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EXPERIMENTS

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FOREWORD

Increase in agricultural production is one of the main objectives of our agricultural planning. It is only by the exploitation of scientific methods of agriculture that we can hope to increase our agricultural production to the level needed for maintaining a reasonable standard of living to the country's population. The technical worth of improvement measures is best judged from carefully conducted field experiments. While it is true that a large number of agricultural field experiments are conducted in the country, the results of these experiments have not been brought together in an integrated manner for the use of research workers. The absence of such a unified account has often led to duplication of work and delay in the utilisation of results for practical farming. The Institute of Agricultural Research Statistics has rendered a very valuable service by preparing a compendium of agricultural field experiments conducted in the country. The first series of compendium containing the results of all agricultural field experiments during the period 1948-53 have already been published by the Institute.

The present compendium is the second in the series covering the period 1954-59. As in the earlier compendium, the present series also contains critical summaries of results of experiments bearing on important agronomic factors, such as the response 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. Judging from the demand for the first series of the compendium, I am sure that the present series will also prove equally useful.

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 wholehearted 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 publications 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,
March 26, 1965.

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

PREFACE

The present set of volumes form Part II in the series of compendia of Agricultural Field Experiments being published by the Indian Council of Agricultural Research under the project for National Index of Field Experiments and contains a unified record of experiments conducted at agricultural research stations and institutes all over the country. Volumes in Part I in this series were published in 1962 and contained results of some 7,500 experiments conducted during the period 1948-53. The present set of volumes includes results of experiments conducted during the next period that is 1954-59. After the period, covered by Part I of the series, agricultural research and experimentation has expanded so much that for the period 1954-59, to which the present volumes refer, results of more than 15,000 experiments are available.

The present compendium is prepared on the same pattern as the previous one and 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 and Kashmir and Himachal Pradesh, (12) Rajasthan, (13) Uttar Pradesh (14) West Bengal and (15) All Central Institutes. In each volume, background information of the respective state regarding its division into different soils and agro-climatic regions, rainfall and cropping pattern followed in each region and agricultural production and area under different crops in the state is given. The experiments reported in each volume have been arranged crop-wise 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 fertilizers (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 grouped together (*e.g.* MV as Manurial-cum-Varietal).

This publication owes its origin to the guidance and help of Dr. D.J. Finney, F.R.S., Professor of Statistics, Aberdeen University, Scotland, in formulating the project during his stay at the Institute of Agricultural Research Statistics as an F.A.O. expert in 1952-53.

At the Institute of Agricultural Research Statistics the work under the scheme was carried out under the supervision of Shri. T.P. Abraham, Assistant Statistical Adviser. The actual working of the scheme was conducted by Shri G.A. Kulkarni, Statistician till he left the Institute in July, 1964. The work was subsequently taken over by Shri O.P. Kathuria, Assistant Statistician. Messrs. L.B.S. Somayazulu, P.P. Rao, M.L. Sahni, Harbhajan Singh, A.L. Punhani, M.K. Joshi, N.K. Worrier, H.C. Jain and J.K. Kapoor of the statistical staff of the Institute deserve special mention for careful and painstaking work in editing and scrutiny of the manuscript as well as proofs of the compendium.

The burden of collecting the data from the various research stations and the analysis of a large number of experiments once again fell on the regional staff of the Council placed in different States. They deserve to be congratulated for the hard work they have put in.

Thanks are due to the State Departments of Agriculture, the Central Institutes and the Commodity Committees who made the data of the experiments conducted under their jurisdiction readily available to the staff of the Institute. The present publication has become possible only through their unstinted co-operation. The Institute is also thankful to the various

officers in the States who worked as Regional Supervisors for the project from time to time and took keen interest in the working of the Scheme. The list of the names of the regional supervisors and the regional staff of the project is given on the following page.

NEW DELHI,
March 25, 1965.

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

REGIONAL SUPERVISORS AND REGIONAL STAFF FOR THE NATIONAL
INDEX OF FIELD EXPERIMENTS

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9. ORISSA (BHUBANESWAR)	L.B.S. SOMAYAZULU	SHRI B. MISRA, Deputy Director of Agriculture (Hq.) SHRI D. MISRA, Principal, Uttakal Krushi Mahavidyalaya, Bhubaneswar.
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SHRI P.D. NAIR,
Director of Agriculture.

ABBREVIATIONS COMMON TO EXPERIMENTS ON ANNUAL AND PERENNIAL CROPS AND EXPERIMENTS ON CULTIVATORS' FIELDS.

Crops :- 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 :-

- | | |
|---------------------------|------------------------|
| 1. A.P.—Andhra Pradesh | 9. M.—Madras |
| 2. As.—Assam | 10. Mh.—Maharashtra |
| 3. Bh.—Bihar | 11. Ms.—Mysore |
| 4. Gj.—Gujarat | 12. Or.—Orissa |
| 5. H.P.—Himachal Pradesh | 13. Pb.—Punjab |
| 6. J.K.—Jammu and Kashmir | 14. Rj.—Rajasthan |
| 7. K.—Kerala | 15. U.P.—Uttar Pradesh |
| 8. M.P.—Madhya Pradesh | 16. W.B.—West Bengal |

For the experiments conducted under the schemes sponsored by the Indian Council of Agricultural Research like the Model Agronomic Experiments or the Simple Fertilizer Trials scheme no serial numbers have been given at the source as the data of these experiments were collected at the Headquarters (New Delhi). In such cases the abbreviations MAE, SFT or TCM are given in the brackets against the year in which the experiment is conducted.

Site :- Name of the Research Station is mentioned alongwith 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 the Indian Agricultural Research Institute.

In case of the experiments conducted on cultivators' fields whether under an Indian Council of Agricultural Research scheme or by the State Government, the abbreviation (c.f.) is given along with the site or centre as, for example, Cuttack (c.f.).

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.

Object :- A statement of the objective of the experiment is given indicating the main crop and type of the experiment. In case of M.A.E., S.F.T. and T.C.M. experiments, the type to which the experiment corresponds is also given, e.g. Type V, Type A or B or C etc.

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

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

Other abbreviations used in the text of experiments :

Nitro. Phos.—Nitrogen Phosphate	A/N—Ammonium Nitrate
Ammo. Phos.—Ammonium Phosphate	A/C—Ammonium Chloride
A/S—Ammonium Sulphate	C/N—Chilean Nitrate
A/S/N.—Ammonium Sulphate Nitrate	N—Nitrogen
C/A/N—Calcium Ammonium Nitrate	P—Phosphate

K—Potash	F.M.—Fish Manure
B.M.—Bone meal	G.N.C.—Groundnut cake
Mur. Pot.—Muriate of Potash	M.C.—Municipal Compost
Pot. Sul.—Potassium Sulphate	T.C.—Town Compost
Super—Super Phosphate	lb.—Pounds
Zn. Sul.—Zinc Sulphate	Srs.—Seers
C/S—Copper Sulphate	B.D.—Basal dressing
G.M.—Green Manure	C.L.—Cart load
F.Y.M.—Farm Yard Manure	ac.—Acre
F.W.C.—Farm Waste Compost	Dical. Phos.—Dicalcium Phosphate

Under the item (ii) (b) of the sub-heading 'Basal conditions' in the text of the experiment, the respective farm station at which the experiment was conducted has been referred to for the soil analysis. The soil analysis of the farm, with other details of the research station is given under the background information of each state. The information regarding the details of experimental stations may be obtained under the respective items as given below :

DETAILS OF EXPERIMENTAL STATIONS

A. General information :

(i) District and the nearest railway station with Latitude, Longitude and Altitude if available. General topography of the experimental area. (ii) Type of tract it represents. (iii) Year of establishment. (iv) Cropping pattern. (v) Programme of research.

B. Normal rainfall :

Average monthly rainfall specifying the period on which the figures are based.

C. Irrigation and drainage facilities :

(i) (a) Whether available, if so, since when. (b) Type of facilities available. (ii) Whether there is a proper drainage system.

D. Soil type and soil analysis :

(i) Broad soil type with depth, colour, and structure etc. (ii) Chemical analysis. (iii) Mechanical analysis.

E. No. of experiments :

No. of experiments conducted on different crops that have been included in the compendium.

Information under the following heads is to be read against the respective items as given below.

BASAL CONDITIONS

A. For experiments on annual crops :

(i) (a) Crop rotation if any. (b) Previous crop. (c) Manuring of previous crop. (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 (x) Date of harvest.

B. For experiments on 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 seedlings at the time of planting. (vii) Basal dressing with time and method of application. (viii) Cultural operations during the year. (ix) Inter cropping if any. (x) Irrigated or Unirrigated. (xi) Rainfall during crop season. (xii) Date of harvest.

C. For experiments on cultivators' fields :

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

DESIGN

A. For experiments on annual crops :

(i) Abbreviations for design : 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 experiments on 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

A. For experiments on 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 and (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 experiments on 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 alongwith reference. (vi) Abnormal occurrences, like heavy rains, frost, storm etc., if any. (vii) Any other important information.

TABLE OF CONVERSIONS TO METRIC UNITS

1 foot	=	304.8 mm.
1 acre	=	0.404606 hectare.
1 gram	=	0.035274 ounce = 0.085735 tola = 0.017147 chatak
1 kg.	=	2.20462 pounds = 1.07169 seers.
1 metric tone	=	0.9842 ton = 26.7923 maunds.
1 maund	=	0.373242 quintal = 37.3242 kg.
1 lb./ac.	=	1.12085 kg./hectare.
1 md./ac.	=	92.23002 kg./hectare = 0.9223 quintal/hectare.
1 ton/ac.	=	2.51071 metric tones/hectare.
1 gallon (Imp.)	=	4.54596 litres.

GLOSSARY OF VERNACULAR NAMES OF CROPS

Sl. No.	Name of Crop	Botanical Name	Assamese	Bengali	Oriya	Telugu	Tamil	Malayalam	Kannada	Marathi	Gujarati	Hind i	Punjabi
1.	Paddy	<i>Oryza sativa L.</i>	Dhan	Dhan	Dhano	Vadlu ; Biyyamu	Nel	Nellu	Bhatta	Bhat	Dangar	Dhan ; Chawal	Chaul ; Dhan
2.	Maize	<i>Zea mays L.</i>	Gom dhan	Bhutta	Macca	Mokkajonna	Makka, Cholam	Cholam	Musutina Jola	Makka	Makkai	Makka	Makki ; Makayee
3.	Mati kalai	<i>Phaseolus mungo</i> var. <i>radiatus</i> Linn.	Matimah	Mashkalai	Biri	Minumulu	Uzhundu	Uzhunnu	U du	Udid	Adad, Udad	Urd	Mash, Urd
4.	Potato	<i>Solanum tuberosum L.</i>	Alooguti	Alu	Bilati Alu	Bangala- dumpa, Uragadda Akugobi	Urulai Kizhangu	Urala Kizangu	Alu gedde	Batata	Aloo, Batata	Aaloo	Alu
5.	Cabbage	<i>Brassica oleracea L.</i> var. <i>capitata L.</i>	Bandhakabi	Bandhakapi	Bandha Kobi		Muttaikose	Muttakose	Yele kosu	Kobi	Kobij	Patgobhy	Band gobhi
6.	Cauliflower	<i>Brassica oleracea L.</i> var. <i>botrytis L.</i>	Phool Kabi	Fulkapi	Fula kobi	Poogobi	Gospoovu	Cauli- flower	Hukosu	Phul kobi; Fulvar	Fulkobi ; Fulvar	Phool Gobhy	Phul gobhi
7.	Brinjal	<i>Solanum melongena L.</i>	Bengena	Begun	Baigan	Vankaya	Katharikai	Vazhuthana	Badane kayi	Vange	Vengan	Baingan	Bengan ; Bataun
8.	Tomato	<i>Lycopersicon esculentum</i> Mill.	Bilahi	Bilati begun	Bilati baigan bapatala, ghant	Tomato ; Rama- mulaka ; Seema vankaya	Thakkali	Thakkali	Tomato	Welwangi ; Tambati	Vilaiti wagan ; Tameta	Tamatter	Tamatar
9.	Sugarcane	<i>Saccharum officinarum L.</i>	Kuhiar	Akh	—	Cheruku	Karumbu	Karimbu	Kabbu	Oos	Sherdi	Ganna ; Kamad ; Naishakar	Kamad ; Ganna ; Eakh
10.	Cotton	<i>Gossypium spp.</i>	Kapah	Karpas ; Tula	Kapa	Pratti	Paruthi	Paruthi	Hatti	Kapus	Kapas	Kapas	Kapah
11.	Jute	<i>Corchorus spp.</i>	Marapat	Shada pat ; Tosha pat	Jhota	Janumu	Chanapai	Chanambu	Senabu	Joot	Moti Chhunchh	Jute	Patsan
12.	Groundnut	<i>Arachis hypogaea L.</i>	China Badam	Cheena badam	China badam	Nelasha- anga	Nilakadalai	Nilakkadala	Kadale kayi	Bhuimug	Magafali	Mungphali	Mungfali
13.	Ginger	<i>Zingiber officinale</i> Rosc.	Ada	Ada	Ada	Allam	Inji	Inchi	Shunti ; Alla	Ale	Adu	Adrakh	Adrak
14.	Mustard	<i>Brassica Juncea</i> Coss.	Sariah	Rai Sarisha	Rai	Avalu	Kadugu	Kaduku	Kampu sasive	Mohri	Rai	Rai	Rai

GLOSSARY OF VERNACULAR NAME OF CROPS—contd.

Sl. No.	Name of Crop	Botanical Name	Assamese	Bengali	Oriya	Telugu	Tamil	Malayalam	Kannada	Marathi	Gujarati	Hindi	Punjabi
15.	Large Cardamom	<i>Amomum subulatum</i> Roxb.	Dangar Elasi	Bara elach	Bada-alaicha	Pedda-elakulu	Periya elakkaai	Kattu elam	Dodda yalakki	Mothi elachi	Mothi elchi	Bari ilaichy	Wadi illaichi
16.	Coconut	<i>Cocos ucifera</i> L.	Narikol	Narikel	Nadia	Tenkaya ; Kobbari	Thennai	Thengu	Thengu	Naral	Nalieri	Gola or Narial	Naryal
17.	Cashewnut	<i>Anacardium occidentale</i> L.	Kaju	Kaju badam	Lanka amba	Jeedi-mamidi	Mundiri	Kasu mavu	Godambi	Kaju	Kaju	Kaju	Khaja
18.	Cardamom	<i>Elettaria cordamomum</i> Maton	Elachi	Chota elach	Gujurati	Yelak-kayalu	Ealakai	Elam	Yalakki	Veldode	Elaichi ; Elchi	Elachi	Illaichi
19.	Black Pepper	<i>Piper nigrum</i> L.	Jaluk	Gol march	Golmarich	Miriyalu	Milagu	Kuru mulaku	Kare menasu	Miri	Mari	Kali mirich	Kali mirch
20.	Pineapple	<i>Ananas sativa</i> Schutt.; <i>Ananas comosus</i> Merr.	Matikathal	Anarash	Sapuri, Saphrd, panasa	Anasa	Annasi palam	Kaitha Chakka	Ananas	Anaoas	Anenas	Ananas	Ananas

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ASSAM

1. General :

The State of Assam including N.E.F.A. and Nagaland lies on the far eastern side of India. It is bound by the Himalayan ranges on the north, East-Pakistan on the west and Burma on the east. It is triangular in shape with its base as Himalayas and vertex pointing to the south and comprises of 12 districts. The State has a geographical area of 54,335 thousand acres. The reporting area according to village papers is about 35,764 thousand acres. The land utilization figures for this State are provided in table 1 below :

TABLE 1.

Land utilisation Statistics of Assam State (1958-59)
(Area in '000 acres)

Reporting area as per village papers	35,764
Land under forests	12,042
Barren & uncultivable land	10,701
Land put to non-agricultural uses	551
Culturable waste	275
Permanent pastures & other grazing land	380
Land under miscellaneous tree crops	2,983
Current fallows	476
Other fallow land	413
Net area sown	5,118
Total cropped area	6,003
Area sown more than once	885

2. Topography :

Physiographically, Assam is divided into three natural divisions : (i) the Brahmaputra valley, (ii) The Surma valley and (iii) The Assam range. The Aka Abor, Mishmi and other neighbouring hills, etc., from the eastern part of the Himalayas together with the Naga Hills. Manipur and Lushai Hills surround the east and north-east of Assam. The Brahmaputra valley is an alluvial plain, 450 miles long and about 50 miles broad. It is bounded on all sides, excepting the west, by hills. It is stretched almost east and west towards the lower portions ; but at its upper end, it is inclined towards north-east. The Brahmaputra flows through the middle of this plain and receives in its course, the drainage of the Himalayas on the north and the Assam range on the south. The Surma valley is a flat plain about 125 miles long and 60 miles wide, closed on three sides by hill ranges. The Surma river rises on the southern slopes of the mountain ranges at the borders of the Naga Hills and flows south through Manipur. It represents a vast deltaic expanse, liable to deep flooding in the rainy season. Its mean elevation is 87 ft. at Silchar and 48 ft. in Sylhet. The rivers are, therefore, sluggish and deposit large amount of silt raising their banks well above the level of the surrounding country. Consequently the village sites assume a swamp condition in the rains. Occasionally, there are low basins, locally called *haors*, which retain water almost throughout the year. The surface of the valley is interspersed with small, isolated hillocks called *tillas*. The Assam range of mountains, which separates the Surma and the Brahmaputra valley, projects at right angles from the Burmese mountain range and lies almost due east and west. To the west, a height of 4,600 ft. is attained at Nikrek. Towards the southern face, the Shillong plateau has a very steep slope.

3. Soil types and Agro-climatic regions.

The most important characteristic of the soil of Assam is its acidity. The soil acidity appears to increase with rainfall and heaviness of the soil. The soils of the northern bank of

Brahmaputra are less acidic than those of the southern bank. In the Surma valley, the soil on the *tillas* and *bheels* are markedly acidic. The soils of the low lying tracts are less acidic and neutral or slightly alkaline.

Chemically the soils of the Brahmaputra valley and the Surma valley are not very much different from each other. The soils of the Surma valley are of finer texture as compared to the soils of the Brahmaputra valley. In other respect, e.g., the percentage of the different constituents the soils are not much different. The Surma valley is characterised by its swampy nature and the abundance of *bheels*, the soils of which contain large percentage of organic matter. The soils on the *tillas* of Cachar differ from the rest only in so far as they occupy a heavy level.

The soils of the Assam range districts are comparatively rich in organic matter and nitrogen. This may be a result of the comparatively virgin nature of the hill soils. Both chemical and mechanical compositions show great variations.

The State of Assam can thus be divided into two distinct regions namely the Assam Hills region and the Assam Plains region. The Brahmaputra and the Surma river vallies owing to the similarity in their soil types together constitute the Assam Hills region, the Assam range being the same as the Assam Plains region. A brief description of these regions is as follows :—

1. *Assam Hill Region* : The districts covered by the region are Garo hills, United Khasi and Jaintia Hills, United Mikir and North Cachar Hills, Naga Hills and Mizo Hills. This also included Manipur. Annual rainfall of this region ranges between 1905 to 2540 mm. Paddy and Jute are the main field crops.

2. *Assam Plains Region* : This consists of Goalpara, Kamrup, Cachar, Darrang, Nowgong, Sibsagar and Lakhimpur districts. This area also receives 1905 to 2540 mm. rainfall annually. Soils are alluvial type and undifferentiated. Main field crops of this region are Paddy and Tea. The annual normal temperature and relative humidity at some selected centres are as follows :

	Max°C	Min°C	R.H. %
Cherrapunji	20.5	14.2	73
Dibrugarh	27.3	18.5	85
Gauhati	29.3	19.2	81
Shillong	21.1	11.2	69
Sibsagar	27.5	18.8	87
Tezpur	28.5	19.5	82

4. Irrigation.

The State has a total irrigated area of 1533 thousand acres. The area irrigated through different sources is as follows :

TABLE 2.
Area irrigated through different sources (1958-59)
(Area in '000 acres)

Source	Acreage	% irrigated area
Govt. Canals	178	11.6
Private Canals	721	47.0
Other sources	634	41.4
Total	1533	100.0

5. Agricultural Production and Normal cropping pattern.

Apart from Tea, the important field crops of this State are Paddy, Sesamum, Rape and Mustard and Jute. The figures for area, production and average yield per acre of various crops in this State are given in Table 3 below :

TABLE 3.

Area, production and Av. yield per acre of principal crops (1963-64)

	Area in '000 ac.	Production in '000 tons.	Yield in lb./ac.
Paddy	4557	1818.8	894
Maize	50	8.9	397
Smallmillets	16	2.9	413
Wheat	10	2.9	661
Pulses	206	35.3	384
Castor	5	0.9	441
Sesamum	22	3.9	401
Rape & Mustard	294	49.3	471
Linseed	3	0.9	735
Mesta	20	28*	1.4*
Cotton (<i>kapas</i>)	41	6.9	35
Jute	334	1020*	3.0 *
Sugarcane	70	1102	15.74**

* '000 bales of 400 lbs. each

** tons/ac.

6. Experimentation and Agricultural Research.

In all 331 experiments conducted during the period 1954—59 were reported from this State. Besides, 52 experiments conducted under the Model Agronomy and Simple Fertilizer Trial Schemes of the Indian Council of Agricultural Research and the experiments conduc-

TABLE 4.
Distribution of experiments crop-wise and type-wise.

Crop	M	MV	C	CV	CM	I	D	Total
Paddy	47	4	6	—	7	—	15	79
Maize	22	—	—	—	—	—	—	22
Mati Kalai	2	—	—	—	—	—	—	2
Potato	30	—	2	—	—	1	3	36
Cabbage	3	—	—	—	—	—	—	3
Cauliflower	2	—	—	—	—	—	—	2
Brinjal	1	—	—	—	—	—	—	1
Tomato	4	—	—	—	—	—	—	4
Sugarcane	7	—	1	—	—	—	—	8
Cotton	2	—	3	—	—	—	—	5
Jute	2	3	—	—	—	—	—	5
Groundnut	4	—	—	—	—	—	—	4
Mustard	12	—	11	7	—	—	2	34
Ginger	6	—	8	1	—	—	—	15
Cardamom	—	—	4	—	—	—	—	4
Coconut	2	—	3	—	—	—	—	5
Cashewnut	1	—	—	—	—	—	—	1
Pineapple	2	—	—	—	—	—	—	2
B. Pepper	—	—	1	—	—	—	—	1
Total	45		39	8	7	1	20	231

ted on cultivators' fields by the State are also included in the compendium for this period. Jorhat, Karimganj Kokilamukh, Titabar and Upper Shillong are the major agricultural research stations of the State. About 64.5 % of experiments have been of purely manurial type while those with manurial treatments are about 70.6 %. Maximum number of trials (34.9 %), Mustard and maize followed in order with 13.9 % and 9.5 % of the experiments respectively. The crop and type wise break up of the experiments is given in Table 4.

About 85% of the experiments were laid out in Randomised Block and Latin square designs. Split-plot or strip-plot arrangement of factors was adopted in about 12% of the experiment and these were with factorial arrangement treatments. The block size varied from 2 to 30 plots in an R.B.D. experiment while in split plot the number of sub-plots per main-plot varied from 3 to 30. The net plot size in R.B.D. ranged between 1/700th of an acre and 1/30th of an acre while in the split-plot design it ranged between 1/725th an acre and 1/40th of an acre. The no. of replications varied from 2 to 8.

PARTICULARS OF RESEARCH STATIONS AND SOIL ANALYSIS

1. Government Agriculture Farm, Jorhat.

A. General information :

(i) District Sibsagar, 2½ miles from Jorhat R.S. (ii) N.A. (iii) Started in 1923. (iv) and (v) N.A.

B. Normal rainfall in mm. :

Details N.A.

C. Irrigation and drainage facilities :

Details N.A.

D. Soil type and soil analysis :

(i) Clay loam. (ii) Chemical and (iii) Mechanical analysis N.A.

E. No. of experiments :

Paddy—17, Maize—1, Malikalai—2, Potato—8, Cabbage—3, Cauliflower—2, Brinjal—1, Tomato—4, Sugarcane—5, Groundnut—4, Mustard—1, Total=48.

2. Sugarcane Research Station, Jorhat.

A. General information :

(i) District Sibsagar, 3 miles from Jorhat R.S. Plain level. (ii) N.A. (iii) Started in 1906. (iv) and (v) N.A.

B. Normal rainfall in mm. :

1499 mm. in a year, details—N.A.

C. Irrigation and drainage facilities :

Details N.A.

D. Soil type and soil analysis :

(i) Reddish sandy loam of old alluvium, shallow, hard, sub soil at a depth of one ft. or so, yellowish grey in colour and single grain (old alluvium) in structure. (ii) Chemical analysis : N—0.114, Total P₂O₅—0.025, Available P₂O₅—0.008, Total K₂O—0.115, Available K₂O—0.007 and Acidity (ppm.)—1350. (iii) Mechanical analysis (%) : Coarse sand—7.2, fine sand—52.5, Silt—22.6, Fine silt—5.0, Clay—6.6 and moisture and loss on ignition—5.1.

E. No. of experiments :

Same as on Govt. Agri. Farm, Jorhat.

3. Rice Experimentation Station, Karimganj.

A. General Information :

(i) District Cachar, 5 miles from Karimganj R.S. Two types of land, one is slightly higher than the other. There is no hilly land and no bund around the fencing with a gate for inlet or outlet of water. (ii) It represent plain tract. (iii) Started in 1913. (iv) and (v) N.A.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
740	617	498	393	257	86	3	12	41	134	337	709	3828

(Av. based on the rainfall data for the period 1949-50 to 1958-59)

C. Irrigation and drainage facilities :

(i) (a) Yes. (b) Tanks. (ii) Yes.

D. Soil type and soil analysis :

(i) Sandy and clay loam, blackish and fine. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—22, Total=22.

4. Seed Farm, Kokilamukh.**A. General information :**

(i) District Sibsagar, $7\frac{1}{2}$ miles from Jorhat R.S. The area is flat. (ii) Alluvial tract. (iii) Started in 1927. (iv) and (v) N.A.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
269	479	363	195	176	28	20	36	47	84	221	468	2376

(Av. based on the rainfall data for the period 1954 to 1959).

C. Irrigation and drainage facilities :

(i) (a) and (b) N.A. (iii) Yes.

A. Soil type and soil analysis :

(i) Sandy loam. (ii) Chemical analysis and (iii) Mechanical analysis as below :
Chemical analysis (%).

Depth	N.	Avl. P ₂ O ₅	Avl. K ₂ O	pH (Water extract)	pH (K ₂ O extract)	Acidity
0"-9"	0.174	0.043	0.013	5.0	4.7	39.2
9"-18"	0.011	0.039	0.018	5.9	4.8	28.0

Mechanical Analysis (%).

Depth	Course sand	Fine sand	Silt	Clay	Moisture	Loss on ignition
0"-9"	0.5	49.5	24.0	22.0	2.0	4.8
9"-18"	1.0	48.9	28.0	20.0	1.4	3.0

E. No. of experiments :

Mustard—31, Total=31.

5. Rice Experimentation Station, Titabar.**A. General information :**

(i) District Sibsagar, 3 miles from Titabar R.S. (ii) Old alluvium tract. (iii) Started in 1923. (iv) and (v) N.A.†

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
202	506	316	117	102	16	24	18	23	62	114	340	1841

(Av. based on the rainfall data for the period 1956 to 1959).

C. Irrigation and drainage facilities :

(i) (a) and (b) N.A. (ii) Yes.

D. Soil type and soil analysis :

(i) Heavy clayey loam, 6" deep, grey in colour. (ii) Chemical and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—21, Total=21.

6. *Paddy Research Station, Upper Shillong.

A. General information :

(i) District Khasi and Jantia Hills, 5 miles from Shillong R.S. (ii) High altitude and cold area. (iii) Started in 1953. (iv) and (v) N.A.

B. Av. rainfall in mm. :

Details N.A.

G. Irrigation and drainage facilities :

(i) (a) and (b) N.A. (ii) N.A.

D. Soil type and soil analysis :

(i) N.A. (ii) Chemical analysis and Mechanical analysis—N.A.

