Sugarcane Res. Stn., Anakapalle

Type :- 'IM'.

Object :- To study the water requirements of sugarcane plant crop in relation to manure.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Fodder Jowar. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 1.2.1953. (iv) (a) N.A. (b) Planted. (c) 15,000 three-budded setts/ac. (d) 3' 4" between sugarcane rows. (e) —. (v) Nil. (vi) CO. 419. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 35.66". (x) 5.2.1954.

## 2. TREATMENTS :

Main-plot treatments :

2 irrigations :  $I_1$  = Once in 12 days and  $I_2$  = Once in 24 days.

Sub-plot treatments :

3 manures :  $M_1$  = 100 lb./ac. of N as A/S,  $M_2$  = 100 lb./ac. of N as G.N.C. and  $M_3$  = 100 lb./ac. of N as A/S and G.N.C. in ratio 1 : 2 on the basis of N.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot (b) N.A. (iii) 4. (iv) (a) 55.4' × 19.8'. (b) 50.2' × 13.2'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Sugarcane yield and growth measurements. (iv) (a) 1951—1954. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data is N.A.

## 5. RESULTS :

(i) 38.37 ton/ac.  
 (ii) N.A.  
 (iii) Only M effect is significant.  
 (iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield	Treatment	Av. yield
$I_1$	39.72	$M_1$	40.96
$I_2$	37.62	$M_2$	38.94
		$M_3$	35.19
S.E./mean	= 1.28 ton/ac.	S.E./mean	= 1.25 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 52 (83).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'IM'.

Object :- To study the water requirements of Sugarcane ratoon crop in relation to N manure.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) N.A. (iv) (a) N.A. (b) Ratooned. (c) 15,000 three-budded setts/ac. (d) 2 8" between rows for plant crop. (e) N.A. (v) Nil. (vi) CO.419. (vii) Irrigated. (viii) Weeding, wrapping and propping up. (ix) N.A. (x) N.A.

## 2. TREATMENTS :

Main-plot treatments :

2 Irrigations :  $I_1$  = Irrigation once in 12 days and  $I_2$  = Irrigation once in 24 days.

Sub-plot treatments :

3 manures :  $M_1$  = 100 lb./ac. of N as A/S,  $M_2$  = 100 lb./ac. of N as G.N.C. and  $M_3$  = 100 lb./ac. of N as A/S and G.N.C. in ratio 1 : 2 on the basis of N.

Manures applied in two equal doses half at planting and half at earthing up.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 42.9' × 31.7'. (b) 36.3' × 21.1'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield and population count. (iv) (a) 1952 to 1954. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 33.98 ton/ac.  
 (ii) (a) 4.07 ton/ac.  
 (b) 1.93 ton/ac.  
 (iii) Only M effect is significant.  
 (iv) Av. yield of sugarcane in ton/ac.

	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	Mean
I <sub>1</sub>	37.69	32.27	34.23	34.73
I <sub>2</sub>	35.32	30.70	33.71	33.24
Mean	36.50	31.49	33.97	33.98

## S.E. of difference of two

1. I marginal means = 1.66 ton/ac.  
 2. M marginal means = 0.96 ton/ac.  
 3. M means at the same level of I = 1.36 ton/ac.  
 4. I means at the same level of M = 2.00 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 53 (85).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'IM'.

Object :- To study water requirements of Sugarcane ratoon crop in relation to manure.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Sugarcane. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Anakapalle. (iii) 7, 8.4.1953 (ratooning). (iv) (a) N.A. (b) Ratooned. (c) —. (d) 2'8" between rows. (e) —. (v) Nil. (vi) CO.419. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 35.66%. (x) 28, 29.12.1953.

## 2. TREATMENTS :

Main-plot treatments :

2 Irrigation : I<sub>1</sub> = Irrigation once in 12 days and I<sub>2</sub> = Irrigation once in 24 days.

Sub-plot treatments :

3 manures : M<sub>1</sub> = 100 lb./ac. of N as A/S, M<sub>2</sub> = 100 lb./ac. of N as G.N.C. and M<sub>3</sub> = 100 lb./ac. of N as A/S and G.N.C. in 1 : 2 ratio on the basis of N.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 33.7' × 34.2', (b) 28.4' × 23.8'. (v) Yes. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Growth measurements. (iv) (a) 1952 to 1954. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data is not traceable at the research station. Hence two way table is not given.

## 5. RESULTS :

- (i) 32.61 ton/ac.  
 (ii) N.A.  
 (iii) Both I and M effects are not significant.  
 (iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield
I <sub>1</sub>	35.05
I <sub>2</sub>	30.17
S.E./mean	= 1.66 ton/ac.

Treatment	Av. yield
M <sub>1</sub>	33.10
M <sub>2</sub>	30.78
M <sub>3</sub>	33.99
S.E./mean	= 1.19 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 51 (16).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'D'.

Object :- To estimate the loss in yield due to the attack of smuts.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) F.Y.M. and A/S. Quantity N.A. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 5.4.1951. (iv) (a) Digging of trenches. (b) Setts are planted in trenches. (c) N.A. (d) 5 links between rows. (e) —. (v) 10 tons ac. of F.Y.M. 100 lb. of N in the form of A/S in two doses, first dose 45 days after planting and the second dose 90 days after planting. (vi) CO. 419. (vii) Irrigated. (viii) 3 or 4 weedings, wrapping and propping up 3 times. (ix) 37.62%. (x) 7.3.1952.

## 2. TREATMENTS :

1. Healthy setts planted.
2. Setts inoculated with smut pores and planted.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 62'×10.6'. (b) 62'×5.3'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Incidence of smuts for each clump, length, and weight of canes. (iv) (a) 1951 to 1954. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data not available.

## 5. RESULTS :

(i) to (iv)

Particulars	Treatments		S.E. of mean diff.
	1	2	
1. Av. no. of milleable cane/clump.	3.72	2.84	0.1427
2. Av. weight of milleable cane/clump in lb.	14.15	8.62	0.5006
3. Av. length of cane in inches.	124.75	108.33	2.0949
4. Av. no. of inter nodes/cane	25.33	22.25	0.4054
5. Av. girth of cane in cm.	2.63	2.39	0.0480
6. Av. wt. of single cane in lb.	3.80	3.04	0.0558
7. No. of cane studied	307	283	

The treatments are significantly different for all the Characters studied.

Crop :- Sugarcane.

Ref :- A.P. 52 (2).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'D'.

Object :- To estimate the loss in yield due to smuts.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane-Paddy. (b) Paddy. (c) F.Y.M. and A/S. Quantities N.A. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 21.3.1952. (iv) (a) Digging of trenches (b) Setts planted in trenches. (c) N.A. (d) 3' 4" between rows. (e) —. (v) 10 ton/ac. of F.Y.M. 100 lb./ac. N as A/S in two doses; first dose 45 days after planting and the second 90 days after planting. (vi) CO : 419. (vii) Irrigated. (viii) 3 or 4 weedings, wrapping and propping up 3 times. (ix) N.A. (x) 19 to 23.2.1953.

## 2. TREATMENTS :

1. Healthy sets planted.
2. Setts inoculated with smut pores and planted.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 62'×10.6' (b) 62'×5.3'. (v) N.A. (vi) Yes

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Incidence of smuts for each clump, Length, wt. etc. (iv) (a) 1951 to 1954. (b) No. (c) N.A. (v) (a) (b) Nil. (vi) Nil. (vii) Raw data not available.

## 5. RESULTS :

(i) to (iv).

Particulars	Treatments		S.E. of mean diff.	Significant or not
	1	2		
1. Av. no. of milleable cane/clump	3.64	1.96	0.0876	Yes
2. Av. weight of milleable cane/clump in lb.	12.56	5.57	0.3026	Yes
3. Av. length of cane in inches	120.01	108.03	2.2035	Yes
4. Av. number of internodes/cane	24.07	22.43	0.5183	Yes
5. Av. girth of cane in centimeter	2.37	2.28	0.0621	No
6. Av. weight of single cane in lb.	3.43	2.86	0.0838	Yes
7. No. of canes studied	481	756		

Crop :- Sugarcane.

Ref :- A.P. 53(30).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'D'.

Object :—To estimate the loss in yield due to attack of smuts.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) F.Y.M. and A/S. Quantity N.A. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 4.5.1953. (iv) (a) Digging trenches in which cane setts are planted. (b) —. (c) N.A. (d) 3' 4" between rows. (e) —. (v) 10 ton/ac. of F.Y.M. 100 lb./ac. of N as A/S in two doses first dose 45 days after planting and the second 90 days after planting. (vi) CO.419. (vii) Irrigated. (viii) 3 to 4 weedings, wrapping and propping up 3 times. (ix) N.A. (x) 4 to 9.1.1954.

## 2. TREATMENTS :

1. Healthy setts planted.
2. Setts inoculated with smut pores and planted.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 62' × 10.6'. (b) 62' × 5.3'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Incidence of smuts for each clump length and weight of canes. (iv) (a) 1951—1954. (b) Nil. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data not available.

## 5. RESULTS :

(i) to (iv)

Particulars	Treatments		S.E. of mean difference	Significant or not
	1	2		
1. Av. number of milleable canes/clump	4.37	2.23	0.239	Yes
2. Av. weight of milleable cane/clump in lb.	10.43	4.97	0.588	Yes
3. Av. length of milleable cane in feet	7.35	6.96	0.314	No
4. Av. no. of internodes/cane	21.05	21.01	0.721	No
5. Av. girth of cane in centimeter	2.39	2.28	0.229	No
6. Av. wt. of single cane in lb.	2.43	2.23	0.169	No
7. Av. cane yield in ton/ac.	23.97	21.33		

Crop :- Sugarcane.

Ref :- A.P. 48(72).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'D'.

Object:—To find out the protective and stimulating effect of immersion of setts in bordeaux mixture and water for different periods on germination and growth under irrigated and unirrigated conditions.

## 1. BASAL CONDITIONS

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 17,18.5.1948. (iv) (a) N.A. (b) Setts planted. (c) 15,000 three-budded setts/ac. (d) Rows 2' 8" apart. (e) —. (v) 10 ton/ac. of compost applied on Feb. 48+100 lb. of N in the form of G.N.C. and A/S in 2 : 1 proportion on N basis in two doses, half dose on 17,18.5.1948 and half on 16,17.7.1948. (vi) N.A. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 34.94". (x) 22 to 26.4.1949.

## 2. TREATMENTS :

## Main-plot treatments :

2 levels of irrigation :  $I_0$ =No irrigation during the period of germination and  $I_1$ =Irrigation.

## Sub-plot treatments :

7 ways of immersing :  $M_0$ =No immersing,  $M_1$ =Immersing the setts in running water for 6 hours.

$M_2$ =Immersing the setts in running water for 12 hours.

$M_3$ =Immersing the setts in running water for 24 hours.

$M_4$ =Immersing the setts in Bordeaux mixture 1% for 6 hours.

$M_5$ =Immersing the setts in Bordeaux mixture 1% for 12 hours.

$M_6$ =Immersing the setts in Bordeaux mixture 1% for 24 hours.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 31.7'×10.6' (b) 26.4'×5.3'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield and growth measurements. (iv) (a) 1948-49. (b) and (c) No. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 37.89 ton/ac.

(ii) (a) 10.56 ton/ac.

(b) 7.62 ton/ac.

(iii) Only main-plot treatments effect is significant.

(iv) Av. yield of sugarcane in ton/ac.

	$M_0$	$M_1$	$M_2$	$M_3$	$M_4$	$M_5$	$M_6$	Mean
$I_0$	39.48	34.62	36.29	37.25	34.71	32.71	34.15	35.60
$I_1$	39.99	37.76	37.64	38.78	39.75	42.34	44.80	40.17
Mean	39.74	36.19	36.97	38.02	37.28	37.53	39.48	37.89

## S.E. of difference of two

1. I marginal means =2.31 ton/ac.
2. M marginal means =3.11 ton/ac.
3. M means at the same level of I =4.40 ton/ac.
4. I means at the same level of M =4.68 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 49(63).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'DI'.

Object :- To find out the protective and stimulating effect of immersion of setts in bordeaux mixture and water for different periods on germination and growth under irrigated and non-irrigated conditions.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 20, 21.4.1949. (iv) (a) N.A. (b) Setts planted. (c) 15,000 three-budded setts/ac. (d) rows 2'8" apart. (e) —. (v) 10 tons of F.Y.M. applied in February 1949 and 100 lb. of N in the form of G.N.C. and A.S in 2 : 1 proportion on N basis, half applied on 20, 21.4 1949 and half applied on 15.6.1949. (vi) N.A. (vii) As per treatments. (viii) Earthing up and trenching. (ix) 49.13". (x) 10 to 12.3.1950.

## 2. TREATMENTS :

## Main-plot treatments :

2 levels of irrigation :  $I_0$ =No irrigation during the period of germination and  $I_1$ =Irrigated.

## Sub-plot treatments :

7 ways of immersing :  $M_0$ = No immersing,  $M_1$ =Immersing the setts in running water for 6 hours.

$M_2$ =Immersing the setts in running water for 12 hours.

$M_3$ =Immersing the setts in running water for 24 hours.

$M_4$ =Immersing the setts in bordeaux mixture 1% for 6 hours.

$M_5$ =Immersing the setts in bordeaux mixture 1% for 12 hours.

$M_6$ =Immersing the setts in bordeaux mixture 1% for 24 hours.



## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 31'8"×10'7". (b) 26' 4"×5' 3½". (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Growth measurements, yield of sugarcane, *jaggery*. (iv) (a) 1948-1949. (b) No. (c) Nil. (v) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 38.74 ton/ac.  
 (ii) (a) 12.05 ton/ac.  
 (b) 8.73 ton/ac.  
 (iii) Only sub-plot treatments effect is significant.  
 (iv) Av. yield of sugarcane in ton/ac.

	M <sub>0</sub>	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>	M <sub>5</sub>	M <sub>6</sub>	Mean
I <sub>0</sub>	41.33	35.06	31.27	37.39	33.60	40.01	41.97	37.23
I <sub>1</sub>	42.59	35.74	39.32	37.87	37.87	39.57	48.80	40.25
Mean	41.96	35.40	35.30	37.63	35.73	39.79	45.38	38.74

S.E of difference of two

1. I marginal means =2.63 ton/ac.
2. M marginal means =3.56 ton/ac.
3. M means at the same level of I =5.04 ton/ac.
4. I means at the same level of M =5.36 ton/ac.

Crop :- Sugarcane.

Site :- Sugarcane Res. Stn., Anakapalle.

Ref :- A.P. 48(73).

Type :- 'DI'.

Object :- To find out the protective and stimulating effect of treatment of setts with fungicides on germination and yield of Sugarcane.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 15.5.1948. (iv) (a) N.A. (b) Setts planted. (c) 15,000, three-budded setts/ac. (d) 2'8" between rows. (e)—. (v) 10 tons of F.Y.M. applied in Feb. 1948+100 lb. of N as G.N.C. and A/S in 2 : 1 ratio on N basis applied ; half on 15.5.1948 and half on 13, 14.7.1948. (vi) N.A. (vii) As per treatments. (viii) Earthing up and trenching. (ix) 34.94". (x) April, 1949.

## 2. TREATMENTS :

Main-plot treatments :

2 levels of irrigation : I<sub>0</sub>=No irrigation for 2 months from the date of planting and I<sub>1</sub>=Irrigated.

Sub-plot treatments :

7 ways of dipping : M<sub>0</sub>=Control, M<sub>1</sub>=Agrosan—1 lb. in 10 gallons of water, M<sub>2</sub>=Agrosan—2 lb. in 10 lb. gallons of water.

M<sub>3</sub>=Ceresan—1 lb. in 10 gallons of water.

M<sub>4</sub>=Ceresan—2 lb. in 10 gallons of water.

M<sub>5</sub>=Bordeaux paste.

M<sub>6</sub>=Soaking for 6 hours in bordeaux mixture of 1%

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 31.7'×10.6'. (b) 26.4'×5.3'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Growth measurements, yield of sugarcane and *jaggery*. (iv) (a) 1948—1950. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 37.20 ton/ac.  
 (ii) (a) 8.995 ton/ac.  
      (b) 5.369 ton/ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of sugarcane in ton/ac.

	M <sub>0</sub>	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>	M <sub>5</sub>	M <sub>6</sub>	Mean
I <sub>0</sub>	35.50	32.96	35.85	32.96	36.03	38.71	31.32	34.76
I <sub>1</sub>	41.26	39.03	37.70	39.31	40.70	39.13	40.42	39.65
Mean	38.38	36.00	36.77	36.13	38.36	38.92	35.87	37.20

S.E. of difference of two

1. I marginal means =2.40 ton/ac.
2. M marginal means =2.69 ton/ac.
3. M means at the same level of I =3.80 ton/ac.
4. I means at the same level of M =4.26 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 49(64).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'DP'.

Object :—To find out the protective and stimulating effect of treatment of setts with fungicides on germination and yield of cane.

## 1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) Loamy. (b) N.A. (iii) 5.4.1949. (iv) (a) N.A. (b) Setts planted. (c) 15,000 three-budded setts/ac. (d) Cane rows 2' 8" apart. (e)—(v) 10 tons of F.Y.M. applied in Feb. 1949 + 100 lb./ac. of N. as G.N.C. and A/S in 2:1 proportion on basis of N ; half applied on 5.4.1949 and half on 15.6.1949. (vi) N.A. (vii) As per treatments. (viii) Earthing up and trenching. (ix) 49.13" (x) 8, 9. 3. 1950.

## 2. TREATMENTS :

Main-plot treatments :

2 levels of irrigation : I<sub>0</sub>=No Irrigation for 2 months from the date of planting and I<sub>1</sub>=Irrigated.

Sub-plot treatments :

7 ways of dipping : M<sub>0</sub>=Control, M<sub>1</sub>=Agrosan—1 lb. in 10 gallons of water. M<sub>2</sub>=Agrosan—2 lb. in 10 gallons of water.  
 M<sub>3</sub>=Ceresan—1 lb. in 10 gallons of water.  
 M<sub>4</sub>=Ceresan—2 lb. in 10 gallons of water.  
 M<sub>5</sub>=Bordeaux paste.  
 M<sub>6</sub>=Soaking for 6 hours in Bordeaux mixture of 1 %

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 31' 8" × 10' 7". (b) 26' 4" × 5' 4". (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Growth measurements, yield of cane and jaggery. (iv) (a) 1943—1950. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 37.31 ton/ac.  
 (ii) (a) 10.90 ton/ac.  
      (b) 6.96 ton/ac.  
 (iii) None of the effects is significant.

(iv) Av. yield of sugarcane in ton/ac.

	M <sub>0</sub>	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	M <sub>4</sub>	M <sub>5</sub>	M <sub>6</sub>	Mean
I <sub>0</sub>	38.50	34.11	36.45	35.23	35.02	27.24	37.32	34.84
I <sub>1</sub>	38.05	41.96	43.35	40.88	41.82	32.78	39.62	39.78
Mean	38.27	38.03	39.90	38.06	38.42	30.01	38.47	37.31

S.E. of difference of two

1. I marginal means = 2.91 ton/ac.
2. M marginal means = 3.48 ton/ac.
3. M means at the same level of I = 4.92 ton/ac.
4. I means at the same level of M = 5.41 ton/ac.

Crop :- Sugarcane.

Ref :- A.P. 50(73).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'DI'.

Object :- To find out the protective and stimulating effect of treatment of setts with fungicides on germination and stand.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Anakapalle. (iii) 29.3.1950. (iv) (a) 3 to 4 ploughing, making ridges and furrows and deepening trenches. (b) Setts planted. (c) 15,000 three-budded setts/ac. (d) Cane rows 2'-8" apart. (e) —. (v) 10 ton/ac. of F.Y.M. + 100 lb./ac. of N in form of G.N.C. and A/S in 2:1 ratio on N basis. (vi) CO.419. (vii) Irrigated. (viii) Earthing up and trenching. (ix) 33.85%. (x) 26.2.1951.

## 2. TREATMENTS :

Main-plot treatments :

2 levels of irrigation : I<sub>0</sub> = No irrigation for 2 months from the date of planting and I<sub>1</sub> = Irrigated.

Sub-plot treatments :

7 ways of dipping : M<sub>0</sub> = Control, M<sub>1</sub> = Agrosan—1 lb in 10 gallons of water, M<sub>2</sub> = Agrosan—2 lb. in 10 gallons of water.M<sub>3</sub> = Ceresan—1 lb. in 10 gallons of water.M<sub>4</sub> = Ceresan—2 lb. in 10 gallons of water.M<sub>5</sub> = Bordeaux paste.M<sub>6</sub> = Soaking for 6 hours in Bordeaux mixture of 1 %.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 7 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 31.7' × 10.6'. (b) 26.4' × 5.3' (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cane weight and growth measurements. (iv) (a) 1948—1950. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) 46.71 ton/ac.

(ii) N.A.

(iii) Only M and I effects are highly significant.

(iv) Av. yield of sugarcane in ton/ac.

Treatment	Av. yield	Treatment	Av. yield
I <sub>0</sub>	42.12	M <sub>0</sub>	48.67
I <sub>1</sub>	51.30	M <sub>1</sub>	51.16
S.E./mean	= 2.50 ton/ac.	M <sub>2</sub>	44.50
		M <sub>3</sub>	45.47
		M <sub>4</sub>	49.70
		M <sub>5</sub>	45.69
		M <sub>6</sub>	41.76
		S.E./mean	= 2.76 ton/ac.

Crop :- Cotton.

Ref :- A.P. 50 (60).

Site :- Lam Farm, Guntur.

Type :- 'M'.

Object :-To study the effect of previous leguminous crops on the succeeding Cotton crop.

## 1. BASAL CONDITIONS :

(i) (a) Jowar-Groundnut-Redgram-Cotton. (b) As under treatments. (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) N.A. (iv) (a) N.A. (b) Drilled. (c) to (e) N.A. (v) Nil. (vi) *Cocanadas* 1. (vii) Rainfed. (viii) 2 or 3 weedings, and thinning, interculture with *H.M. Guntaka*. (ix) 9.41" (Sept. 1950 to April 1951). (x) N.A.

## 2. TREATMENTS :

## Main-plot treatments :

All combinations of (1) and (2)

(1) 5 previous crops : Jowar, Groundnut, Redgram, Jowar+Redgram and Groundnut+Redgram.

(2) 2 levels of  $P_2O_5$  as Super ( $P_2O_5$  applied to plots in 1949) :  $P_0=0$ , and  $P_1=30$  lb./ac. of  $P_2O_5$ .

## Sub-plot treatments :

2 levels of N :  $N_0=0$ , and  $N_1=30$  lb./ac. of N as A/S applied to cotton crop before sowing.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 10 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 52.8' x 28.5' (main-plot) ; 2.34 cents (sub-plot). (b) Sub-plot : 39.6' x 11'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cotton. (iv) (a) 1950 to 1952. (b) No. (c) Nil. (v) (a) Nandyal. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 230 lb./ac.  
(ii) (a) 85.0 lb./ac.  
(b) 135.0 lb./ac.  
(iii) None of the effects is significant.  
(iv) Av. yield of *kapas* in lb./ac.

	Jowar		Groundnut		Redgram		Jowar+Redgram		G.N.+Redgram		Mean
	$P_0$	$P_1$	$P_0$	$P_1$	$P_0$	$P_1$	$P_0$	$P_1$	$P_0$	$P_1$	
$N_0$	250	292	180	190	216	217	222	253	203	210	224
$N_1$	270	245	181	254	291	245	206	211	261	190	236
Mean	260	269	181	222	254	231	214	232	234	200	230

## S.E. of difference of two

- main-plot treatment means =42.4 lb./ac.
- sub-plot treatment means =30.1 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 =79.8 lb./ac.

Crop :- Cotton.

Ref :- A.P. 51 (32).

Site :- Lam Farm, Guntur.

Type :- 'M'.

Object :-To study the effect of previous leguminous crops on the succeeding Cotton crop.

## 1. BASAL CONDITIONS

(i) (a) Jowar-Groundnut, Redgram-Cotton. (b) As under treatments. (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) N.A. (iv) (a) N.A. (b) Drilled. (c) to (e) N.A. (v) Nil. (vi) *Cocanadas* 1. (vii) Rainfed. (viii) 2 or 3 weedings, thinning, interculture with *H.M. Guntaka*. (ix) 7.07". (x) N.A.

## 2. TREATMENTS:

## Main-plot treatments:

All combinations of (1) and (2)

(1) 5 previous crops: Jowar, Groundnut, Redgram, Jowar+Redgram, and Groundnut+Redgram.

(2) 2 levels of  $P_2O_5$  as Super ( $P_2O_5$  applied to plots in 1949):  $P_0=0$ , and  $P_1=30$  lb./ac. of  $P_2O_5$ .

## Sub-plot treatments:

2 levels of N:  $N_0=0$  and  $N_1=30$  lb./ac. of N as A/S applied to cotton crop before sowing.

## 3. DESIGN:

(i) Split-plot. (ii) (a) 10 main-plots/block; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 52.1'×38.5' (main-plot); 2.34 cents (sub-plot). (b) 39.6'×11' (sub-plot). (v) N.A. (vi) Yes.

## 4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Yield of kapas. (iv) (a) 1950 to 1952. (b) No. (c) Nil. (v) (a) Nandyal. (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS:

(i) 496 lb./ac.

(ii) N.A.

(iii) None of the effects is significant.

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

	Jawar		G.N.		Redgram		Jawar+Redgram		G.N.+Redgram		Mean
	$P_0$	$P_1$	$P_0$	$P_1$	$P_0$	$P_1$	$P_0$	$P_1$	$P_0$	$P_1$	
$N_0$	512	538	470	460	477	417	488	508	515	504	489
$N_1$	498	592	453	515	533	458	501	505	482	493	503
Mean	505	565	462	488	505	438	494	507	498	499	496

Crop :- Cotton.