E. No. of experiments :

Paddy—6, Maize—21, Potato—28, Total=55.

*There are 9 more research stations : Barpetta, Burlickson, Kahikuchi, Kanikar, Lembucherra, Naya bunglow, Nongpoh, Roha and Tura where about 54 more experiments are conducted on crops like Jute, Sugarcane, Coconut, Pineapple, Ginger Cardamom and Cotton.

Crop :- Paddy (Ahu).

Ref :- As. 54(17).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'M'.

Object:—To study the effect of different manures on Paddy in acidic soil under limed and un-limed conditions.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Mustard. (c) N.A. (ii) (a) Old alluvial, sandy loam and acidic. (b) N.A. (iii) N.A. (iv) (a) 8 ploughings followed by laddering. (b) Broadcasting. (c) to (e) N.A. (v) 200 md./ac. of cowdung and 200 md./ac. of compost. (vi) *Rangadoria, Ahu* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) Nil. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0 =Without lime, L_1 =20 md./ac. of slaked lime.

Sub-plot treatments :

7 sources of N : A_1 =Control, A_2 =40 lb./ac. of N as cow-dung, A_3 =40 lb./ac. of N as oilcake, A_4 =20 lb./ac. of N as cow-dung+20 lb./ac. of N as C/N, A_5 =40 lb./ac. of N as C/N, A_6 =20 lb./ac. of N as cow-dung+20 lb./ac. of N as A/S and A_7 =40 lb./ac. of N as A/S.

DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 7 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) 40'×22'. (v) No. (vi) Yes.

4. GENERAL :

(i) Nil. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1956. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Agri. Chemist.

5. RESULTS :

(i) 184 lb./ac. (ii) (a) 36 lb./ac. (b) 28 lb./ac. (iii) Main effect of A and interaction $A \times L$ are highly significant. (iv) Av. yield of grain in lb./ac.

	A_1	A_2	A_3	A_4	A_5	A_6	A_7	Mean
L_0	83	264	206	74	173	165	182	164
L_1	140	305	248	115	189	215	223	205
Mean	111	284	227	95	181	190	202	184

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. L marginal means | = 11.12 lb./ac. |
| 2. A marginal means | = 16.17 lb./ac. |
| 3. A means at the same level of L | = 22.87 lb./ac. |
| 4. L means at the same level of A | = 23.90 lb./ac. |

Crop :- Paddy (Ahu).

Ref :- As. 55(31).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'M'.

Object:—To study the effect of different manures on Paddy in acidic soil under limed and un-limed conditions.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Mustard. (c) N.A. (ii) (a) Old alluvial, sandy loam and acidic. (b) N.A. (iii) N.A. (iv) (a) 8 ploughings followed by laddering. (b) Broadcasting. (c) to (e) N.A. (v) 200 md./ac. of cowdung and 200 md./ac. of compost. (vi) *Rangadoria, Ahu* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) Nil. (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54 (17) above.

4 GENERAL :

(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1954—1956. (b) Yes. (c) No. (v) (a) and (b) N.A. (vi) 1956 expt. failed due to drought. (vii) Expt. was conducted by Agri. Chemist.

5. RESULTS :

(i) 489 lb./ac. (ii) (a) 50 lb./ac. (b) 83 lb./ac. (iii) Interaction A×L is significant and main effect of A is highly significant. (iv) Av. yield of grain in lb./ac.

	A ₁	A ₂	A ₃	A ₄	A ₅	A ₆	A ₇	Mean
L ₀	231	627	710	446	462	330	594	486
L ₁	198	479	561	561	578	347	726	493
Mean	214	553	635	503	520	338	660	489

S.E. of difference of two

1. L marginal means = 15.43 lb./ac.
2. A marginal means = 47.92 lb./ac.
3. A means at the same level of L = 67.76 lb./ac.
4. L means at the same level of A = 64.61 lb./ac.

Crop :- Paddy (Ahu).

Ref :- As. 57(37).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'M'.

Object :—To study the effect of different manures and methods of application on Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Mustard. (c) 100 md. ac. of cow-dung+40 lb./ac. of P₂O₅. (ii) (a) Old alluvial, sandy loam and acidic. (b) N.A. (iii) N.A. (iv) (a) 6 ploughings followed by laddering. (b) Broadcasting. (c) 1.25 md. ac. (d) and (e) N.A. (v) 100 md. ac. of cow-dung. (vi) *Rangadoria, Ahu* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) and (x) N.A.

2. TREATMENTS :

6 manurial treatments with methods of application : M₀=0, M₁=40 lb./ac. of N as oilcake, M₂ = M₁+40 lb./ac. of P₂O₅ as Super (broadcasting), M₃ = M₁+40 lb./ac. of P₂O₅ as *Katha* phosphate (broadcasting), M₄ = M₂ (placement) and M₅ = M₃ (placement).

3. DESIGN :

i. R.B.D. (ii) (a) 6. (b) 132'×40'. (iii) 3. (iv) (a) and (b) 40'×22'. (v) No. (vi) Yes.

4. GENERAL :

(i) Fail. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—1959. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Agri. Chemist.

5. RESULTS :

(i) 923 lb. ac. (ii) 465 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅
Av. yield	792	1246	866	784	627	1221

S.E. mean = 268 lb./ac.

Crop :- Paddy (Ahu).

Ref :- As. 58(27).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'M'.

Object :—To study the effect of different manures and methods of application on Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Mustard. (c) 100 md./ac. of cow-dung+40 lb./ac. of P_2O_5 . (ii) (a) Old alluvial, sandy loam and acidic. (b) N.A. (iii) N.A. (iv) (a) 6 ploughings followed by laddering. (b) Broadcasting. (c) 1.25 mds/ac. (d) and (e) N.A. (v) 100 md./ac. of cowdung. (vi) *Rangadoria, Ahu* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) and (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(37) on page 2.

4. GENERAL :

(i) Fair (ii) Nil. (iii) Grain yield. (iv) (a) 1957—1959. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (viii) Expt. was conducted by Agri. Chemist.

5. RESULTS :

(i) 1053 lb./ac. (ii) 258 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅
Av. yield	536	974	1094	1114	1213	1386

S.E./mean = 149 lb./ac.

Crop :- Paddy (*Ahu*).

Ref :- As. 59(30).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'M'.

Object :—To study the effect of different manures and methods of application on Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Matikalai*. (c) 0,40 and 60 lb./ac. of N as cow-dung and 0,40 and 60 lb./ac. of P_2O_5 as Super. (ii) (a) Old alluvial, sandy loam and acidic. (b) N.A. (iii) N.A. (iv) (a) 6 ploughings followed by laddering. (b) Broadcasting. (c) 1.25 md./ac. (d) and (e) N.A. (v) 100 mds./ac. of cow-dung. (vi) *Rangadoria, Ahu* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(37) on page 2.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain yield. (iv) (a) 1957—1959. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Agri. Chemist.

5. RESULTS :

(i) 1079 lb./ac. (ii) 164 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅
Av. yield	639	875	1085	1093	1370	1413

S.E./mean = 95 lb./ac.

Crop :- Paddy (*Sali*).

Ref :- As. 58(42).

Site :- Agri. College, Jorhat.

Type :- 'M'.

Object :—To find out best method of application of N to Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy (*Ahu*). (c) 50 mds./ac. of cowdung. (ii) (a) Sandy loam. (b) N.A. (iii) 16.8.1958 (iv) (a) 4 ploughings followed by laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) 40 mds./ac. of cow-dung. (vi) *Prasad bhog*. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 8.12.1958.

2. TREATMENTS :

All combinations of (1) and (2)

- (1) 3 levels of N as A/S: $N_0=20$, $N_1=40$ and $N_2=60$ lb./ac.
 (2) 2 methods of application: M_1 =Broadcast and M_2 =On sub-surface.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) and (b) $60'10'' \times 12'$. (v) No. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1202 lb./ac. (ii) 269 lb./ac. (iii) Only main effect of M is highly significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean
M_1	1506	1244	1343	1364
M_2	1088	1173	860	1040
Mean	1297	1208	1101	1202

S.E. of M marginal mean = 77.6 lb./ac.
 S.E. of N marginal mean = 95.1 lb./ac.
 S.E. of body of table = 134.5 lb./ac.

Crop :- Paddy (Ahu).

Ref :- As. 58(43).

Site :- Agri. College, Jorhat.

Type :- 'M'.

Object :—To find out suitable dose of N for double cropped Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy (*sali*). (c) 50 md./ac. of cow-dung. (ii) (a) Sandy loam. (b) (pH—4.5). N.A. (iii) 11.4.1958. (iv) (a) 4 ploughings followed by laddering. (b) Broadcasting. (c) 30 srs/ac. (d) and (e) N.A. (v) 50 md./ac. of cow-dung broadcast before sowing. (vi) *Rangadoria Ahu* (medium). (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 1.7.1958.

2. TREATMENTS :

4 levels of N as A/S: $N_0=0$, $N_1=20$, $N_2=40$ and $N_3=60$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 10 (4 plots under N_0 , 2 each under N_1 , N_2 and N_3). (b) N.A. (iii) 3. (iv) (a) and (b) $61\frac{1}{2}' \times 7'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1697 lb. ac. (ii) 220 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	N_0	N_1	N_2	N_3
Av. yield	1652	1744	1676	1761

S.E. of N_0 mean = 63.5 lb./ac.
 S.E. of any other mean = 89.8 lb./ac.

Crop :- Paddy (*Sali*).

Ref :- As. 58(39).

Site :- Agri. College, Jorhat.

Type :- 'M'.

Object :—To find out suitable dose of N for double cropped Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy (*Ahu*). (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 23.8.1958. (iv) (a) 4 ploughings followed by laddering. (b) Transplanting. (c) 20 srs/ac. (d) 9"×9". (e) 3 to 4. (iv) 40 lb./plot of T.C. (vi) *Laudumra*. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 17.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(43) on page 4.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (iv) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2309 lb./ac. (ii) 233 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	N ₀	N ₁	N ₂	N ₃
Av. yield	2327	2386	2066	2436

S.E. of N₀ mean = 63.3 lb./ac.

S.E. of any other mean = 95.1 lb./ac.

Crop :- Paddy (*Ahu*).

Ref :- As. 59(36).

Site :- Agri. College, Jorhat.

Type :- 'M'.

Object :—To find out suitable dose of N for double cropped Paddy.

1. BASAL CONDITIONS :

(i) N.A. (b) Paddy (*Sali*). (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 3.4.1959. (iv) (a) 4 ploughings followed by laddering. (b) Broadcasting. (c) 30 srs/ac. (d) and (e) N.A. (v) 80 lb./plot of cow-dung. (vi) *Rangadoria Ahu* (medium). (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 7.7.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(43) on page 4.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1607 lb./ac. (ii) 221 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	N ₀	N ₁	N ₂	N ₃
Av. yield	1564	1556	1590	1762

S.E. of N₀ mean = 63.8 lb./ac.

S.E. of any other mean = 90.2 lb./ac.

Crop :- Paddy (*Sali*).

Ref :- As. 59(37).

Site :- Agri. College, Jorhat.

Type :- 'M'.

Object :—To find out suitable dose of N for double cropped Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy (*Ahu*). (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 22.8.1959. (iv) (a) 4 ploughings followed by laddering. (b) Transplanting. (c) 20 srs/ac. (d) 9"×9". (e) 3 to 4. (v) 30 lb./plot of T.C. (vi) *Laudumra*. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 18.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. on. 58(43) on page 4.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1875 lb./ac. (ii) 146 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	N ₀	N ₁	N ₂	N ₃
Av. yield	1844	1936	1775	1978

S.E. of N₀ mean = 42.1 lb./ac.

S.E. of any other mean = 59.6 lb./ac.

Crop :- Paddy (*Kharif*).

Ref :- As. 54(13).

Site :- Rice Expt. Stn., Karimganj.

Type :- 'M'.

Object :—To investigate the possibility of increasing Paddy yield by catalysing the release of plant nutrients.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) 30.3.1954. (iv) (a) 8 ploughings followed by laddering. (b) Broadcasting. (c) 100 lb./ac. (d) and (e) N.A. (v) 100 md./ac. of cow-dung at ploughing. (vi) M—142 *koimurali* (early). (vii) Unirrigated. (viii) 2 weedings and 2 hoeings. (ix) 93.28". (x) 5.7.1954 and 6.7.1954.

2. TREATMENTS :

T₁ = Control.

T₂ = 16 lb./ac. of Potassium Permanganate.

T₃ = 28 lb./ac. of Ferrous Sulphate.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 66'×30'. (iii) 6. (iv) (a) 66'×10'. (b) 64'×8'. (v) 1' around the net plot. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1645 lb./ac. (ii) 199.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	1646	1609	1680

S.E./mean = 81.60 lb./ac.

Crop :- Paddy (*Kharif*).

Ref :- As. 55(24).

Site :- Rice Expt. Stn., Karimganj.

Type :- 'M'.

Object :—To investigate the possibility of increasing Paddy yield by catalysing the release of plant nutrients.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) 1.5.1955. (iv) (a) 8 ploughings followed by laddering. (b) Broadcasting. (c) 100 lb./ac. (d) and (e) N.A. (v) 100 md./ac. of cow-dung at ploughing. (vi) M—142 *koimurali* (early). (vii) Unirrigated. (viii) 2 weedings and 2 hoeings. (ix) 144.5%. (x) 25.7.1955 to 1.8.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. 54(13) on page 6.

4. GENERAL :

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

5. RESULTS :

(i) 2564 lb./ac. (ii) 142.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	5007	2572	2621

S.E./mean=58.34 lb./ac.

Crop :- Paddy (*Rabi*).

Ref :- As. 56(33).

Site :- Rice Expt. Stn., Karimganj.

Type :- 'M'

Object :—To study the effect of different sources of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) 100 md./ac. of cow-dung. (ii) (a) Clay loam. (b) N.A. (iii) 4.7.1956/26.8.1956. (iv) (a) 8 ploughings followed by laddering. (b) Transplanting. (c) N.A. (d) 9"×9", (e) 4. (v) 100 md./ac. of cow-dung applied before ploughing. (vi) S.E. 412—56 (*swarnasail*). (vii) Unirrigated. (viii) One mulching with weeding by Japanese weeder. (ix) 65.75%. (x) 21 and 22.12.1956.

2. TREATMENTS:

T₁=Control.

T₂=200 lb./ac. of C/N.

T₃=155 lb./ac. of A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 60.75'×32.25'. (iii) 4. (iv) (a) 20.25'×32.25'. (b) 19.50'×31.50'. (v) One row around the net plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) No. (iii) Grain yield. (iv) (a) 1956—1957. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2838 lb./ac. (ii) 310.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	2682	3010	2823

S.E./mean = 155.3 lb./ac.

Crop :- Paddy (*Rabi*).

Ref :- As. 57(27).

Site :- Rice Expt. Stn., Karimganj.

Type :- 'M'

Object :—To study the residual effect of different sources of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) 30.6.1957/28, 29.8.1957. (iv) (a) 8 ploughings followed by laddering. (b) Transplanting. (c) —. (d) 9'×9'. (e) 4. (v) 100 md./ac. of cow-dung applied before ploughing. (vi) S. C. 412—56 (*Swarnasail*). (vii) Unirrigated. (viii) One weeding. (ix) 65.75". (x) 6.12.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(33) on page 7.

100 mds of cow-dung per acre applied in the previous year as a basal dose in all the plots.

4. GENERAL :

(i) Crop lodged. (ii) Nil. (iii) General growth and grain yield. (iv) (a) 1956—1957. (b) Yes. (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2944 lb./ac. (ii) 341.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	3007	2932	2893

S.E./mean = 170.6 lb./ac.

Crop :- Paddy (*Rabi*).

Ref :- As. 57(29).

Site :- Rice Expt. Stn., Karimganj.

Type :- 'M'.

Object :—To study the effect of combinations of N, P and K on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 100 md./ac. of cow-dung. (ii) (a) Clay loam. (b) N.A. (iii) 30.6.1957/26.8.1957 and 29.8.1957. (iv) (a) 8 ploughings followed by laddering. (b) Transplanted. (c) —. (d) 9'×9'. (e) 4. (v) 100 md./ac. of cow-dung during puddling. (vi) S—22 (*late sail*). (vii) Unirrigated. (viii) One weeding. (ix) 7.91". (x) 4.12.1957.

2. TREATMENTS :

T₁ = Control

T₂ = 60 lb./ac. of N + 30 lb./ac. of P₂O₅ + 15 lb./ac. of K₂O

T₃ = 40 lb./ac. of N + 20 lb./ac. of P₂O₅ + 10 lb./ac. of K₂O

T₄ = 20 lb./ac. of N + 10 lb./ac. of P₂O₅ + 5 lb./ac. of K₂O

Sources of N, P and K—N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 15.75'×32.25'. (b) 15.0'×31.5'. (v) One row around the net plot. (vi) Yes.

4. GENERAL :

(i) Good but lodged badly. (ii) Slightly affected by stem borer but damage negligible. Affected plants uprooted and destroyed. (iii) Grain yield. (iv) (a) 1957—1959. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2569 lb./ac. (ii) 197.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄
Av. yield	2620	2531	2541	2583

S.E./mean = 98.9 lb./ac.

Crop :- Paddy.**Ref :- As. 58(20).****Site :- Rice Expt. Stn., Karimganj.****Type :- 'M'.**

Object :—To study the effect of combinations of N, P and K on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) 22.7.1958/8, 9.8.1958. (iv) (a) 8 ploughings followed by laddering. (b) Transplanting. (c) 4 md./ac. (d) 9"×9". (e) 4. (v) 100 md./ac. of cow-dung. (vi) S—22 (*latisail*) (medium). (vii) Unirrigated. (viii) 1 mulching and 1 weeding. (ix) 79.11". (x) 5.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(29) on page 8.

4. GENERAL :

(i) Lodged badly after maturity. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2476 lb./ac. (ii) 118.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄
Av. yield	2392	2481	2433	2597

S.E./mean = 59.0 lb./ac.

Crop :- Paddy (*Aus*).**Ref :- As. 58(21).****Site :- Rice Expt. Stn., Karimganj.****Type :- 'M'.**

Object :—To study the effect of different manurial doses on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 100 md./ac. of cow-dung. (ii) (a) Clay loam. (b) N.A. (iii) 29.5.1958/21, 22.6.1958. (iv) (a) 8 ploughings followed by laddering. (b) Transplanting. (c) 3 mds/ac. (d) 6"×6". (e) 4. (v) Nil. (vi) M—142 *Koimurali* (medium—*Aus*). (vii) Unirrigated. (viii) 1 weeding. (ix) 109.4". (x) 5.9.1958.

2. TREATMENTS :T₀=Control.T₁=100 md./ac. of cow-dung+10 lb./ac. of P₂O₅ as Super during the preparation of field.T₂=Mixed fertilizer, 45 lb./ac. of P₂O₅ as Super during the preparation of field+30 lb./ac. of N as A/S top dressed.**3. DESIGN :**

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 15.75'×32.25'. (b) 15.0'×31.5'. (v) One row around the net plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1103 lb./ac. (ii) 276.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	1065	1220	1014

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

Crop :- Paddy (Aus).**Ref :- As.59(23).****Site :- Rice Expt. Stn., Karimganj.****Type :- 'M'.**

Object :—To study the effect of different manurial doses on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) 11.9.1959. (iv) (a) 8 ploughings followed by weeding and laddering. (b) Transplanting. (c) 3 md./ac. in seed bed. (d) 6"×6". (e) 4. (v) Nil. (vi) M—142 *Koimurali* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 11.9.1959. (x) 7, 8 and 13.8.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(21) on page 9.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2415 lb./ac. (ii) 103.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	2367	2330	2548

S.E. mean = 51.62 lb./ac.

Crop :- Paddy (Sali).**Ref :- As. 58(23).****Site :- Rice Expt. Stn., Karimganj.****Type :- 'M'.**

Object :—To study the effect of treating seedlings with solution of A/S.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 100 md./ac. of cow-dung. (ii) (a) Clay loam. (b) N.A. (iii) 22.7.1958 1.9.1958. (iv) (a) 8 ploughings followed by laddering. (b) Transplanting. (c) 2 $\frac{1}{2}$ mds./ac. (d) 9"×9". (e) 2. (v) 200 lb./ac. of mixed fertilizer and 100 md./ac. of cow-dung in seed bed. 40 lb./ac. of N as A/S, 40 lb./ac. of P₂O₅ as Super and 100 md./ac. of cow-dung applied during the preparation of field. (vi) S—22(*hail*, medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 79.11". (x) 29.11.1958.

2. TREATMENTS :T₀ - Control.T₁ = 8 lb./ac. of A/S top dressed in seed bed 5 days before uprooting the seedling.T₂ = Dipping the roots of seedlings in 8 lb./ac. of A/S solution (about 1%).**3. DESIGN :**

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) 15.75'×10.50'. (b) 15.0'×9.75'. (v) One row around the net plot. (vi) Yes.

4. GENERAL :

(i) Crop lodged badly on 12.11.1958. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2426 lb./ac. (ii) 68 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	2334	2539	2405

S.E. mean = 30 lb./ac.

Crop :- Paddy (Sali).

Ref :- As. 59(20).

Site :- Rice Expt. Stn., Karimganj.

Type :- 'M'.

Object :—To study the effect of treating seedlings with solution of A/S.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 100 md./ac. of cow-dung, 40 lb./ac. of N as A/S and 40 lb./ac. of P_2O_5 as Super. (ii) (a) Clay Loam. (b) N.A. (iii) 26.6.1959/5.8.1959. (iv) (a) 8 ploughings followed by weeding and laddering. (b) Transplanting. (c) $2\frac{1}{2}$ mds./ac. in seed bed. (d) $9' \times 9'$. (e) 2. (v) 200 lb./ac. of mixed fertilizer + 100 md./ac. of cow-dung in seed bed. 40 lb./ac. of N as A/S, 40 lb./ac. of P_2O_5 as Super and 100 md./ac. of cow-dung applied during the preparation of field. (vi) S—22 (*latisail*, medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 68.31". (x) 9.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(23) on page 10.

4. GENERAL :

(i) Lodged after maturity. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2808 lb./ac. (ii) 340 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	2670	2849	2905

S.E./mean = 152 lb./ac.

Crop :- Paddy (Sali).

Ref :- As. 58(24).

Site :- Rice Expt. Stn., Karimganj.

Type :- 'M'.

Object :—To study the effect of top dressing A/S on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 100 md./ac. of cow-dung. (ii) (a) Clay loam. (b) N.A. (iii) 22.7.1958/1.9.1958. (iv) (a) 8 ploughings followed by weeding and laddering. (b) Transplanting. (c) $2\frac{1}{2}$ mds/ac. (d) $9' \times 9'$. (e) 2. (v) 200 lb./ac. of mixed fertilizer and 100 md./ac. of cow-dung in seed bed, 40 lb./ac. of N as A/S, 40 lb./ac. of P_2O_5 as Super and 100 md./ac. of cow-dung applied during the preparation of field. (vi) S-22 (*latisail* medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 79.11". (x) 28.11.1958.

2. TREATMENTS :

T₀ = Control.

T₁ = 50 lb./ac. of A/S top dressed at earing stage.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 5. (iv) (a) $15.75' \times 10.50'$. (b) $15.00' \times 9.75'$. (v) One row around. (vi) Yes.

4. GENERAL :

(i) Crop lodged on 12.11.1958. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2179 lb./ac. (ii) 114 lb./ac. (iii) Treatment difference is significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁
Av. yield	2071	2287

S.E./mean = 51 lb./ac.

Crop :- Paddy (Sali).**Ref :- As. 59(21).****Site :- Rice Expt. Stn., Karimganj.****Type :- 'M'.**

Object :—To study the effect of top dressing A,S on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 100 md./ac. of cow-dung. (ii) (a) Clay loam. (b) N.A. (iii) 26.6.1959/6.8.1959. (iv) (a) 8 ploughings followed by weeding and laddering. (b) Transplanting. (c) 2½ mds. ac. in seed bed. (d) 9'×9'. (e) 2. (v) 200 lb./ac. of mixed fertilizer and 100 md./ac. of cowdung applied during the preparation of field. (vi) S-22 (*hatisail*, medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 68.31%. (x) 9.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(24) on page 11.

4. GENERAL :

(i) Lodged after maturity. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2951 lb./ac. (ii) 309 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁
Av. yield	2979	2923

S.E./mean = 138 lb./ac.

Crop :- Paddy (Sali).**Ref :- As. 59(22).****Site :- Rice Expt. Stn., Karimganj.****Type :- 'M'.**

Object :—To study the effect of combinations of different doses of manures on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 100 md./ac. of cow-dung. (ii) (a) Clay loam. (b) N.A. (iii) 11.6.1959 3 and 4.8.1959. (iv) (a) 8 ploughings followed by laddering. (b) Transplanting. (c) 3½ mds/ac. in seed bed. (d) 9'×9'. (e) 3. (v) Nil. (vi) S—22 (*hatisail*, medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 68.31%. (x) 11 to 14.12.1959.

2. TREATMENTS :T₀=Control.T₁=20 lb./ac. of N+30 lb./ac. of P₂O₅+15 lb./ac. of K₂O.T₂=20 lb./ac. of N+20 lb./ac. of P₂O₅+10 lb./ac. of K₂O.T₃=20 lb. ac. of N+10 lb./ac. of P₂O₅+ 5 lb./ac. of K₂O.**3. DESIGN :**

(i) R.B.D. (ii) (a) 4. (b) 60'×32.5. (iii) 4. (iv) (a) 15'×32.5'. (b) 14.25'×31.75'. (v) One row around. (vi) Yes.

4. GENERAL :

(i) Lodged after maturity. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—1961. (b) Yes. (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3486 lb./ac. (ii) 291 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	3449	3416	3514	3565

S.E./mean = 145 lb./ac.

Crop :- Paddy (Bao).**Ref :- As. 54(4).****Site :- Deep Water Paddy Res. Stn., Roha.****Type :- 'M'.**

Object :—To obtain suitable manure for deep water Paddy.

1. BASAL CONDITIONS :(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Loamy. (b) Refer below. (iii) 22.5.1954. (iv) (a) Weeding. (b) to (e) N.A. (v) Nil. (vi) *Sail badal*. (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) 25.12.1954.**2. TREATMENTS :**T₀=Control.T₁=100 lb./ac. of A/S+200 md./ac. of cow-dung.T₂=200 md./ac. of cow-dung.T₃=100 lb./ac. of A/S+100 lb./ac. of B.M.**3. DESIGN :**

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 10'×10'. (b) 8'×8'. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1956. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1110 lb./ac. (ii) 326.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	896	1086	1364	1092

S.E./mean = 163.2 lb./ac.

Coarse sand	6.4%	Moisture	3.0%	Avl. P ₂ O ₅	0.03%
Fine sand	33.6%	Loss on ignition	5.6%	Avl. K ₂ O	0.014%
Silt	42.6%	Nitrogen	0.33%	pH (water ext.)	5.1
Clay	16.0%			pH. (KNO ₃ ext.)	4.8
				Acidity ppm.	100.8

Crop :- Paddy (Bao).**Ref :- As. 55(2).****Site :- Deep Water Paddy Res. Stn., Roha.****Type :- 'M'.**

Object :—To obtain suitable manure for deep water Paddy.

1. BASAL CONDITIONS :(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Loamy. (b) Refer expt. no. 54(4) above. (iii) N.A. (iv) (a) 5 ploughings and laddering by country method. (b) Broadcast. (c) to (e) N.A. (v) Nil. (vi) *Sail badal*. (vii) Unirrigated. (viii) Weeding and thinning. (ix) 60%. (x) N.A.**2. TREATMENTS and 3. DESIGN :**

Same as in expt. 54(4) above.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1956. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 986.9 lb./ac. (ii) 885.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	673	1115	1015	1145

S.E./mean = 443.0 lb./ac.

Crop :- Paddy (Bas).**Ref :- As. 56(2).****Site :- Deep Water Paddy Res. Stn., Roha.****Type :- 'M'.**

Object :- To obtain suitable manure for deep water Paddy.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Loamy. (b) Refer expt. no. 54(4) on page 13. (iii) 2.4.1956.
 (iv) (a) 5 ploughings and laddering with country plough. (b) Broadcast. (c) to (e) N.A. (v) Nil. (vi)
Sail badal. (vii) Unirrigated. (viii) Weeding. (ix) 64.41%. (x) 24.11.1956.