Ref :- A.P. 52(30).

Site :- Lam Farm, Guntur.

Type :- 'M'.

Object :- To study the effect of previous leguminous crops on the succeeding Cotton crop.

## 1. BASAL CONDITIONS:

(i) (a) Jowar—Groundnut—Redgram—Cotton. (b) and (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 26.9.1952. (iv) (a) N.A. (b) Drilled. (c) to (e) N.A. (v) Nil. (vi) Cocandas-I (early). (vii) Rainfed. (viii) Interculture with Junior Hoe on 1.11.1952 and 3.11.52. Thinning on 29.10.1952 and 30.10.1952. Interculture with H.M. Guntaka on 20.12.1952. (ix) N.A. (x) 25.3.1953 to 10.4.1953.

## 2. TREATMENTS:

## Main-plot treatments:

All combinations of (1) and (2)

(1) 5 previous crops: Jowar, Groundnut, Redgram, Jawar+Redgram and Groundnut+Redgram.

(2) 2 levels of  $P_2O_5$  as Super ( $P_2O_5$  applied to plots in 1949):  $P_0=0$  and  $P_1=30$  lb./ac. of  $P_2O_5$ .

## Sub-plot treatments:

2 levels of N:  $N_0=0$  and  $N_1=30$  lb./ac. of N as A/S applied to cotton crop before sowing.

## 3. DESIGN:

(i) Split-plot. (ii) (a) 10 main-plots/block; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 52.8'×38.5' (main-plot); 2.34 cents (sub-plot). (b) 39.6'×11' (sub-plot). (v) N.A. (vi) Yes.

## 4. GENERAL:

(i) Normal. (ii) Heavy shedding due to insect attack. (iii) Yield of Kapas. (iv) (a) 1950—1952. (b) and (c) No. (v) (a) Nandyal. (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 271 lb./ac.  
 (ii) (a) 80.0 lb./ac.  
 (b) 161.0 lb./ac.  
 (iii) Only "previous crops" effect is significant.  
 (iv) Av. yield of kapas in lb./ac.

	Jowar		G.N.		Redgram		Jowar+Redgram		G.N.+Redgram		Mean
	P <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	P <sub>1</sub>	
N <sub>0</sub>	357	309	304	354	117	248	189	209	211	140	244
N <sub>1</sub>	364	421	511	396	208	238	284	274	163	125	298
Mean	361	365	408	375	162	243	236	242	187	133	271

S.E. of difference of two

- main-plot treatment means = 40.0 lb./ac.
- sub-plot treatment means = 36.1 lb./ac.
- sub-plot treatment means at the same level of main-plot treatment = 114.1 lb./ac.
- main-plot treatment means at the same level of sub-plot treatment = 89.9 lb./ac.

Crop :- Cotton.

Site :- Plant Breeding Stn., Mudhol.

Ref :- A.P. 50(12).

Type :- 'M'.

Object :- To study the N and P<sub>2</sub>O<sub>5</sub> requirements of Cotton.

## 1. BASAL CONDITIONS :

(i) (a) *Kharif* Jowar—Cotton. (b) *Kharif* Jowar. (c) Nil. (ii) (a) Medium black soil. (b) Refer soil analysis, Mudhol. (iii) 13.7.1950. (iv) (a) One ploughing and three *bakharings*. (b) Furrows opened with marker and seeds hand dibbled. (c) 16 lb./ac. (d) Rows 18" apart. (e) —. (v) Nil. (vi) Gao-6. (vii) Irrigated. (viii) Three weedings and five hoeings (4 with planet junior hand hoe and one with bullock-hoe). (ix) 21.58°. (x) 15.11.1950, 13.12.50, 29.11.50 and 13.1.1951.

## 2. TREATMENTS

All combinations of (1), (2) and (3)

- 2 sources of N : S<sub>1</sub> = A/S and S<sub>2</sub> = G.N.C.
- 2 levels of N : N<sub>0</sub> = 0 and N<sub>1</sub> = 30 lb./ac.
- 2 levels of P<sub>2</sub>O<sub>5</sub> : P<sub>0</sub> = 0 and P<sub>1</sub> = 30 lb./ac.

P<sub>2</sub>O<sub>5</sub> as Super.

## 3. DESIGN :

(i) 2<sup>2</sup> Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 127' × 15'. (b) 121' × 9'. (v) Two rows on each flank together with 3' at each extremity of each row. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Measurements on stand growth, and yield of cotton. (iv) (a) 1950—1952. (b) No. (c) N.A. (v) (a) Nanded and Latur. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 507 lb./ac.  
 (ii) 74.8 lb./ac.  
 (iii) Selective *vs.*, others effect is highly significant ; N effect is also significant. Others are not significant.

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

Selective	Averaged over $N_0$ plots
$P_0$	430
$P_1$	523
S.E./mean	26.4 lb./ac.

	$N_1S_1$	$N_1S_2$	Mean
$P_0$	601	525	563
$P_1$	669	550	610
Mean	635	537	587

S.E. of marginal mean = 26.4 lb./ac.  
S.E. of body of table = 37.4 lb./ac.

Crop :- Cotton.

Ref :- A.P. 51(69).

Site :- Plant Breeding Stn., Mudhol.

Type :- 'M'

Object :- To study the N and  $P_2O_5$  requirements of Cotton.

## 1. BASAL CONDITIONS :

(i) (a) *Kharif* Jowar-Cotton. (b) *Kharif* Jowar. (c) Nil. (ii) (a) Medium black soil. (b) Refer soil analysis, Mudhol. (iii) N.A. (iv) (a) One ploughing and 2 *bakhering*. (b) Furrows opened with marker and seeds dibbled with hand. (c) 16 lb./ac. (d) Rows 11" apart. (e) —. (v) Nil. (vi) Gao-6. (vii) Rainfed. (viii) 3 weedings and 2 hoeings. (ix) 31.90°. (x) N.A.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)

- (1) 2 sources of N :  $S_1=A/S$  and  $S_2=G.N.C.$   
(2) 2 levels of N :  $N_0=0$  and  $N_1=30$  lb./ac.  
(3) 2 levels of  $P_2O_5$  :  $P_0=0$  and  $P_1=30$  lb./ac.  
 $P_2O_5$  as Super.

## 3. DESIGN :

(i) 2<sup>3</sup> Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 127' × 15'. (b) 121' × 9' (v) Two rows on each flank together with 3' at each extremity of each row. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Plant weight at fortnightly intervals, period of boll maturity, number of bolls picked, wt. of 100 bolls, yield of kapas and ginning percentage. (iv) (a) 1950 to 1952. (b) No. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 447 lb./ac.  
(ii) 57.20 lb./ac.  
(iii) 'Selective vs. others' effect, P effect and interaction NP are highly significant. N effect is not significant.  
(iv) Av. yield of kapas in lb./ac.

Selectives	Averaged over $N_0$ plots		
$P_0$	391		
$P_1$	441		
S.E./mean=20.2 lb./ac.			
	$N_1S_1$	$N_1S_2$	Mean
$P_0$	373	485	429
$P_1$	570	488	529
Mean	471	487	479

S.E. of marginal mean=20.2 lb./ac.  
S.E. of body of table=28.6 lb./ac.

Crop :- Cotton.

Ref :- A.P. 52(40).

Site :- Plant Breeding Stn., Mudhol.

Type :- 'M'.

Object :- To study the N and P<sub>2</sub>O<sub>5</sub> requirements of Cotton.

## 1. BASAL CONDITIONS :

(i) (a) *Kharif* Jowar-Cotton. (b) *Kharif* Jowar. (c) Nil. (ii) (a) Medium black soil. (b) Refer soil analysis, Mudhol. (iii) 5.7.1952. (iv) Four bakherings. (b) Furrows opened with marker and seeds hand dibbled. (c) 16 lb./ac. (d) Rows 18" apart. (e) —. (v) Nil. (vi) Gao-6. (vii) Unirrigated. (viii) Two weedings, two planet junior hand hoeings and one bullock hoeing. (ix) 31.02". (x) 14.11.1952, 14.12.1952, and 29.11.1952, 29.12.1952.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)

1. 2 sources of N : S<sub>1</sub>=A/S and S<sub>2</sub>=G.N.C.
2. 2 levels of N : N<sub>0</sub>=0 and N<sub>1</sub>=30 lb./ac.
3. 2 levels of P<sub>2</sub>O<sub>5</sub> : P<sub>0</sub>=0 and P<sub>1</sub>=30 lb./ac.  
P<sub>2</sub>O<sub>5</sub> as Super.

## 3. DESIGN :

(i) 2<sup>3</sup> Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 127'×15'. (b) 121'×9'. (v) Two rows on each flank together with 3' at each extremity of each row. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory in early stages but not satisfactory later due to no rains between 26th August 1952 and 19th September 1952 and heavy rains in October 1952. Heavy shedding of buds and bolls. (ii) Nil. (iii) Measurements on stand and growth ; Yield of cotton. (iv) (a) 1950 to 1952. (b) No. (c) N.A. (v) (a) Nanded, Latur. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 293 lb./ac.  
(ii) 56.99 lb./ac.  
(iii) Only 'selective vs. others' effect is highly significant. Others are not significant.  
(iv) Av. yield of kapas in lb./ac.

Selective	Averaged over N <sub>0</sub> plots
P <sub>0</sub>	216
P <sub>1</sub>	223
S.E./mean	=20.1 lb./ac.

	N <sub>1</sub> S <sub>1</sub>	N <sub>1</sub> S <sub>2</sub>	Mean
P <sub>0</sub>	359	340	349
P <sub>1</sub>	349	415	382
Mean	354	377	365

S.E. of marginal mean=20.1 lb./ac.

S.E. of body of table=28.5 lb./ac.

Crop :- Cotton.

Ref :- A.P. 53 (59).

Site :- Plant Breeding Stn., Mudhol.

Type :- 'M'.

Object :- To study primarily the effect of organic manures and its mixture with A/S on the yield of Cotton and secondly to study their residual effect on the rotation crop.

## 1. BASAL CONDITIONS :

(i) (a) Jowar-Cotton. (b) *Kharif*-Jowar. (c) Nil. (ii) (a) Medium black cotton soil. (b) Refer soil analysis, Mudhol. (iii) 24.6.1953. (iv) (a) Ploughings, 2 harrowings and 2 bakherings. (b) Seeds sown through moghas running behind coultured wooden drill. (c) 16 lb./ac. (d) 18" between rows. (e) —. (v) Nil. (vi) Gao-6. (vii) Rainfed. (viii) Handweedings and hoeings (ix) 48.55". (x) (Nov. and Dec. 1953).



## 2. TREATMENTS:

All combinations of (1) and (2)

(1) 2 levels of F.Y.M. :  $F_0=0$  and  $F_1=4$  ton/ac.

(2) 2 levels of A/S :  $N_0=0$  and  $N_1=100$  lb./ac.

Manures applied in the middle of May, 1953.

## 3. DESIGN :

(i) 2<sup>2</sup> Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 127'×15'. (b) 121'×9'. (v) Two rows at each flank and 3' at each extremity of the row. (vi) Yes.

## 4. GENERAL :

(i) Below normal due to excessive rains ; Heavy shedding of buds and bolls. (ii) Nil. (iii) Germination stand, number of node at which the first fruiting branch appears. Halo length, ginning%. (iv) (a) 1953 to 1955. (b) (b) Yes. (c) N.A. (v) (a) Nanded, Latur. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 225 lb./ac.

(ii) 23.4 lb./ac.

(iii) Main effects of N, F are significant. Interaction  $N \times F$  is not significant.

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

	$N_0$	$N_1$	Mean
$F_0$	148	272	210
$F_1$	180	301	240
Mean	164	287	225

S.E. of marginal mean = 7.4 lb./ac.

S.E. of body of table = 10.5 lb./ac.

Crop :- Cotton.

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

Ref :- A.P. 49 (20).

Type :- 'M'.

Object :- To study the effects of previous leguminous crops and manures on Cotton.

## 1. BASAL CONDITIONS :

(i) (a) Groundnut-Indigo and Jowar-Cotton. (b) As under treatments. (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) Second week of Sept., 1953. (iv) (a) to (e) N.A. (v) Nil. (vi) N-14. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) N.A.

## 2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 4 previous crops : Jowar, Jowar+Indigo, Indigo and Groundnut.

(2) 2 levels of  $P_2O_5$  (as Super applied to the above crops) :  $P_0=0$  and  $P_1=30$  lb./ac.

Sub-plot treatments :

2 levels of N :  $N_0=0$  and  $N_1=30$  lb./ac. of N as A/S applied to the present crop, cotton.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 8 main-plots/replication. 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 2.81 cents. (b) 1.45 cents. Main-plot size : 5.62 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. Heavy rains in the latter part of Sept. caused considerable damage to standing crop. Stand gappy. (ii) Nil. (iii) Yield of kapas. (iv) (a) 1948 to 1952. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Standard Errors not given in the report. Raw data also not available.

## 5. RESULTS :

- (i) 297 lb./ac.  
 (ii) (a) N.A.  
 (b) N.A.  
 (iii) Only the effect of previous crops and N effect are significant.  
 (iv) Av. yield of kapas in lb./ac.

	Jowar		Jowar and Indigo		Indigo		Groundnut		Mean
	P <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	P <sub>1</sub>	
N <sub>0</sub>	220	219	219	214	314	366	336	365	282
N <sub>1</sub>	272	276	277	228	321	396	327	407	313
Mean	245	247	248	221	317	381	332	386	297

Crop :- Cotton.

Ref :- A.P. 51(61).

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

Type :- 'M'.

Object :—To study the effects of previous crops and manures on Cotton (old set).

## 1. BASAL CONDITIONS :

- (i) (a) Groundnut—Indigo, Jowar—Cotton. (b) As under treatments. (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 11.9.1951. (iv) (a) to (e) N.A. (v) Nil. (vi) N-14. (vii) Unirrigated. (viii) 2 weedings. (ix) 2.16". (x) N.A.

## 2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 4 previous crops : Jowar, Jowar+Indigo, Indigo and Groundnut.

(2) 2 levels of P<sub>2</sub>O<sub>5</sub> as Super applied to the above crops : P<sub>0</sub>=0 and P<sub>1</sub>=30 lb./ac.

Sub-plot treatments :

2 levels of N : N<sub>0</sub>=0 and N<sub>1</sub>=30 lb./ac. of N as A/S applied to the present crop, cotton.

## 3. DESIGN :

- (i) Split-plot. (ii) (a) 3 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) main-plot 2.20 sub-plot 1.446 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Nil. (iii) Kapas yield. (iv) (a) 1948—1952. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

- (i) 235 lb./ac.  
 (ii) N.A.  
 (iii) N.A.  
 (iv) Av. yield of kapas in lb./ac.

	Jowar		Jowar+Indigo		Indigo		Groundnut		Mean
	P <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	P <sub>1</sub>	
P <sub>0</sub>	209	242	231	215	266	236	253	227	235
P <sub>1</sub>	229	245	240	219	261	231	262	240	241
Mean	219	244	235	217	264	234	258	234	238

Crop :- Cotton.

Ref :- A.P. 52(65).

Site :- Agri Res. Stn., Nandyal.

Type :- 'M'.

Object :- To study the effect of previous leguminous crops and manure on cotton.

## 1. BASAL CONDITIONS :

(i) (a) Groundnut+Indigo and Jowar—Cotton. (b), (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 25.9.1952. (iv) (a) to (e) N.A. (v) Nil. (vi) N-14. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 15.2.1953 to 30.3.1953.

## 2. TREATMENTS :

## Main-plot treatments :

All combinations of (1) and (2)

(1) 4 previous crops : Jowar, Jowar+Indigo, Indigo and Groundnut.

(2) 2 levels of  $P_2O_5$  (as super applied to the above crops) :  $P_0=0$  and  $P_1=30$  lb./ac.

## Sub-plot treatments :

2 levels of N :  $N_0=0$  and  $N_1=30$  lb./ac. of N as A/S applied to the present crop, cotton.

## 3. DESIGN :

(i) Split-plot (ii) (a) 8 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 5.62 cents. (b) 2.90 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Jassids attack in early stage. Guessorol sprayed. (iii) Yield of cotton. (iv) (a) 1948—1952. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Standard Errors not available in the annual report. Raw data also not available at the Research Station.

## 5. RESULTS :

(i) 293 lb./ac.

(ii) N.A.

(iii) N.A.

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

	Jowar		Jowar+Indigo		Indigo		Groundnut		Mean
	$P_0$	$P_1$	$P_0$	$P_1$	$P_0$	$P_1$	$P_0$	$P_1$	
$N_0$	265	298	282	286	313	245	367	223	285
$N_1$	303	340	322	265	281	234	355	307	301
Mean	284	319	302	276	297	240	361	265	293

S.E.s N.A.

Crop :- Cotton.

Ref :- A.P. 48(50).

Site :- Govt. main Farm, Warangal.

Type :- 'M'.

Object :- To find out the type of manure, the optimum dose and the method of application best suited to cotton crop.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Regur. (b) Refer soil analysis, Warangal. (iii) 18.7.1948. (iv) (a) N.A. (b) Sown by hand in furrows made by a country seed drill. (c) —. (d) 18" apart. (e) —. (v) Nil. (vi) Indicum-38. (vii) Rainfed. (viii) Weeding once and hoeing thrice. (ix) 33.33" (June to Dec.). (x) 22.11.1948. picking.

## 2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 2 sources of N :  $S_1=A/S$  and  $S_2=G.N.C.$ (2) 4 levels of N :  $N_0=0$ ,  $N_1=20$ ,  $N_2=40$  and  $N_3=60$  lb./ac.(3) 2 methods of application of N :  $M_1=By$  broadcasting just before sowing and  $M_2=By$  drilling in furrows about 9" away from the seed furrows.

## 3. DESIGN :

(i)  $2 \times 2 \times 4$  Fact. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 2. (iv) (a)  $63\frac{1}{2}' \times 12'$ . (b)  $60\frac{1}{2}' \times 7\frac{1}{2}'$ . (v) 2 outer rows on either side of flank ; rows of each plot and strip 18" wide at either end of each plot. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of kapas. (iv) (a) 1946—1949. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 556 lb./ac.  
 (ii) 89.09 lb./ac.  
 (iii) 'Control vs. others effect and 'Source' effect are highly significant. Others are not significant.  
 (iv) Av. yield of kapas in lb./ac.

Control=338 lb./ac.

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	Mean	M <sub>1</sub>	M <sub>2</sub>
S <sub>1</sub>	715	693	643	684	723	645
S <sub>2</sub>	535	582	606	574	577	571
Mean	625	637	625	629	650	608
M <sub>1</sub>	629	637	683	650		
M <sub>2</sub>	621	637	567	608		

S.E. of marginal mean of N	=31.5 lb./ac.
S.E. of marginal mean of M or S	=25.7 lb./ac.
S.E. of body of table N×M or N×S	=44.6 lb./ac.
S.E. of body of table M×S	=36.4 lb./ac.
S.E. of control mean	=31.5 lb./ac.

Crop :- Cotton.

Ref A.P. 48(51).

Site :- Govt. Main Farm, Warangal.

Type :- 'M'.

Object :—To find out the type of manure, the optimum dose and the method of application best suited to the cotton crop.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Chalka. (b) Refer soil analysis, Warangal. (iii) 17.7.1948. (iv) (a) N.A. (b) Sown by hand in furrows made by a country seed drill. (c) N.A. (d) 8" apart. (e) —. (v) Nil. (vi) Indicum-38. (vii) Rainfed. (viii) Weeding once and hoeing thrice. Gap filling to the extent of 50% on 24.7.1948. as the germination was obstructed by the formation of hard soil due to a drizzle after sowing. (ix) 33.33" (June to Dec. (x) 5.11.1948/21.11.1948/7.12.1948, picking days.

## 2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 2 sources of N : S<sub>1</sub>=A.S and S<sub>2</sub>=G.N.C.

(2) 4 levels of N : N<sub>0</sub>=0, N<sub>1</sub>=20, N<sub>2</sub>=40, and N<sub>3</sub>=60.

(3) 2 methods of application of N : M<sub>1</sub>=By broadcasting just before sowing and M<sub>2</sub>=By drilling in furrows about 9" away from the seed furrows.

## 3. DESIGN :

(i)  $2 \times 2 \times 4$  Fact. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 2. (iv) (a)  $63\frac{1}{2}' \times 12'$ . (b)  $60\frac{1}{2}' \times 7\frac{1}{2}'$ . (v) Two outer rows on either side of flank rows of each plot and strip 18" wide at either end of each plot. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) In the early seedling stage attack of hairy caterpillar. Brought under control by hand picking and killing. (iii) Yield of kapas. (iv) (a) 1946—1949. (b) N.A. (c) N.A. (v) (a) Nil. (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 639 lb./ac.  
 (ii) 101.8 lb./ac.  
 (iii) Effects 'Control vs others', N, M and S are highly significant. Interactions MN, MS&SN are not significant.  
 (iv) Av. yield of kapas in lb./ac.

Control=420 lb./ac.

	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	Mean	M <sub>1</sub>	M <sub>2</sub>
S <sub>1</sub>	629	840	869	779	871	687
S <sub>2</sub>	493	726	715	645	741	549
Mean	561	783	792	712	806	618
M <sub>1</sub>	655	828	935	806		
M <sub>2</sub>	467	738	649	618		

S.E. of marginal mean of N	=36.0 lb./ac.
S.E. of marginal mean of M or S	=29.4 lb./ac.
S.E. of body of table N×M or N×S	=50.9 lb./ac.
S.E. of body of table M×S	=41.6 lb./ac.
S.E. of control mean	=36.0 lb./ac.

Crop :- Cotton.

Ref :- A.P. 48(54).

Site :- Plant Breeding Stn., Mudhol.

Type :- 'MV'.

Object :—To determine the response of improved varieties of Gaorani cotton to the application of G.N.C.

## 1. BASAL CONDITIONS :

(i) (a) *Kharif* Jowar—Cotton. (b) *Kharif* Jowar. (c) Nil. (ii) (a) Medium black soil. (b) Refer soil analysis, Mudhol. (iii) 11.7.1948. (iv) (a) No ploughings, 2 bakhering and cleaning. (b) Seeds sown by hand in the furrows made by plant junior hoe with Coulters 18" apart. (c) 16 lb./ac. (d) 18" row to row. (e) —. (v) Nil (vi) As per treatments. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 7.12.1948 to 22.1.1949. at fortnightly intervals.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 varieties : V<sub>1</sub>=Gao-6, V<sub>2</sub>=Gao-6E-3, V<sub>3</sub>=P II-43/165 and V<sub>4</sub>=P II-42/7316.(2) 3 levels of N : N<sub>0</sub>=0, N<sub>1</sub>=20 and N<sub>2</sub>=40 lb./ac.

N as G.N.C. powdered and applied to different plots on 11.7.48 by broadcasting.

## 3. DESIGN :

(i) 3×4 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 62'×13½'. (b) 55'×9'. (v) One row on each flank of the plot and 3½' on each extremity of all the rows. (vi) Yes.

## 4. GENERAL :

(i) Good though stunted. Heavy rains in the first and third week of November damaged the crop considerably. (ii) Boll worm damage (rather heavy in the last pickings). Heavy shedding of bolls. (iii) Plant height at fortnightly intervals period of boll maturity. No. of bolls picked, wt. of 100 bolls, yield of kapas, Ginning percentage. (iv) (a) 1947—1949. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 120 lb./ac.  
 (ii) 30.4 lb./ac.  
 (iii) V effect is significant, N effect is highly significant. Interaction is not significant.

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

	V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	V <sub>4</sub>	Mean
N <sub>0</sub>	80	65	98	85	82
N <sub>1</sub>	133	99	103	151	122
N <sub>2</sub>	149	134	169	173	156
Mean	120	99	124	136	120

S.E. of marginal mean of V = 8.8 lb./ac.  
 S.E. of marginal mean of N = 7.6 lb./ac.  
 S.E. of body of table = 15.2 lb./ac.

Crop :- Cotton.

Ref :- A.P. 49(38).

Site :- Plant Breeding Stn., Mudhol.

Type :- 'MV'.

Object :- To determine the response of four improved Gaorani varieties to the application of G.N.C.

## 1. BASAL CONDITIONS :

(i) (a) *Kharif* Jowar—Cotton. (b) *Kharif* Jowar. (c) Nil. (ii) (a) Medium black soil. (b) Refer soil analysis, Mudhol. (iii) N.A. (iv) (a) 2 ploughings, 2 buckerings. (b) Seed sown by hand in furrows made by plaret junior hoe with coulters 18" apart. (c) 16 lb./ac. (d) 18" row to row. (e) —. (v) Nil. (vi) As under treatments. (vii) Unirrigated. (viii) 2 weedings. (ix) 41.63". (x) N.A.

## 2. TREATMENTS:

All combinations of (1) and (2)

(1) 4 varieties : V<sub>1</sub>=Gao-6 E-3, V<sub>2</sub>=P-II-42-7316, V<sub>3</sub>=P-II-43-165 and V<sub>4</sub>=Gao-6.(2) 3 levels of N : N<sub>0</sub>=0, N<sub>1</sub>=20 and N<sub>2</sub>=40 lb. ac.

N as G.N.C. powdered and applied by broadcasting.

## 3. DESIGN :

(i) 3 × 4 Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 62' × 13½'. (b) 55' × 9'. (v) One row on each flank of the plot and 3' on each extremity of all the rows. (vi) Yes.

## 4. GENERAL :

(i) Normal, but season not so favourable. (ii) Nil. (iii) Plant height at fortnightly intervals. Period of boll maturity. No of boll fricher. wt. of 100 bolls. Yield of kapas. Ginning percentage. (iv) (a) 1947—1949. (b) N.A. (c) N.A. (v) (a) and (b) N.A. (vi) N.A. (vii) The results are available only in the above form at the Str. Raw data also not available. Hence it is not possible to give the results in the two way table fashion.

## 5. RESULTS :

(i) 344 lb./ac.

(ii) 56.3 lb./ac.

(iii) Only main effect of N is significant.

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

Treatment	Mean
V <sub>1</sub>	367
V <sub>2</sub>	365
V <sub>3</sub>	325
V <sub>4</sub>	319
N <sub>0</sub>	250
N <sub>1</sub>	370
N <sub>2</sub>	412
S.E. of marginal mean of V	= 16.3 lb./ac.
S.E. of marginal mean of N	= 14.1 lb./ac.

Crop :- Cotton.  
Site :- Agri. Res. Stn., Nandyal.

Ref :- A.P. 50 (53).  
Type :- 'C'.

Object :- To test whether there is any difference in the germination, yield and other characters between crops raised with old seeds and with new seeds.

1. BASAL CONDITIONS :

(i) (a) Cotton-Jowar. (b) Jowar. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 17.9.1950. (iv) (a) N.A. (b) Seeds dibbled. (c) N.A. (d) 1½' between rows. (v) Nil. (vi) N. 14 (late). (vii) Unirrigated. (viii) Interculture with *H.M. Guntaka* and hand weeding. (ix) 4.86". (x) 17.2.1951 to 10.3.1951.

2. TREATMENTS :

1. Crop raised with old seeds (seed from 1948-49 crop).  
2. Crop raised with new seeds (seed from 1949-50 crop).

3. DESIGN :

(i) Paired-plot. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 1.00 cents. (b) 0.66 cents. (v) N.A. (vi) No.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of *kapas*, ginning percentage and seed weight per seed. (iv) (a) 1950 to 1951. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

(i) 653 lb./ac.  
(ii) N.A.  
(iii) Treatments difference is not significant.  
(iv) Av. yield of *kapas* in lb./ac.

Treatment	Av. yield
1.	636
2.	669

S.E./mean=N.A.

Crop :- Cotton.  
Site :- Agri. Res. Stn., Nandyal.

Ref :- A.P. 51(57).  
Type :- 'C'.

Object :- To test whether there is any difference in the germination, yield and other characters between crops raised with old seeds and with new seeds.

BASAL CONDITIONS :

(i) (a) N.A. (b) Cotton. (c) G.N.C. at 250 lb./ac. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 10.9.1951. (iv) (a), (b) and (c) N.A. (d) 1½' between rows. (e) N.A. (v) A/S. at 100 lb./ac. (vi) N.14 (late) (vii) Unirrigated. (viii) 2 Weedings. (ix) 2.16". (x) 28.2.1952 and 4.3.1952.

2. TREATMENTS :

1. Crop raised with old seeds.  
2. Crop raised with new seeds.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) N.A. (b) 0.66 cents. (v) N.A. (vi) Yes.

GENERAL :

(i) Not satisfactory due to poor rainfall and drought conditions. (ii) Boll worm attack. (iii) Germination percentage, halo length, ginning percentage, lint weight, seed weight, boll length and boll diameter. (iv) (a) 1950 to 1951. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Rawdata N.A.

## 5. RESULTS :

- (i) 222 lb./ac.  
 (ii) N.A.  
 (iii) Treatment differences are not significant.  
 (iv) Av. yield of *kapas* in lb./ac.

Treatment	Av. yield
1.	207
2.	236
S.E., mean=N.A.	

Crop :- Cotton.

Ref : A.P. 51(46).

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

Type :- 'CM'.

Object :—To determine the optimum time of sowing and assess the response to manuring with N.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy alluvial clay. (b) Refer soil analysis, Samalkot. (iii) As under treatments. (iv) (a) Ploughings and levelling. (b) Planting in lines. (c)—. (d) 2' x ½'. (e) 2 seeds. (v) Nil. (vi) 216 F. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 4.73". (x) First picking by the end of April 1953 (9 pickings in all) Dates not available.

## 2. TREATMENTS :

## Main-plot treatments :

- T<sub>1</sub>—Sowing within 3 days after harvest of paddy (20.11.1951).  
 T<sub>2</sub>—Sowing a fortnight after T<sub>1</sub> (6.12.1951).  
 T<sub>3</sub>—Sowing two fortnights after T<sub>1</sub>(21.12.1951).  
 T<sub>4</sub>—Sowing three fortnights after T<sub>1</sub> (6.1.1952).

## Sub-plot treatments :

- M<sub>0</sub>=No manure.  
 M<sub>1</sub>=Manure 40 lb./ac. of N as A/S applied in 2 doses of 20 lb. each. First dose applied in bonds 3" away from the row of cotton plants at the time of 1st irrigation, on 21.1.1952. Second dose applied at the time of flowering followed by copious irrigation, on 17.2.1952 and 16.3.1952.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) Sub-plot : 15.5' x 14'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Germination poor in the first sown crop. Stand good in the last sown crop. Mundant weed growth in the *manured* plots. (ii) Nil. (iii) Yield of *kapas*. (iv) (a) 1951-N.A. (b) N.A. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 582 lb./ac.  
 (ii) (a) 107.4 lb./ac.  
 (b) 81.8 lb./ac.  
 (iii) Main effects of T and M are highly significant. Interaction T x M is not significant.  
 (iv) Av. yield of *kapas* in lb./ac.

	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	T <sub>4</sub>	Mean
M <sub>0</sub>	680	405	527	500	528
M <sub>1</sub>	844	489	586	623	636
Mean	762	447	557	562	582

## S.E. of difference of two

1. T marginal means =53.6 lb./ac.  
 2. M marginal means =29.0 lb./ac.  
 3. M means at the same level of T =57.8 lb./ac.  
 4. T means at the same level of M =67.5 lb./ac.



Crop :- Cotton.

Ref :- A.P. 52(39).

Site :- Plant Breeding Stn., Mudhol.

Type :- 'CV'.

Object:—To determine the variety and the spacing suitable for getting higher yield of Cotton.

## 1. BASAL CONDITIONS :

(i) (a) *Kharif* Jowar—Cotton. (b) *Kharif* Jowar. (c) Nil. (ii) (a) Medium black cotton soil. (b) Refer soil analysis, Mudhol. (iii) 21.7.1952. (iv) (a) Ploughing by Kirloskar hundred, 2 harrowings, 5 bakharings and furrows opened with marker. (b) Seed hand dibbled after rubbing with cowdung and ash. (c) 16 lb./ac. (d) N.A. (e)—. (v) Nil. (vi) As under treatments. (vii) Nil. (viii) Hand weedings and two hoeings with planet junior hand hoe. (ix) 31.02". (x) 30.11.1952, 30.12.1952; 15.12.1952 and 14.1.1953.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties :  $V_1$ =Gao-6 and  $V_2$ =Gao-6E-3.(2) 3 spacings between rows :  $S_1$ =12",  $S_2$ =18" and  $S_3$ =24".

## 3. DESIGN :

(i) 2×3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) For 12" spacing : 127'×12', for 18" spacing : 127'×15' and for 24" spacing : 127'×16'. (b) 121'×12'. (v) One row on each flank together with 3' at each extremity of the rows. (vi) Yes.

## 4. GENERAL :

(i) Normal in the early stages but below normal in later stages due to no rain between 26th August 1952 and 19th September 1952 and heavy rains in Oct. 1952. Heavy shedding of buds and bolls. (ii) Nil. (iii) Germination stand, number of node at which the first fruiting branch appears, weight of 100 bolls in grams, final stand, halo length ginning percentage and *kapas* weight. (iv) (a) 1952—1954. (b) No. (c) N.A. (v) (a) Nanded and Latur. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 171.0 lb./ac.

(ii) 18.9 lb./ac.

(iii) Main effects of V and S are highly significant. Interaction V×S is not significant.

(iv) Av. yield of *kapas* in lb./ac.

	$S_1$	$S_2$	$S_3$	Mean
$V_1$	176	159	141	159
$V_2$	200	187	164	184
Mean	188	173	152	171

S.E. of marginal mean of V =4.8 lb./ac.

S.E. of marginal mean of S =6.0 lb./ac.

S.E. of body of table =8.4 lb./ac.

Crop :- Cotton.

Ref :- A.P. 53 (60).

Site :- Plant Breeding Stn., Mudhol.

Type :- 'CV'.

Object:—To determine the variety and spacing suitable for getting higher yield of Cotton.

## 1. BASAL CONDITIONS :

(i) (a) *Kharif* Jowar—Cotton. (b) *Kharif* Jowar. (c) 10-15 C.L./ac. of F.Y.M. (ii) (a) Medium black cotton soil. (b) Refer soil analysis, Mudhol. (iii) 22.6.1953. (iv) (a) Ploughing by Kirloskar hundred, 2 harrowings and 2 bakharings and furrows opened with marker. (b) Seed hand dibbled after rubbing with cowdung ashes. (c) 6 lb./ac. (d) N.A. (e)—. (v) Nil. (vi) As under treatments. (vii) Rainfed. (viii) Two hand weedings and hoeings. (ix) 48.35". (x) Nov. and Dec. 1953.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties :  $V_1 = \text{Gao-6}$  and  $V_2 = \text{Gao-6E-3}$ .

(2) 3 spacings between rows :  $S_1 = 12''$ ,  $S_2 = 18''$  and  $S_3 = 24''$ .

## 3. DESIGN :

(i)  $2 \times 3$  Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) For 12'' spacing— $127' \times 12'$ , for 18'' spacing— $127' \times 15'$  and for 24'' spacing— $127' \times 16'$ . (b)  $121' \times 12'$ . (v) One row at each flank together with 3' at each extremity of the rows. (vi) Yes.

## 4. GENERAL :

(i) Below normal due to excessive rains. Heavy shedding of buds and bolls. (ii) Nil. (iii) Germination stand, number of node at which the first fruiting branch appears, weight of 100 bolls in gms, final stand, halo length, ginning percentage and *kapas* weight. (iv) (a) 1952—1954. (b) No. (c) N.A. (v) (a) Nanded, Latur. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 145.0 lb./ac

(ii) 13.59 lb./ac.

(iii) Only main effect of spacing is significant.

(iv) Av. yield of *kapas* in lb./ac.

	$S_1$	$S_2$	$S_3$	Mean
$V_1$	150	139	137	142
$V_2$	162	142	140	148
Mean	156	140	139	145

S.E. of marginal mean of V = 3.50 lb./ac.

S.E. of marginal mean of S = 4.30 lb./ac.

S.E. of body of table = 6.20 lb./ac.

Crop :- Cotton.

Site :- Lam Farm, Guntur.

Ref :- A.P. 51 (50).

Type :- 'D'.

Object :- To find out whether presoaking of Cotton seed in nutrient solutions will improve yield of Cotton.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Chillies. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 4.10.1551. (iv) (a) 4, 5 ploughings. (b) to (e) N.A. (v) Nil. (vi) Cocanada 1. (vii) Rainfed. (viii) 2 to 3 weedings. (ix) 6.27". (x) 19.3.1952 and 6.4.1952.

## 2. TREATMENTS :

1. Dry seed. (control)
2. Soaked in water for 24 hrs.
3. Soaked in one molar Mono-potassium phosphate for 24 hrs.
4. Soaked in  $\frac{1}{2}$  molar Mono-pott phosphate for 24 hrs.
5. Soaked in  $\frac{1}{4}$  molar Mono-potassium phosphate for 24 hrs.
6. Soaked in one molar A/S for 24 hrs.
7. Soaked in  $\frac{1}{2}$  molar A/S for 24 hrs.
8. Soaked in  $\frac{1}{4}$  molar A/S for 24 hrs.

Seed soaked in solution on 3.10.1951 for 24 hrs. dried in shade and sown in the field.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a)  $44.6' \times 7.9'$ . (b)  $37.3' \times 4.0'$ . (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) *Kapas* yield. (iv) (a) No. (b) No. (c) N.A. (v) (a), (b) Nil (vi) and (vii) Nil.

## 5. RESULTS :

(i) 457 lb./ac.

(ii) 110.0 lb./ac.

(iii) Treatment differences are significant.

(iv) Av. yield of *kapas* in lb./ac.

Treatment	Av. yield
1.	575
2.	408
3.	537
4.	395
5.	554
6.	327
7.	358
8.	502
S.E./mean	= 54.9 lb./ac.

Crop :- Cotton.

Ref :- A.P. 50 (54).

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

Type :- 'D'.

Object :- To study the effect of presoaking the cotton in dilute solutions of nutrient salts like A/S and mono-potassium phosphate.

## 1. BASAL CONDITIONS :

(i) (a) Cotton—Jowar. (b) Jowar. (c) 5 C.L./ac. of F.Y.M. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 17.9.1950. (iv) (a) N.A. (b) Dibbling. (c) N.A. (d) 1½' between rows. (e) N.A. (v) Nil. (vi) N-14 (late). (vii) Unirrigated. (viii) Interculture with *H.M. Guntaka* and hand weeding. (ix) 4.86". (x) 14.2.1951 to 22.3.1951.

## 2. TREATMENTS :

Pre soaking seed with :

- 1 molar (132.14 gm. per litter of) solution of A/S.
- ½ molar ( 66.07 gm. „ „ „) solution of A/S.
- Distilled water.
- Non-soaked seed.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 0.57 cents. (b) 0.47 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of *kapas* ginning percentage and halo length. (iv) (a) 1950-51. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- 643 lb./ac.
- 54.1 lb./ac.
- Treatments do not differ significantly
- Av. yield of *kapas* in lb./ac.

Treatment	Av. yield
1.	619
2.	631
3.	639
4.	683
S.E./mean =	22.0 lb./ac.

Crop :- Cotton.

Ref :- A.P. 51(58).

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

Type :- 'D'.

Object :- To test the efficacy of soaking seed in nutrient solutions.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Cotton. (c) G.N.C. at 250 lb./ac. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 13.9.1951. (iv) (a), (b), (c) N.A. (d) 1½' between rows. (e) N.A. (v) Nil. (vi) N-14 (vii) Irrigated. (viii) 2 weedings. (ix) 2.16". (x) 15.2.1952 to 31.3.1952.

## 2. TREATMENTS :

1. Seed soaked in 1 molar solution of A/S.
2. Seed soaked in  $\frac{1}{2}$  molar solution of A/S.
3. Seed soaked in  $\frac{1}{4}$  molar solution of A/S.
4. Seed soaked in 1 molar solution of mono-potassium phosphate.
5. Seed soaked in  $\frac{1}{2}$  molar solution of mono-potassium phosphate.
6. Seed soaked in  $\frac{1}{4}$  molar solution of mono-potassium phosphate.
7. Seed soaked in distilled water.
8. Seed not soaked (control).

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 0.69 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Not satisfactory due to poor rainfall and drought conditions. (ii) Boll worm attack. (iii) Germination percentage, halo length, ginning percentage, lint weight and seed weight. (iv) (a) 1950—1951. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) & (vii) Nil.

## 5. RESULTS :

- (i) 122 lb./ac.  
 (ii) 27.1 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of *kapas* in lb./ac.

Treatment	Av. yield
1.	142
2.	148
3.	76
4.	141
4.	128
6.	105
7.	130
8.	105
S.E./mean	= 13.7 lb./ac.

Crop :- Tobacco.

Site :- Lam Farm, Guntur.

Ref :- A.P. 48(14).

Type :- 'M'.

Object : To compare the effect of F.Y.M. and G.N.C. on the yield of the crop.

## 1. BASAL CONDITIONS :

- (i) (a) Jowar—country tobacco—Variga—Chillies. (b) Jowar. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) N.A. (iv) (a) 6 to 7 ploughings. (b) Transplanted. (c) —. (d) and (e) N.A. (v) Nil. (vi) Country tobacco—Type 20. (vii) Unirrigated. (viii) 3 to 4 weedings. (ix) N.A. (x) N.A.

## 2. TREATMENTS :

1. No manure (control).
2. F.Y.M. at 10,000 lb./ac.
3. G.N.C. at 500 lb./ac.  
 F.Y.M. applied one month prior to sowing and ploughed in. G.N.C. applied at sowing and puddled.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 1.23 cents. (b) 0.56 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (b) Nil. (iii) Yield of tobacco. (iv) (a) 1944-48. (b) and (c) No. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

- (i) 1415 lb./ac.  
 (ii) N.A.  
 (iii) There is no significant difference between the treatments.  
 (iv) Av. yield of tobacco in lb./ac.

Treatment	Av. yield
1.	1374
2.	1396
3.	1476
S.E./mean	= N.A.

Crop :- Tobacco.

Ref :- A.P. 48(21).

Site :- Lam Farm., Guntur.

Type :- 'M'.

Object :—To study the residual effect of F.Y.M. and G.N.C. on the yield of the crop.

## 1. BASAL CONDITIONS :

- (i) (a) *Pym* Jonna—country tobacco—*Variga*—Chillies. (b) Jonna. (c) As per treatments. (iii) N.A.  
 (iv) (a) 6 to 7 ploughings. (b) Transplanted. (c) —. (d) and (e) N.A. (v) Nil. (vi) Country tobacco-Type 20. (vii) Unirrigated. (viii) 3 to 4 weedings. (ix) and (x) N.A.

## 2. TREATMENTS :

1. No manure (control).  
 2. F.Y.M. at 10,000 lb./ac.  
 3. G.N.C. at 500 lb./ac.  
 Manure applied to the previous crop.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 1.25 cents. (b) 0.56 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield of tobacco. (iv) (a) 1945—1948. (b) and (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

- (i) 1350 lb./ac.  
 (ii) N.A.  
 (iii) There is no significant difference between the treatments.  
 (iv) Av. yield of tobacco in lb./ac.

Treatment	Av. yield
1.	1309
2.	1376
3.	1366
S.E./mean	= N.A.

Crop :- Tobacco.

Ref :- A.P. 51(21).

Site :- Tobacco Res. Stn., Madira.

Type :- 'C'.

Object :—To determine the optimum quantities of sand to be incorporated in black soil to improve the texture and to prevent water stagnation and damping of disease.

## 1. BASAL CONDITIONS :

- (i) (a) No. (b) Tobacco. (c) F.Y.M. at 100 C.L./ac. (ii) (a) Clay soils. (b) Refer soil analysis, Madira. (iii) 15.8.1951 seedlings transplanted March 1952. (iv) (a) 3 ploughings and preparation of beds. (b) Transplanted. (c) —. (d) and (e) N.A. (v) F.Y.M. at 100 C.L./ac. (vi) H.S. 9. (vii) Irrigated. (viii) Hand weeding. (ix) 37.56%. (x) No harvest of this crop.

## 2. TREATMENTS :

1. No sand (control of nursery).
2.  $\frac{1}{2}$  ton seived sand/cent of nursery.
3.  $\frac{3}{4}$  ton seived sand/cent of nursery.
4. 1 ton seived sand/cent of nursery.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 9'×4' (conducted in the nurseries). 4 units of 6"×6" were taken at random for observations. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Quantity of water to be used, germination counts, no. of transplantable seedlings and weight of 10 seedlings. (iv) (a) 1950—contd. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) No yield data is maintained. However the experiment has been included as it has been conducted for a number of years with the useful purpose of determining whether the incorporation of sand has improved the texture of seed beds.

## 5. RESULTS :

- (i) 64 germination counts/unit of area.
- (ii) 19 germination counts/unit of area.
- (iii) Treatments differ significantly.
- (iv) Av. germination counts/unit of area.

Treatment	Germination counts
1.	37
2.	66
3.	58
4.	94
S.E./mean =	7.8

Crop :- Tobacco.

Ref :- A.P. 52(13) 51(21).

Site :- Tobacco Res. Stn., Madira.

Type :- 'C'.

Object :—To find out the optimum quantities of sand to be incorporated in the black soil to improve the texture and to prevent water stagnation.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Tobacco. (c) F.Y.M. at 100 C.L./ac. (ii) (a) Black clay soil. (b) Refer soil analysis, Madira. (iii) 15.8.1952. (iv) (a) 3 ploughings and preparation of beds. (b), (c), (d) and (e) N.A. (v) F.Y.M. at 100 C.L./ac. (vi) H.S. 9. (vii) Irrigated. (viii) Hand weeding. (ix) 23.45" (x) March 1953 (Actual date N.A.).

## 2. TREATMENTS :

1. No sand (control).
2.  $\frac{1}{2}$  ton of seived sand/cent of nursery.
3.  $\frac{3}{4}$  ton of seived sand/cent of nursery.
4. One ton of seived sand/cent of nursery.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 9'×4'. (conducted in the nursery). 4 units of 6"×6" were taken at random for observations. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Quantity of water to be used, germination counts, no. of transplantable seedlings and weight of ten seedlings. (iv) (a) 1950—contd. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) No yield data is maintained for this experiment. However the experiment has been included as it is being conducted for a number of years with the useful purpose of determining whether the incorporation of sand in the seed bed has any effect on the number of transplantable seedlings.

## 5. RESULTS :

- (i) 28
- (ii) 6
- (iii) There is significant difference between the treatments.

(iv) Av. no. of transplantable seedling/unit of area.

Treatment	No. of seedlings
1.	29
2.	21
3.	27
4.	36

Crop :- Tobacco.

Site :- Tobacco Res. Stn., Madira.

Ref :- A.P. 50(6).

Type :- 'C'.

Object :- To find out the effect of topping on cured leaf produce of Tobacco.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Chillies. (c) F.Y.M. at 10 C.L./ac. (ii) (a) Clay soils. (b) Refer soil analysis, Madira (iii) October 1950. (iv) (a) 3 ploughings, harrowing and working with marker. (b) Transplanting. (c) —. (d) 33" x 33". (e) N.A. (v) F.Y.M. 6 C.L./ac. (vi) Guntur white Ash (Natu tobacco). (vii) Irrigated. (viii) Working blade harrow and weedings. (iv) 30.87". (x) Feb. March 1951 (Exact dates N.A.).

2 TREATMENTS:

1. Topping leaving 12 leaves.
2. Topping leaving 14 leaves.
3. Topping leaving 16 leaves.
4. Topping leaving 18 leaves.
5. Only flower head removed.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/34.91 acre. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Stemborer attack, Larvae removed and killed by making holes by knife on stem.. (iii) Yield of tobacco (cured leaf). (iv) (a) 1950 - 1954. (b) No. (c) N.A. (v) (a) and (b) Nil; (vi) and (vii) Nil.

5. RESULTS :

- (i) 426 lb./ac.
- (ii) 78.9 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of cured leaf in lb./ac.

Treatment	Av. yield
1.	436
2.	448
3.	430
4.	407
5.	430
S.E./mean	= 32.3 lb./ac.

Crop :- Tobacco.

Site :- Tobacco Res. Stn., Madira.

Ref :- A.P. 51(20).

Type :- 'C'.

Object :- To find out the optimum stage of topping.

1. BASAL CONDITIONS :

(i) (a) No. (b) Chillies. (c) F.Y.M. at 10 C.L./ac. (ii) (a) Clay soils. (b) Refer soil analysis, Madira. (iii) 5.10.1951. (iv) (a) 3 ploughings, harrowing and working with marker. (b) Transplanted. (c) —. (d) 33" x 33". (e) N.A. (v) F.Y.M. 6 C.L./ac. (vi) Natu Tobacco (Guntur white Ash). (vii) Irrigated. (viii) Working blade harrow and weeding whenever necessary about 4 in number. (ix) 37.56". (x) Feb. 1952.

## 2. TREATMENTS :

1. Topping leaving 12 leaves.
2. Topping leaving 14 leaves.
3. Topping leaving 16 leaves.
4. Topping leaving 18 leaves.
5. Only flower head removed.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/34.91 acre. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of tobacco. (iv) (a) 1950—1954. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 496 lb./ac.

(ii) 53.6 lb./ac.

(iii) Treatments do not differ significantly.

(iv) Av. yield of cured leaf in lb./ac.

Treatment	Av. yield
1.	492
2.	489
3.	553
4.	477
5.	471
S.E./mean	= 23.9 lb./ac.

Crop :- Tobacco.

Site :- Tobacco Res. Stn., Madira.

Ref :- A.P. 52(14).

Type :- 'M'.

Object :—To determine the optimum stage of topping.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Chillies. (c) F.Y.M. at 10 C.L./ac. (ii) (a) Clay soils. (b) Refer soil analysis, Madira. (iii) 15.10.1952 (iv) (a) 3 ploughings, harrowing with marker. (b) Transplanting. (c)—. (d) 3' x 33". (e) N.A. (v) F.Y.M. 7 C.L./ac. and 140 lb./ac. of paddy Fertilizer Mixture. (vi) Natu Tobacco (G. later white Ash). (vii) Irrigated. (viii) Hand weeding. (ix) 23.45" (x) 5.3.1953.

## 2. TREATMENTS :

1. Topping leaving 12 leaves.
2. Topping leaving 14 leaves.
3. Topping leaving 16 leaves.
4. Topping leaving 18 leaves.
5. Only flower head removed.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 90.75' x 13.75'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of tobacco. (iv) (a) 1950—1954. (c) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 644 lb./ac.

(ii) 194 lb./ac.

(iii) Treatments do not differ significantly.



(iv) Av. yield of cured leaf in lb./ac.

Treatment	Av. yield
1.	685
2.	648
3.	653
4.	580
5.	653
S.E./mean	= 79.0 lb./ac.

Crop :- Tobacco.

Ref :- A.P. 53(24).

Site :- Tobacco Res. Stn., Madira.

Type :- 'C'.

Object —To study the influence of topping on cured leaf produce.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut and Redgram. (c) Nil. (ii) (a) Clay soils. (b) Refer soil analysis, Madira. (iii) 15.8.1953. (iv) (a) 3 ploughings, harrowing and working with marker. (b) Transplanting. (c)—. (d) 33"×33". (e) N.A. (v) Nil. (vi) Natu Tobacco (Guntur white Ash). (vii) Irrigated. (viii) Working blade harrow and weeding. (ix) 43.04". (x) 11.3.1954.