2. TREATMENTS:

Same as in expt. no. 54(4) on page 13.

3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 12'×12'. (b) 10'×10'. (v) 1' around. (vi) Yes.

4. GENERAL:

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

5. RESULTS:

(i) 923.9 lb./ac. (ii) 405.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of
 grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	875.6	1115.1	855.1	850.7

S.E. mean = 181.2 lb./ac.

Crop :- Paddy (Boro).**Ref :- As. 54(7).****Site :- Deep Water Paddy Res. Stn., Roha.****Type :- 'M'.**

Object :- To obtain suitable manure for deep water Paddy.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Boro paddy. (c) Nil. (ii) (a) Loamy. (b) Refer expt. no. 54(4) on page 13. (iii) 22.5.1955.
 (iv) (a) 3 ploughings and laddering with country plough. (b) Transplanting. (c) N.A. (d) 9'×9'. (e) 3.
 (v) Nil. (vi) Boro paddy No. II. (vii) Unirrigated. (viii) Weeding. (ix) and (x) N.A.

2. TREATMENTS:T₀ = Control.T₁ = 200 lb./ac. of cow-dung.T₂ = 100 lb./ac. of A.S.**3. DESIGN:**

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) (a) 22'×17'. (b) 20'×15'. (v) 1' around. (vi) Yes.

4. GENERAL:

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

5. RESULTS:

(i) 1586 lb./ac. (ii) 1010 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in
 lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	1368	1729	1661

S.E. mean = 583.2 lb./ac.

Crop :- Paddy (Boro).**Ref :- As. 56(8).****Site :- Deep Water Paddy Res. Stn., Roha.****Type :- 'M'.**

Object :—To obtain the suitable manure for deep water Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Boro* paddy. (c) Nil. (ii) (a) Loamy. (b) Refer expt. no. 54(4) on page 13. (iii) 6.2.1956. (iv) (a) 3 ploughings and laddering with country plough. (b) Transplanted. (c) —. (d) 9"×9". (e) N.A. (v) Nil. (vi) *Boro* No. II. (vii) Unirrigated. (viii) Weeding and thinning (ix) N.A. (x) 20.5.1956.

2. TREATMENTS :

4 levels of P_2O_5 : $P_0=0$, $P_1=10$, $P_2=20$ and $P_3=30$ lb./ac.
Source of manure is N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 22'×17'. (b) 20'×15'. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1257 lb./ac. (ii) 300.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	P_0	P_1	P_2	P_3
Av. yield	1121	1216	1507	1186

S.E./mean = 150.2 lb./ac.

Crop :- Paddy (Boro).**Ref :- As. 57(36).****Site :- Deep Water Paddy Res. Stn., Roha.****Type :- 'M'.**

Object :—To obtain the suitable manure for deep water Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Boro* paddy. (c) Nil. (ii) (a) Loamy (b) Refer expt. no. 54(4) on page 13. (iii) 31.1.1957. (iv) (a) 3 ploughings and laddering with country plough. (b) Transplanting. (c) —. (d) 9"×9" (e) N.A. (v) Nil. (vi) *Boro* No. II. (vii) Unirrigated. (viii) Weeding and thinning. (ix) N.A. (x) 21.5.1957.

2. TREATMENTS and 3. DESIGN:

Same as expt. no. 56(8) above.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) There was one missing value in block II for the treatment P_3 .

5. RESULTS :

(i) 73.69 lb./ac. (ii) 67.95 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	P_0	P_1	P_2	P_3
Av. yield	101.64	34.56	85.81	72.74

S.E./mean except P_3 mean = 33.98 lb./ac. S.E. of difference between P_3 and any other mean = 53.18 lb./ac.

Crop :- Paddy (Boro).

Ref :- As. 58(5).

Site :- Deep Water Paddy Res. Stn., Roha.

Type :- 'M'.

Object :—To obtain the suitable manure for deep water Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Boro paddy. (c) Nil. (ii) (a) Loamy. (b) Refer expt. no. 54(4) on page 13. (iii) 17.11.1957/2.1.1958. (iv) (a) 3 ploughings and laddering. (b) Line method of transplanting. (c) —. (d) 9'×9'. (e) 3. (v) Nil. (vi) Boro No. 1 (early). (vii) Unirrigated. (viii) Weeding. (ix) 14.82%. (x) 15.5.1958.

2. TREATMENTS:

4 levels of P_2O_5 as B.M. : $P_0=0$, $P_1=10$, $P_2=20$ and $P_3=30$ lb./ac.

3. DESIGN :

Same as in expt. no. 56(8) on page 15.

4. GENERAL :

(i) Unsatisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 453.5 lb./ac. (ii) 279.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb. ac.

Treatment	P_0	P_1	P_2	P_3
Av. yield	578.8	320.2	387.4	527.5

S.E./mean = 139.8 lb./ac.

Crop :- Paddy (Boro).

Ref :- As. 59(13).

Site :- Deep Water Paddy Res. Stn., Roha.

Type :- 'M'.

Object :—To obtain the suitable manure for deep water Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Boro paddy. (c) Nil. (ii) (a) Loamy. (b) Refer expt. no. 54(4) on page 13. (iii) 3.2.1959. N.A. (iv) (a) 3 ploughings and laddering. (b) Transplanting. (c) —. (d) 9'×9'. (e) 3. (v) Nil. (vi) Boro paddy No. II. (vii) Unirrigated. (viii) 1 weeding. (ix) 13.23%. (x) 10.5.1959.

2. TREATMENTS

Same as in expt. no. 58(5), above.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 20'×30'. (iii) 3. (iv) (a) and (b) 10'×15'. (v) and (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1451 lb./ac. (ii) 160 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1418	1494	1567	1324

S.E./mean = 92.38 lb./ac.

Crop :- Paddy (Bao).**Ref :- As. 57(37)****Site :- Deep Water Paddy Res. Stn., Roha.****Type :- 'M'.**

Object :—To obtain suitable manure for deep water Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Bao paddy. (c) Nil. (ii) (a) Loamy. (b) Refer expt. no. 54(4) on page 13. (iii) 21.6.1957. (iv) (a) 4 ploughings followed by laddering. (b) Broadcasting. (c) 60 lb./ac. (d) and (e) —. (v) Nil. (vi) E.B. No. 1 (Neghari Bao, medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 32.93%. (x) 24.11.1957.

2. TREATMENTS :

T₀ = Control.
 T₁ = 100 md./ac. of cow-dung.
 T₂ = 200 lb./ac. of A/S.
 T₃ = 400 lb./ac. of mixed fertilizer.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 32' × 16½'. (iii) 4. (iv) (a) 8' × 16½'. (b) 6' × 14½'. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) Unsatisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 107 lb./ac. (ii) 160 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	48	125	173	83

S.E./mean = 80 lb./ac.

Crop :- Paddy (Bao).**Ref :- As. 58(6).****Site :- Deep Water Paddy Res. Stn., Roha.****Type :- 'M'.**

Object :—To obtain suitable manure for deep water Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Bao paddy. (c) Nil. (ii) (a) Loamy. (b) Refer expt. no. 54(4) on page 13. (iii) 13.5.1958. (iv) (a) 4 ploughings, laddering and harrowing. (b) Broadcasting. (c) 60 lb./ac. (d) and (e) —. (v) Nil. (vi) E.B. No. 1 (Neghari Bao, medium). (vii) Unirrigated. (viii) 3 weedings. (ix) 52.80%. (x) 18.12.1958.

2. TREATMENTS :

Same as in expt. no. 57 (37) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 10' × 16.5'. (b) 8' × 14.5'. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of paddy. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1715 lb./ac. (ii) 98.19 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	1664	1661	1647	1891

S.E./mean = 49.0 lb./ac.

Crop :- Paddy (Bao).

Ref :- As. 59(14).

Site :- Deep Water Paddy Res. Stn., Roha.

Type :- 'M'.

Object :—To obtain suitable manure for deep water Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Bao paddy. (c) Nil. (ii) (a) Loamy. (b) Refer expt. no. 54(4) on page 13. (iii) 11.5.59. (iv) (a) 3 ploughings followed by laddering. (b) Broadcasting. (c) 60 lb./ac. (d) and (e) —. (v) Nil. (vi) E.B. No. 1 (Neghari Bao, medium). (vii) Unirrigated. (viii) 3 weedings and hoeing. (ix) 48.99%. (x) 17.12.1959.

2. TREATMENTS :

Same as in expt. no. 57(37) on page 17.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 20' × 30'. (iii) 4. (iv) (a) and (b) 10' × 15'. (v) 2' round the block. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1020 lb./ac. (ii) 252 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	689	1067	1030	1295

S.E./mean = 126 lb./ac.

Crop :- Paddy (Ahu).

Ref :- As. 54(2).

Site :- Govt. Rice Expt. Stn., Titabar.

Type :- 'M'.

Object :—To study the effect of different manures on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 23.4.1954/20 and 21.5.1954. (iv) (a) One ploughing and laddering. (b) Transplanting in lines. (c) 6 mds/ac. (d) 9' × 9'. (e) 4. (v) Nil. (vi) Rangadoria (early). (vii) Unirrigated. (viii) 2 weedings. (ix) and (x) N.A.

2. TREATMENTS :

T₀ Control.

T₁ = 200 lb./ac. of A/S.

T₂ = 200 md/ac. of cowdung + 200 lb./ac. of A/S.

T₃ = 200 md/ac. of cowdung + 200 lb./ac. of B.M.

T₄ = 200 lb./ac. of A/S + 200 lb./ac. of B.M.

T₅ = 200 lb./ac. of A/S + 200 lb./ac. of B.M. + 200 md/ac. of cowdung.

Manures broadcast on 14.4.1954.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 20.5' × 15.5'. (b) 20' × 15'. (v) 3' around. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 759.1 lb./ac. (ii) 140.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄	T ₅
Av. yield	768.0	692.0	811.1	716.9	703.3	863.2

S.E./mean = 70.13 lb./ac.

Crop :- Paddy (*Ahu*).

Ref :- As. 55(6).

Site :- Govt. Rice Expt. Stn., Titabar.

Type :- 'M'.

Object :—To study the effect of manures on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Ahu* paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 20.4.1955. (iv) (a) Ploughing and laddering by country plough. (b) Broadcast. (c) N.A. (d) and (e) —. (v) Nil. (vi) *Rangadoria* (early). Irrigated. (viii) 2 weedings. (ix) 67.49%. (x) N.A.

2. TREATMENTS :

2 manurial doses : M₀=0 and M₁=55 lb./ac. of Urea+200 md./ac. of cowdung.

3. DESIGN :

(i) R.E.D. (ii) (a) 2. (b) N.A. (iii) 3. (iv) (a) and (b) 66'×31'. (v) No. (vi) Yes.

4. GENERAL :

(i) Unsatisfactory. (ii) Affected by rice bug. (iii) Grain yield. (iv) (a) 1955—1956. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 438.2 lb./ac. (ii) 89.4 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁
Av. yield	387.7	488.8

S.E./mean = 51.61 lb./ac.

Crop :- Paddy (*Ahu*).

Ref :- As. 56(9).

Site :- Govt. Rice. Expt. Stn., Titabar.

Type :- 'M'.

Object :—To study the effect of manure on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Ahu* paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 10.5.1956. (iv) (a) Ploughing and laddering by country plough. (b) Broadcast. (c) N.A. (d) and (e) —. (v) Nil. (vi) *Rangadoria* (early). (vii) Irrigated. (viii) 2 weedings. (ix) 72.89%. (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55 (6) on page 19.

4. GENERAL :

(i) Unsatisfactory. (ii) Slightly affected by rice bug. (iii) Grain yield. (iv) (a) 1955—1956. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS:

(i) 855.2 lb./ac. (ii) 179.3 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁
Av. yield	640.5	1070

S.E./mean = 103.5 lb./ac.

Crop :- Paddy (*Ahu*).

Ref :- As. 55(7).

Site :- Govt. Rice Expt. Stn., Titabar.

Type :- 'M'.

Object :—To study the effect of manures on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Ahu* paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 16.4.1955. (iv) a) Ploughing and laddering by country plough. (b) Broadcast. (c) N.A. (d) and (e) —. (v) Nil. (vi) *Rangadoria* (early). (vii) Irrigated. (viii) 2 weedings. (ix) 67.49%. (x) N.A.

2. TREATMENTS :

3 manurial doses : M₀=Control, M₁=6 md./ac. of oilcake and M₂=200 md./ac. of cowdung.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) (a) 20'×20'. (b) 20'×20'. (v) No. (vi) Yes.

4. GENERAL :

(i) Unsatisfactory. (ii) Slightly affected by rice bug. (iii) Grain yield. (iv) (a) 1955—1956. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 718.4 lb./ac. (ii) 39.16 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂
Av. yield	589.9	757.8	807.7

S.E./mean = 22.61 lb./ac.

Crop :- Paddy (*Ahu*).

Ref :- As. 56(10).

Site :- Govt. Rice Expt. Stn., Titabar.

Type :- 'M'.

Object :—To study the effect of manures on Paddy.

1. BASAL CONDITIONS :

(i) a) Nil. (b) *Ahu* paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 11.4.1956. (iv) (a) Ploughing and laddering by country plough. (b) Broadcast. (c) N.A. (d) and (e) —. (v) Nil. (vi) *Rangadoria* (early). (vii) Irrigated. (viii) 2 weedings. (ix) 72.89%. (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55 (7) above.

4. GENERAL :

(i) Unsatisfactory. (ii) Slightly affected by rice bug. (iii) Grain yield. (iv) (a) 1955—1956. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1282 lb./ac. (ii) 189.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂
Av. yield	1070	1416	1361

S.E./mean = 109.5 lb./ac.

Crop :- Paddy (Sali).

Ref :- As. 59(27).

Site :- Govt. Rice Expt. Stn., Titabar.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sali* paddy. (c) Nil. (ii) (a) Clayloam. (b) N.A. (iii) 26.8.1959. (iv) (a) 8 ploughings followed by laddering. (b) Transplanting. (c) —. (d) 9"×9". (e) 4. (v) 100 md./ac. of cowdung, 100 lb./ac. of A/S and 100 lb./ac. of Super. (vi) S. 126 *Laudumra* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 69.55%. (x) 30.12.1959.

2. TREATMENTS :

All combinations of (1) and (2)+ a control.

(1) 3 trace elements : S₁=Ferrous Sul. S₂=Pot. Permanganate and S₃=C/S.

(2) 2 levels of trace elements : M₁=10 and M₂=20 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 90'×15'. (iii) 6. (iv) (a) and (b) 15'×15'. (v) No. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1996 lb./ac. (ii) 90 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 1944 lb./ac.

	S ₁	S ₂	S ₃	Mean
M ₁	2002	2062	2025	2030
M ₂	1977	1996	1965	1979
Mean	1990	2029	1995	2005

S.E. of S marginal mean = 25.98 lb./ac.

S.E. of M marginal mean = 21.21 lb./ac.

S.E. of body of S×M table = 36.74 lb./ac.

Crop :- Paddy (Sali).

Ref :- As. 59 (28).

Site :- Govt. Rice Expt. Stn., Titabar.

Type :- 'M'.

Object :—To study the effect of different methods of application of A/S on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sali* paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) Transplanting on 20.8.1959. (iv) (a) 8 ploughings followed by laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 4. (v) Nil. (vi) S. 126 *Laudumra* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 69.55". (x) 29.12.1959.

2. TREATMENTS :

1. Control.
2. 50 lb./ac. of A/S top-dressed, before 5 days of up-rooting the seedlings.
3. Dipping roots of seedlings for 5 minutes in 0.5% A/S solution.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 58.5'×15'. (iii) 6. (iv) (a) and (b) 15'×9.75'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—contd. (b) Yes. (c) Nil. (v) (a) Karimganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1573 lb./ac. (ii) 180 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	1308	1567	1844

S.E./mean = 73.48 lb./ac.

Crop :- Paddy (*Kharif*).

Ref :- As. 54(11).

Site :- Expt. and Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To study the effect of top dressing N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) a) to (c) No. (ii) (a) Brown sandy loam. (b) N.A. (iii) 16.4.1954. (iv) (a) Pulverising. (b) Broadcasting. (c) 60 lb./ac. (d) and (e) —. (v) 100 md./ac. of F.Y.M., 80 lb./ac. of A/S and 130 lb./ac. of B.M. broadcast at the time of sowing. (vi) *Abor*-red (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 96.89". (x) 28.10.1954.

2. TREATMENTS :

1. Control.
 2. 20 lb./ac. of N as A/S.
 3. 20 lb./ac. of N as C/N.
- Manures top-dressed on 8.7.1954.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 35'×16½'. (iii) 6. (iv) (a) and (b) 11'×16½'. (v) Nil. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1403 lb./ac. (ii) 191.3 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	1180	1480	1548

S.E./mean = 78.1 lb./ac.

Crop :- Paddy (Kharif).**Ref :- As. 55(22).****Site :- Expt. Res. Stn., Upper Shillong****Type :- 'M'.**

Object :—To study the effect of combination of A/S and Super on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 100 md./ac. of F.Y.M, 150 lb./ac. of B.M. and 100 lb./ac. of A/S. (ii) (a) Brown sandy loam. (b) N.A. (iii) 5.5.1955. (iv) (a) Pulverising. (b) Broadcasting. (c) 60 lb./ac. (d) and (e) —. (v) 100 md./ac. of F.Y.M. (vi) Lccal *hailyngkot* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 99.59%. (x) 10.11.1955.

2. TREATMENTS :

All combinations of (1) and (2)+a control.

(1) 3 levels of A/S : $N_1=100$, $N_2=200$ and $N_3=300$ lb./ac.(2) 3 levels of Super : $P_1=125$, $P_2=250$ and $P_3=375$ lb./ac.**3. DESIGN :**(i) R.B.D. (ii) (a) 10. (b) $16\frac{1}{2}' \times 110\frac{1}{2}'$. (iii) 4. (iv) (a) and (b) $16\frac{1}{2}' \times 8\frac{1}{4}'$. (v) No. (vi) Yes.**4. GENERAL :**

(i) Good. (ii) No. (iii) Grain Yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 350.5 lb./ac. (ii) 165.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 275 lb./ac.

	P ₁	P ₂	P ₃	Mean
N ₁	410	320	300	343
N ₂	350	435	390	392
N ₃	360	345	320	342
Mean	373	367	337	359

S.E. of any marginal mean = 47.8 lb./ac.

S.E. of body of table = 82.8 lb./ac.

Crop :- Paddy (Kharif).**Ref :- As. 55(21).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To study the effect of different forms of N and P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 100 md./ac. of F.Y.M., 150 lb./ac. of B.M. and 100 lb./ac. of A/S. (i) (a) Brown sandy loam. (b) N.A. (iii) 29.4.1955. (iv) (a) Pulverising. (b) Broadcasting. (c) 60 lb./ac. (d) and (e) —. (v) 100 md./ac. of F.Y.M. (vi) *Khonorullo* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 99.59%. (x) 7.11.1955.

2. TREATMENTS :

- | | |
|--|--|
| 1. Control. | 8. 200 lb./ac. of B.M.+154 lb./ac. of A/S/N. |
| 2. 200 lb./ac. of B.M. | 9. 200 lb./ac. of B.M.+91 lb./ac. of Urea. |
| 3. 250 lb./ac. of Super. | 10. 250 lb./ac. of Super+200 lb./ac. of A/S. |
| 4. 200 lb./ac. of A/S. | 11. 250 lb./ac. of Super+154 lb./ac. of A/S/N. |
| 5. 154 lb./ac. of A/S/N. | 12. 250 lb./ac. of Super+91 lb./ac. of Urea. |
| 6. 91 lb./ac. of Urea. | 13. 200 lb./ac. of mixed fertilizer. |
| 7. 100 lb./ac. of B.M.+100 lb./ac. of A/S/N. | |

3. DESIGN(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) and (b) $16\frac{1}{2}' \times 8\frac{1}{4}'$. (v) Nil. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 390.4 lb./ac. (ii) 148.3 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10	11	12	13
Av. yield	345	280	245	445	375	410	560	520	430	275	455	315	420

S.E./mean = 74.15 lb./ac.

Crop :- Paddy (Kharif).

Ref :- As. 57(34).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To study the effect of different forms of N and P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Dark brown sandy loam. (b) N.A. (iii) 25.4.1957. (iv) (a) Pulverising. (b) Broadcast. (c) 60 lb./ac. (d) and (e) -. (v) 100 md./ac. of F.Y.M. (vi) *Khonorullo* (medium) (vii) Unirrigated. (viii) 2 weedings. (ix) 63·82%. (x) 3.11.1957.

2. TREATMENTS :

- | | |
|--------------------------|---|
| 1. Control. | 6. 200 lb./ac. of B.M.+200 lb./ac. of A/S. |
| 2. 200 lb./ac. of B.M. | 7. 200 lb./ac. of B.M.+91 lb./ac. of Urea. |
| 3. 250 lb./ac. of Super. | 8. 250 lb./ac. of Super+200 lb./ac. of A/S. |
| 4. 200 lb./ac. of A/S. | 9. 250 lb./ac. of Super+91 lb./ac. of Urea. |
| 5. 91 lb./ac. of Urea. | 10. 200 lb./ac. of mixed fertilizer. |

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) $16\frac{1}{2}' \times 110\frac{1}{4}'$. (iii) 4. (iv) (a) and (b) $16\frac{1}{2}' \times 8\frac{3}{4}'$. (v) No. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 302·7 lb./ac. (ii) 147·8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10
Av. yield	221·6	353·6	287·6	325·3	377·1	273·4	315·9	259·3	330·0	282·9

S.E./mean = 73·9 lb./ac.

Crop :- Paddy (Kharif).

Ref :- As. 59(11).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To study the effect of different forms of N and P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) a Nil b Paddy. (c) 200 md./ac. of F.Y.M., 150 lb./ac. of B.M. and 100 lb./ac. of A/S. (ii) a Dark brown sandy loam. (b) N.A. (iii) 28.3.1959/27.5.1959. (iv) (a) Pulverising. (b) Transplanting. c 60 lb./ac. (d) $9' \times 6'$. (e) 3. (v) 100 md./ac. of F.Y.M. at the time of hoeing. (vi) *Khonorullo* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 55.68%. (x) 29.10.1957.

2. TREATMENTS :

1. Control.
2. 200 lb./ac. of A/S.
3. 300 lb./ac. of A/S.
4. 100 lb./ac. of A/S+62.5 lb./ac. of Super.
5. 100 lb./ac. of A/S+100 lb./ac. of Super.
6. 200 lb./ac. of A/S+125 lb./ac. of Super.
7. 300 lb./ac. of A/S+187.5 lb./ac. of Super.
8. 100 lb./ac. of A/S+100 lb./ac. of B.M.
9. 200 lb./ac. of A/S+100 lb./ac. of B.M.
10. 300 lb./ac. of A/S+150 lb./ac. of B.M.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) $16\frac{1}{2} \times 8\frac{1}{4}$. (v) No. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Grain yield. (iv) (a) 1959—N.A. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1140 lb./ac. (ii) 276 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8	9	10
Av. yield.	1360	1080	840	1000	1240	1160	1080	1440	1000	1240

S.E./mean = 188 lb./ac.

Crop :- Paddy (Kharif).

Ref :- As. 59(12).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To study the effect of combination of Urea and Super on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) No. (ii) (a) Red sandy loam. (b) N.A. (iii) 4.4.1959. (iv) (a) Pulverising. (b) Broadcasting. (c) 60 lb./ac. (d) and (e) —. (v) 150 md./ac. of F.Y.M. (vi) *Abor*-red (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 55.68%. (x) 27.10.1959.

2. TREATMENTS :

6 manurial treatments+2 controls : $M_1=46$ lb./ac. of Urea, $M_2=46$ lb./ac. of Urea+62.5 lb./ac. of Super, $M_3=2M_1$, $M_4=2M_2$; $M_5=3M_1$ and $M_6=3M_2$.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) $16\frac{1}{2} \times 8\frac{1}{4}$. (b) $16\frac{1}{2} \times 8\frac{1}{4}$. (v) No. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Pest attack. Gammexane sprayed twice. (iii) Grain yield. (iv) (a) N.A. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS

(i) 98.4 lb./ac. (ii) 29.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Control = 111.2 lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	82.5	85.0	87.5	127.5	92.5	90.0

S.E./mean (other than control). = 14.7 lb./ac.

S.E./control mean = 10.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- As. (MAE).

Site :- M.A.E. Farm, Tinsukia.

Type :- 'M'.

Object :—To study the effect of P_2O_5 applied to legume crop and of N to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) and (c) As per treatments. (ii) (a) Brahmaputra alluvium. (b) N.A. (iii) 1st to 4th of August. (iv) (a) 8 ploughings. (b) Transplanting. (c) N.A. (d) 8"×8". (e) N.A. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) 5 weedings and 1 hoeing. (ix) N.A. (x) First and second week of Dec.

2. TREATMENTS:

Main-plot treatments :

All combinations of (1. and (2. + Fallow plot (L_0P_0).

(1) 2 legumes : L_1 =*Matikatai* and L_2 =*Pea*.

(2) 3 levels of P_2O_5 as Super applied to legume crops : $P_0=0$, $P_1=40$ and $P_2=80$ lb./ac.

Sub-plot treatments :

3 levels of N as A, S applied to paddy crop : $N_0=0$, $N_1=15$ and $N_2=30$ lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 7 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) No. (iii) Grain yield. (iv) (a) 1957—contd. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 436.5 lb./ac. (ii) (a) 140.0 lb./ac. (b) 95.4 lb./ac. (iii) Control vs others effect and N effect are highly significant while all other effects are not significant. (iv) Av. yield of grain in lb./ac.

	L_0P_0	L_1P_0	L_2P_0	L_1P_1	L_2P_1	L_1P_2	L_2P_2	Mean
N_0	233.7	333.3	383.5	450.1	399.9	383.5	483.0	381.0
N_1	416.4	433.6	433.6	549.7	516.7	533.2	500.3	483.4
N_2	333.3	433.6	433.6	483.0	416.4	533.2	483.0	445.2
Mean	327.8	400.2	416.9	494.3	444.3	483.3	488.8	436.5

S.E. of difference of two.

1. LP marginal means = 66.0 lb./ac.
2. N marginal means = 29.4 lb./ac.
3. N means at the same level of LP = 77.9 lb./ac.
4. LP means at the same level of N = 91.7 lb./ac.

Crop :- Paddy (*Kharif*).

Site :- M.A.E. Farm, Tinsukia.

Ref :- As. 59(MAE).

Type :- 'M'.

Object :—Type IV—To study the effect of P_2O_5 applied to legume crop and of N to the succeeding Paddy crop.

1. BASAL CONDITIONS and 2. TREATMENTS :

Same as in expt. no. 58 (MAE) Type IV on page. 25 conducted at Tinsukia.

3. DESIGN :

(i) Split-plot. (ii) (a) 7 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 31'×14.5'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1957—contd. (b) No. (c) N.A. (v) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1746 lb./ac. (ii) (a) 137.9 lb./ac. (b) 124.3 lb./ac. (iii) Control vs others is significant. N effect is highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	L ₀ P ₀	L ₁ P ₀	L ₂ P ₀	L ₁ P ₁	L ₂ P ₁	L ₁ P ₂	L ₂ P ₂	Mean
N ₀	1407	1061	1160	1160	1654	1407	2032	1412
N ₁	1596	1753	1506	1991	1901	1646	1893	1755
N ₂	1942	1761	2370	1991	1884	1893	2666	2072
Mean	1648	1525	1679	1714	1813	1649	2197	1746

S.E. of difference of two

1. LP marginal means = 65.0 lb./ac.
2. N marginal means = 38.4 lb./ac.
3. N means at the same level of LP = 101.5 lb./ac.
4. LP means at the same level of N = 105.3 lb./ac.

Crop :- Paddy (Kharif).

Ref :- As. 57(MAE).

Site :- M.A.E. Farm, Tinsukia.

Type :- 'M'.

Object :—Type V—To study the most suitable time for the application of N.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Fallow. (c) N.A. (ii) Brahmaputra alluvium. (iii) End of July 1957. (iv) (a) 7 ploughings. (b) Transplanting. (c) N.A. (d) 8" × 8". (e) N.A. (v) 20 lb./ac. of P₂O₅ as Super. (vi) N.A. (vii) Unirrigated. (viii) 2 hoeings and 5 weedings. (ix) N.A. (x) First week of January 1958.

2. TREATMENTS :

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

(1) 2 sources of 30 lb./ac. of N : S₁=Urea and S₂=A/S.

(2) 7 times of application of N : T₁=before planting, T₂=at planting, T₃=at tillering, T₄=½ before planting + ½ at tillering, T₅=½ at planting + ½ at tillering, T₆=½ before planting + ½ at tillering + ½ one week before flowering and T₇=½ at planting + ½ at tillering + ½ one week before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Below normal. (ii) No. (iii) Grain yield. (iv) 1957—contd. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 533.5 lb./ac. (ii) 133.15 lb./ac. (iii) S effect and control vs others are highly significant. (iv) Av. yield of grain in lb./ac.

Control mean = 317.9 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	551.3	452.6	518.4	452.6	436.1	501.9	419.7	476.1
S ₂	633.6	650.0	584.2	732.3	534.9	666.5	551.3	621.8
Mean	592.4	551.3	551.3	592.4	485.5	584.2	485.5	548.9

- S.E. of S marginal mean = 29.06 lb./ac.
 S.E. of T marginal mean = 54.36 lb./ac.
 S.E. of body of table or control mean = 76.88 lb./ac.

Crop :- Paddy (Kharif).
Site :- M.A.E. Farm, Tinsukia.

Ref :- As. 58(MAE).
Type :- 'M'.

Object :—Type V—To study the most suitable time for the application of N.

1. **BASAL CONDITIONS :**

(i) (a) to (c) N.A. (ii) (a) Brahmaputra alluvium. (b) N.A. (iii) 1 to 4.8.1958. (iv) (a) 8 ploughings. (b) Transplanting. (c) N.A. (d) 8"×8". (e) N.A. (v) 20 lb./ac. of P₂O₅ as Super. (vi) N.A. (vii) Unirrigated. (viii) 5 weedings and 1 hoeing. (ix) N.A. (x) First and second week of December.

2. **TREATMENTS to 4. GENERAL :**

Same as in expt. no. 57, MAE, Type V on page 27.

5. **RESULTS :**

(i) 794.5 lb./ac. (ii) 97.5 lb./ac. (iii) S and control vs others effects are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

Control = 633.3 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	666.7	700.0	666.7	800.0	783.3	783.3	800.0	742.9
S ₂	933.3	1000.0	716.7	800.0	850.0	1016.7	766.7	869.1
Mean	800.0	850.0	691.7	800.0	816.6	900.0	783.4	806.0

S.E. of S marginal mean = 21.3 lb./ac.
 S.E. of T marginal mean = 39.8 lb./ac.
 S.E. of body of table or control mean = 56.3 lb./ac.

Crop :- Paddy (Kharif).
Site :- M.A.E. Farm, Tinsukia.

Ref :- As. 59(MAE).
Type :- 'M'.

Object :—Type V—To study the most suitable time for the application of N.

1. **BASAL CONDITIONS :**

(i) (a) to (c) N.A. (ii) (a) Brahmaputra alluvium (b) N.A. (iii) July—August 1959. (iv) (a) 4 to 6 ploughings. (b) Transplanting. (c) N.A. (d) 8"×8". (e) N.A. (v) 20 lb./ac. of P₂O₅ as Super. (vi) N.A. (vii) Unirrigated. (viii) Weeding and hoeing. (ix) N.A. (x) Dec. 1959.

2. **TREATMENTS :**

Same as in expt. in 57, MAE, Type V on page 27.

3. **DESIGN :**

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) 33'×16.5'. (b) 31'×14.5'. (v) 1' around. (vi) Yes.

4. **GENERAL :**

(i) Poor. (ii) N.A. (iii) Grain yield. (iv) (a) 1957—contd. (b) and (c) N.A. (v) Nil. (vi) and (vii) Nil.

5. **RESULTS :**

(i) 631.2 lb./ac. (ii) 184.3 lb./ac. (iii) Only S effect is highly significant. (iv) Av. yield of grain in lb./ac.

Control mean = 469.0 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	661.0	416.9	581.5	499.2	581.5	532.1	548.6	545.8
S ₂	776.2	773.5	548.6	968.2	707.7	710.4	693.9	739.8
Mean	718.6	595.1	565.0	733.7	644.6	621.2	621.2	642.8

S.E. of S marginal mean	= 40.2 lb./ac.
S.E. of T marginal mean	= 75.2 lb./ac.
S.E. of body of table or control mean	= 106.4 lb./ac.

Crop :- Paddy (Kharif).

Ref :- As. 57(MAE).

Site :- M.A.E. Farm, Tinsukia.

Type :- 'M'.

Object :- Type VI—To determine the method of placement of fertilizers.

BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Brahmaputra alluvium. (b) N.A. (iii) From first week to 4th week of August, 1957. (iv) (a) 7 ploughings. (b) Transplanting. (c) N.A. (d) 8"×8". (e) N.A. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) 2 hoeings, weeding after transplanting. (ix) N.A. (x) 4th week of Dec. 1957.

2. TREATMENTS :

All combinations of (1), (2) and (3)+1 control (no manure)/block.

(1) 2 doses of P_2O_5 : $P_1=20$ and $P_2=40$ lb./ac.

(2) 3 sources of P_2O_5 : $S_1=$ Super, $S_2=$ Dical. Phos. and $S_3=$ Ammono. Phos.

(3) 3 methods of application of P_2O_5 : $M_1=$ Broadcasting at puddling time, $M_2=$ Dipping the seedlings in mud slush mixed with the fertilizer before transplanting and $M_3=$ Application of fertilizers in pellets near the roots at the time of planting.

N made up to 30 lb./ac. by applying A/S at planting.

3. DESIGN :

(i) $3^2 \times 2 + 3$ confd. Fact. (ii) (a) 7 plots/block; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) No. (iii) Grain yield. (iv) (a) 1957—contd. (b) No. (c) N.A. (v) Nil. (vi) Nil. (vii) Experiment conducted in the year 1959 was rejected as the crop in a number of plots was grazed by cattle.

5. RESULTS :

(i) 689 lb./ac. (ii) 175.9 lb./ac. (iii) Control vs others is highly significant. Interaction $S \times P$ is significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

Control=508 lb./ac.

	M_1	M_2	M_3	Mean	P_1	P_2
S_1	680	775	715	723	803	643
S_2	685	650	730	688	630	747
S_3	750	695	790	745	767	723
Mean	705	707	745	719	733	705
P_1	703	747	750			
P_2	707	667	740			

S.E. of S or M marginal mean	= 35.9 lb./ac.
S.E. of P marginal mean	= 29.3 lb./ac.
S.E. of body of $S \times P$ or $M \times P$ table	= 50.4 lb./ac.
S.E. of body of $S \times M$ table	= 62.2 lb./ac.

Crop Paddy (Kharif).**Site :- M.A.E. Farm, Tinsukia.****Ref :- Or. 58(MAE).****Type :- 'M'.**

Object :—Type VI—To determine the method of placement of fertilizers.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Brahmaputra alluvium. (b) N.A. (iii) 1 to 4.8.1958. (iv) (a) 8 ploughings. (b) planting. (c) N.A. (d) 8'×8'. (e) N.A. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) 5 weedings and 1 harrowing. (ix) N.A. (x) First and second week of Dec.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57 (MAE) Type VI on page 29.

5. RESULTS :

(i) 577.9 lb./ac. (ii) 100.5 lb./ac. (iii) Control vs manures and S effects are highly significant. (iv) Av. yield of grain in lb./ac.

Control mean = 303.6 lb./ac.

	M ₁	M ₂	M ₃	Mean	P ₁	P ₂
S ₁	506.2	550.0	493.7	516.6	537.5	495.8
S ₂	637.5	675.0	625.0	645.8	608.3	683.3
S ₃	712.5	700.0	712.5	708.3	687.5	729.2
Mean	618.7	641.7	610.4	623.6	611.1	636.1
P ₁	604.2	645.8	583.3			
P ₂	633.3	637.5	637.5			

S.E. of S or M marginal mean = 20.5 lb./ac.
 S.E. of P marginal mean = 16.8 lb./ac.
 S.E. of body of S×P or M×P table = 29.0 lb./ac.
 S.E. of body of S×M table = 35.5 lb./ac.

Crop :- Paddy (1st crop).**Centre :- Darrang (c.f.).****Ref :- Or. 54(TCM).****Type :- 'M'.**Object :—Type II(a) —To study the effect of different levels and sources of N along with P₂O₅ on the yield of Paddy.**1. BASAL CONDITIONS :**

(i) (a) to (c) N.A. (ii) Alluvial (loam), pH 5.5. (iii) Nil. (iv) N.A. (v) (a) N.A. (b) Transplanted. (c)—. (d) and (e) N.A. (vi) June—July. (vii) Unirrigated. (viii) and (ix) N.A. (x) Nov.—Dec.

2. TREATMENTS :

0 =Control.

N₁ =20 lb./ac. of N as A/S.P₁N₁ =20 lb./ac. of N as A/S + 20 lb./ac. of P₂O₅ as Super.P₁N₁' =20 lb./ac. of N as Urea + 20 lb./ac. of P₂O₅ as Super.**3. DESIGN :**

(i) and (ii) Eleven community project centres, representing the entire paddy growing tract 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 one unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) No. (iii) Grain yield. (iv) (a) 1953—1955. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	N ₁	P ₁ N ₁	P ₁ N ₁ '
Av. yield	2123	2839	3538	2872

G.M.=2843 lb./ac. ; S.E./mean=65.83 lb./ac. and no. of trials=31.

Crop :- Paddy (1st crop).

Centre :- Darrang (c.f.).

Ref :- Or. 54(TCM).

Type :- 'M'.

Object :—Type II (b)—To study the effect of different levels and sources of N along with P₂O₅ on the yield of Paddy.

1. BASAL CONDITIONS :

Same as in expt. no. 54(TCM) Type II (a) on page 30 conducted at Darrang.

2. TREATMENTS :

0 =Control

P₁ =20 lb./ac. of P₂O₅ as Super.

P₁N₁ =20 lb./ac. of P₂O₅ as Super+20 lb./ac. of N as A/S.

P₁N₂ =20 lb./ac. of P₂O₅ as Super+40 lb./ac. of N as A/S.

P₁N₁' =20 lb./ac. of P₂O₅ as Super+20 lb./ac. of N as Urea.

P₁N₂' =20 lb./ac. of P₂O₅ as Super+40 lb./ac. of N as Urea.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(TCM) Type II (a) on page 30 conducted at Darrang.

5. RESULTS :

Treatment	0	P ₁	P ₁ N ₁	P ₁ N ₂	P ₁ N ₁ '	P ₁ N ₂ '
Av. yield	2197	3431	3563	2715	2880	2617

G.M.=2900 lb./ac. ; S.E.=74.1 lb./ac. and no. of trials=30.

Crop :- Paddy (1st crop).

Centre :- Darrang (c.f.).

Ref :- As. 54(TCM).

Type :- 'M'.

Object :—Type III—To study the effect of different levels and sources of P₂O₅ along with N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (e) N.A. (ii) Alluvial (undifferentiated) loam, pH 5.5. (iii) Nil. (iv) N.A. (v) (a) N.A. (b) Transplanted. (e)—. (d) and (e) N.A. (vi) June—July. (vii) Unirrigated. (viii) and (ix) N.A. (x) Nov.—Dec.

2. TREATMENTS :

0 =Control (no manure)

N₁ =20 lb./ac. of N as A/S.

N₁P₁ =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super.

N₁P₂ =20 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super.

N₁P₁' =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super.

N₁P₂' =20 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super.

Fertilizers applied two days before planting.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(TCM) Type II(a) on page 30 conducted at Darrang.

5. RESULTS :

Treatment	0	N ₁	N ₁ P ₁	N ₁ P ₂	N ₁ P ₁ '	N ₁ P ₂ '
Av. yield	2172	2938	3612	2246	2732	3283

G.M.=2831 lb./ac. ; S.E.=65.83 lb./ac. and no. of trials=29.

Crop :- Paddy (1st crop).

Ref :- As. 55(TCM).

Centre :- Udaygiri (c.f).

Type :- 'M'.

Object :—Type I—To study the effect of different levels and sources of N on the yield of Paddy.

1. BASAL CONDITIONS :

Same as in expt. no. 54, (TCM) Type II (a) on page 30 conducted at Darrang.

2. TREATMENTS :

0 = Control (no manure).

N₁ =20 lb./ac. of N as A.S.

N₂ =40 lb /ac. of N as A.S.

N₁' =20 lb./ac. of N as Urea.

N₂' =40 lb./ac. of N as Urea.

Fertilizers broadcast two days before planting.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54, (TCM) Type II(a) on page 30 conducted at Darrang.

5. RESULTS :

Treatment	0	N ₁	N ₂	N ₁ '	N ₂ '
Av. yield	1670	2083	2081	2295	2204

G.M.=2067 lb./ac. ; S.E.=103.7 lb./ac. and no. of trials=14.

Crop :- Paddy (1st crop).

Ref :- As. 55(TCM).

Centre :- Udaygiri. (c.f).

Type :- 'M'.

Object :—Type II (b)—To study the effect of different levels and sources of N along with P₂O₅ on the yield of Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 54, (TCM) Type II (b) on page 31 conducted at Darrang.

5. RESULTS :

Treatment	0	P ₁	P ₁ N ₁	P ₁ N ₂	P ₁ N ₁ '	P ₁ N ₂ '
Av. yield	1892	2291	2544	2410	2247	2250

G.M.=2272 lb./ac. ; S.E.=107.79 lb./ac. and no. of trials=14.

Crop :- Paddy (1st crop).

Ref :- As. 55(TCM).

Centre :- Udaygiri (c.f).

Type :- 'M'.

Object :—Type III—To study the effect of different levels and sources of P₂O₅ along with N on the yield of Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in experiment no. 54, (TCM) Type III on page 31 conducted at Darrang.

5. RESULTS :

Treatment	0	N ₁	N ₁ P ₁	N ₁ P ₂	N ₁ P ₁ '	N ₁ P ₂ '
Av. yield	1949	2293	2558	2800	2514	2432

G.M.=2424 lb./ac., S.E./mean=148.1 lb./ac. and no. of trials=10.

Crop :- Paddy (Kharif).**Ref :- As. 59(SFT).****Centre :- Lakhimpur (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvium and laterite. (iii) and (iv) N.A. (v) (a) 4 ploughings and plankings. (b) Transplanting. (c)—. (d) and (e) N.A. (vi) July—Aug. (vii) Unirrigated. (viii) and (ix) N.A. (x) Nov.—Dec.

TREATMENTS :

0. =Control (no manure).

n =20 lb./ac. of N as A/S.

p =20 lb./ac. of P_2O_5 as Super.

np =20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.

k =20 lb./ac. of K_2O as Mur. of Potash.

nk =20 lb./ac. of N as A/S+20 lb./ac. of K_2O as Mur. of Pot.

pk =20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. of Pot.

npk=20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant has been posted in each zone. The field assistant conducts the trials in one revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on a *kharif* cereal, 8 on a *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of Type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The above experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) Lakhimpur and Sibsagar. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n	p	np	k	nk	pk	npk
Av. yield	2087	2780	2786	2487	2830	2780	2738	2905

G.M.=2674 lb./ac. ; S.E./mean=170.1 lb./ac. and no. of trials=5.

Crop :- Paddy (Rabi).**Ref :- As. 59(SFT).****Centre :- Lakhimpur (c.f.).****Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvium and laterite. (iii) and (iv) N.A. (v) (a) 4 to 5 ploughings and plankings. (b) Transplanted. (c)—. (d) and (e) N.A. (vi) November 1959. (vii) Irrigated. (viii) and (ix) N.A. (x) March 1960.

2. TREATMENTS :

0 =Control (no manure).

n_1 =20 lb./ac. of N as A/S.

n_2 =40 lb./ac. of N as A/S.

n_1' =20 lb./ac. of N as Urea.

n_2' =40 lb./ac. of N as Urea.

n_1'' =20 lb./ac. of N as A/S/N.

n_2'' =40 lb./ac. of N as A/S/N.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59(SFT) Type A above.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	1580	1827	1967	1991	2041	1934	2098

G.M.=1920 lb./ac. ; S.E./mean=89.61 lb./ac. and no. of trials=5.

Crop :- Paddy (Kharif).

Ref :- As. 59(SFT).

Centre :- Sibsagar (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Hilly (mostly red loam and laterite). (iii) and (iv) N.A. (v) (a) Ploughings and plankings. (b) Transplanting. (c)—. (d) and (e) N.A. (vi) July—August. (vii) Unirrigated. (viii) and (ix) N.A. (x) Dec.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) Type A on page 33 conducted at Lakhimpur.

5 RESULTS :

Treatment	0	n	p	np	k	nk	pk	npk
Av. yield	1983	2208	2128	2331	2137	2172	2175	2359

G.M.=2187 lb./ac., S.E./mean=67.95 lb./ac. and no. of trials=12.

Crop :- Paddy (Kharif).

Ref :- As. 59(SFT).

Centre :- Sibsagar. (c.f.)

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Hilly. (iii) Nil. (iv) N.A. (v) (a) 5 ploughings and 3 plankings. (b) Transplanting. (c)—. (d) and (e) N.A. (vi) July—August. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Nov.—Dec.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 59 (SFT) Type B on page 33 conducted at Lakhimpur.

4. GENERAL :

(i) Normal. (ii) Some trials attacked by stem-borer and case-worm. Control measures taken. (iii) Grain yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) Lakhimpur. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ ''
Av. yield	2271	2395	2378	2337	2098	2164	2329

G.M.=2282 lb./ac. ; S.E./mean=107.1 lb./ac. and no. of trials=10.

Crop :- Paddy (1st and 2nd crop).

Ref :- As. 54 (TCM).

Centre :- Agartala (Tripura, c.f.).

Type :- 'M'.

Object :—Type I— To study the effect of different levels and sources of N on yield of Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 55 (TCM) Type I on page 32 conducted at Udaygiri.

5. RESULTS :

First crop

Treatment	0	N ₁	N ₂	N ₁ '	N ₂ '
Av. yield	1621	1958	2001	1905	1946

G.M.=1886 lb./ac. ; S.E./mean=96.7 lb./ac. and no. of trials=10.

Second crop

Treatment	0	N ₁	N ₂	N ₁ '	N ₂ '
Av. yield	1975	2452	2896	2386	2674

G.M.=2477 lb./ac. ; S.E./mean=181.0 lb./ac. and no. of trials=9.

Crop :- Paddy (Ist crop).

Ref :- As. 55(TCM).

Centre :- Agartala (Tripura, c.f.).

Type :- 'M'.

Object :—Type I—To study the effect of different sources and levels of N on yield of Paddy.

1. BASAL CONDITIONS :

Same as in expt. no. 54 (TCM) Type II(a) on page 30 conducted at Darrang.

2. TREATMENTS :

0 =Control.

N₁ =20 lb./ac. of N as A/S.

N₂ =40 lb./ac. of N as A/S.

N₁" =20 lb./ac. of N as Nitrochalk.

N₂" =40 lb./ac. of N as Nitrochalk.

Fertilizers applied two days before planting.

3. DESIGN :

Same as in expt. no. 54 (TCM) Type II(a) on page 30 conducted at Darrang.

4. GENERAL :

(i) Normal heavy lodging. (ii) No. (iii) Grain yield. (iv) (a) 1953—55. (b) No. (c) N.A, (v) (a) and (b) Nil.

5. RESULTS :

Treatment	0	N ₁	N ₂	N ₁ "	N ₂ "
Av. yield	1556	1733	1839	1828	1952

G.M.=1782 lb./ac. ; S.E./mean=65.83 lb./ac. and no. of trials=11.

Crop :- Paddy (Ist crop).

Ref :- As. 55(TCM).

Centre :- Agartala (Tripura, c.f.).

Type :- 'M'.

Object :—Type I—To study the effect of different levels and sources of N on yield of Paddy.

1. BASAL CONDITIONS to 3. DESIGN :

Same as in expt. 54 (TCM) Type I on page 34 conducted at Agartala.

4. GENERAL :

Same in expt. no. 55 (TCM) Type I as above.

5. RESULTS :

Treatment	0	N ₁	N ₂	N ₁ '	N ₂ '
Av. yield	1456	1883	2061	1903	2041

G.M.=1869 lb./ac. ; S.E./mean=81.79 lb./ac. and no. of trials=20.

Crop :- Paddy (1st crop).

Ref :- As. 54 (TCM).

Centre :- Agartala (Tripura, c.f.).

Type :- 'M'.

Object :—Type II (b)—To study the effect of different levels of N and P on the yield of Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 54 (TCM) Type II (b) on page 31 conducted at Darrang.

5. RESULTS :

Treatment	0	P ₁	P ₁ N ₁	P ₁ N ₂	P ₁ N ₁ '	P ₁ N ₂ '
Av. yield	1962	2334	2422	2767	2567	2481

G.M.=2422 lb./ac. ; S.E./mean=156.2 lb./ac. and no. of trials=13.

Crop :- Paddy (1st crop).

Ref :- As. 55(TCM)

Centre :- Agartala (Tripura, c.f.).

Type :- 'M'.

Object :—Type III—To study the effect of different levels and sources of P along with N on the yield of Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 54 (TCM) Type III on page 31 conducted at Darrang.

5. RESULTS :

Treatment	0	N ₁	N ₁ P ₁	N ₁ P ₂	N ₁ P ₁ '	N ₁ P ₂ '
Av. yield	1537	1918	2208	2081	2163	2410

G.M.=2053 lb./ac. ; S.E./mean=117.4 lb./ac. and no. of trials=17.

Crop :- Paddy (2nd crop).

Ref :- As. 54(TCM).

Centre :- Agartala (Tripura, c.f.).

Type :- 'M'.

Object :—Type IV—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial (loam). (iii) Nil. (iv) N.A. (v) (a) N.A. (b) Transplanted. (c)—(d) and (e) N.A. (vi) November—December. (vii) Irrigated. (viii) and (ix) N.A. (x) April 1955.

2. TREATMENTS :

0 =Control (no mauure)
 N₁ =20 lb./ac. of N as A/S
 N₁P₁ =20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super.
 N₁P₂ =20 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super.
 N₁P₁K₁=20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super+20 lb./ac. of K₂O as Pot. Sul.
 N₁P₁K₂=20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super+40 lb./ac. of K₂O as Pot. Sul.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(TCM) Type II (a) on page 30 conducted at Darrang.

5. RESULTS :

Treatment	0	N ₁	N ₁ P ₁	N ₁ P ₂	N ₁ P ₁ K ₁	N ₁ P ₁ K ₂
Av. yield	1'25	2584	2748	2543	2427	3003

G.M.=2538 lb./ac. ; S.E./mean=320.9 lb./ac. and no. of trials=5.

Crop :- Paddy (1st crop).**Ref :- As. 55(SFT).****Centre :- Agartala (Tripura, c.f.).****Type :- 'M'.**

Object :- Type IV—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvium (loam). (iii) Nil. (iv) N.A. (v) (a) N.A. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) June July. (vii) Unirrigated. (viii) and (ix) N.A. (x) November—December.

2. TREATMENT to 4. GENERAL :

Same as in expt. no. 54(TCM) Type II (b) on page 36 conducted at Darrang.

5. RESULTS :

Treatment	0	N ₁	N ₁ P ₁	N ₁ P ₂	N ₁ P ₁ K ₁	N ₁ P ₁ K ₂
Av. yield	1414	1913	1880	1877	1934	2076

G.M.=1849 lb./ac. ; S.E./mean=108.7 lb./ac. and no. of trials=19.

Crop :- Paddy (Sali).**Ref :- As. 58(45).****Site :- Agri. College, Jorhat.****Type :- 'M'.**

Object :- To find out suitable doses of fertilizers for different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) Cowdung at 50 md./ac. (ii) (a) Sandy loam. (b) N.A. (iii) 11.8.1958. to 13.8.1958. (iv) (a) Ploughing 4 times followed by laddering. (b) Transplanted. (c) —. (d) 9"×9". (e) 2 to 3. (v) Cowdung at 50 md./ac. (vi) As per treatments. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 15.12.1958 and 16.12.1958.

2. TREATMENTS :**Main-plot treatments:**2 varieties : V₁=Laudumra and V₂=Prosad bhog.**Sub-plot treatments :**

All combinations of (1) and (2)

(1) 5 sources of N : S₁=A/S, S₂=A/S/N, S₃=A/C, S₄=Urea and S₅=Cowdung.(2) 4 levels of N : N₀=0, N₁=20, N₂=40 and N₃=60 lb./ac.**3. DESIGN :**

(i) Split-plot. (ii) (a) 2 main-plots/block ; 20 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) 50'×6'2". (v) No. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1863 lb./ac. (ii) (a) 679 lb./ac. (b) 813 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	S ₃	S ₄	S ₅	Mean	N ₀	N ₁	N ₂	N ₃
V ₁	1781	1934	1907	2125	2229	1995	1955	2162	1986	1877
V ₂	1695	1512	1813	1752	1887	1732	1750	1717	1678	1783
Mean	1738	1723	1860	1939	2058	1863	1852	1939	1832	1830
N ₁	1922	2010	1750	1692	2323					
N ₂	1468	1568	2034	2054	2034					
N ₃	1833	1356	1768	1945	2246					
Mean	1741	1645	1851	1897	2201					

S.E. of difference of two

- | | | | |
|-----------------------------------|---------------|-----------------------------------|---------------|
| 1. V marginal means | = 124 lb./ac. | 6. V means at the same level of S | = 322 lb./ac. |
| 2. S marginal means in V×S table | = 235 lb./ac. | 7. N means at the same level of V | = 297 lb./ac. |
| 3. S marginal means in N×S table | = 271 lb./ac. | 8. V means at the same level of N | = 285 lb./ac. |
| 4. N marginal means | = 210 lb./ac. | S.E. of body of N×S table | = 332 lb./ac. |
| 5. S means at the same level of V | = 332 lb./ac. | | |

Crop :- Paddy (Sali).

Ref :- As. 54(6).

Site :- Govt. Rice Expt. Stn., Titabar.

Type :- 'MV'.

Object :—To study the catalysing effect of KMnO_4 and FeSO_4 for releasing plant nutrients.

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 6.9.1954/N.A. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Line method of transplanting. (c) 6 md./ac. (d) $9' \times 9'$. (e) 4. (v) Cowdung broadcast. (vi) As per treatments. (vii) Unirrigated. (viii) Two hand weedings. (ix) $16'$ approx. (x) 3.1.1955 to 5.1.1955.

2. TREATMENTS :

Main-plot treatments :

2 varieties : $V_1 = \text{Prosad bhog SL—834/1}$ and $V_2 = \text{Laudumra SL—126}$.

Sub-plot treatments :

3 chemicals : $M_0 = \text{Control}$, $M_1 = \text{KMnO}_4$ at 16 lb./ac. and $M_2 = \text{FeSO}_4$ at 28 lb./ac.

3. DESIGN :

- (i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) $15' \times 15'$. (b) $14.25' \times 14.25'$. (v) $4.5' \times 4.5'$. (vi) Yes.

4. GENERAL :

- (i) Fair ; no lodging. (ii) Nil. (iii) Paddy yield. (iv) (a) 1954—1958. (b) and (c) Yes. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

- (i) 3656 lb./ac. (ii) (a) 326.9 lb./ac. (b) 148.7 lb./ac. (iii) Main effect of M is highly significant while effect of V and interaction $M \times V$ are significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	Mean
V_1	3102	3915	3861	3626
V_2	3110	4069	3879	3685
Mean	3106	3991	3870	3656

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. V marginal means | = 154.1 lb./ac. |
| 2. M marginal means | = 85.9 lb./ac. |
| 3. M means at the same level of V | = 121.4 lb./ac. |
| 4. V means at the same level of M | = 183.2 lb./ac. |

Crop :- Paddy (Sali).