## 2. TREATMENTS :

1. Topping after leaving 12 leaves.
2. Topping after leaving 14 leaves.
3. Topping after leaving 16 leaves.
4. Topping after leaving 18 leaves.
5. Only flower head removed.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b) 90'×12'. (v) N.A. (vi) Yes:-

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of tobacco. (iv) (a) 1950—1954. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 736 lb./ac.
- (ii) 220 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of cured leaf in lb./ac.

Treatment	Av. yield
1.	783
2.	740
3.	746
4.	663
5.	746
S.E./mean	= 89.9 lb./ac.

Crop :- Tobacco.

Ref :- A.P. 52(15).

Site :- Tobacco Res. Stn., Madira.

Type :- 'C'.

Object :-To find out whether topping is desirable and if so at what stage it has to be done.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jowar. (c) F.Y.M. at 3 C.L./ac. (ii) (a) Clay soils. (b) Refer soil analysis, Madira. (iii) 15.8.1952. (iv) (a) 3 ploughings, harrowing and working with marker. (b) Transplanting. (c)—. (d) 33"×33". (e) N.A. (v) F.Y.M. at 3 C.L./ac. (vi) Virginia tobacco. (vii) Irrigated. (viii) Working blade harrow and weeding. (ix) 23.45". (x) 4 to 21.2.1953.

## 2. TREATMENTS :

1. No topping.
2. Topping when flower head fully emerged.
3. Topping after 3rd priming.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 60' × 18'. (b) 60' × 18'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of tobacco. (iv) (a) 1952-1953. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 297 lb./ac.  
 (ii) 64.8 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of cured leaf in lb./ac.
- | Treatment | Av. yield      |
|-----------|----------------|
| 1.        | 393            |
| 2.        | 253            |
| 3.        | 244            |
| S.E. mean | = 26.4 lb./ac. |

Crop :- Tobacco.

Ref :- A.P. 53(25)/52(15).

Site :- Tobacco Res. Stn., Madira.

Type :- 'C'.

Object :- To find out whether topping is desirable and if so at what stage it has to be done.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Chillies. (c) F.Y.M. at 3 C.L./ac. (ii) (a) Clay soils. (b) Refer soil analysis, Madira. (iii) 18.11.1953. (iv) (a) 3 ploughings, harrowing of working with marker. (b) Transplanting. (c) —. (d) 33" × 33". (e) N.A. (v) F.Y.M. at 3 C.L./ac. (vi) Virginia tobacco. (vii) Irrigated. (viii) Working blade harrow and weeding. (ix) 43.94". (x) 10.3.1954 and 31.3.1954.

## 2. TREATMENTS :

1. No topping.
2. Topping after flower head fully emerged.
3. Topping after 3rd priming.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a), (b) 60' × 18'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of tobacco. (iv) (a) 1952-1953. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 477 lb./ac.  
 (ii) 233 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of cured leaf in lb./ac.
- | Treatment | Av. yield      |
|-----------|----------------|
| 1.        | 543            |
| 2.        | 487            |
| 3.        | 400            |
| S.E. mean | = 95.1 lb./ac. |

Crop :- Groundnut.

Ref :- A.P. 48(55).

Site :- Agri. Res. Institute, Rajendranagar.

Type :- 'M'.

Object :- To determine the manurial requirements of Groundnut.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Groundnut. (c) Nil. (ii) (a) Chalka. (b) Refer soil analysis, Rajendranagar. (iii) 7.7.1948.  
 (iv) (a) 1 ploughings and 2 harrowings. (b) Sown behind cultivator. (c) N.A. (d) 12"×4". (e) N.A. (v) Nil.  
 (vi) Spanish Peanut NO.-5. (vii) N.A. (viii) One hoeing and one weeding. (ix) 34.16" (June to Nov.).  
 (x) 4.11.1948.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of N :  $N_0=0$  and  $N_1=30$  lb./ac.(2) 2 levels of  $P_2O_5$  :  $P_0=0$  and  $P_1=30$  lb./ac.N as G.N.C. and  $P_2O_5$  as Super.

Other details N.A.

## 3. DESIGN :

- (i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 7. (iv) (a), (b) 121'×9'. (v) Nil. (vi) Yes.

## 4. GENERAL :

- (i) N.A. (ii) Nil. (iii) Pod yield. (iv) (a) 1948—1950. (b) N.A. (c) N.A. (v) (a), (b) N.A. (vi) Nil.  
 (vii) About 300 lb./ac. is the normal yield in Telengana.

## 5. RESULTS :

(i) 269 lb./ac.

(ii) 134.9 lb./ac.

(iii) None of the effects is significant.

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

	$P_0$	$P_1$	Mean
$N_0$	209	248	229
$N_1$	319	299	309
Mean	264	274	269

S.E. of marginal mean

= 36.1 lb./ac.

S.E. of body of table

= 51.0 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 49(40).

Site :- Agri. Res. Institute, Rajendranagar.

Type :- 'M'.

Object :- To determine the manurial requirements of Groundnut.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Castor. (c) Nil. (ii) (a) Chalka. (b) Refer soil analysis, Rajendranagar. (iii) 22.6.1949.  
 (iv) (a) Ploughing and bakharing. (b) Sown behind the cultivator. (c) N.A. (d) 12"×4". (e) N.A.  
 (v) Nil. (vi) Spanish Peanut No. 5. (vii) N.A. (viii) One hoeing and one weeding. (ix) 21.70".  
 (x) 23.10.1949.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of N :  $N_0=0$  and  $N_1=30$  lb./ac.2 levels of  $P_2O_5$  :  $P_0=0$  and  $P_1=30$  lb./ac.N as G.N.C. and  $P_2O_5$  as Super.

Other details N.A.

## 3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 7. (iv) (a), (b) 121'×9'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Pod yield. (iv) (a) 1948—1950. (b) N.A. (c) N.A. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1461 lb./ac.  
 (ii) 290.0 lb./ac.  
 (iii) Only main effect of P is significant.  
 (iv) Av. yield of pods in lb./ac.

	P <sub>0</sub>	P <sub>1</sub>	Mean
N <sub>0</sub>	1228	1532	1380
N <sub>1</sub>	1457	1628	1543
Mean	1343	1580	1461

S.E. of marginal mean = 77.5 lb./ac.  
 S.E. of body of table = 109.6 lb./ac.

Crop :- Groundnut (*Abi.*).

Ref :- A.P. 50(40).

Site :- Agri. Res. Institute, Rajendranagar.

Type :- 'M'.

Object :- To determine the manurial requirements of Groundnut.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Surhemp for seed. (c) Nil. (ii) (a) Chalka. (b) Refer soil analysis, Rajendranagar. (iii) 8.7.1950. (iv) (a) 2 dry ploughings, 2 bakherings and levelling. (b) Sown behind the cultivator. (c) N.A. (d) 12"×4". (e) —. (v) Nil. (vi) Spanish peanut No. 5. (vii) N.A. (viii) Two hoeings and one weeding. (ix) 42.15". (x) 8.11.1950.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of N : N<sub>0</sub>=0 and N<sub>1</sub>=30 lb./ac.

(2) 2 levels of P<sub>2</sub>O<sub>5</sub> : P<sub>0</sub>=0 and P<sub>1</sub>=30 lb./ac.

N as G N C. and P<sub>2</sub>O<sub>5</sub> as Super. Other details N.A.

## 3. DESIGN :

(i) 2×2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 7. (iv) (a) and (b) 121'×9'. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Slight attack of aphids. Gammaxene dusted. (iii) Pod yield. (iv) (a) 1948 to 1950. (b) N.A. (c) N.A. (v) (a) (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 79 lb./ac.  
 (ii) 42.3 lb./ac.  
 (iii) Main effect of P alone is highly significant.

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

	P <sub>0</sub>	P <sub>1</sub>	Mean
N <sub>0</sub>	52	104	78
N <sub>1</sub>	56	104	80
Mean	54	104	79

S.E. of marginal mean=11.3 lb./ac.

S.E. of body of table=16.0 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 52(19).

Site :- Lam Farm, Guntur.

Type :- 'C'.

Object :- To determine the effect of dibbling H-420 Cotton on the yield of standing Groundnut.

## 1. BASAL CONDITIONS :

(i) (a) Chillies-Groundnut. (b) Chillies. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) 26.6.1952. (iv) (a) No ploughing but guntaku. (b), (c), (d) and (e) N.A. (v) Nil. (vi) Groundnut-A.H. 45. (vii) Rainfed. (viii) Weedings twice, gap filing for groundnut, thinning of cotton seedlings. (ix) N.A. (x) 23.10.1952.

## 2. TREATMENTS :

1. Groundnut alone.
2. Groundnut+Cotton sown after one month.
3. Groundnut+Cotton sown after 45 days.

Each plot consists of 8 rows of groundnut and 4 rows of cotton. Cotton dibbled in alternate spaces. Four rows of groundnut and 2 rows of cotton taken for experimental purposes.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 39.6' × 7.3'. (b) 33.0' × 3.6'. (v) 3.3' on either side of length and 1.7', on either side of breadth of the net plot. (vi) Yes.

## 4. GENERAL ;

(i) Normal. Germination good. Uniform stand. Pod setting very poor. (ii) Wilt attack. Drenching the soil at the base of the plants by perenox. Aphids-gamma-xene dusting. (iii) Nil. (iv) (a) 1951 to 1952. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## RESULTS :

- (i) 132 lb./ac.
- (ii) 35.5 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of pods in lb./ac.

Treatment	Av. yield
1.	126
2.	134
3.	135
S.E./mean	= 12.5 lb./ac.

Crop :- Groundnut (*Kharif*).

Ref :- A.P. 52 (89).

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

Type :- 'D'.

Object :- To find out suitable control measures against 'Tikka' ceraspora leaf spots of Groundnut.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Light black soil. (b) Refer soil analysis, Rajendranagar. (iii) 4.7.1952. (iv) (a) 3 ploughings. (b) Sown by dibbling. (c) About 80 lb./ac. (d) 9' from hill to hill 1' apart (row to row). (e) N.A. (v) N.A. (vi) Local (Medium). (vii) Unirrigated. (viii) 3 or 4 weedings at an interval of 20 days. (ix) 22.59%. (x) 11.11.1952.

## 2. TREATMENTS :

1. Agrosan	4 ozs.	9. Feresan	6 ozs.
2. Agrosan	5 ozs.	10. Landisan	4 ozs.
3. Agrosan	6 ozs.	11. Landisan	5 ozs.
4. Hawesan	4 ozs.	12. Landisan	6 ozs.
5. Havvesan	5 ozs.	13. Sulphur	4 ozs.
6. Hevvesan	6 ozs.	14. Sulphur	5 ozs.
7. Fersan	4 ozs.	15. Sulphur	6 ozs.
8. Feresan	5 ozs.	16. Control	

Seeds treated with the above treatments 4 days before sowing.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 63'×14'. (b) 60.5'×12'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Percentage of infection. Intensity as per grade, No. of plants. Pod yield. (iv) (a) 1952 to 1957. (b) No. (c) Nil. (v) (a) Nil. (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 142.2 lb./ac.

(ii) 41.1 lb./ac.

(iii) Treatments do not differ significantly.

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

Treatment	Av. yield	Treatment	Av. yield
1.	163.4	9.	127.4
2.	106.6	10.	112.2
3.	114.9	11.	142.4
4.	156.7	12.	107.9
5.	113.9	13.	114.2
6.	135.5	14.	110.4
7.	143.2	15.	108.9
8.	115.9	16.	114.3
S.E./mean	= 14.6 lb./ac.		

Crop :- Groundnut.

Ref :- A.P. 53 (103).

Site :- Agri. Res. Institute, Rajendranagar.

Type :- 'D'.

Object :- To find out suitable control measure against 'Tikka' ceraspora leaf spots of Groundnut (Seed dressers).

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Light Black soil. (b) Refer soil analysis, Rajendranagar. (iii) N.A. (iv) (a) 3 ploughings. (b) Sown by dibbling. (c) About 80 lb./ac. (d) 9'×12'. (e) N.A. (v) N.A. (vi) Local (medium). (vii) Unirrigated. (viii) 3 or 4 weedings at an interval of 20 days. (ix) N.A. (x) N.A.

## 2. TREATMENTS :

1. Sulphur.
  2. Agrosan G.N.
  3. Landisan.
  4. Ceresan.
  5. Harvesan.
  6. Fernisan.
  7. Nonrithane.
  8. Trithane.
  9. Control.
- Other details N.A.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/94.69 ac. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Normal. (ii) Tikka attack. (iii) Percentage of infection. Intensity as per grades and pod yield. (iv) (a) 1952 to 1957. (b) No. (c) Nil. (v) (a) Nil. (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 638 lb./ac.  
 (ii) 196.9 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of pods in lb./ac.

Treatment	Av. yield
1.	706
2.	734
3.	541
4.	537
5.	572
6.	690
7.	670
8.	584
9.	706
S.E./mean	=114.0 lb./ac.

Crop :- Groundnut (*Kharif*).

Site :- Agri. Res. Institute, Rajendranagar.

Ref :- A.P. 52(90).

Type :- 'D'.

Object :- To find out a suitable spray or dust against leaf spot for Groundnut.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Light black soil. (b) Refer soil analysis, Rajendranagar. (iii) N.A. (iv) (a) 3 ploughings. (b) Sown by dibbling. (c) About 80 lb./ac. (d) 9" x 12". (e) N.A. (v) N.A. (vi) Local (medium). (vii) Unirrigated. (viii) 3 or 4 hand weeding at the interval of 20 days. (ix) 22.59" (x) N.A.

## 2. TREATMENTS :

1. Bordeaux mixture 1%.
2. Perenox 0.35%.
3. Cupravit 0.35%.
4. Agri cop 0.4%.
5. Sulphur 10 lb./ac.
6. Control.

Sprayed and dusted three times at monthly intervals.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 62.5' x 14'. (b) 60' x 12'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory. (ii) N.A. (iii) Intensity of disease and pod yield. (iv) (a) 1952-1957. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 60.18 lb./ac.  
 (ii) 12.10 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of pods in lb./ac.

Treatment	Av. yield
1.	52.63
2.	48.92
3.	65.18
4.	62.12
5.	72.36
6.	59.85
S.E./mean	= 6.09 lb./ac.

Crop :- Groundnut.

Ref :- A.P. 53(102).

Site :- Agri. Res. Institute Rajendranagar.

Type :- 'D'.

Object :- To find out a suitable spray or dust against leaf spot for Groundnut.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Loam. (b) Refer soil analysis, Rajendranagar. (iii) 6.7.1953. (iv) (a) 3 ploughings. (b) Sown by dibbling. (c) About 80 lb./ac. (d) 9' x 12'. (e) N.A. (v) N.A. (vi) Local (medium). (vii) Unirrigated. (viii) 3 to 4 hand weedings at the interval of 20 days. (ix) N.A. (x) 14.11.1953.

## 2. TREATMENTS :

- Bordeaux mixture 1%.
- Sulphur dust 20 lb./ac.
- Diathane Z-78 (1 lb. in 50 gallons).
- Perenox 0.35%.
- Fernsul (1 oz. in 1 gallon).
- Wetcol 15 (1 oz. in one gallon).
- Agri cop (4%).
- Cupravit.
- Diathane D-14.
- Control.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 3. (iv) (a) 25' x 22'. (b) 23' x 20'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) N.A. (iii) Intensity of disease ; pod yield. (iv) (a) 1952-1957. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 613 lb./ac.  
 (ii) 214.9 lb. ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of pods in lb./ac.

Treatment	Av. yield
1.	900
2.	723
3.	619
4.	643
5.	608
6.	448
7.	561
8.	426
9.	466
10.	734
S.E./mean	= 124.0 lb./ac.



Crop :- Chillies.

Ref :- A.P. 48 (5).

Site :- Lam Farm, Guntur.

Type :- 'M'.

Object :- To compare the effect of F.Y.M. and G.N.C. on the yield of the crop.

## 1. BASAL CONDITIONS :

(i) (a) Jowar-Country tobacco-*Variga*-Chillies. (b) *Variga*. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) N.A. (iv) (a) 6 to 7 ploughings. (b) Transplanted. (c) —. (d) 22" × 11". (e) 1. (v) Nil. (vi) 398. (vii) Unirrigated. (viii) 3 to 4 weedings. (ix) N.A. (x) N.A.

## 2. TREATMENTS:

1. G.N.C. at 500 lb./ac.
2. F.Y.M. at 10,000 lb./ac.
3. No manure.

F.Y.M. applied one month prior to sowing and ploughed in. G.N.C applied at sowing and puddled.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 33' × 16.5'. (b) 26' × 9.2'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of chillies. (iv) (a) 1944-1948. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

- (i) 782 lb./ac.  
 (ii) N.A.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of ripe chillies in lb./ac.

Treatment	Av. yield.
1.	710
2.	819
3.	817
S.E./mean	=N.A.

Crop :- Chillies.

Ref :- A.P. 48(22).

Site :- Lam Farm, Guntur.

Type :- 'M'.

Object :- To study the residual effect of G.N.C. and F.Y.M. on the yield of the crop.

## 1. BASAL CONDITIONS :

(i) (a) Jowar-Country tobacco-*Variga*-Chillies. (b) *Variga*. (c) As under treatments. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) N.A. (iv) (a) 6 to 7 ploughings. (b) Transplanted. (c) —. (d) 22" × 11". (e) 1. (v) Nil. (vi) 398. (vii) Unirrigated. (viii) 3 to 4 weedings. (ix) N.A. (x) N.A.

## 2. TREATMENTS :

1. G.N.C. at 500 lb./ac.
2. F.Y.M. at 10,000 lb./ac.
3. No manure.

Manure applied to the previous crop *Variga*.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 33' × 16.5'. (b) 26' × 9.2'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Chillies yield. (iv) (a) 1945-1948. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

- (i) 636 lb./ac.  
 (ii) N.A.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of ripe chillies in lb./ac.

Treatment	Av. yield
1.	716
2.	632
3.	561
S.E./mean	=N.A.

Crop :- Chillies.

Ref :- A.P. 50(62).

Site :- Lam Farm, Guntur.

Type :- 'M'.

Object :- To study the comparative effects of night soil compost with F.Y.M. in getting high yields.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil. analysis, Guntur. (iii) First week of August 50.10.1950. (iv) (a) to (e) N.A. (v) Nil. (vi) G-1. (vii) Unirrigated. (viii) 2 or 3 hand weedings (ix) 5.75\* (October to Feb.). (x) 2nd and 24th Feb. 1951.

## 2. TREATMENTS :

- F.Y.M. at 120 lb./ac. of N.
  - Night soil compost at 120 lb./ac. of N.
  - Control (no manure).
- Manures applied on 1.10.1950.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 1.50 cents. (b) 0.68 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

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

## 5. RESULTS :

- (i) 828 lb./ac.  
 (ii) 151.9 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of ripe chillies in lb./ac.

Treatment	Av. yield
1.	787
2.	1122
3.	574
S.E./mean	=62.1 lb./ac.

Crop :- Chillies.

Ref :- A.P. 48(3).

Site :- Lam Farm, Guntur.

Type :- 'C'.

Object :- To find out whether close spacing of plants in rows can be a means to reduce the loss due to grub and thrips.

## 1. BASAL CONDITIONS :

(i, (a) Nil. (b) Fodder Jowar. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (ii.) 29.9.1948. (iv) (a) 6 to 7 ploughings. (b) Transplanted. (c) —. (d) As under treatments. (e) As under treatments. (v) N.A. (vi) N.A. (vii) Unirrigated. (viii) 3 to 4 weedings. (ix) 13.26\* (Sep. 1948 to March 1949). (x) 11.2.1949 to 5.3.1949.

## 2. TREATMENTS :

1. Spacings between rows 22" × within rows 22" in bunches (control).
2. Spacings between rows 22" × within rows 11" in singles.
3. Spacings between rows 22" × within rows 7.3" in singles.
4. Spacings between rows 22" × within rows 5.5" in singles.

## 3. DESIGN:

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 0.21 cents. (b) 0.10 cents. (v) N.A. (vi) Yes.

## 4. GENERAL:

- (i) Chillies affected owing to excessive rainfall in November 1948. (ii) Nil. (iii) Yield of chillies. (iv) (a) 1947 to 1949. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2242 lb./ac.
- (ii) 345.0 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of ripe chillies in lb./ac.

Treatment	Av. yield
1.	2141
2.	2135
3.	2112
4.	2581
S.E./mean	=141.0 lb./ac.

Crop :- Chillies.

Ref :- A.P. 49(19).

Site :- Lam Farm, Guntur.

Type :- 'C'.

Object :- To find out whether close spacing of plants in rows can be a means to reduce the loss due to grubs and thrips.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Jowar with redgram. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) 20.7.1949/20.9.1949. (iv) (a) 6 to 7 ploughings. (b) Transplanted. (c) —. (d), (e) As under treatments. (v) F.Y.M. at 10 C.L./ac. (vi) G-1. (vii) Unirrigated. (viii) 3 to 4 weedings. (ix) N.A. (x) 16.1.1950 to 20.3.1950.

## 2. TREATMENTS:

1. Spacings between rows 22" × within rows 22" in bunches (control).
2. Spacings between rows 22" × within rows 11" in singles.
3. Spacings between rows 22" × within rows 7.3" in singles.
4. Spacings between rows 22" × within rows 5.5" in singles.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 3.36 cents. (b) 2.48 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Not satisfactory. Heavy rains and cyclonic winds. (ii) Severe attack of cock chaffer grubs, fusarium wilt and thrips. (iii) Yield of chillies. (iv) (a) 1947-1949. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 334 lb./ac.
- (ii) 24.6 lb./ac.
- (iii) Treatments differ significantly.
- (iv) Av. yield of ripe chillies in lb./ac.

Treatment	Av. yield
1.	266
2.	331
3.	358
4.	381
S.E./mean	= 10.0 lb./ac.

Crop :- Chillies.

Ref :- A.P. 50(1).

Site :- Lam Farm, Guntur.

Type :- 'C'.

Object :- To compare the recommended spacing with the local method of bunch planting.

## 1. BASAL CONDITIONS :

(i) (a) No. (b) Millets and redgram mixture. (c) Nil. (ii) Deep black soil. (b) Refer soil analysis, Guntur. (iii) 15.7.1950, 26.9.1950. (iv) (a) 5 ploughings. (b) Transplanting. (c) —. (d) and (e) As under treatments. (v) F.Y.M. at 20 C.L./ac. + G.N.C. at 20 lb./ac. of N. (vi) Chillies 1402. (vii) Unirrigated. (viii) 2 weedings. (ix) 21.95'. (x) 19.1.1951 to 3.2.1951.

## 2. TREATMENTS :

1. Local Method : 22" × 22" spacing, 4 seedlings/bunch and interculture both ways.
2. Recommended method : 22" × 5½" spacing, single seedling per hole, and interculture one way.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 12. (iv) (a) 36.3' × 34.1'. (b) 29.0' × 27.2'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Slight attack of thrips. (iii) Yield of chillies. (iv) (a) 1950—1952. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 1489 lb./ac.
- (ii) 289.3 lb./ac.
- (iii) Treatments differ highly significantly.
- (iv) Av. yield of dry chillies in lb./ac.

Treatment	Av. yield
1.	1225
2.	1754
S.E., mean	= 83.5 lb./ac.

Crop :- Chillies.

Ref :- A.P. 51(28).

Site :- Lam Farm, Guntur.

Type :- 'C'.

Object :- To compare the recommended close planting against local method of bunch planting.

## 1. BASAL CONDITIONS :

(i) (a) Chillies—Cotton. (b) Cotton. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) 5.10.1951. (iv) (a) 6 ploughings. (b) Transplanted. (c) —. (d) and (e) As under treatments. (v) F.Y.M. at 20 C.L./ac. + G.N.C. at 10 lb./ac. of N. (vi) Chillies-1402. (vii) Unirrigated. (viii) 2 weedings (hand) and one interculture with planet junior hoe. (ix) 21.22'. (x) 6.2.1952 and 17.3.1952.

## 2. TREATMENTS :

1. Local method of bunch planting, 4 seedlings/hole at 22" × 22" spacing and interculture both ways.
2. Local method of bunch planting, 4 seedlings/hole at 22" × 22" spacing and interculture one way only.
3. Close planting at 22" × 5½" spacing, one seedling/hole and interculture one way only.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 25.4' × 36.3'. (b) 10.9' × 29.0'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Season abnormal after transplanting. (ii) Nil. (iii) Yield of chillies. (iv) (a) 1950—1952. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 254 lb./ac.
- (ii) 49.3 lb./ac.
- (iii) Treatments do not differ significantly.

## (iv) Av. yield of dry chillies in lb./ac.

Treatment	Av. yield
1.	279
2.	243
3.	240
S.E./mean	= 17.4 lb./ac.

Crop :- Chillies.

Ref :- A.P. 52(12).

Site :- Lam Farm, Guntur.

Type :- 'C'.

Object :- To compare the recommended close spacing against local method of bunch planting.

## 1. BASAL CONDITIONS :

(i) (a) Chillies—cotton. (b) Chillies and cotton. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 8.10.1952. (iv) (a) 5 ploughings. (b) Transplanting. (c) —. (d) and (e) As under treatments. (v) F.Y.M. at 10 C.L./ac. + *Pillipesara* at 400 lb./ac. + G.N.C. at 30 lb./ac. of N. (vi) Chillies 1402. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 25th January, 18th and 28th February, 1953.