Ref :- As. 57(16).

Site :- Govt. Rice Expt. Stn., Titabar.

Type :- 'MV'.

Object :—To study the catalysing effect of KMnO_4 and FeSO_4 for releasing plant nutrients.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) N.A. (iv) (a) Ploughing with country plough, laddering and harrowing. (b) Transplanting in lines. (c) to (e) N.A. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Two weedings. (ix) 86-34". (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(6) on page 38.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Paddy yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2818 lb./ac. (ii) (a) 673.8 lb./ac. (b) 58.6 lb./ac. (iii) Main effect of M is highly significant while effect of V and interaction $M \times V$ are significant. (iv) Av. yield of grain lb./ac.

	M ₀	M ₁	M ₂	Mean
V ₁	2681	2909	2842	2811
V ₂	2574	2950	2950	2825
Mean	2628	2929	2896	2818

S.E. of difference of two

1. V marginal means = 389.0 lb./ac.
2. M marginal means = 41.4 lb./ac.
3. M means at the same level of V = 58.6 lb./ac.
4. V means at the same level of M = 391.9 lb./ac.

Crop :- Paddy (Sali).

Ref :- As. 58(7).

Site :- Govt. Rice Expt. Stn., Titabar.

Type :- 'MV'.

Object :—To study the catalysing effect of $KMnO_4$ and $FeSO_4$ for releasing plant nutrients.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) N.A. (iv) (a) Ploughing with country plough, laddering and harrowing. (b) Line method of transplanting. (c) to (e) N.A. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Two weedings. (ix) 67-87" (x) N.A.

2. TREATMENT and 3. DESIGN:

Same as in expt. no. 54(6) on page 38.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Paddy yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2150 lb./ac. (ii) (a) 166.0 lb./ac. (b) 62.1 lb./ac. (iii) Main effect of M is highly significant while effect of V and interaction $M \times V$ are significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	Mean
V ₁	2118	2305	2265	2229
V ₂	1850	2259	2105	2071
Mean	1984	2282	2185	2150

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. V marginal means | = 95.8 lb./ac. |
| 2. M marginal means | = 43.9 lb./ac. |
| 3. M means at the same level of V | = 62.1 lb./ac. |
| 4. V means at the same level of M | = 108.4 lb./ac. |

Crop :- Paddy (Kharif).**Ref :- As. 54(12).****Site :- Rice Expt. Stn., Karimganj.****Type :- 'C'.**

Object :—To study the effect of broadcasting and dibbling on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 15.3.1954/N.A. (iv) (a) 8 ploughings followed by laddering. (b) to (e) N.A. (v) 100 md./ac. of cowdung at ploughing. (vi) Type M—142 *Koimurali* (early). (vii) Unirrigated. (viii) As per treatments. (ix) 64.70". (x) 27, 28.6.1954.

2. TREATMENTS :

All combinations of (1) and (2)

- (1) 2 methods of sowing : S_1 =Broadcasting seed at 30 srs/ac. and S_2 =Dibbling at 10 srs/ac. with $2' \times 6''$ spacing.
 (2) 2 levels of weeding : C_0 =No weeding and C_1 =One weeding.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) $66' \times 40'$. (iii) 4. (iv) (a) $66' \times 10'$. (b) $64' \times 8'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) No. (iii) General growth and grain yield. (iv) (a) 1953—1955. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1953 lb./ac. (ii) 137.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	C_0	C_1	Mean
S_1	1969	1873	1921
S_2	2065	1904	1984
Mean	2017	1888	1953

S.E. of any marginal mean = 48.7 lb./ac.
 S.E. of body of table = 68.9 lb./ac.

Crop :- Paddy (Kharif).**Ref :- As. 55(23).****Site :- Rice Expt. Stn., Karimganj.****Type :- 'C'.**

Object :—To study the effect of broadcasting and dibbling on Paddy yield.

1. BASAL CONDITIONS :

(i) No. (b) Paddy. (c) 100 md./ac. of cowdung. (ii) (a) Clay loam. (b) N.A. (iii) 3.5.1955/N.A. (iv) 8 ploughings followed by laddering. (b) to (e) N.A. (v) 100 md./ac. of cowdung at ploughing. (vi) Type M—142 *Koimurali* (early). (vii) Unirrigated. (viii) As per treatments. (ix) 144.57". (x) 3.8.1955 to 5.8.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54 (12) above.

4. GENERAL :

(i) N.A. (ii) No. (iii) General growth and grain yield. (iv) (a) 1953—1955. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3483 lb./ac. (ii) 189.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	C ₀	C ₁	Mean
S ₁	3604	3874	3739
S ₂	3137	3318	3228
Mean	3370	3596	3483

S.E. of any marginal mean = 66.9 lb./ac.

S.E. of body of table = 94.6 lb./ac.

Crop :- Paddy (*Sali*).

Ref :- As. 58(38).

Site :- Agri. College, Jorhat.

Type :- 'C'.

Object :—To find out a suitable crop rotation for Sibsagar district.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) As per treatments. (c) T.C. at 40 lb./plot. (ii) (a) Sandy loam. (b) pH—4.5. (iii) N.A. 21.1.1958. (iv) (a) 4 ploughings followed by laddering. (b) Transplanting. (c) —. (d) 9"×9". (e) 3. (v) T.C. at 40 lb./plot broadcast just before puddling. (vi) *Prosad bhog*. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 16.12.1958.

2. TREATMENTS :

4 crop rotations : R₁=*Ahu* paddy—*Sali* paddy, R₂=*Fallow*—*Sali* paddy, R₃=*Jute*—*Sali* paddy and R₄=*G.M.*—*Sali* paddy.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 66'10"×9". (v) No. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 2277 lb./ac. (ii) 247 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	R ₁	R ₂	R ₃	R ₄
Av. yield	2286	2200	2412	2209

S.E./mean = 123 lb./ac.

Crop :- Paddy (*Bao*).

Ref :- As. 55(1).

Site :- Deep Water Paddy Res. Stn., Roha.

Type :- 'C'.

Object :—To obtain a suitable seed rate for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Loam. (b) Refer expt. no. 54(4) on page 13. (iii) 30.5.1955: (iv) (a) 5 ploughings and laddering with country plough. (b) Broadcasting. (c) As per treatments. (d) N.A. (e) —. (v) Nil. (vi) *Gout* (medium). (vii) Unirrigated. (viii) Weeding and thinning. (ix) 60". (x) 20.12.1955.

2. TREATMENTS :

4 seed rates : R₁=60, R₂=80, R₃=100 and R₄=120 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 10'×15'. (b) 8'×13'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3435 lb./ac. (ii) 732.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	R ₁	R ₂	R ₃	R ₄
Av. yield	3310	3071	3633	3727

S.E./mean = 366.4 lb./ac.

Crop :- Paddy (*Bao*).

Ref :- As. 56(1).

Site :- Deep Water Paddy Res. Stn., Roha.

Type :- 'C'.

Object :—To obtain a suitable seed rate for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Loam. (b) Refer expt. no. 54(4) on page 13. (iii) 30.3.1956. (iv) (a) 5 ploughings and laddering with country plough. (b) Broadcast. (c) As per treatments. (d) and (e)—. (v) Nil. (vi) *Gout Bao*. (vii) Unirrigated. (viii) Weeding and thinning. (ix) 69.41%. (x) 30.11.1956.

2. TREATMENTS :

Same as in expt. no. 55 (1) on page 41.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 17'×12'. (b) 15'×10'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) No incidence of pests and diseases. (iii) Grain yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1210 lb./ac. (ii) 342.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	R ₁	R ₂	R ₃	R ₄
Av. yield	1352	1138	1246	1106

S.E./mean = 153.0 lb./ac.

Crop :- Paddy (*Sali*).

Ref :- As. 59(29).

Site :- Rice Expt. Stn., Titabar.

Type :- 'C'.

Object :—To study the Chinese and Japanese methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 12,20 and 25.6.1959. (iv) (a) 8 ploughings followed by laddering. (b) Transplanting. (c) to (e) As per treatments. (v) Nil. (vi) 406 (6)/93—1 (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 69.55%. (x) 30.11.1959, 1.12.1959 and 2.12.1959.

2. TREATMENTS :

3 methods of cultivation : M₁=Chinese. M₂=Japanese and M₃=Country.

3. DESIGN

(i) R.B.D. (ii) (a) 3. (b) 180'×30'. (iii) 6. (iv) (a) 30'×30'. (b) 28'×28' for M₁, 26'×26' for M₂ and 27'×27' for M₃. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—contd. (b) Yes. (c) N.A. (v) (a) Karimganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3188 lb./ac. (ii) 250 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	2815	3564	3187

S.E./mean = 102 lb./ac.

Crop :- Paddy (Rabi).

Ref :- As. 54(14).

Site :- Rice Expt. Stn., Karimganj.

Type :- 'CM'.

Object :—To study the Japanese vs. local method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 15.7.1954/18.8.1954. (iv) (a) 8 ploughings followed by laddering. (b) Transplanting. (c) As per treatments. (d) 9"×9" for treatment 1 and 10"×10" for treatment 2. (e) 4. (v) Nil. (vi) *Swarnasail* S.C. 412—56(medium). (vii) Unirrigated. (viii) As per treatments. (ix) 66.96%. (x) 17.12.1954 to 19.12.1954.

2. TREATMENTS :

- Local method : 6 md./ac. of seed in seed beds, 100 md./ac. of cowdung at the time of ploughing and one weeding.
- Japanese method : 5 md./ac. of seed in seed beds, 300 md./ac. of cowdung at the time of ploughing, 200 lb./ac. of A/S and B.M. in 1 : 1 ratio at puddling, one weeding two weeks after transplanting, 200 lb./ac. of manure mixture applied one month after transplanting by deep layering method and one weeding and one mulching a month before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 60.75'×31.50'. (iii) 6. (iv) (a) 60.75'×15.75'. (b) 60'×15'. (v) One row kept on all sides. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 3055 lb./ac. (ii) 209.6 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2
Av. yield	2981	3128

S.E./mean = 84.5 lb./ac.

Crop :- Paddy (Rabi).

Ref :- As. 55(25).

Site :- Rice Expt. Stn., Karimganj.

Type :- 'CM'.

Object :—To study Japanese vs. local method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) 7.7.1955/20.8.1955. (iv) (a) 8 ploughings followed by laddering. (b) Transplanted. (c) As per treatments. (d) N.A. (e) 4. (v) N.A. (vi) *Swarnasail*; S.C. 412-56 (medium). (vii) Unirrigated. (viii) As per treatments. (ix) 86.88%. (x) 12, 13.12.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(14) on page 43.

4. GENERAL :

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

5. RESULTS :

(i) 2092 lb./ac. (ii) 87.1 lb./ac. (iii) Treatment difference is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2
Av. yield	1962	2222

S.E./mean = 35.6 lb./ac.

Crop :- Paddy (*Kharif*).
Site :- Rice Expt. Stn., Karimganj.

Ref :- As. 55(26).
Type :- 'CM'.

Object :—To study Japanese vs. local method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 100 md./ac. of cowdung. (ii) (a) Clay loam. (b) N.A. (iii) 25.5.1955/21 to 23.6.1955. (iv) (a) 8 ploughings with country plough followed by laddering. (b) Transplanting. (c) As per treatments. (d) 6'×6". (e) 4. (v) 100 md./ac. of cowdung applied before ploughing. (vi) *Kasalath* As-2 (medium). (vii) Unirrigated. (viii) Hoeing and weeding twice. (ix) 144.57%. (x) 14.9.1955.

2. TREATMENTS :

- Local method : 6 md./ac. of seed in seed beds.
- Japanese method : 3 md./ac. of seed in seed beds, 200 lb./ac. of Super+200 lb./ac. of A/S applied in two doses first at puddling and second one month after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 60.5'×31.0'. (iii) 6. (iv) (a) 60.5'×15.5'. (b) 60'×15'. (v) One row kept on all sides. (vi) Yes.

4. GENERAL :

(i) Crop under treatment 2 lodged. (ii) Nil. (iii) General growth, tiller count and grain yield. (iv) (a) 1955—1957. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1939 lb./ac. (ii) 135.5 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2
Av. yield	1978	1901

S.E./mean = 55.3 lb./ac.

Crop :- Paddy (*Kharif*).
Site :- Rice Expt. Stn., Karimganj.

Ref :- As. 56(32).
Type :- 'CM'.

Object :—To study Japanese vs. local method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam (b) N.A. (iii) 22.5.1956/15 to 17.6.1956. (iv) (a) Ploughing with country plough followed by laddering. (b) Transplanting. (c) As per treatments. (d) 6'×6". (e) 4. (v) 100 md./ac. of cowdung applied before ploughing. (vi) *Kasalath* As-2 (medium). (vii) Unirrigated. (viii) Hoeing and weeding twice. (ix) 129.96%. (x) 12.9.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(26) on page 44.

4. GENERAL :

(i) Crop under treatment 2 lodged. (ii) N.A. (iii) General growth, tiller count and grain yield. (iv) (a) 1955—1957. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1968 lb./ac. (ii) 83.4 lb./ac. (iii) Treatment difference is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2
Av. yield	1821	2115

S.E./mean = 34.1 lb./ac.

Crop :- Paddy (Kharif).

Ref :- As. 57(28).

Site :- Rice Expt. Stn., Karimganj.

Type :- 'CM'.

Object :—To study Japanese vs. local method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) N.A. (iv) (a) 8 ploughings with country plough followed by laddering. (b) Transplanting. (c) As per treatment. (d) 6"×6". (e) 4. (v) 100 md./ac. of cowdung applied before ploughing. (vi) *Kasalath* As-2 (medium). (vii) Unirrigated. (viii) Hoeing and weeding twice. (ix) and (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(26) on page 44.

4. GENERAL :

(i) Crop under treatment 5 lodged. (ii) Nil. (iii) General growth, tiller count and grain yield. (iv) (a) 1955—1957. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1636 lb./ac. (ii) 197.5 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2
Av. yield	1620	1652

S.E./mean = 80.6 lb./ac.

Crop :- Paddy (Sali).

Ref :- As. 54(1).

Site :- Rice Expt. Stn., Titabar.

Type :- 'CM'.

Object :—To compare Japanese and local methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Cowdung at 100 md./ac. (ii) (a) Clay loam. (b) N.A. (iii) 29.6.1954/7.8.1954. (iv) (a) One ploughing and laddering with the help of bullocks. (b) Line method. (c) 2.5 md./ac. for Japanese and 6 md./ac. for local method. (d) 10"×10" for Japanese method and 9"×9" for local method. (e) 1 for Japanese and 4 for local method. (v) Cowdung at 200 md./ac. before puddling. (vi) *Laudumra*. (vii) Unirrigated. (viii) Two weedings. (ix) N.A. (x) 24.12.1954.

2. TREATMENTS :

1. Japanese method : Cowdung at 100 md./acre, A/S at 200 lb./ac. B.M. at 200 lb./ac. after final preparation of land.

2. Local method.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 3. (iv) (a) 16'5×9'. (b) 15'×7.5'. (v) 9"×9". (vi) Yes.

4. GENERAL :

(i) Fair. Slight lodging in treatment (1). (ii) Nil. (iii) Grain yield. (iv) (a) 1953—1955. (b) Yes. (c) N.A. (v) (a) Karimganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4993 lb./ac. (ii) 215.3 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2
Av. yield	5308	4679

S.E./mean = 124.3 lb./ac.

Crop :- Paddy (*Sali*).

Ref :- As. 54(3).

Site :- Rice Expt. Stn., Titabar.

Type :- 'CM'.

Object :—To compare Japanese and local methods of Paddy cultivation.

1. BASAL CONDITIONS and 2. TREATMENTS :

Same as in expt. no. 54(1) on page 45.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a) 31'5×16'5. (b) 30'×15'. (v) 9"×9". (vi) Yes.

4. GENERAL :

Same as in expt. no. 54(1) on page 45.

5. RESULTS :

(i) 3831 lb./ac. (ii) 261.2 lb./ac. (iii) Treatment difference is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2
Av. yield	4403	3259

S.E./mean = 106.7 lb./ac.

Crop :- Paddy (*Kharif*).

Ref :- As. 54(19).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'D'.

Object :—To study the effect of weedicide on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) 150 md./ac. of cowdung. (ii) (a) Sandy loam. (b) N.A. (iii) 5.4.1954/N.A. (iv) (a) 5 ploughings, 2 ladderings and hoeing. (b) Broadcasting. (c) 100 lb./ac. (d) and (e) —. (v) Nil. (vi) *Rangadoria* (medium). (vii) Unirrigated. (viii) As per treatments. (ix) 30.42". (x) 6.7.1954.

2. TREATMENTS :

T₁ = Control.

T₂ = Spraying Dicotin—2 gallons in 100 gallons of water.

T₃ = T₂ + extra dose of 3 lbs. of Dicotin in 40 gallons of water.

Hand spraying 3 times at intervals of 15 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 54'×23'. (iii) 4. (iv) (a) 23'×18'. (b) 20'×15'. (v) 1.5'×1.5'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1953—1955. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Botanical section.

5. RESULTS :

(i) 1774 lb./ac. (ii) 605.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	1648	2022	1652

S.E./mean = 302.7 lb./ac.

Crop :- Paddy (Kharif).

Ref :- As. 55(33).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'D'.

Object :—To study the effect of weedicide on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) 150 md./ac. of cowdung. (ii) (a) Sandy loam. (b) N.A. (iii) 12.4.1955/N.A. (iv) (a) 5 ploughings, 2 ladderings and hoeing. (b) Broadcasting. (c) 100 lb./ac. (d) and (e) —. (v) Nil. (vi) *Rangadoria* (medium). (vii) Unirrigated. (viii) As per treatments. (ix) 31.29". (x) 13.7.1955.

2. TREATMENTS :

Same as in expt. no. 54(19) on page 46.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 54'×23'. (iii) 4. (iv) (a) 23'×18'. (b) 20'×15'. (v) and (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1953—1955. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Expt. was conducted by Botanical section.

5. RESULTS :

(i) 1771 lb./ac. (ii) 221.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	1326	2081	1907

S.E./mean = 110.5 lb./ac.

Crop :- Paddy (Kharif).

Ref :- As. 58(53).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'D'.

Object :—To find out the best time and method of application of weedicides to Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 21.3.1958. (iv) (a) Ploughing and ladderings. (b) Broadcasting. (c) 30 srs/ac. (d) and (e) —. (v) Cowdung at 100 mds/ac. (vi) *Rangadoria* (vii) Unirrigated. (viii) As per treatments. (ix) N.A. (x) 30.6.1958 and 1.7.1958.

2. TREATMENTS :

9 methods of weeding and application of weedicide : M₀=no manure, M₁=Local method, M₂=Pre-emergence application of weedicide once, M₃=Post-emergence application of weedicide once, M₄=Post-emergence application of weedicide twice, M₅=M₂+M₃, M₆=M₂+cultural method of weeding, M₇=M₃+cultural method of weeding, M₈=M₅+cultural method of weeding.

Fernoxone at 8 ozs in 60 gallons of water/ac. was used as weedicide for spraying.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) 153'×14'. (iii) 4. (iv) (a) 14'×17'. (b) 12'×15'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Mycological section.

5. RESULTS :

(i) 1193 lb./ac. (ii) 143 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈
Av. yield	666	1210	1089	1016	1150	1065	1271	1331	1936

S.E./mean = 71 lb./ac.

Crop :- Paddy (*Kharif*).

Ref :- As. 59(51).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'D'.

Object :—To find out the best time and method of application of weedicide to Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 30.3.1959. (iv) (a) Ploughing and laddering. (b) Broadcasting. (c) 30 srs/ac. (d) and (e) —. (v) Cowdung at 100 mds/ac. (vi) *Rangadoria Ahu*. (vii) Unirrigated. (viii) As per treatments. (ix) N.A. (x) 1.7.1959 and 2.7.1959.

2. TREATMENTS :

Same as in expt, no. 58(53) on page 47 with one extra treatment as follows :
T=Cultural method of weeding (with implements)+a hand weeding.

3. DESIGN

(i) R.B.D. (ii) (a) 10. (b) 138'×17'. (iii) 4. (iv) (a) 14'×17'. (b) 12'×15'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Mycological section.

5. RESULTS :

(i) 1183 lb./ac. (ii) 482 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	T
Av. yield	756	1150	998	1029	1271	1240	1301	1422	1603	1059

S.E./mean = 241 lb./ac.

Crop :- Paddy (*Kharif*).

Ref :- As. 59(51a).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'D'.

Object :—To find out a suitable pesticide for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 21.3.1959. (iv) (a) Ploughing and laddering. (b) Broadcasting. (c) 1 md./ac. (d) and (e)—. (v) Nil. (vi) *Rangadoria*. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 29.6.1959.

2. TREATMENTS :

1. Folidol at 7 oz. in 104 gallons/ac. of water.
2. Endrex at 7 oz. in 104 gallons/ac. of water.
3. Ekatox at 7 oz. in 104 gallons/ac. of water.
4. Hexidol at 1 lb. in 104 gallons/ac. of water.
5. Guesarol 550 at 1 lb. in 104 gallons/ac. of water.
6. Control.

3. DESIGN :

- (i) R.B.D. (ii) (a) 6. (b) 138'×12'. (iii) 5. (iv) (a) 12'×23'. (b) 11'×22'. (v) 0.5' around. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Paddy stem-borer, rice-bug, rice case-worm and rice grass-hopper were noticed. Control measures as per treatments. (iii) 3 sq. ft. area was selected at random from each plot and percentage of plants affected by different pests was observed. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Entomological section.

5. RESULTS :

(i) 10.34 percent. (ii) 0.71 percent. (iii) Treatment differences are highly significant. (iv) Percentage of affected plants.

Treatment	1	2	3	4	5	6
Percentage	8.58	9.73	9.75	10.21	10.70	13.06

S.E./mean = 0.32 percent

Crop :- Paddy.

Site :- Rice Expt. Stn., Karimganj.

Ref :- As. 58(22).

Type :- 'D'.

Object :—To study the effect of soaking seed in solution of sodium bicarbonate on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 100 md./ac. of cowdung. (ii) (a) Clay loam. (b) N.A. (iii) 22.7.1958/1.9.1958 (iv) (a) 8 ploughings and laddering. (b) Transplanting. (c) 2½ mds/ac. (d) 9"×9". (e) 2. (v) 200 lb./ac. of mixed fertilizer and 100 md./ac. of cowdung in seed bed. 40 lb./ac. of N as A/S, 40 lb./ac. of P₂O₅ as Super and 100 md./ac. of cowdung applied during preparation of field. (vi) S. 22 (*Sail*, medium). (vii) Unirrigated. (viii) 2 weedings by Japanese weeder. (ix) 79.1". (x) 28.11.1958.

2. TREATMENTS :

1. Soaking seeds in sodium bicarbonate solution of 40% strength for two days before sowing.
2. Control (no soaking).

3. DESIGN :

- (i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 5. (iv) (a) 15.75'×10.50'. (b) 15'×9.75'. (v) 9"×9". (vi) Yes.

4. GENERAL :

(i) Crop lodged badly due to heavy wind on 12.11.1958. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960 (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2357 lb./ac. (ii) 78 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2
Av. yield	2383	2331

S.E./mean = 35 lb./ac.

Crop :- Paddy.**Ref :- As. 59(19).****Site :- Rice Expt. Stn., Karimganj.****Type :- 'D'.**

Object :—To study the effect of soaking seed in solution of sodium bicarbonate on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 100 lb./ac. of cowdung : 40 lb./ac. of N as A/S and 40 lb./ac. of P₂O₅ as Super
(ii) (a) Clay loam. (b) N.A. (iii) 26.6.1959/3.8.1959. (iv) (a) 8 ploughings followed by weeding and
laddering. (b) Transplanting. (c) 2½ mds/ac. in seed bed. (d) 9"×9". (e) 2. (v) 200 lb./ac. of mixed
fertilizer and 100 md./ac. of cowdung in seed bed. 40 lb./ac. of N as A/S, 40 lb./ac. of P₂O₅ as Super
and 100 md./ac. of cowdung applied during the preparation of field. (vi) S—22 (*Sail*, medium). (vii) Un-
irrigated. (viii) 2 weedings by Japanese weeder. (ix) 68.31". (x) 9.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(22) on page 49.

4. GENERAL :

(i) Crop lodged. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) N.A. (v) (a) and (b) N.A.
(vi) and (vii) Nil.

5. RESULTS :

(i) 3011 lb./ac. (ii) 84.89 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2
Av. yield	3008	3014

S.E./mean = 38.12 lb./ac.

Crop :- Paddy (*Sali*).**Ref :- As. 57(51).****Site :- Govt. Rice expt. Stn., Titabar.****Type :- 'D'.**

Object :—To study the best time of application of weedicide to Paddy.

1. BASAL CONDITIONS

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 28.7.1957. (iv) (a) Ploughing
and harrowing. (b) Transplanted. (c) N.A. (d) 10"×10". (e) 6. (v) 150 md./ac. of cowdung at
(vi) *Prosad bhag*. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 14.12.1957.

2. TREATMENTS :

- Control (no weeding).
- Local method of weeding.
- Post-emergence application of weedicide once.
- Post-emergence application of weedicide twice.
- Post-emergence application of weedicide once + cultural method of weeding.
Feroxone at 8 oz. in 60 gallons of water/ac. was sprayed.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 36'×72'. (iii) 6. (iv) (a) 36'×15'. (b) 33'×12'. (v) 1.5'×1.5'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) N.A.
(vi) Nil. (vii) Expt. was conducted by Mycological section.

5. RESULTS :

(i) 2313 lb./ac. (ii) 163 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	2134	2354	2199	2386	2492

S.E./mean = 66 lb./ac.

Crop :- Paddy (Sali).**Ref :- As. 58(55).****Site :- Govt. Paddy Farm, Titabar.****Type :- 'D'.**

Object :—To study the best time of application of weedicide to Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 31.7.1958. (iv) (a) Ploughing and harrowing. (b) Transplanted. (c) N.A. (d) 10"×10". (e) 6. (v) Cowdung at 150 md./ac. (vi) (v) *Prosad bhog*. (vii) Unirrigated. (viii) Nil. (ix) 17.63". (x) 29.11.1958.

2. TREATMENTS and 3. DESIGN :

Same as in exp. no. 57(51) on page 50.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Mycological section.

5. RESULTS :

(i) 2646 lb./ac. (ii) 192 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	2076	2860	2557	2603	3135

S.E./mean = 78 lb./ac.

Crop :- Paddy (Sali).**Ref :- As. 59(54).****Site :- Govt. Paddy Farm, Titabar.****Type :- 'D'.**

Object :—To study the best time of application of weedicide to Paddy.

1. BASAL CONDITIONS

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 2.9.1959. (iv) (a) Ploughing and harrowing. (b) Transplanted. (c) N.A. (d) 10"×10". (e) 6. (v) Cowdung at 150 md./ac. (vi) *Prosad bhog*. (vii) Unirrigated. (viii) Nil. (ix) 30.99". (x) 29.12.1959.

2. TREATMENTS :

1. Control (no weeding).
 2. Local method of weeding.
 3. Post-emergence application of weedicide once.
 4. Post-emergence application of weedicide twice.
 5. Post-emergence application of weedicide once + cultural method of weeding once.
 6. Cultural method of weeding once.
- Fernoxone 8 oz. in 60 gallons/ac. of water sprayed.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 15'×213'. (iii) 6. (iv) (a) 36'×15'. (b) 33'×12'. (v) 1.5'×1.5'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Mycological section.

5. RESULTS :

(i) 2705 lb./ac. (ii) 129 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	2067	2869	2557	2621	3148	2965

S.E./mean = 52 lb./ac.

Crop :- Paddy (Sali).**Ref :- As. 57(49).****Site :- Govt. Paddy Farm, Titabar.****Type :- 'D'.**

Object :—To find out the suitable weedicide and its effective dose to control Paddy weeds.