## 2. TREATMENTS :

1. Local method of bunch planting, 4 seedlings/hole at 22" × 22" spacing and interculture both ways.
2. Local method of bunch planting, 4 seedlings/hole at 22" × 22" spacing and interculture one way only.
3. Close planting at 22" × 5½" spacing, one seedling/hole and interculture one way only.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 25.4' × 72.6'. (b) 10.9' × 58.4'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of chillies. (iv) (a) 1950—1952. (b) No. (c) N.A. (v) (a) and (b) Nil (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 604 lb./ac.  
(ii) 160.6 lb./ac.  
(iii) Treatments do not differ significantly.  
(iv) Av. yield of dry chillies in lb./ac.

Treatment	Av. yield
1.	565
2.	610
3.	638
S.E./mean	= 65.6 lb./ac.

Crop :- Chillies.

Ref :- A.P. 50 (2).

Site :- Lam Farm, Guntur.

Type :- 'C'.

Object :- To compare the incidence of thrips by delaying planting and judging yield in relation to thrip incidence.

## 1. BASAL CONDITIONS :

(i) (a) No. (b) Millets and redgram mixture. (c) Nil. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) Nursery raised on 15.7.1950 transplanted on 20.9.1950, nursery raised on 30.7.1950/ transplanted on 5.10.1950, nursery raised on 15.8.1950/transplanted on 20.10.1950 and nursery raised on 31.8.1950 transplanted on 4.11.1950. (iv) (a) 5 ploughings. (b) Transplanting. (c) —. (d) 22" × 7½". (e) 1. (v) F.Y.M. at 20 C.L./ac. + G.N.C. at 30 lb./ac. (vi) Chillies-1402. (vii) Unirrigated. (viii) 2 weedings. (ix) 21.95". (x) 28.1.1951 and 3.2.1951.

## 2. TREATMENTS:

1. Normal planting.
2. Planting a fortnight later.
3. Planting two fortnights later.
4. Planting three fortnights later.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 34.5' × 18.2'. (b) 30.2' × 10.9'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Late planted crop is poor in growth. (ii) Attack of thrips. (iii) The mean percentage of plants with thrips grade 3 to the total population and chillies yield. (iv) (a) No. (b) No. (c) No. (v) (a), (b) Nil. (vi) N.A. (vii) As no yield was available for the fourth treatment the data was analysed without this treatment.

## 5. RESULTS :

- (i) 483 lb./ac.  
 (ii) 280.3 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of green chillies in lb./ac.

Treatment	Av. yield
1.	954
2.	412
3.	82
4.	Failed
S.E., mean	=114.0 lb./ac.

Crop :- Chillies.

Ref :- A.P. 51 (36)

Site :- Lam Farm, Guntur.

Type :- 'C'.

Object :—To find out the number of seedlings required per bunch and optimum spacing between bunches for maximum yield.

## 1. BASAL CONDITIONS:

(i) Cotton-chillies. (b) Cotton. (c) N.A. (ii) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 7.10.1951. (iv) (a) 5 ploughings. (b) Transplanted. (c)—. (d) 22" between rows and as per treatments within rows (e) As under treatments. (v) F.Y.M. at 20 C.L./ac. + G.N.C. at 30 lb./ac. of N. F.Y.M. given as basal dose at the time of ploughing and incorporated in the soil. G.N.C. given as top dressing after transplanting. (vi) Chillies 1402. (vii) Unirrigated. (viii) 2 weedings and one interculture with *palmet* junior hoe. (ix) 10.36". (x) 31.1.1952 to 15.3.1952.

## 2. TREATMENTS :

Main-plot treatments :

Spacing between rows × spacing within rows :  $R_1=22" \times 5.5"$ ,  $R_2=22" \times 11"$  and  $R_3=22" \times 22"$ .

Sub-plot treatments :

No. of seedlings/hole :  $S_1=1$ ,  $S_2=2$ ,  $S_3=4$ ,  $S_4=6$  and  $S_5=8$ .

## 3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 10.9' × 39.9'. (b) 7.3' × 32.7'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Progress of the crop not encouraging. Prolonged drought after transplanting. (ii) Heavy incidence of thrips. (iii) Chillies yield (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 149 lb./ac.  
 (ii) (a) 85.19 lb./ac.  
 (b) 48.15 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield of dry chillies in lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	Mean
R <sub>1</sub>	174	158	154	175	81	149
R <sub>2</sub>	157	101	165	224	140	157
R <sub>3</sub>	140	91	139	195	145	142
Mean	157	116	153	198	122	149

## S.E. of difference of two

1. R marginal means =34.77 lb./ac.  
 2. S marginal means =15.21 lb./ac.  
 3. S means at the same level of R =34.05 lb./ac.  
 4. R means at the same level of S =44.53 lb./ac.

Crop :- Chillies.

Ref :- A.P. 52(38).

Site :- Lam Farm, Guntur.

Type :- 'C'.

Object :- To find out the number of seedlings required per bunch and optimum spacing between bunches for maximum yield.

## 1. BASAL CONDITIONS :

(i) (a) Chillies—cotton. (b) Cotton. (c) 25 C.L./ac. of F.Y.M.+5000 lb./ac. of G.L.+40 lb./ac. of N as A/S. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) Transplanted on 9.10.1952. (iv) (a) 5 ploughings. (b) Transplanting. (c)—. (d) and (e) As under treatments. (v) F.Y.M. at 10 C.L./ac.+4000 lb./ac. of pillipesara as G.M.+30 lb./ac. of N as G.N.C. (vi) Chillies-1402. (vii) Unirrigated. (viii) 2 weedings and one interculture with planet junior hoe. (ix) N.A. (x) 25.1.1953 to 28.2.1953.

## 2. TREATMENTS :

## Main-plot treatments :

Spacing between rows × spacing with in rows : R<sub>1</sub>=22" × 5.5", R<sub>2</sub>=22" × 11" and R<sub>3</sub>=22" × 22".

## Sub-plot treatments :

No. of seedlings/hole : S<sub>1</sub>=1, S<sub>2</sub>=2, S<sub>3</sub>=4, S<sub>4</sub>=6 and S<sub>5</sub>=8.

## DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 21.8' × 33'. (b) 14.5' × 30.4'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Only yield of chillies (iv) (a) 1951—1953. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 395 lb./ac.  
 (ii) (a) 175.9 lb./ac.  
 (b) 176.9 lb./ac.  
 (iii) None of the effects is significant.

(i) Av. yield of dry chillies in lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	Mean
R <sub>1</sub>	591	383	609	394	381	473
R <sub>2</sub>	256	335	486	376	483	387
R <sub>3</sub>	221	264	320	321	500	325
Mean	356	330	471	363	454	395

S.E. of difference of two

1. R marginal means = 55.9 lb./ac.
2. S marginal means = 72.7 lb./ac.
3. S means at the same level of R = 125.1 lb./ac.
4. R means at the same level of S = 125.0 lb./ac.

Crop :- Chillies.

Ref :- A.P. 53(27).

Site :- Lam Farm, Guntur.

Type :- 'C'.

Object :—To find out the number of seedlings required per bunch and optimum spacing between bunches for maximum yield.

## 1. BASAL CONDITIONS :

(i) (a) No. (b) Chillies. (c) 10 C.L./ac. of F.Y.M.+1 cwt./ac. of A/S+2 bags/ac. of G.N.C. (ii) (a) Deep black clayey soil. (b) Refer soil analysis, Guntur. (iii) 17.7.1953./18.9.1953. (iv) (a) 6 ploughings. (b) Transplanting. (c,— (d) and (e) As under treatments. (v) 10 C.L./ac. of F.Y.M.+1 cwt./ac. of A/S+2 bags/ac. of G.N.C. (vi) G-1. (vii) Irrigated. (viii) 2 weedings and one interculture with planet junior hoe. (ix) 16.8". (x) 3.1.1954 to 24.2.1954.

## 2. TREATMENTS :

Main-plot treatments :

Spacing between rows × spacing within rows : R<sub>1</sub>=22" × 5.5", R<sub>2</sub>=22" × 11" and R<sub>3</sub>=22" × 22."

Sub-plot treatments :

No. of seedlings/hole : S<sub>1</sub>=1, S<sub>2</sub>=2, S<sub>3</sub>=4, S<sub>4</sub>=6 and S<sub>5</sub>=8.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 21.8' × 33'. (b) 14.5' × 30'. (v) 3.6' breadth wise; 1.3' length wise. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Thrips attack, agnocide P 520 was sprayed. (iii) Yield of chillies only. (iv) (a) 1951—1953. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 595 lb./ac.
- (ii) (a) 127.5 lb./ac.  
(b) 87.8 lb./ac.
- (iii) All effects are highly significant.
- (iv) Av. yield of dry chillies in lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	Mean
R <sub>1</sub>	330	403	424	494	623	455
R <sub>2</sub>	493	476	634	644	698	589
R <sub>3</sub>	699	635	780	778	816	742
Mean	507	505	613	639	712	595

S.E. of difference of two

1. R marginal means = 40.3 lb./ac.
2. S marginal means = 35.9 lb./ac.
3. S means at the same level of R = 62.1 lb./ac.
4. R means at the same level of S = 68.7 lb./ac.



Crop :- Chillies.

Ref :- A.P. 53(19).

Site :- Lam Farm, Guntur.

Type :- 'C'.

Object :- To compare the yields of recommended close spacing with singles receiving one-way interculture against local bunch planting with and without two-way interculture.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Chillies. (c) 25 C.L./ac. of F.Y.M.+5000 lb./ac. of G.L. +40 lb./ac. of N. as A/S. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur, (iii) 19.9.1953. (iv) (a) 5 ploughings. (b) Transplanting. (c) —. (d) and (e) As under treatments. (v) 25 C.L./ac. of F.Y.M.+5000 lb./ac. of G.L.+40 lb./ac. of N as A/S. (vi) Chillies-1402. (vii) Unirrigated. (viii) 2 weedings. (ix) 16.2". (x) 2.1.1954 ; 30.1.1954 ; 24.2.1954.

## 2. TREATMENTS :

1. Recommended method : 1 seedling/hill,  $5\frac{1}{2}'' \times 22''$  spacing and one way interculture.
2. Local method of bunch planting : 4 seedlings per hill, distance between hill to hill and row to row 22" with length wise and cross wise interculture.
3. Local method of bunch planting : 4 seedlings per hill, distance between hill to hill and row to row 22", with one way interculture.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a)  $58.1' \times 43.6'$ . (b)  $54.5' \times 39.9'$ . (v) About 2' on all sides left as border. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Chillies yield. (iv) (a) 1953—contd. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 614 lb./ac.
- (ii) 12.46 lb./ac.
- (iii) Treatments do not differ significantly.
- (iv) Av. yield of dry chillies in lb./ac.

Treatment	Av. yield
1.	626
2.	614
3.	603
S.E./mean	= 5.08 lb./ac.

Crop :- Chillies.

Ref :- A.P. 53(21).

Site :- Lam Farm, Guntur.

Type :- 'C'.

Object :- To find out the optimum age of seedlings for transplanting along with methods of planting.

## 1. BASAL CONDITIONS :

(i) (a) Chillies after chillies. (b) Chillies. (c) 25 C.L./ac. of F.Y.M.+5000 lb./ac. of G.L.+40 lb./ac. of N as A/S. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) Planting on 16.9.1953. (iv) (a) 5 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (v) 25 C.L./ac. of F.Y.M.+5000 lb./ac. of G.L.+40 lb./ac. of N as A/S. (vi) G-2-chillies. (vii) Unirrigated. (viii) 2 weedings. (ix) 16.2". (x) 14.1.1954 to 22.2.1954.

## 2. TREATMENTS :

## Main-plot treatments :

Methods of planting :  $M_1$ =Close and  $M_2$ =Bunch.

## Sub-plot treatments ;

Age of seedlings :  $A_1$ =8 weeks old,  $A_2$ =7 weeks old,  $A_3$ =6 weeks old,  $A_4$ =5 weeks old and  $A_5$ =4 weeks old.

## 3. DESIGN :

(i) (a) Split-plot. (ii) (a) 2 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 1.210 cents. (b) 0.817 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Chillies yield. (iv) (a) No. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 787 lb./ac.

(ii) (a) 202.6 lb./ac.

(b) 99.1 lb./ac.

(iii) Only 'age of seedlings' effect is highly significant.

(iv) Av. yield of dry chillies in lb./ac.

	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>	A <sub>5</sub>	Mean
M <sub>1</sub>	872	853	843	636	717	784
M <sub>2</sub>	928	832	903	575	710	790
Mean	900	843	873	606	714	787

S.E. of difference of two

1. M marginal means = 52.3 lb./ac.

2. A marginal means = 40.4 lb./ac.

3. A means at the same level of M = 57.1 lb./ac.

4. M means at the same level of A = 73.2 lb./ac.

Crop :- Chillies.

Ref :- A.P. 50(3).

Site :- Lam Farm, Guntur.

Type :- 'D'.

Object :- To compare the effects of B.H.C. and D.D.T. (dusts and sprays) in checking deterioration due to thrips damage and their effects on the yield.

## . BASAL CONDITIONS :

(i) (a) No. (b) Jowar. (c) Nil. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) 15.7.50 and 8.10.1950. (iv) (a) 5 ploughings. (b) Transplanting. (c) —. (d) 22" × 22" bunch planting. (e) 4 or 5. (v) 10 C.L./ac. of F.Y.M. (vi) Chillies-1402. (vii) Unirrigated. (viii) 2 weedings. (ix) 21.95%. (x) 23.1.51 and 5.3.1951.

## 2. TREATMENTS :

1. Control.

2. Gammaxene P-520 spray 1½ oz. in one gallon of water at 50 gallons spray per acre.

3. Guesrol-410 dust at 15 lb./ac.

4. Guesrol-50 spray at ½ oz. in one gallon of water at 50 gallons spray per acre.

5. Gammaxene dust D .025 at 15 lb./ac.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 36.3' × 25.4'. (b) 29.0' × 18.2'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Attack of thrips. (iii) Stand, wt. of plants and chillies weight. The plants were thrip graded and the percentage of grade 3 plants per unit area calculated at two different dates. (iv) (a) 1951—1953. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil

## 5. RESULTS :

(i) 1360 lb./ac.

(ii) 181.7 lb./ac.

(iii) Treatments differ highly significantly.

(iv) Av. yield of green chillies in lb./ac.

Treatment	Av. yield
1.	1090
2.	1705
3.	1274
4.	1285
5.	1455
S.E., mean	= 90.9 lb./ac.

Crop :- Chillies.  
Site :- Lam Farm, Guntur.

Ref :- A.P. 51(35).  
Type :- 'D'.

Object :- To compare the effects of different B.H.C. strengths by different methods of application in checking thrips damage to Chillies.

### 1. BASAL CONDITIONS :

(i) (a) Chillies—cotton. (b) Cotton. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) 13.8.51/2.10.51. (iv) (a) 6 ploughings. (b) Transplanting. (c) —. (d) 22"×22" bunch. (e) 4 or 5. (v) F.Y.M. at 20 C.L./ac. + G.N.C. at 30 lb./ac. of N. (vi) G-1402. (vii) Unirrigated. (viii) 2 hand weedings and one interculture with planet junior hoe. (ix) 21.22". (x) 1 and 25.2.1952.

### 2. TREATMENTS :

- |                               |                              |
|-------------------------------|------------------------------|
| 1. Control.                   | 7. B.H.C. 10%—rotary duster. |
| 2. B.H.C. 5%—local method.    | 8. B.H.C. 50%—spraying.      |
| 3. B.H.C. 5%—bellous duster.  | 9. B.H.C. 5%—prophylactic.   |
| 4. B.H.C. 5%—rotary duster.   | 10. B.H.C. 10%—prophylactic. |
| 5. B.H.C. 10%—local method.   | 11. B.H.C. 50%—prophylactic. |
| 6. B.H.C. 10%—bellous duster. |                              |

(1) Treatments 1 to 6 applied in two rounds as follows :

First round on 21st November 1961 when leaf curl just appeared. Treatments 1 to 3 at 15 lb. of dust per acre and treatments 4 to 6 at 12 lb./ac. of dust.

Second round on 14th Oct. 1951—three weeks later ; treatments 1 to 3 at 20 lb./ac. of dust and treatments 4 to 6 at 15 lb./ac. of dust.

(2) Prophylactic round was given on 6.11.1951. before thrip appeared.

(3) Local method of dusting : Allowing the chemical to fall on the plant by shaking a cloth bag of fine texture containing the dust.

### 3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 8. (iv) (a) 12.7'×36.3'. (b) 9.1'×29.0'. (v) N.A. (vi) Yes.

### 4. GENERAL :

(i) Season abnormal after transplanting. (ii) Nil. (iii) Percentage of thrip grade 3 levels in December. Yield of chillies. (iv) (a) 1951—1953. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

### 5. RESULTS :

- (i) 371 lb./ac.  
(ii) 70.9 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of dry chillies in lb./ac.

Treatment	Av. yield	Treatment	Av. yield
1.	340	7.	356
2.	380	8.	437
3.	343	9.	401
4.	347	10.	342
5.	371	11.	348
6.	424		
	S.E./mean		= 25.1 lb./ac.

Crop :- Chillies.  
Site :- Lam Farm, Guntur.

Ref :- A.P. 52 (21).  
Type :- 'D'.

Object :- To compare the effects of different strengths of B.H.C. in checking thrips damage to Chillies.

### 1. BASAL CONDITIONS :

(i) (a) Chillies-Jowar. (ii) Jowar with Redgram. (c) Nil. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) 29.8.1952/26.9.1952. (iv) (a) 5 ploughings. (b) Transplanting. (c) —. (d) 22"×5½". (e) 1. (v) F.Y.M. at 24 C.L./ac. + Pillipesara at 4000 lb./ac. + G.N.C. at 30 lb./ac. of N. (vi) Chillies-1402. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 20.1.1953 and 16, 28.2.1953.

## 2. TREATMENTS :

1. Control (No B.H.C.).
2. B.H.C. 5% dusting by local method as adopted by *Ryots*.
3. B.H.C. 5% dusting with rotary duster.
4. B.H.C. 10% dusting by local method as adopted by *Ryots*.
5. B.H.C. 10% dusting with rotary duster.
6. B.H.C. 50% spraying.

The insecticides were applied in two rounds—once when leaf curl was just seen and second four weeks later.

Dosages :—B.H.C. 5%—First round 20 pounds of dust and Second round 25 pounds of dust.

B.H.C. 10%—First round 15 pounds of dust and Second round 20 pounds of dust.

B.H.C. 50%—Spraying at  $1\frac{1}{2}$  oz. in one gallon ; first round-50 gallons of fluid per acre and second round-60 gallons of fluid per acre.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 12.7'×72.6'. (b) 9.1'×59.4'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory, (ii) Nil. (iii) Yield of dry chillies. (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 583 lb./ac.  
 (ii) 79.8 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of dry chillies in lb./ac.

Treatment	Av. yield
1.	543
2.	593
3.	624
4.	559
5.	593
6.	583
S.E./mean	= 32.6 lb./ac.

Crop :- Chillies.

Site :- Lam Farm, Guntur.

Ref :- A P. 53 (26).

Type :- 'D'.

Object :—To compare the effects of different strengths of B.H.C. in checking thrips damage to Chillies.

## 1. BASAL CONDITIONS:

- (i) (a) Chillies after chillies. (b) Chillies. (c) 25 C.L./ac. of F.Y.M + 5000 lb./ac. of G.L. + 40 lb./ac. of N as A/S (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 23.7.1953 to 17.9.1953. (iv) (a) 5 ploughings. (b) Transplanting (c)—. (d) 22'×5½'. (e) 1. (v) 25 C.L./ac. of F.Y.M. + 5000 lb./ac. of G.L. + 40 lb./ac. of N as A/S. (vi) G-2. (vii) Unirrigated. (viii) One weeding. (ix) 16.2. (x) 31.1.1954 ; 21.1.1954 ; 23.2.1954.

## 2. TREATMENTS :

1. Control.
2. B.H.C. 50% Spraying.
3. B.H.C. 10% dusting with rotary duster.
4. B.H.C. 10% by local method.
5. B.H.C. 5% rotary duster.
6. B.H.C. 5% local method.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 2.12 cents. (b) 1.24 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield of chillies (iv) (a) 1951 to 1953. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 974 lb./ac.  
 (ii) 79.1 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of green chillies in lb./ac.

Treatment	Av. yield
1.	544
2.	1022
3.	968
4.	977
5.	934
6.	998
S.E./mean	= 32.2 lb./ac.

Crop :- Potato.

Ref. A.P. :- 48(61)

Site :- Demonstration Farm, Araku Valley.

Type :- M.

Object :- To find out a suitable manurial mixture to Potato crop.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Araku Valley. (iii) 20.10.1948. (iv) (a) 3 or 4 ploughings and levelling. (b) Seeds dibbled. (c) 2000 lb./ac. (d) 9" x 24". (e) N.A. (v) G. M. crop of Sannhemp raised and ploughed in. Quantity, etc. N.A. (vi) Mysore Rickets. (vii) Irrigated. (viii) 2 or 3 weedings during Nov.-Dec. 1948. (ix) 13.38". (x) 27.1.1949.

## 2. TREATMENTS :

4 manure mixture :

- G.N.C. at 500 lb./ac. + Ammo. Phos. at 300 lb./ac. + concentrated Super at 250 lb./ac. + B.M. at 300 lb./ac. + Pot. Sul. at 200 lb./ac.
- G.N.C. at 500 lb./ac. + Ammo. Phos. at 300 lb./ac. + ordinary Super at 1000 lb./ac. + Pot. Sul. at 200 lb./ac.
- G.N.C. at 500 lb./ac. + ordinary Super at 1500 lb./ac. + A/S at 200 lb./ac. + Pot. Sul. at 200 lb./ac.
- Nanjanad mixture (control): G.N.C. at 500 lb./ac. + concentrated Super at 336 lb./ac. + B. M. at 350 lb./ac. + A/S at 200 lb./ac. + Pot. Sul. at 224 lb./ac.

Manure mixture was evenly distributed in furrows, well stirred with the soil and seeds dibbled.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/20 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Germination not uniform and stand very patchy. Yields poor and erratic. (ii) Affected by *Alternaria Solanici*. (iii) Tuber yield. (iv) (a) 1947-1951. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) Yields erratic and poor. The crop can be said to be a failure during the year. (vii) Nil.

## 5 RESULTS :

- (i) 571 lb./ac.  
 (ii) 362.2 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (v) Av. yield of tubers in lb./ac.

Treatment	Av. yield
1.	720
2.	556
3.	400
4.	608
S.E./mean	= 162.0 lb./ac.

Crop :- Potato.

Ref. :- A.P. 49 (45)

Site :- Demonstration Farm, Araku Valley.

Type :- 'M'

Object :- To find out a suitable manurial mixture to Potato crop.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Araku Valley. (iii) 12.11.1949. (iv) (a) 3 or 4 ploughings and levelling. (b) Seeds dibbled. (c) 2000 lb./ac. (d) 9" x 24" (e) N.A. (v) G.M. crop of Sannhemp sown on 10.4.1949 and ploughed in early July '49 at 5000 lb./ac. of G.L. (vi) Mysore Rickets. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 1.26". (x) 14.3.1950.

## 2. TREATMENTS :

4 manure mixtures :

1. G.N.C. at 500 lb./ac. + Ammo. Phos. at 300 lb./ac. + concentrated Super at 250 lb./ac. + B.M. at 300 lb./ac. + Pot. Sul. at 200 lb./ac.
2. G.N.C. at 500 lb./ac. + Ammo. Phos. at 300 lb./ac. + ordinary Super at 1000 lb./ac. + Pot. Sul. at 200 lb./ac.
3. G.N.C. at 500 lb./ac. + ordinary Super at 1500 lb./ac. + A/S at 200 lb./ac. + Pot. Sul. at 200 lb./ac.
4. Nanjanad mixture (control) : G N.C. at 500 lb./ac. + concentrated Super at 336 lb./ac. + B.M. at 350 lb./ac. + A, S at 200 lb./ac. + Pot. Sul. at 224 lb./ac.

Manure mixture was evenly distributed in furrows, well stirred with the soil and then seeds dibbled.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 5 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Good. (ii) Nil. (iii) Tuber yield. (iv) (a) 1947-1951. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

(i) 5263 lb./ac.

(ii) 834.9 lb./ac.

(iii) Treatments do not differ significantly.

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

Treatment	Av. yield
1.	5170
2.	5700
3.	5560
4.	4620

S.E./mean = 373.4 lb./ac.

Crop :- Potato.

Ref :- A.P. 50(57).

Site :- Demonstration Farm, Araku Valley.

Type :- 'M'.

Object :- To find out a suitable manurial mixture to Potato crop.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Red sandy loam (5th replication-saline). (b) Refer soil analysis, Araku Valley. (iii) 22.11.1950. (iv) (a) 3 or 4 ploughings and levelling. (b) Seeds dibbled. (c) 2000 lb./ac. (d) 9" x 24". (e) N.A. (v) G.M. crop of sannhemp grown in May and ploughed in. Quantity, etc. N.A. (vi) Mysore Rickets. (vii) Irrigated. (viii) 2 or 3 weedings. (ix) 4.18" (November 1950 to March 1951). (x) 18.3.1951.

## 2. TREATMENTS :

## 4 manure mixtures

1. G.N.C. at 500 lb./ac.+ Ammo. Phos. at 300 lb./ac.+ concentrated Super at 250 lb./ac.+ B.M. at 300 lb./ac.+ Pot. Sul. at 200 lb./ac.
2. G.N.C. at 500 lb./ac.+ Ammo. Phos. at 300 lb./ac.+ ordinary Super at 1000 lb./ac.+ Pot. Sul. at 200 lb./ac.
3. G.N.C. at 500 lb./ac.+ ordinary Super at 1500 lb./ac.+ A/S at 200 lb./ac.+ Pot. Sul. at 200 lb./ac.
4. Nanjanad mixture (control) : G.N.C. at 500 lb./ac.+ concentrated Super at 336 lb./ac.+ B.M. at 350 lb./ac.+ A/S at 200 lb./ac.+ Pot. Sul. at 224 lb./ac.

Manure mixture was evenly distributed in furrows, well stirred with the soil and then seeds dibbled.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5 (only four replications taken for analysis) (iv) (a) N.A. (b) 5 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Stand thin but growth vigorous. 20% sprouting only in the last replication; 50% in the first four replications due to severe winter. (ii) Nil. (iii) Tuber yield. (iv) (a) 1947—1951. (b) No. (c) Nil. (v) (a) (b) Nil. (vi) Since the yields in Block no. 5 were found to be very low, only four replications were taken for analysis. (vii) Nil.

## 5. RESULTS :

- (i) 5843 lb./ac.  
 (ii) 1730 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of tubers in lb./ac.

Treatment	Av. yield
1.	5895
2.	5165
3.	5850
4.	6465
S.E./mean	= 864.8 lb./ac.

Crop :- Potato

Site :- Demonstration Farm, Araku Valley.

Ref :- A.P. 51(47).

Type :- 'M'.

Object :- To find out a suitable manurial mixture to Potato crop.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Araku Valley. (iii) 23.11.1951. (iv) (a) 4 to 5 ploughings. (b) N.A. (c) 2,000 lb./ac. (d) 9" x 24". (e) N.A. (v) Nil. (vi) Mysore Rickets (winter variety). (vii) Unirrigated. (viii) One weeding and hoeing. Turning up of vines. (ix) 5.95". (x) 20.3.1952.

## 2. TREATMENTS

## 4 manure mixtures

1. G.N.C. at 500 lb./ac.+ Ammo. Phos. at 300 lb./ac.+ concentrated Super at 250 lb./ac.+ B.M. at 300 lb./ac.+ Pot. Sul. at 200 lb./ac.
2. G.N.C. at 500 lb./ac.+ Ammo. Phos. at 300 lb./ac.+ ordinary Super at 1000 lb./ac.+ Pot. Sul. at 200 lb./ac.
3. G.N.C. at 500 lb./ac.+ ordinary Super at 1500 lb./ac.+ A/S at 200 lb./ac.+ Pot. Sul. at 200 lb./ac.
4. Nanjanad mixture (control) : G.N.C. at 500 lb./ac.+ concentrated Super at 336 lb./ac.+ B.M. at 350 lb./ac.+ A/S at 200 lb./ac.+ Pot. Sul. at 224 lb./ac.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a), (b) 5 cents. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tuber yield. (iv) (a) 1947—1951. (b) N.A. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2444 lb./ac.  
 (ii) 344.4 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of tubers in lb./ac.
- | Treatment | Av. yield       |
|-----------|-----------------|
| 1.        | 2572            |
| 2.        | 2432            |
| 3.        | 2300            |
| 4.        | 2472            |
| S.E./mean | = 154.0 lb./ac. |

Crop :- Potato.

Ref :- A.P. 53(81).

Site :- Demonstration Farm, Araku Valley.

Type :- 'M'.

Object :- To determine the manurial requirements of Potato crop.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Vegetables. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Araku Valley. (ii) 2.7.1953. (iv) (a) to (e) N.A. (v) Nil. (vi) Mysore Rickets. (vii) Unirrigated. (viii) N.A. (ix) 39.42" (x) 4.10.1953.

## 2. TREATMENTS :

1. C/N—P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O as in Nanjanad mixture.
  2. Urea+K<sub>2</sub>O and P<sub>2</sub>O<sub>5</sub> as in Nanjanad mixture.
  3. A/S as in Nanjanad mixture.
  4. Nanjanad Mixture.
  5. Treatment (1)+5000 lb./ac. of G.L.
  6. Treatment (2)+5000 lb./ac. of G.L.
  7. Treatment (3)+5000 lb./ac. of G.L.
  8. Treatment (4)+5000 lb./ac. of G.L.
- Nanjanad mixture :-G.N.C. at 500 lb./ac. +concentrated Super at 336 lb./ac.+B.M. at 350 lb./ac.+A, S at 200 lb./ac. +Pot. Sul. at 224 lb./ac.
- C N and Urea applied to supply the equivalent amount of N as from A/S at 200 lb./ac. of N.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1 cent. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Tuber yield. (iv) (a) No. (b) No. (c) Nil. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 2276 lb./ac.  
 (ii) N.A.  
 (iii) N.A.  
 (iv) Av. yield of tubers in lb./ac.
- | Treatment | Av. yield |
|-----------|-----------|
| 1.        | 2140      |
| 2.        | 2160      |
| 3.        | 2280      |
| 4.        | 2110      |
| 5.        | 2740      |
| 6.        | 2280      |
| 7.        | 2340      |
| 8.        | 2160      |
| S.E./mean | =N.A.     |



Crop :- Sweet Potato.

Ref :- A.P. 48(37).

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

Type :- 'M'.

Object :—To study the application of boric acid to the soil in stimulating tuber yield.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Deep black clay. (b) Refer soil analysis, Maruteru. (iii) 29.1.1948.  
 (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) One weeding. (ix) 0.52". (x) 9.6.1948.

## 2. TREATMENTS :

1. No boric acid (control).
2.  $7\frac{1}{2}$  lb./ac. of boric acid.
3. 15 lb./ac. of boric acid.
4.  $22\frac{1}{2}$  lb./ac. of boric acid.
5. 30 lb./ac. of boric acid.—

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b)  $15' \times 14'$ . (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tuber yield. (iv) (a) N.A. (b) N.A. (c) N.A. (v) (a) N.A. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 9677 lb./ac.  
 (ii) 1657.0 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of tubers in lb./ac.

Treatment	Av. yield
1.	10631
2.	9856
3.	9127
4.	9438
5.	9334
S.E./mean	= 828.5 lb./ac.

Crop :- Sweet Potato (main-crop).

Ref :- A.P. 49(81).

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

Type :- 'M'.

Object :—To study the effects of application of Borax to soil in stimulating Potato yield.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b), (c) N.A. (ii) (a) Heavy black clay. (b) Refer soil analysis, Maruteru. (iii) 25.8.1949.  
 (iv) (a) Ploughing and levelling. (b) Vines planted. (c) N.A. (d) N.A. (e) N.A. (v) N.A. (vi) N.A. (vii) N.A. (viii) N.A. (ix) 23.05". (x) 18.1.1950.

## 2. TREATMENTS :

1. No Borax.
  2. Borax applied at 20 lb./ac.
  3. Borax applied at 40 lb./ac.
  4. Borax applied at 80 lb./ac.
- Borax applied to soil on 26.6.1949.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a), (b)  $7' \times 16'$ . (v) No. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory due to cyclone in October. (b) Nil. (iii) Tuber yield. (iv) (a) 1948-1949. (b) N.A. (c) Nil. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 3127 lb./ac.  
 (ii) 685.7 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of tubers in lb./ac.

Treatment	Av. yield
1.	2366
2.	4147
3.	2852
4.	3144
S.E./mean	= 279.9 lb./ac.

Crop :- Cabbage.

Ref :- A.P. 52(73).

Site :- Demonstration Farm, Araku Valley.

Type :- 'M'.

Object :—To find the manurial value of C/N as compared with A/S.

## 1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Vegetables. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Araku Valley. (iii) N.A.  
 (iv) (a) to (c) N.A. (v) Nil. (vi) Eclipse drumhead. (vii) Unirrigated. (viii) N.A. (ix) 15.52%. (x) N.A.

## 2. TREATMENTS :

- Basal dressing of lime at 450 lb./ac. + C.M. at 3 ton/ac. + Super at 30 lb./ac. of  $P_2O_5$ .
- Treatment (1) + A/S at 40 lb./ac. of N
- Treatment (1) + A/S at 60 lb./ac. of N.
- A/S alone at 40 lb./ac. of N.
- A/S alone at 60 lb./ac. of N.
- Treatment (1) + C/N at 40 lb./ac. of N.
- Treatment (1) + C/N at 60 lb./ac. of N.
- C/N alone at 50 lb./ac. of N (more than 40 lb./ac. of N).
- C/N alone at 70 lb./ac. of N (more than 60 lb./ac. of N).

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 5. (iv) (a) N.A. (b)  $\frac{1}{2}$  cent. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1952-1953. (b) No. (c) No. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 11,389 lb./ac.  
 (ii) 2,489.0 lb./ac.  
 (iii) Treatments differ significantly.  
 (iv) Av. yield of cabbage in lb./ac.

Treatment	Av. yield
1.	7435
2.	13585
3.	16020
4.	7435
5.	9639
6.	11344
7.	15825
8.	9229
9.	11986
S.E./mean	= 1114.0 lb./ac.

Crop :- Cabbage.  
Site :- Demonstration Farm, Araku Valley.

Ref :- A.P. 53(79).  
Type :- 'M'.

Object :- To find the manurial value of C/N as compared with A/S.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Vegetables. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Araku Valley. (iii) 8.10.1953/8.11.1953. (iv) (a) to (e) N.A. (v) Nil. (vi) Eclipse drumhead. (vii) Unirrigated. (viii) N.A. (ix) 19.45". (x) Feb. and March 1954.

2. TREATMENTS :

1. Basal dressing of lime at 450 lb./ac. + C.M. at 3 ton/ac. + Super at 30 lb./ac. of  $P_2O_5$ .
2. Treatment (1) + A/S at 40 lb./ac. of N.
3. Treatment (2) + A/S at 60 lb./ac. of N.
4. A/S alone at 40 lb./ac. of N.
5. A/S alone at 60 lb./ac. of N.
6. Treatment (1) + C/N at 40 lb./ac. of N.
7. Treatment (1) + C/N at 60 lb./ac. of N.
8. C/N alone at 50 lb./ac. of N (more than 40 lb./ac. of N).
9. C/N alone at 70 lb./ac. of N (more than 60 lb./ac. of N).

3. DESIGN :

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

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1952-1953. (b) and (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 9711 lb./ac.  
(ii) 1599 lb./ac.  
(iii) Treatments differ significantly.  
(iv) Av. yield of cabbage in lb./ac.

Treatment	Av. yield
1.	7540
2.	11320
3.	13320
4.	10060
5.	8620
6.	9640
7.	10940
8.	7900
9.	8060
S.E./mean	= 715.1 lb./ac.

Crop :- Brinjal.  
Site :- Agri. Res. Stn., Himayatsagar.

Ref :- A.P. 53(2).  
Type :- 'M'.

Object :- To determine the manurial requirements of the crop for getting high yield.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Sannhemp. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Himayatsagar. (iii) Seedlings transplanted on 19.4.1953. (iv) (a) Ploughings, harrowing and levelling before sowing. (b) to (e) N.A. (v) 60 lb./ac. of  $P_2O_5$  as Super. (vi) Purple long. (vii) N.A. (viii) N.A. (ix) 25.65" (during *Abi* 1953-1954). (x) 7.7.53 and 19.8.1953.

2. TREATMENTS :

All combinations of (1) and (2) + a control (no manure).

- (1) 4 sources of N :  $S_1$ =A/S,  $S_2$ =Ammo. Chloride,  $S_3$ =C/N and  $S_4$ =F.Y.M.  
(2) 2 levels of N :  $N_1$ =30 and  $N_2$ =60 lb./ac.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 57'×91½'. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield data. (iv) (a) 1953—N.A. (b) and (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS:

- (i) 626 lb./ac.  
 (ii) 232.4 lb./ac.  
 (iii) None of the effects is significant.  
 (iv) Av. yield in lb./ac.

Control=556 lb./ac.

	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	Mean
N <sub>1</sub>	498	768	685	768	680
N <sub>2</sub>	550	508	836	467	590
Mean	524	638	760	618	

S.E. of marginal mean of S = 82.2 lb./ac.  
 S.E. of marginal mean of N = 58.0 lb./ac.  
 S.E. of body of table = 116.2 lb./ac.

Crop :- Lucerne.

Ref :- A.P. 50 (68).

Site :- Sugarcane Res. Stn., Anakapalle.

Type :- 'M'.

Object :- To find out the effect of borax on the growth and yield of Lucerne.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Jowar (bulk). (c) N.A. (ii) (a) Loamy soil. (b) Refer soil analysis, Anakapalle (iii) 30.3.1950. (iv) (a) to (c) N.A. (v) N.A. (vi) N.A. (vii) N.A. (viii) Gap filling. (ix) N.A. (x) N.A.

## 2. TREATMENTS :

1. No borax.
2. Borax at 20 lb./ac.
3. Borax at 40 lb./ac.
4. Borax at 80 lb./ac.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 26.4'×15.8'. (b) 21.1'×10.6'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield data. (iv) (a) No. (b) No. (c) No. (v) (a), (b) Nil. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 4906 lb./ac.  
 (ii) 1190 lb./ac.  
 (iii) Treatments do not differ significantly.  
 (iv) Av. yield of lucerne in lb./ac.

Treatment	Av. yield
1.	5085
2.	5008
3.	4928
4.	4604
S.E./mean	= 486.0 lb./ac.

Crop :- Citrus (*Sathugudi*).

Ref :- A.P. 53 (93).

Site :- Fruit Res. Stn., Anantharajupet.

Type :- 'M'.

Object :- To find out the optimum time of application of N for *Sathugudi*.

## 1. BASAL CONDITIONS :

(i) Mostly waste land. (ii) (a) Light red loam. (b) Refer soil analysis, Anantharajupet. (iii) Shield method of budding. (iv) *Sathugudi*. (v) Planted on 24.4.1939, 20' x 20'. (vi) 2 years and 3 months. (vii) N.A. (viii) Digging hoeing and weeding. (ix) Nil. (x) Irrigated. (xi) N.A. (xii) Sept. to Nov. and April to July.

## 2. TREATMENTS :

1. 1 lb. of N as A/S in December.
2. 2 lb. of N as A/S in December.
3. 3 lb. of N as A/S in December.
4. 1 lb. of N as A/S in two doses in Dec. and June.
5. 2 lb. of N as A/S in two doses in Dec. and June.
6. 3 lb. of N as A/S in two doses in Dec. and June.
7. 1 lb. of N as A/S in four doses in Dec., March, June and Sept.
8. 2 lb. of N as A/S in four doses in Dec., March, June and Sept.
9. 3 lb. of N as A/S in four doses in Dec., March, June and Sept.
10. Control (no additional N).  
N given per tree.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) One. (v) No. (vi) Yes.

## 4. GENERAL :

(i) Fair. (ii) Dry root rot and deficiency diseases. (iii) Yield of oranges. (iv) (a) 1953-N.A. (b) N.A. (v) and (vi) Nil.

## 5. RESULTS :

(i) to (iv)	Mean value per tree	
	No. of fruits	Wt. of fruits in lb.
1.	1423	473.7
2.	1516	331.0
3.	1591	512.1
4.	1229	418.7
5.	1244	492.0
6.	1565	488.5
7.	1431	500.5
8.	1148	457.1
9.	1367	545.3
10.	982	393.4
G.M.	1349	461.0
S.E. of the expt.	535.0	187.2
S.E./mean	267.5	93.6
Significance	Not significant	Not significant.

Crop :- Banana.

Ref :- A.P. 51(30).

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

Type :- 'M'.

Object :- To determine the manurial requirements of Banana.

## 1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Rudrur. (iii) Suckers planted. (iv) Basrai. (v) 3.10.1951, 8' x 8', square method. (vi) N.A. (vii) Nil. (viii) Weeding and hoeing. (ix) Nil. (x) Irrigated. (xi) 37.95". (xii) N.A.

## 2. TREATMENTS :

Manurial treatment per plant :—

1. 2 pounds of G.N.C.+4 ozs. of Super.
2. 4 pounds of G.N.C.+4 ozs. of Super.
3. 2 pounds of C.C. +4 ozs. of Super.
4. 4 pounds of C.C. +4 ozs. of Super.
5. 5 basketful of F.Y.M. weighing 80 pounds.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) No. of trees per plot—N.A. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield only. (iv) (a) No. (b) No. (c) No. (v) and (vi) Nil.

## 5. RESULTS :

(i) 9005 lb./ac.

(ii) N.A.

(iii) N.A.

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

Treatment	Av. yield
1.	9797
2.	8842
3.	7763
4.	10662
5.	7967
S.E./mean	=N.A.

Crop :- Chillies+Cotton.

Ref :- A.P. 50(4).

Site :- Lam Farm, Guntur.

Type :- 'X'

Object :—To study the desirability of growing Chillies as a mixture with Cotton.

## 1. BASAL CONDITIONS :

(i) (a) No. (b) Chillies. (c) 10 C.L./ac. of F.Y.M. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) 18.9.1950 Chillies transplanted; 19.9.1950 Cotton dibbled. (iv) (a) 5 to 6 ploughings. (b) Transplanting. (c) —. (d) 22" x 22" bunch planting. (e) 4 or 5. For Cotton—N.A. (v) 10 C.L./ac. of F.Y.M. (vi) Chillies G-1, Cotton as under treatments. (vii) Unirrigated. (viii) Gap filling on 1.10.1950 Interculture once on 19.11.1950. Weeding on 3.11.1950. (ix) 21.95%. (x) Chillies 8.2.1951, Cotton 6.4.1951.

## 2. TREATMENTS :

1. Pure Chillies.
2. Cotton C.1 and Chillies.
3. Cotton 881 F. and Chillies.

Details N.A.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3 (each plot contains 25 holes). (b) N.A. (iii) 6. (iv) (a) 2.84 cents. (b) 1.02 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Nil. (iv) (a) No. (b) No. (c) N.A. (v) (a) and (b) No. (vi) Nil. (vii) Raw data and other details are N.A.

## 5. RESULTS :

(i) 1442 lb./ac.

(ii) 83.33 lb./ac.

(iii) Treatments differ highly significantly.

(iv) Av. yield of green chillies in lb./ac.

Treatment	Av. yield
1.	1602
2.	1357
3.	1369
S.E./mean	=34.02 lb/ac.

Crop :- Cotton+Groundnut.

Ref :- A.P. 48(1).

Site :- Lam Farm, Guntur.

Type :- 'X'.

Object :-To study the desirability of growing *desi* Cotton as mixture with Groundnut.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Millets. (c) N.A. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) 22.7.1948. (iv) (a) to (e) N.A. (v) N.A. (vi) Yes. (vii) Rainfed. (viii) 3 to 4 weedings. (ix) 22.17" (June 1948 to Dec. 1948). (x) 27.10.1948 to 22.12.1948.

## 2. TREATMENTS :

1. Groundnut+881-F Cotton.
2. Groundnut+Bannilla Cotton.
3. Groundnut+197-3 Cotton.
4. Groundnut+520-2 Cotton.
5. Groundnut+35-6 Cotton.

Each plot consists of 2 cotton rows and 16 Groundnut rows in two strips.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 33.0'×16.5'. (b) 26.4'×16.5'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield data. (iv) (a) 1948-1950. (b), (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data and other details N.A.

## 5. RESULTS :

(i) to (iv) Av. yield in lb./ac.

Treatment	Groundnut (pods)	Cotton (kapas)
1.	656	264
2.	662	350
3.	619	381
4.	621	309
5.	666	380
G.M.	645	337
S.E./mean	24.5	24.6
Significance	No.	Yes.

Crop :- Cotton+Groundnut.

Ref :- A.P. 49(52).

Site :- Lam Farm, Guntur.

Type :- 'X'.

Object :-To study the desirability of growing *desi* Cotton as mixture with Groundnut.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 11.6.1949. (iv) (a) to (e) N.A. (v) N.A. (vi) As per treatments. (vii) Rainfed. (viii) 2 or 3 weedings. (ix) Groundnut : 24.57" (June to Sept.), Cotton 35.88" (June 1949 to May 1950). (x) Groundnut-25.9.1949, Cotton-10.10.1949 to 14.5.1950.

## 2. TREATMENTS :

1. Pure Groundnut.
2. Groundnut+197-3 Cotton in 8 : 1 proportion.
3. Groundnut+881-F Cotton in 8 : 1 proportion.
4. Groundnut+197-3 Cotton in 14 : 1 proportion.
5. Groundnut+881-F Cotton in 14 : 1 proportion.

## 3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 46.2'×41.3'. (b) 39.6'×41.3'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) October cyclone affected adversely the cotton crop which was in buds and flowers. Consequently the pickings were prolonged to the middle of May, 1950. (ii) Nil. (iii) Yield data. (iv) (a) 1948—1950. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv) Av. yield in lb./ac.

Treatment	Groundnut (pods)	Cotton (kapas)
1.	749	—
2.	600	93
3.	575	98
4.	663	88
5.	691	83
G.M.	656	91
S.E./mean	46.9	11.9
Significance	No.	No.

Crop :- Cotton+Groundnut.

Site :- Lam Farm, Guntur.

Ref :- A.P. 56(5).

Type :- 'X'.

Object :- To study the desirability of growing *desi* Cotton as a mixture with Groundnut.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Chillies. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) 9.6.1950. (iv) (a) No ploughing but *guntaka* worked. (b) N.A. (c) Groundnut : N.A. Cotton : 10—12 lb., ac. (d) 1 or cotton 22' × 9'. For groundnut N.A. (e) N.A. (v) 10 C.L./ac. of F.Y.M. (vi) Groundnut—local, cotton—As under treatments. (vii) Rainfed. (viii) Weeding and gapfilling. (ix) 26.35'. (x) For groundnut 21.10.1950 to 23.10.1950. For cotton 4.10.1950. to 22.12.1950.

## 2. TREATMENTS :

- Groundnut alone.
- Cotton 197-3 one row+Groundnut 8 rows.
- Cotton 881-F one row+Groundnut 8 rows.
- Cotton 197-3 one row+Groundnut 14 rows.
- Cotton 881-F one row+Groundnut 14 rows.

## 3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 46.2' × 41.3'. (b) 39.6' × 41.3'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal. (ii) Aphid attack—dusting with gammaxene. (iii) Yield data. (iv) (a) 1948—1950. (b), (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

Treatment	Groundnut		Cotton		Total value of produce in Rs. ac.
	Av. yield in lb./ac.	Rs./ac.	Av. yield in lb./ac.	Rs./ac.	
1.	681	217.92	—	—	217.92
2.	580	185.59	175	62.89	248.49
3.	531	169.92	152	54.62	224.55
4.	595	190.40	122	43.84	234.25
5.	623	199.36	99	35.58	235.94
G.M.	—	—	—	—	—
S.E./mean	22.0	—	8.95	—	—
Significance	Yes	—	Yes	—	—



Crop :- Cotton+Groundnut.  
Site :- Lam Farm, Guntur.

Ref :- A.P. 49(51).  
Type :- 'X'.

Object :- To study the feasibility of growing American Cotton varieties as mixture with Groundnut.

1. BASAL CONDITIONS :

(i) (a) N.A. (b), (c) N.A. (ii) (a), Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 10.6.1949. (iv) (a) to (e) N.A. (v) N.A. (vi) As under treatments. (vii) Rainfed. (viii) 2 or 3 handweeding. (ix) Groundnut : 24.57" (June to September). Cotton : 35.88" (June 49 to May 50). (x) Groundnut : 30.9.1949. Cotton : 11.10.1949 to 15.5.1950.

2. TREATMENTS :

1. A.C. 64 Cotton+Groundnut.
  2. A.C. 71 Cotton+Groundnut.
  3. A.C. J<sub>1</sub> Cotton+Groundnut.
  4. A.C. J<sub>2</sub> Cotton+Groundnut.
- Cotton : Groundnut in 1:8 ratio.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) N.A. (iv) (a) 0.375 cents. (b) 0.250 cents. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Due to unusually heavy rains and cyclone in October there was much shedding of buds and flowers of cotton varieties. (ii) Cotton varieties suffered from severe Jassid attack and redleaf in December, but they recovered later in January. (iii) Yield data. (iv) (a) 1949-1950. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

(i) to (iv)

Treatment	Av. yield in lb./ac.	
	Groundnut	Cotton
1.	458	176
2.	428	72
3.	378	133
4.	419	130
G.M.	421	128
S.E./mean	22	21
Significance	No	Yes.

Crop :- Cotton+Groundnut.  
Site :- Lam Farm, Guntur.

Ref :- A.P. 50(61).  
Type :- 'X'.

Object :- To study the feasibility of growing American Cotton varieties as mixture with Groundnut.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 10.6.1950. (iv) (a) to (e) N.A. (v) N.A. (vi) As per treatments. (vii) Rainfed. (viii) 2 or 3 weedings, (ix) Groundnut 26.35" (June to Oct.) Cotton : 26.35" (June to Oct.) (x) Groundnut : 29.10.1950 to 31.10.1950 ; Cotton : 14.10.1950 to 11.12.1950.

2. TREATMENTS :

1. American Cotton 64+Groundnut (sown in 1 : 8 ratio).
2. American Cotton 71+Groundnut (sown in 1 : 8 ratio).
3. American Cotton J<sub>1</sub>+Groundnut (sown in 1 : 8 ratio).
4. American Cotton J<sub>2</sub>+Groundnut (sown in 1 : 8 ratio).
5. Pure Groundnut.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) N.A. (iv) (a) 0.375 cents. (b) 0.250 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Cotton varieties severely affected by Jassids but promptly controlled by spraying with Guesorol—550. (iii) Yield data. (iv) (a) 1949-1950. (b) and (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv)

Treatment	Av. yield in lb./ac.	
	Groundnut (pods)	Cotton (kapas)
1.	606	134
2.	629	114
3.	646	108
4.	622	118
5.	707	—
G.M.	642	119
S.E. mean	34	11
Significance	No	No.

Crop :- Cotton+Groundnut.

Ref :- A.P. 51(33).