1. BASAL CONDITIONS :(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 27.7.1957. (iv) (a) Ploughing and laddering. (b) Transplanting. (c) N.A. (d) 10' × 10'. (e) 6. (v) N.A. (vi) *Prosad bhog*. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 12 and 13.12.1957.**2. TREATMENTS :****Main-plot treatments :**4 weedicides : S₁=Feroxone, S₂=Dicotox, S₃=Kathon and S₄=Agroxone.**Sub-plot treatments :**5 doses of weedicide : L₀=0, L₁=8, L₂=12, L₃=16 and L₄=20 oz. in 60 gallons /ac. of water.**3. DESIGN :**

(i) Split-plot. (ii) (a) 4 main-plots/block ; 5 sub-plots/main-plot. (b) 70' × 140'. (iii) 5. (iv) (a) 35' × 14'. (b) 33' × 12'. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) Crop lodged just after milk stage. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Mycological section.

5. RESULTS :

(i) 2471 lb./ac. (ii) (a) 149 lb./ac. (b) 175 lb./ac. (iii) Main effects of S and L are highly significant. Interaction is not significant. (iv) Av. yield of grain in lb./ac.

	L ₀	L ₁	L ₂	L ₃	L ₄	Mean
S ₁	2310	2668	2585	2640	2613	2565
S ₂	2239	2365	2503	2503	2393	2400
S ₃	2305	2393	2393	2448	2448	2397
S ₄	2393	2503	2585	2613	2519	2522
Mean	2311	2482	2516	2551	2493	2471

S.E. of difference of two

1. S marginal means = 42 lb./ac.
2. L marginal means = 55 lb./ac.
3. L means at the same level of S = 111 lb./ac.
4. S means at the same level of L = 108 lb./ac.

Crop :- Paddy (Sali).**Ref :- As. 58(50).****Site :- Govt. Paddy Farm, Titabar.****Type :- 'D'.**

Object :—To find out the suitable weedicide and its effective dose to control Paddy weeds.

1. BASAL CONDITIONS :(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 14.7.1958. (iv) (a) Ploughing and laddering. (b) Transplanting. (c) N.A. (d) 10' × 10'. (e) 6. (v) N.A. (vi) *Prosad bhog*. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 28 and 29.7.1958.**2. TREATMENTS and 3. DESIGN :**

Same as in expt. no. 57 (49) above.

4. GENERAL :

(i) Crop lodged just after milk stage. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Mycological section.

5. RESULTS :

(i) 2481 lb./ac. (ii) (a) 209 lb./ac. (b) 171 lb./ac. (iii) Main effects of S and L are highly significant and interaction S×L is significant. (iv) Av. yield of grain in lb./ac.

	L ₀	L ₁	L ₂	L ₃	L ₄	Mean
S ₁	2024	2706	2816	3124	3058	2746
S ₂	1892	2552	2310	2596	2530	2376
S ₃	1980	2420	2244	2264	2354	2292
S ₄	1980	2514	2574	2992	2486	2509
Mean	1969	2548	2486	2794	2607	2481

S.E. difference of two

1. S marginal means = 59 lb./ac.
2. L marginal means = 54 lb./ac.
3. L means at the same level of S = 180 lb./ac.
4. S means at the same level of L = 113 lb./ac.

Crop :- Paddy (*Sali*).

Ref :- As. 59(53).

Site :- Govt. Paddy Farm, Titabar.

Type :- 'D'.

Object :—To study the effective doses of various weedicides to control Paddy weeds.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 30.8.1959. (iv) (a) Ploughing and harrowing. (b) Transplanted. (c) N.A. (d) 10°×10°. (e) 6. (v) Cowdung at 150 md/ac. (vi) *Prosad bhog*. (vii) Unirrigated. (viii) Nil. (ix) 30.99°. (x) 26.12.1959.

2. TREATMENTS :

All combinations of (1) and (2) + 2 extra treatments

- (1) 4 weedicides : S₁=Fernoxone, S₂=Dicotox, S₃=Kathon and S₄=Agroxone.
 - (2) 3 levels of weedicide : L₁=8, L₂=16 and L₃=24 ozs in 60 gallons/ac. of water.
- 2 extra treatments : T₁=Control (no weeding) and T₂=Local method of weeding.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) 15'×498'. (iii) 5. (iv) (a) 36'×15'. (b) 33'×12'. (v) 1.5'×1.5'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Mycological section.

5. RESULTS :

(i) 2696 lb./ac. (ii) 138 lb./ac. (iii) All effects and interactions are highly significant. (iv) Av. yield of grain in lb./ac.

T₁ = 2073 lb./ac and T₂ = 2898 lb./ac.

	S ₁	S ₂	S ₃	S ₄	Mean
L ₁	2739	2585	2409	2530	2566
L ₂	2976	2618	2481	2986	2765
L ₃	3146	2673	2569	3058	2861
Mean	2954	2625	2486	2858	2731

S.E. of S marginal mean	=	36 lb./ac.
S.E. of L marginal mean	=	31 lb./ac.
S.E. of body of table	=	62 lb./ac.

Crop :- Paddy (*Sali*).

Ref :- As. 59(48).

Site :- Rice Expt. Stn., Titabar.

Type :- 'D'.

Object :—To find out the effect of pesticides on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 22, 23.8.1959. (iv) (a) Ploughing and laddering. (b) Transplanting. (c) N.A. (d) 12"×10". (e) 4. (v) Nil. (vi) *Laudumra*. (vii) Unirrigated. (viii) Nil. (ix) 30.99". (x) 26 to 30.12.1959.

2. TREATMENTS :

1. Folidol at 30 c.c. in 30 gallons/ac. of water.
2. Endrex at 30 c.c. in 30 gallons/ac. of water.
3. Ekatox at 30 c.c. in 30 gallons/ac. of water.
4. Guesarol at 1 lb. in 30 gallons/ac. of water.
5. Hexidol at 1 lb. in 30 gallons/ac. of water.
6. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 134'×69'. (iii) 5. (iv) (a) 67'×23'. (b) 66'×22'. (v) 2'×0.5'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of stem-borer, case-worm, grasshopper, leafhopper and bugs. Control measures as per treatments. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Entomological section.

5. RESULTS :

(i) 2557 lb./ac. (ii) 62 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	2922	2688	2772	2334	2532	2094

S.E./mean = 28 lb./ac.

Crop :- Paddy (*Sali*).

Ref :- As. 58(51).

Site :- Rice Expt. Stn., Titabar.

Type :- 'D'.

Object :—To find out the effect of the pesticides on Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Clay soil. (b) N.A. (iii) 17 and 18.8.1958. (iv) (a) Ploughing and laddering. (b) Transplanting. (c) N.A. (d) 12"×10". (e) 4. (v) Nil. (vi) *Laudumra*. (vii) Unirrigated. (viii) Nil. (ix) 17.63". (x) 23, 24.12.1958.

2. TREATMENTS :

1. Guesarol at 1 lb. in 300 lb./ac. of water.
2. Gammexane at 1 lb. in 300 lb./ac. of water.
3. Hexidol at 1 lb. in 300 lb./ac. of water.
4. Folidol at 30 c.c. in 300 lb./ac. of water.
5. Endrex at 30 c.c. in 300 lb./ac. of water.
6. Control.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 134'×69'. (iii) 5. (iv) (a) 67'×23'. (b) 65'×22'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Stem-borer, case-worm, grass-hopper, leaf-hopper and rice bug are generally noticed. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. was conducted by Entomological section.

5. RESULTS :

(i) 2359 lb./ac. (ii) 77 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	2256	2148	2610	2826	2388	1926

S.E./mean = 34 lb./ac.

Crop :- Paddy (*Ahu*).

Centre :- Jorhat (c.f.).

Ref :- As. 58(49).

Type :- D'.

Object :- To find out the most economic and effective way of controlling weeds associated with *Ahu* Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) Cowdung at 200 mds/ac. (iv) *Rangadoria*. (v) (a) Ploughing and laddering. (b) Broadcasting. (c) N.A. (d) and (e) —. (vi) 29.3.1958. (vii) Un-irrigated. (viii) and (ix) N.A. (x) 9 to 11.7.1958.

2. TREATMENTS :

Same as in expt. no. 57(49) on page 52.

3. DESIGN :

(i) Split-plot. 4 main-plots/block ; 5 sub-plots/main-plot ; 5 replications. (ii) 5 blocks were selected from the agreeable cultivators' in the same locality. (iii) (a) 13'×11'. (b) 11'×9'. (iv) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1261 lb./ac. (ii) (a) 242 lb./ac. (b) 209 lb./ac. (iii) Main effects of S and L are highly significant. Interaction S×L is significant. (iv) Av. yield of grain in lb./ac.

	L ₀	L ₁	L ₂	L ₃	L ₄	Mean
S ₀	880	1408	1265	1760	1980	1459
S ₁	770	990	935	1100	1375	1034
S ₂	660	1265	1090	1650	1650	1263
S ₃	883	1100	1375	1430	1650	1287
Mean	798	1191	1166	1485	1664	1261

S.E. of difference of two.

1. S marginal means = 68 lb./ac.

2. L marginal means = 266 lb./ac.

3. L means at the same level of S = 132 lb./ac.

4. S means at the same level of L = 137 lb./ac.

Crop :- Paddy (Ahu).**Ref :- As. 59(53a).****Centre :- Jorhat (c.f.).****Type :- 'D'.**

Object :—To find out the most economic and effective way of controlling weeds associated with Ahu Paddy.

1. BASAL CONDITIONS :

(i) (a) and (b) Potato. (c) Cowdung at 200 mds/ac. (ii) Sandy loam. (iii) Cowdung at 200 mds/ac. (iv) *Rangadoria*. (v) (a) Ploughing and laddering. (b) Broadcasting. (c) N.A. (d) and (e) —. (vi) 25.3.1959. (vii) Unirrigated. (viii) and (ix) N.A. (x) 5 and 6.6.1959.

2. TREATMENTS :

Same as in expt. no. 59(53) on page 53.

3. DESIGN :

(i) N.A. (ii) 5 blocks were selected from the same village. (iii) (a) 13'×11'. (b) 11'×9'. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) 1959—contd. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1411 lb./ac. (ii) 187 lb./ac. (iii) Effects of S, L, T₁ vs T₂ and 'T vs others' are highly significant. Interaction S×L is not significant. (iv) Av. yield of grain in lb./ac.

$$T_1 = 704 \text{ lb./ac. and } T_2 = 1430 \text{ lb./ac.}$$

	S ₁	S ₂	S ₃	S ₄	Mean
L ₁	1496	990	1342	1078	1226
L ₂	1738	1165	1672	1474	1512
L ₃	1804	1386	1782	1694	1666
Mean	1679	1181	1599	1415	1468

S.E. of S marginal mean = 48 lb./ac.

S.E. of L marginal mean = 42 lb./ac.

S.E. of body of table = 84 lb./ac.

Crop :- Maize (Kharif).**Ref :- As. 59(34).****Site :- Govt. Agri. Farm, Jorhat.****Type :- 'M'.**

Object :—To study the effect of different fertilizers on Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Cabbage. (c) A/S at 50, 100 and 150 lb./ac. Cowdung at 150 md./ac. (ii) (a) Old alluvial acidic soil. (b) N.A. (iii) 6.4.1959. (iv) (a) 5 ploughings followed by laddering. (b) Line sowing. (c) N.A. (d) 18'×9'. (e) 1. (v) 20 lb./ac. of N as cowdung broadcast on 4.4.1959. (vi) Local. (vii) Unirrigated. (viii) Weeding. (ix) 4.16'. (x) 31.8.1959.

2. TREATMENTS :4 sources of N at 40 lb./ac. : S₀=No manure (control.) ; S₁=A/S, S₂=A/C and S₃=Urea.Super at 40 lb./ac. of P₂O₅ applied to treatments : S₁, S₂ and S₃.**3. DESIGN :**

(i) R.B.D. (ii) (a) 4. (b) 48'×25'. (iii) 3. (iv) (a) and (b) 25'×12'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—contd. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 675 lb./ac. (ii) 262 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃
Av. yield	436	781	714	769

S.E./mean = 151 lb./ac.

Crop :- Maize.

Ref :- As. 56(16).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To find out the effect of N and P on Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Potato. (c) F.Y.M. at 250 mds/ac. and mustard oilcake at 10 mds/ac. (ii) Sandy loam. (b) N.A. (iii) 11.5.1956. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing. (b) Dibbling. (c) N.A. (d) 3'×3'. (e) 3 seeds/hill. (v) 100 md./ac. of F.Y.M. applied in hills at the time of sowing. (vi) N.A. (vii) Unirrigated. (viii) Two intercultures. (ix) 13.1.12". (x) 13.11.1956.

2. TREATMENTS :

1. Control.
 2. A/S at 375 lb./ac.
 3. A/S at 375 lb./ac.+Super at 225 lb./ac.
- Fertilizers applied at sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 16.5'×102'. (iii) 4. (iv) (a) and (b) 33'×16½'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory; no lodging. (ii) Nil. (iii) Yield of maize. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 346.3 lb./ac. (ii) 121.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	282.9	411.5	344.6

S.E./mean = 60.54 lb./ac.

Crop :- Maize.

Ref :- As. 57(4).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :— To find out the effect of N and P on Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millets—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 18.5.1957. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing. (b) Dibbling. (c) N.A. (d) 3'×3'. (e) 3. (v) 200 md./ac. of F.Y.M. applied in hills at sowing. (vi) South African "Pearl" (late). (vii) Unirrigated. (viii) Two intercultures. (ix) 57-57". (x) 7.11.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56 (16) on page 57.

5. RESULTS :

(i) 175.7 lb./ac. (ii) 405.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	46.3	82.3	398.6

S.E./mean = 203.0 lb./ac.

Crop :- Maize.

Ref :- As. 59(8).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To find out the effect of N and P on Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+ Soyabean - Millet—Fallow. (b) Potato. (c) F.Y.M. at 200 mds/ac., oilcake at 5 mds/ac. and mixed fertilizer at 200 lb./ac. (ii) (a) Sandy loam. (b) N.A. (iii) 19.6.1959. (iv) (a) Ploughing and pulverising. (b) Planting in furrows. (c) 15 sr./ac. (d) 2'×1'. (e) 2. (v) F.Y.M. at 200 mds/ac. applied at sowing. (vi) Local white—round (medium). (vii) Unirrigated. (viii) Earthing up once (ix) 35-16" (x) 12.11.1959.

2. TREATMENTS :

Same as in expt. no. 56(16) on page 57.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 20'×16'. (v) Nil. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 323.0 lb./ac. (ii) 207.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	153.0	442.0	374.0

S.E./mean = 103.7 lb./ac.

Crop :- Maize.

Ref :- As. 55(16).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To find out the effect of different nitrogenous fertilizers on Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+ Soyabean—Millet—Fallow. (b) Potato. (c) F.Y.M. at 250 mds/ac. and mustard oilcake at 10 md./ac. (ii) (a) Sandy loam. (b) N.A. (iii) 11, 12.5.1955. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing. (b) Dibbling. (c) N.A. (d) 3'×3'. (e) 3. (v) 100 md./ac. of F.Y.M. applied at sowing. (vi) Local *Khasi* (medium). (vii) Unirrigated. (viii) 2 intercultures. (ix) 95.87". (x) 4.11.1955.

2. TREATMENTS :

1. Control.

2. A/S/N at 300 lb./ac.

3. Urea at 175 lb./ac.

Half dose applied at sowing and half at earthing up.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56(16) on page 57.

5. RESULTS :

(i) 857.3 lb./ac. (ii) 342.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	833.3	1069.9	668.7

S.E./mean = 171.1 lb./ac.

Crop :- Maize.

Ref :- As. 56(19).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To find out the effect of different nitrogenous fertilizers on Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Potato. (c) F.Y.M. at 250 mds/ac. and mustard oilcake at 10 md./ac. (ii) (a) Sandy loam. (b) N.A. (iii) 11.5.1956. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing. (b) Dibbling. (c) N.A. (d) 3'×3'. (e) 3. (v) Nil. (vi) Local *Khasi* (medium). (vii) Unirrigated. (viii) Two intercultures. (ix) 131.12". (x) 13.11.1956.

2. TREATMENTS :

1. A/S at 375 lb./ac.
 2. A/S/N at 300 lb./ac.
 3. Urea at 175 lb./ac.
- Fertilizers were applied at the time of planting.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 55(16) on page 58.

5. RESULTS :

(i) 112.3 lb./ac. (ii) 67.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	90.0	90.0	156.9

S.E./mean = 33.68 lb./ac.

Crop :- Maize.

Ref :- As. 56(18).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To find out the effect of N and P on Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Potato. (c) F.Y.M. at 250 mds/ac. and mustard oilcake at 10 mds/ac. (ii) (a) Sandy loam. (b) N.A. (iii) 11.5.1956. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing. (b) Dibbling. (c) N.A. (d) 3'×3'. (e) 3. (v) 100 md./ac. of F.Y.M. applied at sowing. (vi) Local *Khasi* (medium). (vii) Unirrigated. (viii) Two intercultures. (ix) 131.12". (x) 13.11.1956.

2. TREATMENTS :

1. Control.
 2. Urea at 175 lb./ac.
 3. Urea at 175 lb./ac.+Super at 225 lb./ac.
- Fertilizers were applied at sowing.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56(16) on page 57.

5. RESULTS :

- (i) 190.3 lb./ac. (ii) 82.37 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	174.9	231.5	164.6

S.E./mean = 41.18 lb./ac.

Crop :- Maize.

Site :- Expt. Res. Stn., Upper Shillong.

Ref :- As. 57(5).

Type :- 'M'.

Object :—To find out the effect of N and P on Maize.

1. BASAL CONDITIONS :

- (i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 18.5.1957. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing etc. (b) Hill system. (c) N.A. (d) 3'×3'. (e) 3 seeds/hill. (v) 200 md./ac. of F.Y.M. applied at sowing. (vi) South African "Pearl" (late). (vii) Unirrigated. (viii) Two intercultures. (ix) 57.57". (x) 7.11.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(18) on page 59.

5. RESULTS :

- (i) 197.2 lb./ac. (ii) 84.72 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	133.7	108.0	349.8

S.E./mean = 42.36 lb./ac.

Crop :- Maize.

Site :- Expt. Res. Stn., Upper Shillong.

Ref :- As. 59(9).

Type :- 'M'.

Object :—To study the effect of N and P on Maize.

1. BASAL CONDITIONS :

- (i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Potato. (c) F.Y.M. at 200 md./ac. and mixed fertilizer at 200 lb./ac. (ii) (a) Sandy loam. (b) N.A. (iii) 20.6.1959. (iv) (a) Ploughing and pulverising. (b) Planting in furrows. (c) 15 sr./ac. (d) 2'×1'. (e) 2. (v) F.Y.M. at 200 md./ac. applied at the time of sowing. (vi) Local white—round (medium). (vii) Unirrigated. (viii) Earthing up once. (ix) 35.46". (x) 12.11.1959.

2. TREATMENTS :

Same as in expt no. 56 (18) on page 59.

Fertilizers were applied at the time of earthing up.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59 (8) on page 58.

5. RESULTS :

- (i) 215.3 lb./ac. (ii) 89.18 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield in grain lb./ac.

Treatment	1	2	3
Av. yield	238	238	170

S.E./mean = 44.59 lb./ac.

Crop :- Maize.**Ref :- As. 55(15).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To find out the effect of different nitrogenous fertilizers on Maize.

1. BASAL CONDITIONS :

Same as in expt. no. 55 (16) on page 58.

2. TREATMENTS :

1. Control.
2. C/N at 500 lb./ac.
3. A/S/N at 300 lb./ac.

Half dose of fertilizers was applied at sowing and half dose at the first earthing up.

3. DESIGN and 4. GENERAL :

Same as in expt. 56(16) on page 57.

5. RESULTS :

(i) 836.7 lb./ac. (ii) 242.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	720	792	997

S.E./mean = 121.1 lb./ac.

Crop :- Maize.**Ref :- As. 54(9).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To compare the effect of C/N and A/S on Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+ Soyabean—Millet—Fallow. (b) Potato. (c) F.Y.M. at 200 md./ac. and mustard oilcake at 10 md./ac. (ii) (a) Sandy loam. (b) N.A. (iii) 28.4.1954. (iv) (a) Two ploughings with turnwrest plough followed by laddering and harrowing. (b) Dibbling. (c) N.A. (d) 3'×3'. (e) 3 seeds/hill. (v) Basal dressing of 200 md./ac. of F.Y.M. and 5 md./ac. of oilcake. (vi) South African 'Pearl' (late). (vii) Unirrigated. (viii) 2 intercultures. (ix) 103.34". (x) 19.11.1954.

2. TREATMENTS :

1. Control.
2. C/N at 125 lb./ac.
3. A/S at 100 lb./ac.

Fertilizers were applied at the time of 1st interculturing.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 2. (iv) (a) and (b) 33'×33'. (v) Nil. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1285 lb./ac. (ii) 371.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	844	1276	1738

S.E./mean = 262.4 lb./ac.

Crop :- Maize.**Ref :- As. 56(14).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To find out the effect of different nitrogenous fertilizers on Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Potato. (c) F.Y.M. at 250 mds/ac. and mustard oilcake at 10 mds/ac. (ii) (a) Sandy loam. (b) N.A. (iii) 11.5.1956/N.A. (iv) (a) Two ploughings with turnwrest plough followed by laddering and harrowing. (b) Dibbling. (c) N.A. (d) 3'×3'. (e) 3. (v) 100 md./ac. of F.Y.M. was applied at the time of sowing. (vi) Local *Khasi* (medium). (vii) Unirrigated. (viii) 2 intercultures. (ix) 131.1*. (x) 13.11.1956.

2. TREATMENTS :

1. Control.

2. C/N at 475 lb./ac.

3. A/S at 375 lb./ac.

Fertilizers were applied at the time of sowing.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56(16) on page 57.

5. RESULTS :

(i) 138.0 lb./ac. (ii) 87.14 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	118.3	169.7	126.0

S.E./mean = 43.57 lb./ac.

Crop :- Maize.**Ref :- As. 55(17).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To find out the effect of N and P on Maize.

1. BASAL CONDITIONS :

Same as in Expt. no. 55 (16) on page 58.

2. TREATMENTS :

1. Control.

2. A/S/N at 300 lb./ac.

3. A/S/N at 300 lb./ac. + 375 lb./ac. of Super.

Half dose of fertilizers was applied at sowing and the other half at first interculture.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56 (16) on page 57.

5. RESULTS :

(i) 1231 lb./ac. (ii) 280.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	946	1255	1492

S.E./mean = 140.2 lb./ac.

Crop :- Maize.**Ref :- As. 56 (15).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To study the effect of N and P on Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+ Soyabean—Millet—Fallow. (b) Potato. (c) F.Y.M. at 250 mds/ac. and mustard oilcake at 10 mds/ac. (ii) Sandy loam. (b) N.A. (iii) 11.5.1956/N.A. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing. (b) Dibbling. (c) N.A. (d) 3'×3'. (e) 3. (v) 100 md./ac. of F.Y.M. was given at sowing. (vi) Local *Khasi* (medium). (vii) Unirrigated, (viii) Two intercultures. (ix) 131.12". (x) 13.11.1956.

2. TREATMENTS :

1. Control.
 2. A/S/N at 300 lb./ac.
 3. A/S/N at 300 lb./ac. + Super at 225 lb./ac.
- Fertilizers were applied at sowing.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56 (16) on page 57.

5. RESULTS :

(i) 204.0 lb./ac. (ii) 106.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Ay. yield	118.3	257.2	236.6

S.E./mean = 53.09 lb./ac.

Crop :- Maize.

Ref :- As. 57(8).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To find out the effect of N and P on Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+ Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 18.5.1957/N.A. (iv) (a) Two ploughings with turn-wrest plough, followed by laddering, harrowing, etc. (b) Dibbling. (c) N.A. (d) 3'×3'. (e) 3. (v) 200 md./ac. of F.Y.M. applied at sowing. (vi) South African '*Pearl*' (late). (vii) Unirrigated. (viii) Two intercultures. (ix) 57.57". (x) 7.11.1957.

2. TREATMENTS :

Same as in expt. no. 56(15) on page 62.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56(16) on page 57.

5. RESULTS :

(i) 1029 lb./ac. (ii) 270.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	1152	741	1193

S.E./mean = 135.1 lb./ac.

Crop :- Maize.

Ref :- As. 56(17).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To find out the effect of mixed fertilizers on Maize.

1. BASAL CONDITIONS :

Same as in expt. no. 56(15) on page 62.

2. TREATMENTS:

1. Control.
2. Mixed fertilizer at 625 lb./ac.
3. Mixed fertilizer at 940 lb./ac.
4. Mixed fertilizer at 625 lb./ac. + Mur. Pot. at 200 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 135'×16.5'. (iii) 4. (iv) (a) and (b) 33'×16.5'. (v) Nil. (vi) Yes.

4. GENERAL :

Same as in expt. no. 57(8) on page 63.

5. RESULTS :

(i) 187.7 lb./ac. (ii) 103.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	133.7	198.0	187.7	231.5

S.E./mean = 51.9 lb./ac.

Crop :- Maize.

Ref :- As. 57(6).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'

Object :—To study the effect of mixed fertilizers combined with Mur. Pot. on Maize.

1. BASAL CONDITIONS :

Same as in expt. no 57(8) on page 63.

2. TREATMENTS :

1. Control.
 2. Mixed fertilizer at 625 lb./ac.
 3. Mixed fertilizer at 940 lb./ac.
 4. Mixed fertilizer at 625 lb./ac. + Mur. Pot. at 200 lb./ac.
- Fertilizers applied at the time of sowing.

3. DESIGN to 4. GENERAL :

Same as in expt. no. 56(17) on page 63.

5. RESULTS :

(i) 1728 lb./ac. (ii) 720.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	1811	2016	1811	1276

S.E./mean = 360.2 lb./ac.

Crop :- Maize.

Ref :- As. 59(10).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'

Object :—To study the effect of mixed fertilizer and Mur. Pot. on the yield of Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Potato. (c) F.Y.M. at 200 md./ac. and mixed fertilizer at 200 lb./ac. (ii) (a) Sandy loam. (b) N.A. (iii) 20.6.1959. (iv) (a) Ploughing and pulverising. (b) Furrow planting. (c) 15 srs/ac. (d) 2'×1' (e) 2. (v) F.Y.M. at 200 mds/ac. applied at time of sowing. (vi) Local, white round (medium). (vii) Unirrigated. (viii) Earthing up once and weeding. (ix) 35.46". (x) 12.11. 1959.

2. TREATMENTS:

1. Control.
 2. Mixed fertilizer at 625 lb./ac.
 3. Mixed fertilizer at 940 lb./ac.
 4. Mixed fertilizer at 625 lb./ac. + Mur. Pot. at 200 lb./ac.
- Fertilizers were applied at the time of earthing up.

3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 20' × 16'. (v) Nil. (vi) Yes.

4. GENERAL:

(i) Poor. (ii) No. (iii) Grain yield. (iv) (a) 1958—1959 (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 187 lb./ac. (ii) 68 lb./ac. (iii) Treatment differences are not significant (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	119	187	170	272

S.E./mean = 34.0 lb./ac.

Crop :- Maize.

Site :- Expt. Res. Stn., Upper Shillong.

Ref :- As. 57(9).

Type :- 'M'.

Object :—To find out the effect of different nitrogenous fertilizers on Maize.

1. BASAL CONDITIONS:

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 18.5.1957. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing. (b) Dibbling. (c) N.A. (d) 3' × 3'. (e) 3 seeds/hill. (v) 200 md./ac. of F.Y.M. applied at the time of sowing. (vi) South African *Pearl* (late). (vii) Unirrigated. (viii) Two intercultures. (ix) 55.52". (x) 7.11.1957.

2. TREATMENTS:

1. Control.
 2. C/N at 475 lb./ac.
 3. Nitrolime at 475 lb./ac.
 4. A/S at 375 lb./ac.
- Fertilizers were applied in bills planting.

3. DESIGN and 4. GENERAL:

Same as in expt. no. 56(17) on page 63.

5. RESULTS:

(i) 869.9 lb./ac. (ii) 353.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	928.3	1028.8	699.6	823.0

S.E./mean = 177.0 lb./ac.

Crop :- Maize.

Site :- Expt. Res. Stn., Upper Shillong.

Ref :- As. 57(7).

Type :- 'M'.

Object :—To find the effect of different nitrogenous fertilizers on Maize without B.D. of F.Y.M.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 18.5.1957. (iv) (a) Two ploughings with turn-wrest plough followed by laddering, harrowing etc. (b) Dibbling. (c) N.A. (d) 3'×3'. (e) 3 seeds/hill. (v) Nil. (vi) South African *Pearl*. (late). (vii) Unirrigated. (viii) Two intercultures. (ix) 57.57". (x) 7.11.1957.

2. TREATMENTS :

1. A/S at 600 lb./ac.
 2. A/S/N at 470 lb./ac.
 3. Urea at 275 lb./ac.
 4. Nitrolime at 750 lb./ac.
- Fertilizers were applied at the time of sowing.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56(17) on page 63.

5. RESULTS :

(i) 74.58 lb./ac. (ii) 88.59 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	41.2	33.4	174.9	48.9

S.E./mean = 44.29 lb./ac.

Crop :- Maize.

Site :- Expt. Res. Stn., Upper Shillong.

Ref :- As. 55(18).

Type :- 'M'.

Object :—To find out the effect of mixed fertilizers on the yield of Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Potato. (c) F.Y.M. at 250 mds/ac. and mustard oilcake at 10 mds/ac. (ii) (a) Sandy loam. (b) N.A. (iii) 11, 12.5.1955. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing, (b) Dibbling. (c) N.A. (d) 3'×3'. (e) 3 seeds/hill. (v) 100 md./ac. of F.Y.M. was applied at sowing. (vi) Local *Khasi* (medium). (vii) Unirrigated. (viii) Two intercultures. (ix) 95.87". (x) 4.11.1955.

2. TREATMENTS :

1. Control.
 2. Mixed fertilizer at 300 lb./ac.
 3. Mixed fertilizer at 450 lb./ac.
- Half dose of fertilizers applied at sowing and half at first earthing up.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56 (17) on page 63.

5. RESULTS :

(i) 132.4 lb./ac. (ii) 281.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	1152	1265	1553

S.E./mean = 140.5 lb./ac.

Crop :- Maize.

Site :- Expt. Res. Stn., Upper Shillong.

Ref :- As. 59(7).

Type :- 'M'.

Object :—To study the effect of A/S/N and Super on Maize.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Potato. (c) F.Y.M. at 200 mds/ac., oilcake at 5 mds/ac. and mixed fertilizer at 200 lb./ac. (ii) Sandy loam. (b) N.A. (iii) 19.6.1959. (iv) (a) Ploughing and pulverising. (b) Furrow planting. (c) 15 srs/ac. (d) 2'×1'. (e) 2 seeds/hole. (v) F.Y.M. at 200 mds/ac. applied at the time of sowing. (vi) Local, white round (medium). (vii) Unirrigated. (viii) Earthing up once and weeding. (ix) 35.17". (x) 12.11.1959.

2. TREATMENTS :

1. Control.
2. A/S at 300 lb./ac.
3. A/S at 300 lb./ac. + Super at 225 lb./ac.
Fertilizers were applied at the time of earthing up.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 20'×16'. (v) No. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) No. (iii) Yield of grain. (iv) (a) No. (b) and (c) —. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 396.7 lb./ac. (ii) 136.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	374	442	374

S.E./mean = 68.0 lb./ac.

Crop :- Maize (Kharif).

Ref :- As. 59(46).

Centre :- Jorhat (c.f.).

Type :- 'D'.

Object :—To find out the most economic and effective way of controlling weeds of Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Potato. (c) Cowdung at 200 mds/ac. (ii) Sandy loam. (iii) Cowdung at 200 mds/ac. (iv) Local. (v) (a) Ploughing and laddering. (b) Dibbling. (c) to (e) N.A. (vi) 28.3.1959. (vii) Unirrigated. (viii) and (ix) N.A. (x) 13 to 15.6.1959.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments.

(1) 4 weedicides : S₁=Fernoxone, S₂=Dicotox, S₃=Kathon and S₄=Agroxone.

(2) 3 levels of weedicides : L₁=8, L₂=16 and L₃=24 oz./ac. dissolved in 60 gallons of water and sprayed.

Extra treatment : T₁=Control (no weeding) and T₂=Local method of weeding (cultural).

3. DESIGN :

(i) and (ii) 5 block of 14 plots each were selected from the agreeable cultivators in the same locality. (iii) (a) 13'×13'. (b) 11'×11'. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—contd. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 548 lb./ac. (ii) 94 lb./ac. (iii) Main effects of S and L and T₁ vs T₂ are highly significant. Others are not significant. (iv) Av. yield of grain in lb./ac.

$T_1 = 270 \text{ lb./ac.}$ and $T_2 = 792 \text{ lb./ac.}$

	S ₁	S ₂	S ₃	S ₄	Mean
L ₁	540	360	405	360	416
L ₂	630	360	540	405	484
L ₃	900	630	720	765	754
Mean	690	450	555	510	551

S.E. of S marginal mean = 24.27 lb./ac.
 S.E. of L marginal mean = 21.02 lb./ac.
 S.E. of body of table = 42.04 lb./ac.

Crop :- Matikalai (Rabi).

Ref :- As. 58(34).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'M'.

Object :—To study the effect of N applied to Ma tikalai on acid soils.

1. BASAL CONDITIONS :

(i) a) N.A. (b) *Ahu* paddy. (c) 100 md./ac. of cowdung+40 lb./ac. of P₂O₅. (ii) (a) Old alluvial acid soil. (b) N.A. (iii) 15.9.1958. (iv) (a) 4 ploughings followed by laddering. (b) Broadcasting. (c) 10 srs/ac. (d) and (e) N.A. (v) 125 md./ac. of cowdung. (vi) Local (early). (vii) Unirrigated. (viii) 1 weeding. (ix) 0.83". (x) 20.12.1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as cowdung : N₀=0, N₁=40 and N₂=60 lb./ac.

(2) 3 levels of P₂O₅ as Triple Super : P₀=0, P₁=40 and P₂=60 lb./ac.

3. DESIGN :

(i) R.B.D Fact. (ii) (a) 9. (b) 44'×17'. (iii) 4. (iv) (a) 44'×13'. (b) 40'×11'. (v) 2'×1'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi, and (vii) Nil.

5. RESULTS :

(i) 318 lb./ac. (ii) 96 lb./ac. (iii) N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	Mean
N ₀	186	313	248	249
N ₁	334	291	344	323
N ₂	297	359	492	383
Mean	272	321	361	318

S.E. of N or P marginal mean = 27.71 lb./ac.
 S.E. of body of table = 48.00 lb./ac.

Crop :- Matikalai (Rabi).

Ref :- As. 59(31).

Site :- Govt. Agri. Farm, Jarhat.

Type :- 'M'.

Object :—To study the effect of Nitrogen applied to Matikalai on acid soils.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Ahu Paddy*. (c) 100 md./ac. of cowdung+40 lb./ac. of P_2O_5 . (ii) (a) Old alluvial acid soil. (b) N.A. (iii) 14.10.1959. (iv) (a) 4 ploughings followed by laddering. (b) Broadcasting. (c) 10 srs/ac. (d) and (e) N.A. (v) 125 md./ac. of cowdung. (vi) Local (early). (vii) Unirrigated. (viii) 1 weeding. (ix) 1.83". (x) 18 and 19.1.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(34) on page 68.

5. RESULTS :

(i) 78 lb./ac. (ii) 24 lb./ac. (iii) Main effect of P is highly significant. Interaction $N \times P$ is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean
N_0	32	64	168	88
N_1	41	63	92	65
N_2	45	60	136	80
Mean	39	62	132	78

S.E. of N or P marginal mean = 6.9 lb./ac.

S.E. of body of table = 12.0 lb./ac.

Crop :- Potato (*Rabi*).

Site :- Govt. Agri. Farm, Jorhat.

Ref :- As. 59(33).

Type :- 'M'.

Object :- To study the effect of N, P and K on Potato.

1. BASAL CONDITIONS :

(i) (a) and (b) Maize. (c) 20 lb./ac. of N as cowdung+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of N as A/S, A/C and Urea. (ii) (a) Old alluvial acid soil. (b) N.A. (iii) 11.11.1959. (iv) (a) 5 ploughings followed by laddering. (b) Sown in lines. (c) N.A. (d) $24'' \times 6''$. (e) 1. (v) 60 lb./ac. of N as cowdung broadcast on 10.11.1959. (vi) Local. (vii) Unirrigated. (viii) Hoeing and earthing twice. (ix) 1.26". (x) 27.2.1960 to 2.3.1960.

TREATMENTS :

4 manurial treatments : T_0 =Control, T_1 =50 lb./ac. of N as A/S+50 lb./ac. of P_2O_5 as Triple Super+50 lb./ac. of K_2O as Mur. Pot., T_2 =75 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Triple Super+75 lb./ac. of K_2O as Mur. Pot. and T_3 =100 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Triple Super+100 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) $48' \times 25'$. (iii) 3. (iv) (a) and (b) $25' \times 12'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of potato. (iv) (a) 1959—contd. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 9501 lb./ac. (ii) 587 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of potato in lb./ac.

Treatment	T_0	T_1	T_2	T_3
Av. yield	6921	11162	9848	10071

S.E./Mean = 339 lb./ac.

Crop :- Potato (Rabi).**Ref :- As. 58(44).****Site :- Agri. College, Jorhat.****Type :- 'M'.**

Object :—To find out suitable fertilizers for Potato.

1. BASAL CONDITIONS :

(i) (a) and (b) G.M. (c) Nil. (ii) (a) Sandy loam. (b) pH—4.5. (iii) 29.10.1958. (iv) (a) 1 ploughing with tractor followed by 3 ploughings with *desi* plough and laddering. (b) Dibbling. (c) 820 lb./ac. (d) 2'×1'. (e) 1. (v) 200 md./ac. of cowdung+T.C. at 70 lb./plot.+Mustard oilcake at 1.5 lb./plot. (vi) Local *Khasi*. (vii) Irrigated. (viii) 1 hoeing and 1 earthing. (ix) N.A. (x) 6,7.2.1959.

2. TREATMENTS :

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

- (1) 3 levels of N as A₁S : N₀=0, N₁=60 and N₂=120 lb./ac.
 (2) 3 levels of P₂O₅ as Super : P₀=0, P₁=30 and P₂=60 lb./ac.
 (3) 3 levels of K₂O as Pot. Sul. : K₀=0, K₁=40 and K₂=80 lb./ac.

3. DESIGN :

(i) 3³ confd. Fact. (ii) (a) 9. (b) 22'×81'. (iii) 4. (iv) (a) and (b) 22'×9'. (v) No. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Perenox sprayed to prevent blight. (iii) Yield of potato. (iv) (a) No. (b) and (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) N.A.

5. RESULTS :

(i) 6702 lb./ac. (ii) 1245 lb./ac. (iii) Only K effect is significant. (iv) Av. yield of potato in lb./ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	6194	6606	6526	6442	5889	6774	6664
N ₁	6882	6632	7065	6859	6810	7526	6242
N ₂	6025	7122	7264	6804	6723	7173	6515
Mean	6367	6787	6952	6702	6474	7157	6474
K ₀	5896	6883	6643				
K ₁	6785	7250	7436				
K ₂	6419	6226	6776				

S.E. of any marginal mean = 207.5 lb./ac.

S.E. of body of any table = 359.4 lb./ac.

Crop :- Potato.**Ref :- As. 55(11).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To find out the effect of A/S/N and Super on Potato crop.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 13.4.1955 (iv) (a) Two ploughings with turn-wrest plough followed by laddering, harrowing. (b) Planting in furrows. (c) N.A. (d) 2'×1'. (e) N.A. (v) F.Y.M. at 100 mds/ac. was applied at the time of planting. (vi) Up-to-date (medium). (vii) Unirrigated. (viii) Two intercultures. (ix) 93.9°. (x) 6.10.1955.

2. TREATMENTS :T₀=Control.T₁=300 lb./ac. of A/S/N.T₂=300 lb./ac. of A/S/N + 375 lb./ac. of Super.

Fertilizers were applied at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 33'×16.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Late blight, two sprayings given during the growth period with perenox. (iii) Yield of potato. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2016 lb./ac. (ii) 381.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	1193	1646	3210
S.E./mean = 190.6 lb./ac.			

Crop :- Potato.

Ref :- As. 56(20).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To find out the effect of different nitrogenous fertilizers with and without Super on Potato.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 31.3.1956. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing. (b) In furrows. (c) N.A. (d) 2'×1'. (e) N.A. (v) 100 md./ac. of F.Y.M. was applied to all the plots in furrows at the time of planting. (vi) *Arran* consul (late). (vii) Unirrigated. (viii) One interculture. (ix) 140.21". (x) 17.10.1956.

2. TREATMENTS :

T₀=Control.
T₁=300 lb./ac. of A/S/N.
T₂=300 lb./ac. of A/S/N+225 lb./ac. of Super.
Fertilizers were applied at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 33'×16.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Late blight—one spraying was given with Copper oxychloride. (iii) Yield of potato. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 219.5 lb./ac. (ii) 38.79 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	205.8	205.8	246.9
S.E./mean = 19.39 lb./ac.			

Crop :- Potato.

Ref :- As. 57(15).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To find out the effect of different nitrogenous fertilizers with and without Super on Potato.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 16.4.1957. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing. (b) Planting in furrows. (c) 306 tubers/plot. (d) 2'×1'. (e) N.A. (v) 200 md./ac. of F.Y.M. applied at the time of planting. (vi) Inverness Favourite (medium). (vii) Unirrigated. (viii) One interculture. (ix) 60.00". (x) 14.10.1957.

2. TREATMENTS :

Same as in expt. no. 56(20) on page 71.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 16.5'×102'. (iii) 4. (iv) (a) and (b) 33'×16.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Late blight—one spraying was done with N.C.C. fungicide. (iii) Yield of potato. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 753.9 lb./ac. (ii) 171.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of potato in lb. ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	452.6	493.8	1316.8
S.E./mean = 85.65 lb./ac.			

Crop :- Potato (Kharif).

Ref :- As. 58(13).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To study the effect of different nitrogenous fertilizers with and without Super on Potato.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 31.3.1958. (iv) (a) Ploughing and pulverising. (b) Furrow planting. (c) 20 md./ac. (d) 2'×1'. (e) 1. (v) 200 md./ac. of F.Y.M. applied in furrows at the time of planting. (vi) Local *Khasi* (medium). (vii) Unirrigated. (viii) Weeding and earthing twice. (ix) 47.47%. (x) 10.11.1958.

2. TREATMENTS :

Same as in expt. no. 56 (20) on page 71.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 12'×10'. (v) No. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Affected by late blight ; Copper oxychloride sprayed twice. (iii) Yield of potato. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3569 lb./ac. (ii) 1009 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	907	4719	5082
S.E./mean = 504.6 lb./ac.			

Crop :- Potato (Kharif).

Ref :- As. 59(2).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To study the effect of different nitrogenous fertilizers with and without Super on Potato.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) Sandy loam. (b) N.A. (iii) 15.4.1959. (iv) (a) Ploughing and pulverising. (b) In furrows. (c) 20 mds/ac. (d) 2'×1'. (e) 1 tuber/hole. (v) 200 md./ac. of F.Y.M. applied in furrows at the time of planting seed tubers. (vi) Up-to-date (medium). (vii) Unirrigated. (viii) Weeding and earthing once. (ix) 58.06%. (x) 13.11.1959.

2. TREATMENTS :

Same as in expt. no. 56 (20) on page 71.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 20'×16'. (v) No. (vi) Yes.

4. GENERAL :

(i) Most of the plants died due to continuous rain fall. (ii) Affected by late blight and other virus diseases ; Copper oxychloride sprayed once. (iii) Yield of potato. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 58.37 lb./ac. (ii) 7.89 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	55.42	55.76	63.92

S.E./mean = 3.95 lb./ac.

Crop :- Potato.

Ref :- As. 58(18).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To study the effect of different doses of mixed fertilizers, alone and in combination with Potash on Potato.

1. BASAL CONDITIONS :

(i) to (ix) Same as in expt. no. 58(13) on page 72. (x) 14.11.1958.

2. TREATMENTS :

T₀=Control.

T₁=625 lb./ac. of mixed fertilizers.

T₂=940 lb./ac. of mixed fertilizers.

T₃=625 lb./ac. of mixed fertilizers+200 lb./ac. of Mur. of Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 12'×10'. (v) No. (vi) Yes.

4. GENERAL :

Same as in expt. no. 58(13) on page 72.

5. RESULTS :

(i) 4220 lb./ac. (ii) 838 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	1634	5264	5264	4719

S.E./mean = 419 lb./ac.

Crop :- Potato (Kharif).

Ref :- As. 59(4).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To study the effect of mixed fertilizers in different doses and in combination with Potash on Potato.

1. BASAL CONDITIONS :

(i) to (ix) Same as in expt. no. 59(2) on page 72. (x) 14.11.1959.

2. TREATMENTS :

Same as in expt. no. 58(18) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) and (b) 20'×16'. (v) No. (vi) Yes.

4. GENERAL :

Same as in expt. no. 59(2) on page 72.

5. RESULTS :

(i) 91.89 lb./ac. (ii) 19.72 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	98.26	102.68	85.34	81.26

S.E./mean = 9.86 lb./ac.

Crop :- Potato.

Site :- Expt. Res. Stn., Upper Shillong.

Ref :- As. 56(22).

Type :- 'M'.

Object :—To find out the effect of A/S and Super on the yield of Potato.

1. BASAL CONDITIONS :

Same as in expt. no. 56(20) on page 71.

2. TREATMENTS :

T₀=Control.

T₁=375 lb./ac. of A/S.

T₂=375 lb./ac. of A/S+225 lb./ac. of Super.

Fertilizers were applied at the time of planting.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56 (20) on page 71.

5. RESULTS :

(i) 164.6 lb./ac. (ii) 83.43 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	164.6	144.0	185.2

S.E./mean = 41.72 lb./ac.

Crop :- Potato.

Site :- Expt. Res. Stn., Upper Shillong.

Ref :- As. 57(14).

Type :- 'M'.

Object :—To find out the effect of A/S and Super on the yield of Potato.

1. BASAL CONDITIONS :

Same as in expt. no. 57(15) on page 71.

2. TREATMENTS :

Same as in expt. no. 56(22) above.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 57(15) on page 71.

5. RESULTS :

(i) 548.7 lb./ac. (ii) 155.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	329.2	411.5	905.3

S.E./mean = 77.56 lb./ac.

Crop :- Potato (Kharif).

Ref :- As. 58 (14).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :- To study the effect of A/S alone and with Super on the yield of Potato.

1. BASAL CONDITIONS :

Same as in expt. no. 58 (13) on page 72.

2. TREATMENTS :

Same as in expt. no. 56 (22) on page 74.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58 (13) on page 72.

5. RESULTS :

(i) 2601 lb./ac. (ii) 838 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	1633.5	2541.0	3630.0

S.E./mean = 419 lb./ac.

Crop :- Potato (Kharif).

Ref :- As. 59(1).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :- To study the effect of A/S alone and with Super on the yield of Potato.

1. BASAL CONDITIONS :

Same as in expt. no. 59(2) on page 72.

2. TREATMENTS :

Same as in expt. no. 56(22) on page 74.

3. DESIGN :

Same as in expt. no. 59(2) on page 72.

4. GENERAL :

(i) Very poor. Most of the plants died due to continuous rainfall. (ii) Late blight. Copper oxychloride sprayed once. (iii) Potato yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 87.83 lb./ac. (ii) 27.74 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	119.0	59.5	85.0

S.E./mean = 13.87 lb./ac.

Crop :- Potato.**Ref :- As. 56(21).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To find out the effect of nitrogenous and phosphatic fertilizers on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 31.3.1956. (iv) (a) 2 ploughings with turn-wrest plough followed by laddering and harrowing. (b) and (c) N.A. (d) 2'×1'. (e) N.A. (v) 100 md./ac. of F.Y.M. applied in furrows at the time of planting. (vi) *Arran* consul (late). (vii) Unirrigated. (viii) 1 interculturing. (ix) 140.21". (x) 17.10.1956.

2. TREATMENTS :T₁=Control.T₂=175 lb./ac. of Urea.T₃=175 lb./ac. of Urea+225 lb./ac. of Super.

Fertilizers were applied at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 33'×16.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Late blight ; one spraying was given with copper oxychloride. (iii) Yield of potato. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 137.2 lb./ac. (ii) 57.79 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	102.9	102.9	205.7

S.E./mean = 28.89 lb./ac.

Crop :- Potato.**Ref :- As. 57(13).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To find out the effect of different nitrogenous and phosphatic fertilizers on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 16.4.1957. (iv) (a) Two ploughings with turn-wrest plough followed by laddering, harrowing, etc. (b) Planting in furrows. (c) 306 tubers/plot. (d) 2'×1'. (e) N.A. (v) F.Y.M. at 200 mds/ac. applied in furrows at the time of planting. (vi) Inverness favourite (medium). (vii) Unirrigated. (viii) 1 interculturing. (ix) 60". (x) 14.10.1957.

2. TREATMENTS :

Same as in expt. no. 56(21) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 16.5'×102'. (iii) 4. (iv) (a) and (b) 33'×16.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Late blight ; one spraying was given with N.C.C. fungicide. (iii) Yield of potato. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 425.2 lb./ac. (ii) 164.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	370.4	370.4	535.0
S.E./mean = 82.30 lb./ac.			

Crop :- Potato.

Ref :- As. 58(15).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To study the effect of nitrogenous and phosphatic fertilizers on the yield of Potato.

1. BASAL CONDITIONS :

(i) to (ix) Same as in expt. no. 58(13) on page 72. (x) 11.11.1958.

2. TREATMENTS :

Same as in expt. no. 56(21) on page 76.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(13) on page 72.

5. RESULTS :

(i) 4416 lb./ac. (ii) 1016 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	2178	5808	5263
S.E./mean = 508 lb./ac.			

Crop :- Potato (Kharif).

Ref :- As. 59(3).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To study the effect of nitrogenous and phosphatic fertilizers on the yield of Potato.

BASAL CONDITIONS :

(i) to (ix) Same as in expt. no. 59(2) on page 72. (x) 14.11.1959.

2. TREATMENTS :

Same as in expt. no. 56(21) on page 76.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59(2) on page 72.

5. RESULTS :

(i) 124.8 lb./ac. (ii) 80.21 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	127.5	157.4	89.4
S E./mean = 40.11 lb./ac.			

Crop :- Potato (Kharif).

Ref :- As. 58(16).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To study the effect of nitrogenous fertilizers on the yield of Potato.

1. BASAL CONDITIONS :

(i to ix) Same as in expt. no. 58(13) on page 72. (x) 12.11.1958.

2. TREATMENTS :

T₀=Control

T₁=475 lb./ac. of C/N.

T₂=375 lb./ac. of A/S.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(13) on page 72

5. RESULTS :

(i) 3206.5 lb./ac. (ii) 838 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	2722.5	2904.0	3993.0

S.E./mean = 419 lb./ac.

Crop :- Potato.

Site :- Expt. Res. Stn., Upper Shillong.

Ref :- As. 59(6).

Type :- 'M'.

Object :—To study the effect of different nitrogenous fertilizers on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 16.4.1959. (iv) (a) ploughing and pulverising. (b) Furrow planting. (c) 20 md./ac. (d) 2'×1'. (e) One tuber/hole. (v) 200 md./ac. of F.Y.M. applied at the time of planting. (vi) Up-to-date (medium) (vii) Unirrigated. (viii) 1 interculturing. (ix) 58°. (x) 16.11.1959.

2. TREATMENTS :

Same as in expt. no. 58(16) on page 77.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) (a) and (b) 20'×16'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Very poor. (ii) Late blight and other virus diseases. Copper oxychloride sprayed once. (iii) Potato yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 144.7 lb./ac. (ii) 62.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	148.9	170.0	115.3

S.E./mean = 36.20 lb./ac.

Crop :- Potato (Kharif).

Site :- Expt. Res. Stn., Upper Shillong.

Ref :- As. 58(17).

Type :- 'M'.

Object :—To study the effect of different nitrogenous fertilizers on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 31.3.1958. (iv) (a) Ploughing and pulverising. (b) Furrow planting. (c) 20 md./ac. (d) 2'×1'. (e) 1 tuber hole. (v) Nil. (vi) Local *Khazsi*—(medium). (vii) Unirrigated. (viii) Weeding and earthing up twice. (ix) 47.47°. (x) 13.11.1958.

2. TREATMENTS :

T₁=600 lb./ac. of A/S.
 T₂=470 lb./ac. of A/S/N.
 T₃=275 lb./ac. of Urea.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(13) on page 72.

5. RESULTS :

(i) 3085 lb./ac. (ii) 574 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	2541.0	3993.0	2722.5

S.E./mean = 287 lb./ac.

Crop :- Potato (Kharif).

Ref :- As. 59(5).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To study the effect of different nitrogenous fertilizers on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 16.4.1959. (iv) (a) Ploughing and pulverising. (b) Furrow planting. (c) 20 md./ac. (d) 2'×1'. (e) One tuber/hole. (v) Nil. (vi) Up-to-date (medium). (vii) Unirrigated. (viii) Weeding and earthing once. (ix) 58%. (x) 16.11.1959.

2. TREATMENTS :

Same as in expt. no. 58(17) on page 78.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) (a) and (b) 20'×16'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Most of the plants died due to continuous rainfall. (ii) Affected by late blight and other virus diseases. Copper oxychloride sprayed once. (iii) Potato yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 52.7 lb./ac. (ii) 23.66 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	T ₁	T ₂	T ₃
Av. yield	55.42	68.34	34.34

S.E./mean = 13.66 lb./ac.

Crop :- Potato.

Ref :- As. 55(12).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To find out the effect of different doses of mixed fertilizers on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 13.4.1955. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing. (b) Planting in furrows. (c) N.A. (d) 2'×1'. (e) N.A. (v) F.Y.M. at 100 md./ac. was applied to all the plots at the time of planting. (vi) Up-to-date (medium). (vii) Unirrigated. (viii) Two interculturings. (ix) 93.89%. (x) 6.10.1955.

2. TREATMENTS :

1. Control.
 2. 300 lb./ac. of mixed fertilizers.
 3. 450 lb./ac. of mixed fertilizers.
- Fertilizers were applied at the time of planting.

3. DESIGN :

Same as in expt. no. 56(21) on page 76.

4. GENERAL :

(i) No lodging. (ii) Light blight, two sprayings with Pereno during the growth period. (iii) Yield of potato. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2263 lb./ac. (ii) 531.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	1	2	3
Av. yield	1893	2346	2551

S.E./mean = 265.6 lb./ac.

Crop :- Potato.

Ref :- As. 56(27).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To find out the effect of mixed fertilizers and Potash on Potato crop.

1. BASAL CONDITIONS :

(i) Potato—Maize+ Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 31.3.1956. (iv) (a) Two ploughings with turnwrest plough followed by laddering, harrowing etc. (b) Planting in furrows. (c) N.A. (d) 2'×1'. (e) N.A. (v) 100 md./ac. of F.Y.M. applied in furrows at the time of planting. (vi) *Arran* consul (late). (vii) Unirrigated. (viii) 1 interculturing. (ix) 140.21". (x) 17.10.1956.

2. TREATMENTS :

1. Control.
 2. 625 lb./ac. of mixed fertilizers.
 3. 940 lb./ac. of mixed fertilizers.
 4. 625 lb./ac. of mixed fertilizers + 200 lb./ac. of Mur. Pot.
- Fertilizers were applied at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 16.5'×135'. (iii) 4. (iv) (a) and (b) 33'×16.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Late blight—one spraying was given with Copper oxychloride. (iii) Yield of potato. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 110.9 lb./ac. (ii) 54.04 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	1	2	3	4
Av. yield	97.7	111.9	131.2	102.9

S.E./mean = 27.02 lb./ac.

Crop :- Potato.**Ref :- As. 57(11).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To find out the effect of mixed fertilizers and potash on Potato crop.

1. BASAL CONDITIONS :

Same as in expt. no. 57(13) on page 76.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(27) on page 80.