Site :- Lam Farm, Guntur.

Type :- 'X'.

Object. - To find the possibility of raising an early maturing Cotton (H-420) one month after sowing of Groundnut.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Chillies. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) Groundnut : 30.6.1951 ; Cotton : As per treatments. (iv) (a) N.A. (b) Dibbled. (c) to (e) N.A. (v) N.A. (vi) Groundnut—Local ; Cotton H-420 (early). (vii) Rainfed. (viii) 2 or 3 hand weedings. (ix) Groundnut : 20.93" (June to Oct.) Cotton : 21.73" (June to March). (x) Groundnut : 11.10.1951. Cotton 6.11.1951 to 27.3.1952.

## 2. TREATMENTS :

1. Groundnut pure (local bunch).
  2. Groundnut+H-420 Cotton sown on 28.7.1951 (one month after Groundnut sowing).
  3. Groundnut+H-420 Cotton sown on 1.9.1951 (two months after Groundnut sowing).
  4. Groundnut+H-420 Cotton sown on 4.10.1951 (three months after Groundnut sowing).
- Cotton dibbled in alternate row spaces in standing Groundnut.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 72.6'×7.3' (b) 66.0'×3.6'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Normal for groundnut. Owing to drought and untimely rains the, cotton dibbled two months and three months after groundnut sowing did not establish properly. (ii) Nil. (iii) Yield data. (iv) (a) to (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Cotton crop failed under treatments 2 and 3.

## 5. RESULTS :

(i) to (iv)

Treatment	Av. yield in lb./ac.	
	Groundnut (pods)	Cotton (kapas)
1.	455	—
2.	360	759
3.	410	—
4.	427	—
G.M.	413	—
S.E./mean	54.9	—
Significance	No	—

Crop :- Cotton and Groundnut.

Ref :- A.P. 52(31).

Site :- Lam Farm, Guntur.

Type :- 'X'.

Object :- To find out the possibility of raising an early maturing Cotton variety as a mixture with Groundnut.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Chillies. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) Groundnut 26.6.1952, Cotton 26.7.1952 and 13.8.1952. (iv) (a) to (e) N.A. (v) N.A. (vi) As under treatments. (vii) Rainfed. (viii) 2 or 3 weedings. (ix) N.A. (x) Groundnut : 23.10.1952, Cotton : 5.3.1953 to 25.3.1953.

## 2. TREATMENTS :

1. A.H. 45 Groundnut pure.
2. A.H. 45 Groundnut + H. 420 Cotton sown dibbled in July (26.7.1952) (30 days after sowing of Groundnut).
3. A.H. 45 Groundnut + H. 420 Cotton sown dibbled in August (13.8.1952) (45 days after sowing of Groundnut).

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 39.6' x 7.3'. (b) 33.0' x 3.6'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Not satisfactory for Groundnut due to continuous drought and wilt. Germination and stand was uniform in July. Seedlings failed to establish properly in August. (ii) Nil. (iii) Yield data. (iv) (a) No. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv).

Treatment	Av. yield in lb./ac.	
	Groundnut (pods)	Cotton (kapas)
1.	126	—
2.	134	324
3.	135	206
G.M.	132	265
S.E./mean	5.94	N.A.
Significance	No.	N.A.

Crop :- Cotton and Groundnut.

Ref :- A.P. 53(18).

Site :- Lam Farm, Guntur.

Type :- 'X'.

Object :- To find out whether H-420 Cotton could be profitably raised with Groundnut, side by side determining the optimum time of sowing of H. 420 Cotton in standing Groundnut crop.

## 1. BASAL CONDITIONS :

(i) (a) Cotton—Jowar-Cotton. (b) Jowar. (c) Nil. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) Groundnut 19.6.1953 ; Cotton as under treatments. (iv) (a) 5 ploughings ; (b) to (e) N.A. (v) 15 C.L./ac. of F.Y.M. (vi) Groundnut T.M.V.-2 ; Cotton H-420. (vii) Rainfed. (viii) 2 weedings ; 2 interculture ploughings. (ix) 17.5'. (x) Groundnut—19.10.1953 ; Cotton—23.12.1953 to 27.4.1954.

## 2. TREATMENTS :

1. Groundnut sown in June-July (19.6.1953).
2. Groundnut sown in June + Cotton dibbled on 19.6.1953.
3. Groundnut sown in June + Cotton dibbled on 5.7.1953.
4. Groundnut sown in June + Cotton dibbled on 22.7.1953.
5. Cotton sown on 22.7.1953.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 39.6' x 7.3'. (b) 33.0' x 3.6'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vi) Raw data N.A.

## 5. RESULTS :

(i) to (iv).	Av. yield in lb./ac.	
Treatment	Groundnut	Cotton
1.	1011	—
2.	780	115
3.	836	109
4.	973	40
5.	—	112
G.M.	900	94
S.E./mean	156.6	—
Significance	Yes	—

Crop :- Cotton and Chillies.

Ref :- A.P. 48 (2).

Site :- Lam Farm, Guntur.

Type :- 'X'.

Object :- To study the desirability of growing American Cotton as a mixture with Chillies.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Pyrus* Millets. (c) N.A. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) 23.9.1948. (iv) (a) to (e) N.A. (v) N.A. (vi) Chillies-G-1 (398), Cotton-M.A. II, Parbhan American and 6752-B. (vii) Rainfed. (viii) 3 to 4 weedings. (ix) 20.70°. (x) 18.1.1949/16.6.1949.

## 2. TREATMENTS :

1. Chillies+M.A. II Cotton.
2. Chillies+P.A. II Cotton.
3. Chillies+6752-13 Cotton.

Cotton was sown with chillies in every third row and in that also they were sown after every 3 chillies plant. These cotton plants had 66"×44" spacing. Each plot consisted of 6 rows of which cotton occupied 2 rows.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 66"×11". (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) American type cotton suffered from high leaf bud and boll shedding ; cotton turned green and healthy after the removal of chillies. (ii) American cotton suffered from thrips. (iii) Yield data. (iv) (a) 1948-N.A. (b) N.A. (c) N.A. (v) (a), (b) Nil. (vi) and (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv)	Av. yield in lb./ac.	
Treatment	Chillies (dry)	Cotton (kapas)
1.	901	97
2.	975	64
3.	937	44
G.M.	938	68
S.E./mean	52.5	5.24
Significance	No.	Yes.

**Crop :- Cotton + Chillies.**  
**Site :- Lam Farm, Guntur.**

**Ref :- A.P. 49 (53).**  
**Type :- 'X'.**

**Object :-**To study the desirability of growing 881 F-Cotton with Chillies.

**1. BASAL CONDITIONS :**

(i) (a) to (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) Chillies—28.9.1949 Cotton—29.9.1949. (iv) (a) to (e) N.A. (v) N.A. (vi) As under treatments. (vii) Rainfed. (viii) 2 or 3 hand weedings. (ix) 10.13" (Sept. 49 to May 50). (x) Chillies-28.2.1950 to 6.4.1950 ; Cotton-25.2.1250 to 15.5.1950.

**2. TREATMENTS :**

(1) 881/F-Cotton + G. 1-Chillies (1 : 14).  
 (2) G. 1-Cotton + G. 1-Chillies (1 : 14).

**3. DESIGN :**

(i) Paired plot. (ii) (a) 2. (b) N.A. (iii) 7. (iv) (a) 8.16 cents. (b) 3.62 cents. (v) N.A. (vi) No.

**4. GENERAL :**

(i) Not satisfactory. (ii) Thrip attack on chillies. (iii) Yield data. (iv) (a) No. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

**5. RESULTS :**

(i) to (iv)	Treatment	Av. yield in lb./ac.	
		Chillies (dry)	Cotton (kapas)
	1.	388	36
	2.	339	163
	G.M.	364	100
	S.E./mean	N.A.	N.A.
	Significance	No.	Yes.

**Crop :- Chillies + Cotton.**  
**Site :- Lam Farm, Guntur.**

**Ref :- A.P. 52 (37).**  
**Type :- 'X'.**

**Object :-**To study the desirability of growing early type Cotton with Chillies.

**1. BASAL CONDITIONS :**

(i) (a) Nil. (b) Chillies. (c) 25 C.L./ac. of F.Y.M. + 5000 lb./ac. of G.M. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) Cotton sown on 27.9.1952. Chillies transplanted 27.9.1952. (iv) (a) 5 ploughings. (b) Cotton sown and chillies transplanted. (c) N.A. for cotton. (d) 22" x 22". (e) 4 or 5. (v) 24 C.L./ac. of F.Y.M. Time and method of application N.A. (vi) Chillies 1402. Cotton as per treatments. (vii) Rainfed. (viii) 2 weedings. (ix) N.A. (x) Chillies 28.1.1953 to 2.3.1953 ; Cotton 13.3.1953. to 31.3.1953.

**TREATMENTS :**

- |                                    |   |
|------------------------------------|---|
| 1. 2955 Cotton + 1402 Chillies.    | 7. H. 420 Cotton + 1402 Chillies.                   |
| 2. 2963 Cotton + 1402 Chillies.    | 8. B <sub>32</sub> -48 D.A. Cotton + 1402 Chillies. |
| 3. Lakshmi Cotton + 1402 Chillies. | 9. 35/6. Cotton + 1402 Chillies.                    |
| 4. P 216 F Cotton + 1402 Chillies. | 10. C 520/3 Cotton + 1402 Chillies.                 |
| 5. H 105 Cotton + 1402 Chillies.   | 11. 1402 pure Chillies. (no Cotton)                 |
| 6. Acala Cotton + 1402 Chillies.   |   |

One row of cotton for every 14 rows of chillies.

**3. DESIGN :**

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 38.1' x 29.0' (b) 27.2' x 18.2'. (v) One row of chillies left around. (vi) Yes.

**4. GENERAL :**

Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) No. (b) No. (c) Nil. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv)

Treatments.	Av. yield in lb./ac. for Chillies.	Cotton (kapas) in lb./ac.	Halo length.	Ginning percentage.	Mean monetary value in Rs. per plot.
1.	1590	102	23	33	3.89
2.	1825	127	21	34	4.50
3.	1713	213	25	36	4.47
4.	1713	93	24	36	4.47
5.	1775	12	22	35	4.05
6.	2097	13	23	34	4.81
7.	1651	49	21	33	3.88
8.	1981	82	21	32	4.71
9.	2087	87	16	38	4.97
10.	1836	126	16	37	4.51
11.	2480	—	—	—	5.09

S.E.— N.A.

There is significant difference between the treatments for both Chillies and Cotton

Crop :-Chillies and Tobacco.

Ref. :-A.P. 48(18).

Site :-Lam Farm, Guntur.-

Type :-'X'.

Object :-To compare two—course and four—course rotations for Chillies and Tobacco.

## 1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) As per treatments. (c) N.A. (ii) (a) Deep black soil. (b) Refer soil analysis, Guntur. (iii) Chillies : 22.9.1948/21.12.1948 ; Tobacco : 28.10.1948. (iv) (a) to (e) N.A. (v) N.A. (vi) Chillies—G. 1. (398) Virginia tobacco—H. S. 9. (vii) Rainfed. (viii) 3 to 4 weedings. (ix) Chillies—13.26" (Sep. to Feb). Tobacco—10.59" (Oct. to March). (x) 10.2.1949 for Chillies ; 22.3.1949 for Tobacco.

## 2. TREATMENTS :

1. Continuous cropping of Chillies and Tobacco.
2. Alternate cropping of Chillies and Tobacco.
3. Four-course rotation of Groundnut, *pyru* Jowar, virginia Tobacco and Chillies.

## 3. DESIGN :

(i) R.B.D (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 52.8'×19.8'. (b) 39.6'×6.6'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1942-1948. (b) Yes. (c) Nil. (v) (a) Nil. (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv)

Treatment	Av. yield in lb./ac.	
	Chillies (green)	Tobacco (green leaf)
1.	498	2657
2.	362	2518
3.	401	2432
G.M.	420	2536
S.E./mean	32	235
Significance.	Yes	No.

Crop :- Chillies, Brinjal, Etc.

Ref :- A.P. 48(17).

Site :- Lam Farm, Guntur.

Type :- 'X'.

Object :—To study the economics of growing pure crops of Chillies, Brinjal and Tomato as against a mixture of all the three on the dry land.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) Millets. (c) N.A. (ii) (a) Black soil. (b) Refer soil analysis, Guntur. (iii) 21.9.1948. (iv) (a) 4, 5 ploughings and levelling. (b) to (e) N.A. (v) N.A. (vi) N.A. (vii) Rainfed. (viii) 3 to 4 weedings. (ix) 13.26". (x) 8.12.1948 to 24.2.1949.

## 2. TREATMENTS :

1. Pure chillies.
2. Pure brinjals.
3. Pure tomatoes.
4. Mixture of chillies, brinjals and tomatoes.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 16.5'×16.5'. (b) 12.9'×12.9'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Slight attack of thrips on chillies. (iii) Yield data. (iv) (a) 1947—N.A. (b) No. (c) Nil. (v) (a), (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 384.55 (Rs./ac.).  
 (ii) 255.12 (Rs./ac.).  
 (iii) Treatment differences are not significant.
- | Treatment | Money value per acre (Rs./ac.) |
|-----------|--------------------------------|
| 1.        | 207.12                         |
| 2.        | 591.94                         |
| 3.        | 306.37                         |
| 4.        | 440.75                         |
| S.E./mean | 127.56 Rs./ac.                 |

Crop :- Groundnut, Jowar, Redgram.

Ref :- A.P. 49(50).

Site :- Lam Farm, Guntur.

Type :- 'MX'.

Object :—To study the effect of leguminous crop on the succeeding Cotton crop.

## 1. BASAL CONDITIONS :

(i) (a) Jowar, Groundnut, Redgram—Cotton. (b), (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 11.6.1949. (iv) (a) to (e) N.A. (v) Nil. (vi) Groundnut—N.A. (bunch variety), Jowar—G-3, redgram—Local. (vii) Rainfed. (viii) Jowar resown as it was lost from extensive damage by grasshopper and unusually heavy rains. Gap filling. 2 weedings. (ix) 30.74" (June to January). (x) Groundnut—23.10.1949, Jowar—13.12.1949, Redgram—28.1.1950 to 1.2.1950.

## 2. TREATMENTS :

1. Groundnut pure with 30 lb./ac. of  $P_2O_5$ .
  2. Groundnut pure without  $P_2O_5$ .
  3. Groundnut+Redgram in 5 : 1 ratio with 30 lb./ac. of  $P_2O_5$ .
  4. Groundnut+Redgram in 5 : 1 ratio without  $P_2O_5$ .
  5. Punasa Jowar with 30 lb./ac. of  $P_2O_5$ .
  6. Punasa Jowar without  $P_2O_5$ .
  7. Punasa Jowar+Redgram in 5 : 1 with 30 lb./ac. of  $P_2O_5$ .
  8. Punasa Jowar+Redgram in 5 : 1 ratio without  $P_2O_5$ .
  9. Redgram pure with 30 lb./ac. of  $P_2O_5$ .
  10. Redgram pure without  $P_2O_5$ .
- $P_2O_5$  as Super applied by drill. Each plot consists of 42 rows and in mixture, every 6th row is Redgram (7 rows) and in pure, every 4th row is Redgram (11 rows).

## 3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 4.67 cents. (b) 2.34 cents (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Jowar—not satisfactory ; other crops—satisfactory. (ii) The October cyclone caused premature shedding of Jowar leaves which were attacked by colletotrichum sorghin. (iii) Yield data. (iv) (a) 1949—1951. (b) No. (c) Nil. (v) (a) Nandyal. (b) Nil. (vi) Nil. (vii) At the time of harvest each gross plot was divided into two halves and produce harvested, weighed and recorded separately for each of the net sub-plots (halves of the sub-plot has dimensions 50×16.7 sq. links. Next Year one of the sub-plots in each treatment received 'N'. Manure and cotton was sown in all the plots. Raw data N.A.

## 5. RESULTS :

(i) to (iv) Av. yield in lb./ac.

Treatment	Jowar (straw)	Groundnut (Pods)	Redgram
1.	—	807	—
2.	—	925	—
3.	—	394	753
4.	—	363	825
5.	1463	—	—
6.	1500	—	—
7.	863	—	778
8.	663	—	772
9.	—	—	800
10.	—	—	850
G.M.	1122	622	796
S.E./mean	121	84.3	51
Significance	Yes.	Yes.	No.

Crop :- Groundnut, Jowar and Redgram.

Site :- Lam Farm, Guntur.

Ref :- A.P. 50(59).

Type :- 'X'.

Object :- To study the effect of previous leguminous crops on the succeeding Cotton crop.

## 1. BASAL CONDITIONS :

(i) (a) Jowar, Groundnut, Redgram—Cotton. (b) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 6.7.1950. (iv) (a) to (e) N.A. (v) Nil. (vi) N.A. (vii) Rainfed. (viii) Gap filling on 17.7.1950 2 weedings on 25.7.1950 and 26.7.1950. (ix) 26.35". (v) Jowar—14.11.1950, Cotton—15.11.1950. and Redgram—11.1.1951 and 6.2.1951.

## 2. TREATMENTS :

1. Groundnut pure with 30 lb./ac. of  $P_2O_5$ .
  2. Groundnut pure without  $P_2O_5$ .
  3. Groundnut+Redgram in 5 : 1 ratio with 30 lb./ac. of  $P_2O_5$ .
  4. Groundnut+Redgram in 5 : 1 ratio without  $P_2O_5$ .
  5. *Purnasa* Jowar with 30 lb./ac. of  $P_2O_5$ .
  6. *Purnasa* Jowar without  $P_2O_5$ .
  7. *Purnasa* Jowar+Redgram in 5 : 1 ratio with 30 lb./ac. of  $P_2O_5$ .
  8. *Purnasa* Jowar+Redgram in 5 : 1 ratio without  $P_2O_5$ .
  9. Redgram pure with 30 lb./ac. of  $P_2O_5$ .
  10. Redgram pure without  $P_2O_5$ .
- $P_2O_5$  as Super applied by drill. Each plot consists of 42 rows and in mixture, every 6th row is Redgram (7 rows) and in pure, every 4th row is Redgram (11 rows).



## 3. DESIGN :

(i) R.B.D. (ii) (a) 10, (b) N.A. (iii) 4. (iv) (a) 4.67 cents, (b) 2.34 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Redgram failed to germinate. Groundnut—poor. Jowar—normal. (ii) Aphid attack. Dusting with gamm-axene severe attack of Tikka on groundnut. (iii) Yield data. (iv) (a) 1949—1951. (b) No. (c) Nil. (v) (a) Nandyal. (b) Nil. (vi) Nil. (vii) At the time of harvest each plot was divided in to two halves and produce harvested, weighed and recorded separately for each of the sub-plot. Each of the sub-plot has dimension  $60 \times 16\frac{2}{3}$  sq. links=1.00 cent Next year one of the sub-plot received Nitrogen Manure and cotton was sown in all the plots.

## 5. RESULTS :

(i) to (iv) Av. yield in lb./ac.

Treatment	Jowar (straw)	Groundnut (Pods)	Redgram
1.	—	247	—
2.	—	231	—
3.	—	43	1240
4.	—	50	1175
5.	3790	—	—
6.	4428	—	—
7.	3676	—	205
8.	3856	—	169
9.	—	—	892
10.	—	—	1329
G.M.	3938	143	835
S.E./mean	295	20.6	109
Significance	No.	Yes	Yes

Crop : Groundnut, Jowar and Redgram.

Site :- Lam Farm, Guntur.

Ref :- A.P. 51(31).

Type :- 'MX'.

Object :—To study the effect of previous leguminous crops on the succeeding Cotton crop.

## 1. BASAL CONDITIONS :

(i) (a) Jowar, Groundnut and Redgram—Cotton. (b), (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) 29.6.1951. (iv) (a) to (e) N.A. (v) Nil. (vi) Groundnut—A.H.45 ; Jowar—G.3 ; Redgram—Local. (vii) Rainfed. (viii) 2 or 3 weedings. (ix) 21.06" (June to January). (x) Groundnut—27.10.1951, Jowar—31.10.1951 to 2.11.1951, Redgram—19.1.1952.

## 2. TREATMENTS :

1. Groundnut pure with 30 lb./ac. of  $P_2O_5$ .
2. Groundnut pure without  $P_2O_5$ .
3. Groundnut+Redgram in 5 : 1 ratio with 30 lb./ac. of  $P_2O_5$ .
4. Groundnut+Redgram in 5 : 1 ratio without  $P_2O_5$ .
5. Punasa Jowar with 30 lb./ac. of  $P_2O_5$ .
6. Punasa Jowar without  $P_2O_5$ .
7. Punasa Jowar+Redgram in 5 : 1 ratio with 30 lb./ac. of  $P_2O_5$ .
8. Punasa Jowar+Redgram in 5 : 1 ratio without  $P_2O_5$ .
9. Redgram pure with 30 lb./ac. of  $P_2O_5$ .
10. Redgram pure without  $P_2O_5$ .

$P_2O_5$  as Super applied by drill. Each plot consists of 42 rows and in mixture, every 6th row is Redgram (7 rows) and in pure, every 4th row is Redgram (11 rows).

## 3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 4.67 cents. (b) 2.34 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory except for Jowar. (ii) Calcosia attack. (iii) Yield data. (iv) (a) 1949—1951. (b) No. (c) Nil. (v) (a) Nandyal. (b) Nil. (vi) Nil. (vii) Results from annual report. At the time of harvest each gross plot was divided into two halves and produce harvested, weighed and recorded separately for each of the sub-plot. Next year one of the sub-plots received Nitrogen Manure and cotton was grown in all the plots.

## 5. RESULTS :

(i) to (iv) Av. yield in lb./ac.

Treatment	Sub-plot A		Sub-plot B	
	Yield of grain or pods	Yield of straw or bhusa	Yield of grain or pods	Yield of straw or bhusa
1.	369	—	292	—
2.	372	—	406	—
3. Groundnut	167	—	242	—
Redgram	252	6825	416	8175
4. Groundnut	156	—	223	—
Redgram	186	4550	214	5175
5.	—	4600	—	4605
6.	—	4230	—	4275
7. Jowar	—	4440	—	4980
Redgram	161	3850	170	3950
8. Jowar	—	4395	—	4515
Redgram	194	4425	303	5950
9.	270	2225	320	6350
10.	227	5700	319	6750

Crop :- Chillies+Cotton.  
Site :- Lam Farm, Guntur.

Ref :- A.P. 53(78).  
Type :- 'CX'.

Object :- To study the desirability of growing early white Cotton mixture with Chillies.

## 1. BASAL CONDITIONS :

(i) (a) No. (b) Chillies. (c) 25 to 30 C.L./ac. of F.Y.M. + 5000 lb./ac. of G.L. + 40 lb./ac. of N as A/S. (ii) (a) Black cotton soil. (b) Refer soil analysis, Guntur. (iii) Cotton sown on 23.9.1953, Chillies transplanted on 23.9.1953. (iv) (a) 5 ploughings. (b) Cotton sown and chillies transplanted. (c) 10—12 lb./ac. (cotton). (d) Chillies : N.A., Cotton : as per treatments. (e) N.A. (v) 25 to 30 C.L./ac. of F.Y.M. + 5000 lb./ac. of G.L. + 40 lb./ac. of N as A/S. (vi) Chillies-1402, Cotton as per treatments. (vii) Rainfed. (viii) 2 weedings and 2 interculture ploughings. (ix) N.A. (x) Cotton : 6.3.1954 to 4.5.1954, Chillies : 20.1.1954 to 27.2.1954.

## 2. TREATMENTS :

Main-plot treatments :

Spacings between cotton plants :  $S_1=6''$  and  $S_2=12''$ .

Sub-plot treatments :

1. Laxmi cotton+chillies.
2. 3414— cotton+chillies.
3. C. 520/2 cotton+chillies.
4. 197-3 cotton+chillies.
5. C-2 cotton + chillies.
6. Chillies only.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 58.1'×43.6'. (b) 54.5'×39.9'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Jassids found affecting Laksmi variety for which Hexodol-550 was sprayed. Slight attack of thrips on chillies was noticed. 5% gammaxene sprayed. (iii) Yield data. (iv) (a) 1953—55. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv)

	12"			6"		
	Ripe chillies in lb./ac.	Cotton kapas in lb./ac.	Total monetary value in Rs./ac.	Ripe chillies in lb./ac.	Cotton kapas in lb./ac.	Total monetary value in Rs./ac.
1.	1014	105	364	1081	104	386
2.	1003	80	354	1035	57	359
3.	843	79	301	987	71	347
4.	1048	62	365	1042	56	361
5.	828	159	316	1108	178	414
6.	1014	—	338	1105	—	368

Crop :- Chillies and Cotton.

Ref :- A.P. 53(20).

Site :- Lam Farm, Guntur.

Type :- 'CX'.

Object :- To find out a suitable white Cotton variety that can profitably be grown along with Chillies.

## 1. BASAL CONDITIONS :

(i) (a) No. (b) Jowar for fodder ; red gram. (c) Nil. (ii) (a) Black cotton soil. (b) Refer soil analysis Guntur. (iii) Cotton 6.9.1953, Chillies transplanted 22.9.1953. (iv) (a) 5 ploughings. (b) Cotton sown and chillies transplanted. (c) 10—12 lb./ac. of cotton seed. (d) and (e) N.A. (v) 25-30 C.L./ac. of F.Y.M.+5000 lb./ac. of G.L. + 40 lb./ac. of N as A/S. (vi) Chillies-1402, Cotton as per treatments. (vii) Rainfed. (viii) 2 weedings ; 2 interculture ploughings. (ix) 16.5". (x) Chillies 7.1.1954 to 4.3.1953 Cotton 4.3.1954 to 19.4.1954.

## 2. TREATMENTS :

Main-plot treatments :

Spacing between cotton plants :  $S_1=6''$  and  $S_2=12''$ .

Sub-plot treatments :

1. Laxmi cotton + chillies.
2. 3414 cotton + chillies.
3. C: 520/2 cotton + chillies.
4. 197—3 cotton + chillies.
5. C.2 cotton + chillies.
6. Chillies only.

## 3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 58.1'×43.6'. (b) 54.5'×39.9'. (v) 1.9' border left around. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Jassids attack on the early sown cotton crop was comparatively severe than the late sown cotton crop. Similarly the shedding of floral forms mostly due to boll-worm attack was very severe in early sown cotton crop. (iii) Yield data. (iv) (a) 1953—1955. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data and other details N.A.

## 5. RESULTS :

(i) to (iv)

	12"			6"		
	Chillies in lb./ac.	Cotton kapas in lb./ac.	Monetary value in Rs./ac.	Chillies in lb./ac.	Cotton kapas in lb./ac.	Monetary value in Rs./ac.
1.	1380	42	471	1608	29	543
2.	1502	62	516	1232	68	427
3.	1113	43	382	1295	47	448
4.	1492	33	506	1335	43	456
5.	1389	89	485	1405	115	497
6.	1523	—	508	1457	—	485
Mean	1400	54	478	1388	64	475

Crop :- Groundnut, Indigo and Jowar.

Ref :- A.P. 48(23).

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

Type :- 'X'.

Object :- To study the role of leguminous crops in conjunction with  $P_2O_5$  on the rotational crop Cotton.

## 1. BASAL CONDITIONS :

(i) (a) Groundnut-Indigo and Jowar-Cotton. (b) and (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) Groundnut—9.7.1948 ; Jowar—28.9.1948 ; Indigo—28.9.1948. (iv) (a) N.A. (b) N.A. (c) Groundnut bunch variety—70 to 80 Kernals/a.c. ; Groundnut spreading variety—60 to 70 Kernals/a.c. ; Indigo and Jowar—5 lb./ac.. (d) Groundnut—10.5"×3" ; Indigo and Jowar—10.5" between rows. (e) N.A. (v) Nil. (vi) Groundnut—A.H. 698 ; Indigo—local ; Jowar—N.1. (vii) Unirrigated. (viii) 2 weedings. (ix) Groundnut—25.76" (June to December) ; Jowar—8.64" (Sep. 1948 to June 1949) ; Indigo—9.38" (Sep. 1948 to April 1949). (x) Groundnut—20.12.1948 ; Jowar—26.1.1949 ; Indigo—8.4.1949.

## 2. TREATMENTS :

All combinations of (1) and (2)

1. 4 crops : G=Groundnut, J=Jowar, I=Indigo and J+I=Jowar+Indigo.

2. 2 levels of  $P_2O_5$  :  $P_0=0$  and  $P_1=30$  lb./ac. of  $P_2O_5$ . $P_2O_5$  as Super.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a), (b) 2.90 cents. (v) Nil. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948 to 1952. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv) Av. yield in lb./ac.

	G	J	I	J+I
$P_2$	845	514	103	470+18
$P_1$	869	594	114	504+16

Note : G=Groundnut pod yield, J=Jowar grain yield and I=Indigo seed yield.

Crop :- Groundnut, Indigo and Jowar.

Ref :- A.P. 50(30).

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

Type :- 'X'.

Object :- To study the role of leguminous crops in conjunction with  $P_2O_5$  on the rotational crop Cotton.

1. BASAL CONDITIONS :

(i) (a) Groundnut—Indigo, Jowar—Cotton. (b) Cotton. (c) N at 30 lb./ac. for half the plot and no N for the other half. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) Groundnut—15.7.1950 ; Jowar—21.9.1950 ; Indigo—21.9.1950. (iv) (a) N.A. (b) N.A. (c) Groundnut bunch variety—70 to 80 Kernals/ac. ; Groundnut spreading variety—60 to 70 Kernals/ac. ; Indigo and Jowar—5 lb./ac. (d) Groundnut—10.9"×3" ; Indigo and Jowar—10.5" between rows. (e) N.A. (v) Nil. (vi) Groundnut—T.M.V.-3 ; Indigo—Local ; Jowar—N-1. (vii) Unirrigated. (viii) 2 weedings. (ix) Groundnut 23.25" ; Jowar 4.46" ; Indigo 4.46". (x) Groundnut—6.12.1950 ; Jowar—19.1.1951 ; Indigo—21.3.1951.

2. TREATMENTS :

All combinations of (1) and (2)

1. 4 crops : G=Groundnut, J=Jowar, I=Indigo and J+I=Jowar+Indigo.

2. 2 levels of  $P_2O_5$  :  $P_0=0$  and  $P_1=30$  lb./ac. of  $P_2O_5$ .

$P_2O_5$  as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 5.62 cents. (b) 2.90 cents. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948 to 1952. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) Nil. (vii) Raw data N.A.

5. RESULTS :

(i) to (iv) Av. yield in lb./ac.

	G	J	I	J+I
$P_0$	414	475	140	499+11
$P_1$	452	537	130	519+15

Note : G=Groundnut pod yield, J=Jowar grain yield, and I=Indigo seed yield.

Crop :- Groundnut, Indigo and Jowar.

Ref :- A.P. 51 (62).

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

Type :- 'X'.

Object :- To study the role of leguminous crops in conjunction with  $P_2O_5$  on the rotational crop Cotton (New set).

1. BASAL CONDITIONS :

(i) (a) Groundnut, Indigo and Jowar—Cotton. (b) N.A. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) Groundnut—18.7.1951 ; Jowar 21.9.1951 ; Indigo—21.9.1951. (iv) (a) N.A. (b) N.A. (c) Groundnut bunch variety—70 to 80 Kernals/ac. ; Groundnut spreading variety—60 to 70 kernals/ac. Indigo and Jowar—5 lb./ac. (d) Groundnut—10.5"×3" ; Indigo and Jowar—10.5" between rows. (e) N.A. (v) Nil. (vi) Groundnut T.M.V.-3, Jowar N-1 and Indigo-local. (vii) Rainfed. (viii) 2 weedings. (ix) Groundnut : 13.45" , Jowar : 3.73" and Indigo : 4.73". (x) Groundnut—6.11.1951, Jowar—6.1.1952 and Indigo—3.4.1952.

## 2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 crops : G=Groundnut, J=Jowar, I=Indigo and J+I=Jowar+Indigo.

(2) 2 levels of  $P_2O_5$  :  $P_0=0$  and  $P_1=30$  lb./ac. of  $P_2O_5$ .

$P_2O_5$  as Super.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 5.62 cents. (b) 2.90 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1948-1952. (b) No. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv)

Av. yield in lb./ac.

	G	I	J	J+I
$P_0$	121	112	371	223+(Failed)
$P_1$	155	82	302	349+(Failed)
Significance	No	No	No	No
S. E./Mean	11	20	90	16

Note : G=Groundnut pod yield, J=Jowar grain yield and I=Indigo seed yield.

Crop :- Cotton+Groundnut.

Ref :- A.P. 50 (31).

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

Type :- 'X'.

Object : -To study the possibilities of growing cotton as a mixture with Groundnut,

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 27.6.1950. (iv) (a), (b), (c) N.A. (d) 10.5' between rows. (e) N.A. (v) G.N.C. at 250 lb./ac. (vi) As under treatments. (vii) Unirrigated. (viii) 2 weedings. (ix) Cotton 10.96' ; Groundnut 23.25'. (x) Groundnut bunch-6th Nov. 1950, Groundnut bunch-28th Nov. 1950 and Cotton bunch-31st Oct. 1950 to 5th March 1951.

## 2. TREATMENTS :

1. Groundnut spreading type only.
2. Groundnut bunch type only.
3. Groundnut spreading type+881-F cotton.
4. Groundnut bunch type+881-F cotton.
5. Groundnut spreading type+197-3 cotton.
6. Groundnut bunch type+197-3 cotton.
7. Groundnut spreading type+Pratap cotton.
8. Groundnut bunch type+Pratap cotton.

Cotton varieties early maturing type. Cotton : Groundnut sown in 11 : 1 proportions.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) 21'×49.5'. (b) 21'×41.3'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Cotton-Satisfactory. Groundnut-not satisfactory. Severe attack by Aphids to Groundnut crop. (iii) Yield data. (iv) (a) 1950-1952. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Groundnut valued at 3 lb./Rupee ; raw data N.A.

## 5. RESULTS :

(i) to (iv) Yield of produce in lb./ac.

Treatment	Groundnut pods	Cotton kapas	Money value in Rupees.
1.	670	—	222
2.	307	—	103
3.	656	29	246
4.	249	81	124
5.	649	12	224
6.	264	24	102
7.	601	19	210
8.	269	37	108
Significance	No	Yes	Yes.
S.E./mean	15 lb./ac.	6.0 lb./ac.	10 Rs./ac.

Crop :-Cotton and Groundnut.

Ref :-A.P. 51 (60)

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

Type :-'X'.

Object :-To study the possibilities of growing Cotton as a mixture with Groundnut.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) As under treatments. (c) G.N.C. at 250 lb./ac. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 14.7.1951. (iv) (a), (b) and (c) Nil. (d) 10.5" between rows. (e) Nil. (v) N.A. (vi) As per treatments. (vii) Unirrigated. (viii) 2 weedings. (ix) 13.42". (x) Groundnut bunch type : 12.11.1951 to 18.11.1951 ; Groundnut Spreading type : 3.12.1951 to 6.12.1951 ; Cotton : 2.11.1951 to 18.1.1952.

## 2. TREATMENTS :

- |  |  |
|--|--|
| 1. Groundnut bunch type only.          | 7. Groundnut spreading type only.          |
| 2. Groundnut bunch type+881-F. cotton. | 8. Groundnut spreading type+881-F cotton.  |
| 3. Groundnut bunch type+Pratap cotton. | 9. Groundnut spreading type+Pratap cotton. |
| 4. Groundnut bunch type+ cotton.*      | 10. Groundnut spreading type+ cotton.*     |
| 5. Groundnut bunch type+197-3 cotton.  | 11. Groundnut spreading type+197-3 cotton. |
| 6. Groundnut bunch type+H-420 cotton.  | 12. Groundnut spreading type+H-420 cotton. |

One row of cotton for every eleven rows of groundnut.

\* variety N.A.

## 3. DESIGN:

(i) R.B.D. (ii) (a) 12. (b) Nil. (iii) 6. (iv) (a) 21'×49.5'. (b) 21'×41.3'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield data. (iv) (a) 1950-1952. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv)	Yield of produce in lb./ac.		
Treatment.	Groundnut.	Cotton.	Money value in Rupees.
1.	431	—	86
2.	397	96	111
3.	347	82	97
4.	389	72	102
5.	395	59	99
6.	370	42	88
Significance	Yes	N.A.	N.A.
S.E./mean	16	N.A.	N.A.
7.	261	—	52
8.	239	93	81
9.	228	56	64
10.	216	62	64
11.	236	42	61
12.	245	42	63
Significance	No	Yes	Yes
S.E./mean	17	5.0	3.5

Crop :-Cotton+Groundnut.

Ref :-A.P. 52 (66)

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

Type :- X'

Object :- To study the possibilities of introducing Cotton as a mixture with Groundnut.

## 41. BASAL CONDITIONS :

(i) a) Nil (b), (c) As under treatments. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 17.6.1952 (iv) (a), (b), (c) N.A. (d) 10.5" between rows. (e) N.A. (v) N.A. (vi) As under treatments. (vii) Unirrigated. (viii) 2 weedings. (ix) Cotton 13.23"; Groundnut 12.93". (x) Cotton : 13.10.1952 to 17.2.1953 ; Groundnut (bunch) : 24.10.1952 ; Groundnut (spreading) : 25.11.1952.

## 2. TREATMENTS :

- |  |  |
|--|--|
| 1. Groundnut bunch type only.          | 7. Groundnut spreading type only.          |
| 2. Groundnut bunch type+881-F cotton.  | 8. Groundnut spreading type+881-F cotton.  |
| 3. Groundnut bunch type+Pratap cotton. | 9. Groundnut spreading type+Pratap cotton. |
| 4. Groundnut bunch type+cotton*.       | 10. Groundnut spreading type+cotton*.      |
| 5. Groundnut bunch type+197-3 cotton.  | 11. Groundnut spreading type+197-3 cotton. |
| 6. Groundnut bunch type+H-420 cotton.  | 12. Groundnut spreading type+H-420 cotton. |

One row of cotton for every eleven rows of groundnut.

\* Variety N A.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 21'×49.5'. (b) 21'×41.3'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Groundnut—not satisfactory. (ii) Aphid attack in early stages. (iii) Yield data. (iv) (a) 1950-1952. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv)	Yield of produce in lb./ac.		
Treatments.	Groundnut	Cotton	Money value in Rupees.
1.	357	—	71
2.	339	102	102
3.	291	107	94
4.	292	108	94
5.	304	285	89
5.	299	103	94
7.	272	—	54
8.	202	100	77
9.	271	88	83
10.	256	89	81
11.	255	106	86
12.	249	82	82
Significance	Not Significant	Not Significant	Significant
S.E./mean	N.A.	N.A.	14 Rs./ac.



Crop :- Cotton, Groundnut, etc.

Ref :- A.P. 50(32).

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

Type :- 'X'.

Object :—To study the economy of growing Cotton as a mixture with Groundnut or *Korra* in preference to Redgram.

## 1. BASAL CONDITIONS:

(i) (a) Nil (b) N.A. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 27.6.1950. (iv) (a), (b), (c) N.A. (d) 10" to 12" between rows. (e) N.A. (v) G.N.C. at 250 lb./ac. (vi) As under treatments. (vii) Rainfed. (viii) 2 weedings. (ix) Cotton 10.96", Groundnut 23.25", *Korra* 23.01" and Redgram 23.25". (x) *Korra* : 26.10.1950, Redgram : 3.1.1951, Groundnut : 7.11.1950 and Cotton : 25th Nov. 1950 to 29th March 1951.

## 2. TREATMENTS :

1. Groundnut (bunch type)+Redgram in the proportion of 5 : 1.
2. Groundnut (bunch type)+881-F Cotton in the proportion of 5 : 1.
3. Groundnut (bunch type)+N-14 Cotton in the proportion of 5 : 1.
4. *Korra* (bunch type)+Redgram in the proportion of 5 : 1.
5. *Korra* (bunch type)+881-F Cotton in the proportion of 5 : 1.
6. *Korra* (bunch type)+N-14 Cotton in the proportion of 5 : 1.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 21'×49.5'. (b) 21'×41.3'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Groundnut—not satisfactory. Other crops—satisfactory. (ii) Severe attack by aphids to groundnut crop. (iii) Yield of produce. (iv) (a) 1950—1952. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv)

Av. yield in lb./ac.

Treatment	Av. yield in lb./ac.				Money value in Rupees
	Redgram	G. Nut	<i>Korra</i>	Cotton	
1.	456	188	—	—	104
2.	—	268	—	148	149
3.	—	244	—	197	161
4.	446	—	122	—	53
5.	—	—	166	147	76
6.	—	—	141	217	102
S.E./mean	46 lb./ac.	15 lb./ac.	10 lb./ac.	13 lb./ac.	6 Rs./ac.
Significance	No.	Yes.	Yes.	Yes.	Yes.

Crop :- Cotton, Groundnut, etc.

Ref :- A.P. 51(59).

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

Type :- 'X'.

Object :—To study the economy of growing Cotton as a mixture with Groundnut or *Korra* in preference to Redgram.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) As under treatments. (c) G.N.C. at 250 lb./ac. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 14.7.1951. (iv) (a), (b), (c) N.A. (d) 10.5" between rows. (e) N.A. (v) N.A. (vi) As per treatments. (vii) Rainfed. (viii) 2 weedings. (ix) *Korra* : 13.42", Groundnut : 13.42", Cotton : 13.42". (x) *Korra* : 24.10.1951, Groundnut : 8.11.1951, Cotton : 23.11.1951 to 8.2.1952.

## 2. TREATMENTS :

1. Groundnut (bunch type) + Redgram in the proportion of 5 : 1.
2. Groundnut (bunch type) + 881-F Cotton in the proportion of 5 : 1.
3. Groundnut (bunch type) + N-14 Cotton in the proportion of 5 : 1.
4. *Korra* (bunch type) + Redgram in the proportion of 5 : 1.
5. *Korra* (bunch type) + 881-F Cotton in the proportion of 5 : 1.
6. *Korra* (bunch type) + N-14 Cotton in the proportion of 5 : 1.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 21' × 49.5'. (b) 21' × 41 3'. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Satisfactory. (ii) Nil. (iii) Yield of produce. (iv) (a) 1950—1952. (b) N.A. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i to iv) Yield of produce in lb./ac.

Treatment	Groundnut	<i>Korra</i>	Redgram	Cotton	Money value in Rupees
1.	279	—	106	—	69
2.	289	—	—	259	144
3.	280	—	—	242	136
4.	—	277	147	—	52
5.	—	240	—	173	88
6.	—	256	—	195	97
Significance	No.	No.	Yes.	No.	Yes.
S.E./mean	10 lb./ac.	14 lb./ac.	19 lb./ac.	16 lb./ac.	5 Rs./ac.

Crop :- Cotton, Groundnut, etc.

Ref :- A P. 52 (67).

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

Type :- 'X'.

Object :- To test whether Cotton would be more profitable than Redgram as a mixture with Groundnut and *Korra*

## 1. BASAL CONDITIONS :

- (i) (a) N.A. (b) As under treatments. (c) N.A. (ii) (a) Black cotton soil. (b) Refer soil analysis, Nandyal. (iii) 16.6 1952. (iv) (a), (b), (c) N.A. (d) 10.5". (e) N.A. (v) G.N.C. at 250 lb./ac. (vi) As under treatments. (vii) Unirrigated. (viii) 2 weedings. (ix) Cotton-13.23" and other crops-12.93". (x) *Korra* : 26.9.1952 to 13.10.1952 ; Groundnut : 15.10.1952 ; Cotton : 11.11.1952 to 17.2.1953.

## 2. TREATMENTS :

1. Groundnut (bunch type) + Redgram in the proportion of 5 : 1.
2. Groundnut (bunch type) + 881-F Cotton in the proportion of 5 : 1.
3. Groundnut (bunch type) + N-14 Cotton in the proportion of 5 : 1.
4. *Korra* (bunch type) + Redgram in the proportion of 5 : 1.
5. *Korra* (bunch type) + 881-F Cotton in the proportion of 5 : 1.
6. *Korra* (bunch type) + N-14 Cotton in the proportion of 5 : 1.

## 3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 2.24 cents. (b) 2.00 cents. (v) N.A. (vi) Yes.

## 4. GENERAL :

- (i) Due to severe drought after sowing, groundnut and *Korra* yielded very low. Redgram and Cotton-normal. (ii) Aphid attack in early stages (iii) Yield data. (iv) (a) 1951 to 1952. (b) Yes. (c) N.A. (v) (a), (b) Nil. (vi) Nil. (vii) Raw data N.A.

## 5. RESULTS :

(i) to (iv)	Yield of produce in lb./ac.				
Treatment	Groundnut	Korra	Redgram	Cotton	Money value in Rs.
1.	99	—	390	—	61
2.	99	—	—	188	74
3.	97	—	—	195	77
4.	—	173	394	—	71
5.	—	169	—	84	49
6.	—	178	—	126	64
Significance	No	No	No	No	No
S.E./mean	N.A.	N.A.	N.A.	N.A.	N.A.

Crop :- Tur, Groundnut, and Jowar.

Ref :- A.P. 49 (39).

Site :- Govt. Main Farm, Warangal.

Type :- 'X'.

Object :—To ascertain the relative economy of growing Tur as a whole crop and as a mixed crop in association with Groundnut and Jowar.

## 1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) N.A. (ii) N.A. (iii) N.A. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) Rainfed. (viii) Weeding once or twice. (ix) 45.66". (x) N.A.

## 2. TREATMENTS :

1. *Kharif* Jowar alone.
2. Groundnut alone.
3. Tur alone.
4. Groundnut 6 rows+Tur one row.
5. Groundnut 4 rows+Tur one row.
6. Jowar 6 rows+Tur one row.
7. Jowar 4 rows+Tur one row.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 78'×19'. (b) 72'×15'. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) Very unsatisfactory for Jowar, badly affected by excess of rain. (ii) Nil. (iii) Yield data. (iv) (a) 1949—1953. (b) No. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

- (i) 208.8 Rs./ac.
- (ii) 32.8 Rs./ac.
- (iii) Treatments differ significantly.
- (iv) Av. yield of produce in Rs./ac.

Treatment	Mean value
1.	71.6
2.	287.6
3.	186.4
4.	309.6
5.	321.2
6.	137.6
7.	147.6
S.E./mean	=16.4 Rs./ac.

Crop :- Tur, Goundnut and Jowar.

Ref :- A.P. 50(38).

Site :- Govt. Main Farm, Warangal.

Type :- 'X'.

Object :—To ascertain the relative economy of growing Tur as a whole crop and as a mixed crop with Groundnut and Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) N.A. (iii) 16.7.1950. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) Rain-fed. (viii) Weeding once or twice. (ix) 30.82%. (x) Jowar : 27.10.1950, Tur : 30.1.1951 and Groundnut : 1.11.1950.

2. TREATMENTS :

1. Jowar alone.
2. Groundnut alone.
3. Tur alone.
4. Groundnut 6 rows + Tur one row.
5. Groundnut 4 rows + Tur one row.
6. Jowar 6 rows + Tur one row.
7. Jowar 4 rows + Tur one row.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 78' × 19'. (b) 72' × 15'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Due to unfavourable seasonal conditions all the crops were adversely affected in different degrees. Poor growth. Besides poor growth the majority of groundnut flowers failed in pod formation due to complete absence of the rain at the time of flowering and the consequent hard texture of the soil, groundnut yields were thus highly affected. Due to highly stunted crop growth, Tur yields were abnormally low. Jowar almost failed in grain setting. (ii) Nil. (iii) Yield data. (iv) (a) 1949—1953. (b) No. (c) N.A. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

- (i) 104.4 Rs./ac.
- (ii) 32.6 Rs. ac.
- (iii) Treatments differ significantly.
- (iv) Av. yield of produce in Rs./ac.

Treatment	Mean value
1.	149.2
2.	78.4
3.	38.0
4.	71.2
5.	72.8
6.	157.2
7.	162.8
S.E., mean	= 16.40 Rs./ac.

Crop :- Tur, Groundnut and Jowar.

Ref :- A.P. 52(7).

Site :- Govt. Main Farm, Warangal.

Type :- 'X'.

Object :—To ascertain the economy of growing Tur as a pure crop and as an associated crop with Groundnut and Jowar.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) N.A. (iii) 11.7.1952. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) N.A. (viii) N.A. (ix) 20.47%. (x) Jowar : 30.10.1952, Tur : 31.1.53 and Groundnut : 28.10.1952.

2. TREATMENTS :

1. Jowar alone.
2. Groundnut alone.
3. Tur alone.
4. Groundnut 6 rows + Tur one row.
5. Groundnut 4 rows + Tur one row.
6. Jowar 6 rows + Tur one row.
7. Jowar 4 rows + Tur one row.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/40 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield data. (iv) (a) 1949—1953. (b) and (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

(i) to (iv) Av. yield in lb./ac.

Treatment	Jowar	Tur	Groundnut	Monetary return per acre in Rs.
1.	G : 400.0 K : 5320.0	—	—	198.8
2.	—	—	760.0	242.8
3.	—	269.6	—	46.4
4.	—	318.4	625.2	254.8
5.	G : 425.2 K : 4500.0	155.0	—	204.4
6.	K : 6200.0 G : 440.0	144.0	—	234.8
7.	—	370.0	440.0	204.4
G.M.	—	—	—	198.0
S.E /mean	—	—	—	21.13 Rs./ac.

There is significant difference in monetary returns for different treatments.

Note : G : Grain.

K. Kadbi

Crop :- Tur, Groundnut and Jowar.

Site :- Govt. Main Farm, Warangal.

Ref :- A.P. 53(9).

Type :- 'X'.

Object :- To ascertain the economy of growing Tur as a pure crop and as an associated crop with Groundnut or Jowar.

## 1. BASAL CONDITIONS :

(i) (a) N.A. (b) N.A. (c) N.A. (ii) N.A. (iii) 29.6.1953. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) N.A. (viii) N.A. (ix) 30.49" (From July 1953 to December 1953). (x) Groundnut—11.10.1953 ; Jowar—12.10.1953 and Tur—8.2.1954.

## 2. TREATMENTS :

1. Jowar alone.
2. Groundnut alone.
3. Tur alone.
4. Groundnut 6 rows and Tur one row.
5. Groundnut 4 rows and Tur one row.
6. Jowar 6 rows and Tur one row.
7. Jowar 4 rows and Tur one row.

## 3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/40 acre. (v) N.A. (vi) Yes.

## 4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield data. (iv) (a) 1949 to 1953. (b) N.A. (c) N.A. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

## 5. RESULTS :

Treatment (i, to (iv)	Av. yield in lb./ac.			Monetary Return per acre in Rs.
	Jowar	Groundnut	Tur	
1.	G. 288.0 K. 5610.0	—	—	179.6
2.	—	781.2	—	185.6
3.	—	—	522.0	70.8
4.	—	700.0	464.4	265.2
5.	—	517.2	652.0	238.0
6.	G. 263.4 K. 3800.0	—	335.6	172.0
7.	G. 188.0 K. 4140.0	—	370.8	180.4
G.M.	—	—	—	109.4
S.E./mean	—	—	—	25.0 Rs./ac.
C.D.	—	—	—	74.5

There is significant differences in monetary return for different treatments.

Note :—G—Grain.

K—Kadbi