4. GENERAL :

(i) No lodging. (ii) Late blight—one spraying was given with N.C.C. fungicide. (iii) Yield of potato. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 565.8 lb./ac. (ii) 298.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	1	2	3	4
Av. yield	699.6	617.2	452.6	493.8

S.E./mean = 149.2 lb./ac.

Crop :- Potato.**Ref :- As. 55(13).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To find out the effect of N in the form of C/N and A/S/N on Potato crop.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (ii) (a) Sandy loam. (b) N.A. (iii) 13.4.1955. (iv) (a) Two ploughings with turn-wrest plough followed by laddering, harrowing etc. (b) Planting in furrows. (c) N.A. (d) 2'×1'. (e) N.A. (v) 100 md./ac. of F.Y.M. applied at the time of planting. (vi) Up-to-date main (medium). (vii) Unirrigated. (viii) Two intercultures were given to all the plots. (ix) 93.89%. (x) 6.10.1955.

2. TREATMENTS :

1. Control.
2. 500 lb./ac. of C/N.
3. 300 lb./ac. of A/S/N.

Fertilizers were applied at the time of planting.

3. DESIGN :

Same as in expt. no. 56(21) on page 76.

4. GENERAL :

(i) No lodging. (ii) Late blight—two sprayings were given with Perenox. (iii) Yield of potato. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1152 lb./ac. (ii) 446.0 lb./ac. (iii) Treatment difference are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	1	2	3
Av. yield	926	1132	1399

S.E./mean = 223.0 lb./ac.

Crop :- Potato.**Ref :- As. 56(23).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To find out the effect of N in the form of C/N and A/S on Potato crop.

1. BASAL CONDITIONS :

Same as in expt. no. 56(21) on page 76.

2. TREATMENTS :

1. Control
2. 475 lb./ac. of C/N.
3. 375 lb /ac. of A/S.

Fertilizers were applied at the time of planting.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56(21) on page 76.

5. RESULTS :

(i) 185.17 lb./ac. (ii) 85.66 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	1	2	3
Av. yield	164.6	144.0	246.9

S.E./mean = 42.83 lb./ac.

Crop :- Potato.**Ref :- As. 57(10).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To find out the effect of different nitrogenous fertilizers on Potato crop.

1. BASAL CONDITIONS :

Same as in expt. no. 57(13) on page 76.

2. TREATMENTS :

1. Control.
2. 475 lb./ac. of C/N.
3. 475 lb./ac. of Nitro-lime.
4. 375 lb./ac. of A/S.

Fertilizers applied at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 16.5'×135'. (iii) 4. (iv) (a) and (b) 33'×16.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Late blight—one spraying was given with N.C.C. fungicide. (iii) Yield of potato. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 210.9 lb./ac. (ii) 89.15 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	1	2	3	4
Av. yield	205.8	267.5	164.6	205.8

S.E./mean = 44.57 lb./ac.

Crop :- Potato.**Ref :- As. 55(14).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To find out the effect of different nitrogenous fertilizers on Potato crop.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 13.4.1955. (iv) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing. (b) Planting in furrows. (c) N.A. (d) 2'×1'. (e) N.A. (v) 100 md./ac. of F.Y.M. applied at the time of planting. (vi) Up-to-date main (medium). (vii) Unirrigated. (viii) Two interculturings. (ix) 93.9%. (x) 6.0.1955.

2. TREATMENTS

1. Control.
2. 300 lb./ac. of A/S/N.
3. 175 lb./ac. of Urea.

Fertilizers were applied at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 33'×16.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Late blight—two sprayings with Perenox during the growth period. (iii) Yield of potato. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1186 lb./ac. (ii) 545.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	1	2	3
Av. yield	1029	1337	1193

S.E./mean = 272.9 lb./ac.

Crop :- Potato.**Ref :- As. 57(12).****Site :- Expt. Res. Stn., Upper Shillong.****Type :- 'M'.**

Object :—To find out the effect of different nitrogenous fertilizers on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 16.4.1957. (iv) (a) Two ploughings with turn-wrest plough followed by laddering, harrowing, etc. (b) Planting in furrows. (c) 306 tubers/plot. (d) 2'×1'. (e) N.A. (v) Nil. (vi) Inverness Favourite (medium). (vii) Unirrigated. (viii) One interculturing. (ix) 60%. (x) 14.10.1957.

2. TREATMENTS :

1. 600 lb./ac. of A/S.
2. 470 lb./ac. of A/S/N.
3. 275 lb./ac. of Urea.
4. 750 lb./ac. of Nitro-lime.

Fertilizers applied in furrows at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 16.5'×135'. (iii) 4. (iv) (a) and (b) 33'×16.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Late blight—one spraying was given with N.C.C. fungicide. (iii) Yield of potato. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 190.3 lb./ac. (ii) 55.40 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of Potato in lb./ac.

Treatment	A	B	C	D
Av. yield	123.4	226.3	205.8	205.8

S.E./mean = 27.70 lb./ac.

Crop :- Potato.

Ref :- As. 56(24).

Site :- Expt. Res. Stn., Upper Shillong.

Type :- 'M'.

Object :—To find out the effect of different nitrogenous fertilizers on Potato crop.

1. BASAL CONDITIONS :

(i) (a) Potato—Maize+Soyabean—Millet—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam (b) N.A. (iii) N.A./31.3.1956. (v) (a) Two ploughings with turn-wrest plough followed by laddering and harrowing. (b) and (c) N.A. (d) 2'×1'. (e) N.A. (v) Nil. (vi) *Arran* consul (late). (vii) Unirrigated. (viii) One interculturing. (ix) 140.21". (x) 17.10.1956.

2. TREATMENTS :

1. 375 lb./ac. of A/S.
2. 300 lb./ac. of A/S/N.
3. 175 lb./ac. of Urea.

Fertilizers were applied at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 33'×16.5'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Late blight—one spraying was given with Copper oxychloride. (iii) Yield of potato. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) No reasons given for low yield. (vii) Nil.

5. RESULTS :

(i) 49.72 lb./ac. (ii) 11.37 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	1	2	3
Av. yield	46.29	61.73	41.15

S.E./mean = 5.68 lb./ac.

Crop :- Potato (Rabi).

Ref :- As. 53(37).

Site :- Agri. College, Jorhat.

Type :- 'C'.

Object :—To find out a suitable spacing for the cultivation of Potato crop.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Maize. (c) 100 md./ac. of cowdung. (ii) (a) Sandy loam. (b) pH—4.5. (iii) 24.10.1958. (iv) (a) Ploughing once with tractor followed by 4 ploughings with bullocks and laddering. (b) Dibbling. (c) 945 lb./ac. (d) As per treatments. (e) 1. (v) Cowdung at 150 mds/ac., T.C. at 1194 lb./ac., oilcake (mustard) at 403 lb./ac. and 242 lb./ac. of A/S broadcast. (vi) Local *Khasi* (medium). (vii) Irrigated. (viii) Hoeing, 2 weedings and earthings. (ix) N.A. (x) 5.2.1959.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 spacings between rows : $R_1=18''$, $R_2=24''$ and $R_3=30''$.

(2) 3 spacings between plants : $P_1=6''$, $P_2=9''$ and $P_3=12''$.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) 81'×30'. (iii) 8. (iv) (a) and (b) 30'×9'. (v) Nil. (vi) Yes.

4. GENERAL :

- (i) Good. (ii) Perenox was sprayed as preventive measure. (iii) Yield of potato. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 5252 lb./ac. (ii) 850 lb./ac. (iii) Main effects of R and P are highly significant. Interaction R×P is not significant. (iv) Av. yield of potato in lb./ac.

	P ₁	P ₂	P ₃	Mean
R ₁	7404	6378	5007	6263
R ₂	6098	4809	4434	5113
R ₃	5254	4171	3712	4379
Mean	6252	5119	4384	5252

S.E. of any marginal mean = 173.5 lb./ac.
S.E. of body of table = 300.5 lb./ac.

Crop :- Potato (Rabi).

Site :- Agri. College, Jorhat.

Ref :- As. 59(38).

Type :- 'C'.

Object :—To find out a suitable spacing for the cultivation of Potato crop.

1. BASAL CONDITIONS :

- (i) (a) N.A. (b) Paddy (*Ahu*). (c) 100 md./ac. of cowdung. (ii) (a) Sandy loam. (b) pH—4.5. (iii) 18.11.1959. (iv) (a) Ploughing with tractor followed by 4 ploughings with bullock and country plough and laddering. (b) Dibbling. (c) 945 lb./ac. (d) As per treatments. (e) 1. (v) Cowdung at 150 mds./ac. and T.C. at 6130 lb./ac. applied on 2.10.1959. A/S at 242 lb./ac. applied on 19.12.1959, mustard oilcake at 403 lb./ac. applied on 12.11.1959 and mixed fertilizer at 323 lb./ac. applied on 15.11.1959. (vi) Local *Khasi* (medium). (vii) Irrigated. (viii) Hoeing, weeding and earthing—twice. (ix) N.A. (x) 16.3.1960 to 18.3.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(37) on page 84.

RESULTS :

- (i) 10101 lb./ac. (ii) 218 lb./ac. (iii) R and P effects are highly significant. Interaction is not significant. (iv) Av. yield of potato in lb./ac.

	P ₁	P ₂	P ₃	Mean
R ₁	12967	11777	7482	10742
R ₂	12261	10648	9075	10661
R ₃	10265	9539	6897	8900
Mean	11831	10655	7818	10101

S.E. of any marginal mean = 44.5 lb./ac.
S.E. of body of table = 77.1 lb./ac.

Crop :- Potato.

Site :- Agri. College, Jorhat.

Ref :- As. 57(45).

Type :- 'P'.

Object :—To find out the effect of irrigation on Potato crop.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Cucumber. (c) 100 md./ac. of cowdung. (ii) (a) Sandy loam. (b) pH—4.5. (iii) N.A./6.10.1957. (iv) (a) 4 ploughings followed by laddering. (b) Line sowing. (c) N.A. (d) 18"×12". (e) 1. (v) Cowdung at 50 mds/ac. broadcast after first ploughing. (vi) Majestic (N.P.). (vii) As per treatments. (viii) Hoeing on 1.11.1957 and earthing on 28.12.1957. (ix) N.A. (x) 16.1.1958.

2. TREATMENTS :

2 levels of irrigation : $I_0=0$ and $I_1=10$ irrigations.
Irrigations given in furrows at 5 days interval one acre-inch each time.

3. DESIGN

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 2. (iv) (a) and (b) 5'-9"×3'-2". (v) No. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Potato yield. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 10378 lb./ac. (ii) 1165 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of potato in lb./ac.

Treatment	I_0	I_1
Av. yield	9089	11667

S.E./mean = 824 lb./ac.

Crop :- Potato (*Rabi*).

Ref :- As. 59(52).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'D'.

Object :—To study the effective doses of different weedicides to control weeds.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Maize. (c) 200 md./ac. of cowdung. (ii) (a) Sandy loam. (b) N.A. (iii) 19.11.1958. (iv) (a) Ploughing and laddering. (b) Dibbling. (c) 10 md./ac. (d) Between lines—3'. (e) —. (v) 200 md./ac. of cowdung. (vi) Shillong. (vii) Unirrigated. (viii) Earthing once. (ix) N.A. (x) 27.2.1959.

2. TREATMENTS :

All combinations of (1) and (2) + a control

(1) 2 weedicides : W_1 =Fernozone and W_2 =Agrozone

(2) 2 concentrations : $C_1=1$ and $C_2=2$ lb. in 60 gallons of water per acre.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 85'×14'. (iii) 5. (iv) (a) 17'×14'. (b) 15'×12'. (v) 1'×1' (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Potato yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2409 lb./ac. (ii) 259 lb./ac. (iii) Main effect of C is highly significant. Interaction $C \times W$ is significant. (iv) Av. yield of potato in lb./ac.

Control=1863 lb./ac.			
	W_1	W_2	Mean
C_1	2468	2105	2286
C_2	2904	2710	2807
Mean	2686	2407	2546

S.E. of any marginal mean = 81.9 lb./ac.
S.E. of body of table = 115.82 lb./ac.

Crop :- Potato (Rabi).

Ref :- As. 58(54).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'D'.

Object :—To study the effective doses of weedicide to control weeds.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Maize. (c) 200 md./ac. of cowdung. (ii) (a) Sandy loam. (b) N.A. (iii) 11.11.1958.
(iv) (a) Ploughing and laddering. (b) Dibbling. (c) 10 mds/ac. (d) Between lines—3'. (e) —. (v) 200 md./ac. of cowdung. (vi) Shillong. (vii) Unirrigated. (viii) Earthing once. (ix) N.A. (x) 9.3.1959.

2. TREATMENTS :

4 concentrations of Fernoxone : $C_0=0$, $C_1=1$, $C_2=2$ and $C_3=3$ lb. in 80 gallons of water per acre.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 75'×27'. (iii) 5. (iv) (a) 27'×20'. (b) 22'×15'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Potato yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1226 lb./ac. (ii) 193 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of potato in lb./ac.

Treatment	C_0	C_1	C_2	C_3
Av. yield	911	1280	1261	1452

S.E./mean = 86.3 lb./ac.

Crop :- Potato (Rabi).

Ref :- As. 57(50).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'D'.

Object :—To study the effective doses of weedicide to control weeds.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Maize. (c) Cowdung at 200 mds./ac. (ii) (a) Sandy loam. (b) N.A. (iii) 29.10.1957.
(iv) (a) Ploughing and laddering. (b) Line sowing. (c) 10 mds/ac. (d) Between lines—3'. (e) —. (v) Nil.
(vi) Shillong. (vii) Unirrigated. (viii) Earthing once. (ix) N.A. (x) 20.2.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(54) above.

5. RESULTS :

(i) 1825 lb./ac. (ii) 494 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of potato in lb./ac.

Treatment	C_0	C_1	C_2	C_3
Av. yield	1478	1782	2046	1993

S.E./mean = 221 lb./ac.

Crop :- Potato (Rabi).

Ref :- As. 57(48).

Centre :- Jorhat (c.f.).

Type :- 'D'.

Object :—To find out the most economic and effective way of controlling different weeds associated with Potato.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Ahu* paddy. (c) Cowdung at 200 mds/ac. (ii) Sandy loam. (iii) Cowdung at 250 mds/ac. (iv) Shillong. (v) (a) Ploughing and laddering. (b) Dibbling. (c) to (e) N.A. (vi) 6.11.1957. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 3.3.1958.

2. TREATMENTS :

1. Control.
 2. Local method of weeding.
 3. Application of weedicide 5 days after planting.
 4. Application of weedicide 10 days after planting.
 5. Application of weedicide 5 days after planting+cultural method of weeding.
 6. Application of weedicide 10 days after planting+cultural method of weeding.
- Weedicide used— .6 oz./ac. of Fernox one in water.

3. DESIGN :

(i) and (ii) 5 blocks of 6 plots each were selected from the agreeable cultivators in the same locality. (iii) (a) 13'×13'. (b) 11'×11'. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of tuber. (iv) (a), 1957—contd. (b) No. (c) Nil. (v) (a, and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3582 lb./ac. (ii) 1269 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	2592	3312	2880	3924	4140	4644

S.E./mean = 567 lb./ac.

Crop :- Potato (*Rabi*).

Ref :- As. 58(48).

Centre :- Jorhat (c.f.).

Type :- 'D'.

Object :—To find out the most economic and effective way of controlling weeds associated with Potato.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Ahu* Paddy. (c) Cowdung at 250 mds/ac. (ii) Sandy loam. (iii) Cowdung at 200 mds/ac. (iv) Shillong. (v) (a) Ploughing and laddering. (b) Dibbling. (c) to (e) N.A. (vi) 3.11.1958. (vii) Unirrigated. (viii) and (ix) N.A. (x) 28.1.1959.

2. TREATMENTS :

Same as in expt. no. 57(48) on page 87.

3. DESIGN :

(i) and (ii) 5 blocks of 6 plots each were selected from the agreeable cultivators in the same locality. (iii) (a) 13'×13'. (b) 11'×11'. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tuber yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 7128 lb./ac. (ii) 828 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of tuber in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	6120	7344	6480	7200	7704	7920

S.E./mean = 370 lb./ac.

Crop :- Potato (Rabi).**Ref :- As. 59(45).****Centre :- Jorhat (c.f.).****Type :- 'D'.**

Object :—To find out the most economic and effective way of controlling different weeds associated with Potato.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Ahu* Paddy. (c) Cowdung at 200 mds/ac. (ii) Sandy loam. (iii) Cowdung at 200 mds/ac. (iv) Shillong. (v) (a) Ploughing and laddering. (b) Dibbling. (c) to (e) N.A. (vi) 5.11.1959. (vii) Unirrigated. (viii) and (ix) N.A. (x) 12.2.1960.

2. TREATMENTS :

7 methods of weeding: M_0 =Control (no weeding), M_1 =Local method of weeding, M_2 =Application of weedicide 5 days after planting, M_3 =Application of weedicide 10 days after planting, M_4 =Application of weedicide 5 days after planting+cultural method of weeding, M_5 =Application of weedicide 10 days after planting+cultural method of weeding and M_6 =Cultural method of weeding.

Weedicide used—16 oz./ac. of Fernoxone in water.

3. DESIGN :

(i) and (ii) 5 blocks were selected from the agreeable cultivators in the same locality. (iii) (a) 13'×13'. (b) 11'×11'. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tuber yield. (iv) (a) to (c) 1957—contd. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 7264 lb./ac. (ii) 476 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	6120	7398	6444	7182	7740	7938	8028

S.E./mean = 213 lb./ac.

Crop :- Potato (Rabi).**Ref :- As. 58(47).****Centre :- Jorhat (c.f.).****Type :- 'D'.**

Object :—To find out the effect of pesticides on Potato cut-worms.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Ahu* Paddy. (c) Cowdung at 200 mds/ac. (ii) Sandy loam. (iii) Cowdung at 150 mds/ac. (iv) Shillong. (v) (a) Ploughing and laddering. (b) Dibbling. (c) to (e) N.A. (vi) 7.11.1958. (vii) Unirrigated. (viii) and (ix) N.A. (x) 17, 18.2.1959.

2. TREATMENTS :

1. Control.
2. Application of Aldrex 5% D at 15 lb./ac.
3. Application of Gam D₀ 25 at 15 lb./ac.
4. Application of Gammexane W.D.P. at 1 lb./ac. in 30 gallons of water per acre.
5. Application of Dieldrex at 1 lb./ac. in 30 gallons of water per acre.
6. Application of Guesarol D.D.T. at 1 lb./ac. in 30 gallons of water per acre.

3. DESIGN :

(i) and (ii) 5 blocks of 6 plots each were selected from the agreeable cultivators in the same locality. (iii) (a) 24'×17'. (b) 22'×15'. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Potato cut-worm. Control measures as per treatments. (iii) Tuber yield. (iv) (a) to (c) 1958—contd. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 10894 lb./ac. (ii) 103 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	9557	11642	10058	10560	11035	12514

S.E./mean = 46 lb./ac.

Crop :- Potato (Rabi).

Ref :- As. 59(47).

Centre :- Jorhat (c.f.).

Type :- 'D'.

Object :—To find out the effect of pesticides on Potato cut-worm.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Ahu Paddy*. (c) Cowdung at 250 mds/ac. (ii) Sandy loam. (iii) Cowdung at 200 mds./ac. (iv) Shillong. (v) (a) Ploughing and laddering. (b) Dibbling. (c) to (e) N.A. (vi) 11.11.1959. (vii) Unirrigated. (viii) and (ix) N.A. (x) 16, 17.1.1960.

2. TREATMENTS :

- Control.
- Application of Aldrex 5% D at 15 lb./ac.
- Application of Gam D₀ 25 at 15 lb./ac.
- Application of Gammexane W.P.D. at 1 lb. in 30 gallons of water per acre.
- Application of Endrex 33 c.c. in 30 gallons of water per acre.
- Application of Guesarol D.D.T. at 1 lb. in 30 gallons of water per acre.

3. DESIGN :

(i) and (ii) 5 blocks of 6 plots each were selected from the agreeable cultivators in the same locality. (iii) (a) 24'×17'. (b) 22'×15'. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Potato cut-worm. Control measures as per treatments. (iii) Tuber yield. (iv) (a) to (c) 1958—contd. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 10371 lb./ac. (ii) 251 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	8633	11141	10058	11299	11774	9319

S.E./mean = 112 lb./ac.

Crop :- Cabbage (Rabi).

Ref :- As. 56(42).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'M'.

Object :—To study the effect of A/S on Cabbage in acid soil.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Ahu Paddy*. (c) 150 md./ac. of cowdung. (ii) (a) Old alluvial acid soil. (b) N.A. (iii) 30, 31.10.1956. (iv) (a) 5 hoeings. (b) Transplanting. (c) —. (d) 2'×1½'. (e) 1. (v) 150 md./ac. of cowdung. (vi) Drum head (late). (vii) Irrigated. (viii) 1 mulching and 4 hoeings. (ix) 1.27' (x) 12.1.1957 to 9.3.1957.

2. TREATMENTS :

4 levels of N as A₇S : N₀=0, N₁=50, N₂=100 and N₃=150 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 24'×72'. (iii) 3. (iv) (a) 24'×18'. (b) 20'×16'. (v) 2'×1'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cabbage. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 11326 lb./ac. (ii) 3455 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of cabbage in lb./ac.

Treatment	N ₀	N ₁	N ₂	N ₃
Av. yield	12302	13163	10744	9093

S.E./mean = 1995 lb./ac.

Crop :- Cabbage (Rabi).

Site :- Govt. Agri. Farm, Jorhat.

Ref :- 57(40).

Type :- 'M'.

Object :—To study the effect of A/S on Cabbage in acid soil.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Ahu* Paddy. (c) 150 md./ac. of cowdung. (ii) (a) Old alluvial acid soil. (b) N.A. (iii) 8.11.1957. (iv) (a) 5 hoeings. (b) Transplanting. (c) —. (d) 2' × 1½'. (e) 1. (v) 150 md./ac. of cowdung. (vi) Drum head (late). (vii) Irrigated. (viii) Mulching and hoeing. (ix) 2.12". (x) 19.1.1958 to 3.3.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(42) on page 90.

5. RESULTS :

(i) 23441 lb./ac. (ii) 7132 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of cabbage in lb./ac.

Treatment	N ₀	N ₁	N ₂	N ₃
Av. yield	17860	26883	28278	20744

S.E./mean = 4118 lb./ac.

Crop :- Cabbage (Rabi).

Site :- Govt. Agri. Farm, Jorhat.

Ref :- As. 58(35).

Type :- 'M'.

Object :—To study the effect of A/S on Cabbage in acid soil.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Ahu* Paddy. (c) 150 md./ac. of cowdung. (ii) (a) Old alluvial acid soil. (b) N.A. (iii) 7.11.1958. (iv) (a) 5 hoeings. (b) Transplanting. (c) —. (d) 2' × 1½'. (e) 1. (v) 150 md./ac. of cowdung. (vi) Drum head (late). (vii) Irrigated. (viii) Mulching and 4 hoeings. (ix) 1.02". (x) 28.2.1959 to 13.3.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(42) on page 90.

5. RESULTS :

(i) 16813 lb./ac. (ii) 7454 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of cabbage in lb./ac.

Treatment	N ₀	N ₁	N ₂	N ₃
Av. yield	11744	20116	20952	14441

S.E./mean = 4304 lb./ac.

Crop :- Cauliflower (Rabi).**Ref :- As. 57(47).****Site :- Agri. College, Jorhat.****Type :- 'M'.**

Object :—To find out suitable doses of N and P for Cauliflower.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Cucumber. (c) Cowdung at 200 mds./ac. (ii) (a) Sandy loam. (b) pH—4.5. (iii) 5.11.1957.
 (iv) (a) Ploughing once with tractor, 4 ploughings with bullock and laddering. (b) Transplanted. (c) —.
 (d) 30" × 24". (e) 1. (v) Cowdung at 200 mds./ac. and T.C. at 18 lb./plot. (vi) Banaras (late). (vii)
 Irrigated. (viii) 2 hoeings and 1 earthing up. (ix) N.A. (x) Later half of February.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=20$ lb./ac.(2) 5 levels of N as A/S : $N_0=0$, $N_1=20$, $N_2=40$, $N_3=60$ and $N_4=80$ lb./ac.**3. DESIGN :**

(i) R.B.D. Fact. (ii) (a) 10. (b) 15' × 100'. (iii) 4. (iv) (a) and (b) 15' × 10'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of cauliflower. (iv) (a) 1957—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2774 lb./ac. (ii) 973 lb./ac. (iii) No effect is significant. (iv) Av. yield of cauliflower in lb., ac.

	N_0	N_1	N_2	N_3	N_4	Mean
P_0	2202	2713	2786	2737	2891	2665
P_1	2046	3030	3077	3116	3147	2883
Mean	2124	2872	2930	2927	3019	2774

S.E. of N marginal mean = 344 lb./ac.

S.E. of P marginal mean = 217 lb./ac.

S.E. of body of table = 486 lb./ac.

Crop :- Cauliflower (Rabi).**Ref :- As. 58(40).****Site :- Agri. College, Jorhat.****Type :- 'M'.**

Object :—To find out suitable doses of N and P for Cauliflower.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Cucumber. (c) Nil. (ii) (a) Sandy loam. (b) pH—4.5. (iii) 5.11.1958. (iv) (a) Ploughing
 once with tractor, 3 ploughings with bullock and laddering. (b) Transplanted. (c) —. (d) 30" × 24".
 (e) 1. (v) Cowdung at 200 mds./ac. and T.C. at 1 md./plot. (vi) Banaras (late). (vii) Irrigated. (viii)
 2 hoeings and earthing. (ix) N.A. (x) 23.12.1958 to 3.2.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(47) above.

5. RESULTS :

(i) 7365 lb./ac. (ii) 1443 lb./ac. (iii) Only N effect is significant. (iv) Av. yield of cauliflower in lb., ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	4792	7532	7750	8525	10006	7721
P ₁	4728	6670	8186	7020	8436	7008
Mean	4760	7101	7969	7773	9221	7365

S.E. of N marginal mean = 510 lb./ac.
 S.E. of P marginal mean = 323 lb./ac.
 S.E. of body of table = 722 lb./ac.

Crop :- Brinjal (Rabi).

Ref :- As. 58(46).

Site :- Agri. College, Jorhat.

Type :- 'M'.

Object :—To find out suitable dose of different fertilizers for Brinjal.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Dhaincha*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 30.9.1958. (iv) (a) Ploughing once with tractor, 3 ploughings with bullocks and laddering. (b) Transplanting. (c) —. (d) 2½'×2'. (e) 1. (v) Cowdung at 200 mds/ac. and P₂O₅ at 40 lb./ac. (vi) Local. (vii) Irrigated. (viii) 2 weedings and one earthing. (ix) N.A. (x) 1.12.1958 to 12.3.1959.

2. TREATMENTS :

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

- (1) 5 sources of N : F₁=A/S, F₂=T.C., F₃=Mustard oilcake, F₄=A/S and T.C. in 1 : 1 ratio and F₅=A/S and Mustard oilcake in 1 : 1 ratio.
 (2) 3 levels of N : N₀=0, N₁=50 and N₂=100 lb./ac.
 (3) 2 levels of K₂O as wood ash : K₁=40 and K₂=80 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 30. (b) 60'×60'. (iii) 3. (iv) (a) and (b) 10'×12'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of brinjal. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 15394 lb./ac. (ii) 5035 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of brinjal in lb./ac.

	F ₁	F ₂	F ₃	F ₄	F ₅	K ₁	K ₂	Mean
N ₀	—	—	—	—	—	13277	14553	13915
N ₁	16647	14919	20692	18748	17967	16700	18889	17795
N ₂	13350	14377	13315	17004	14316	15389	13556	14472
Mean	14998	14648	17004	17876	16142	15122	15666	15394
K ₁	12975	12680	15883	17663	16407			
K ₂	15381	15741	14979	16101	16124			
Mean	14178	14210	15432	16883	16266			

S.E. of N marginal mean = 919 lb./ac.
 S.E. of F marginal mean in F×N table = 1187 lb./ac.
 S.E. of F marginal mean in F×K table = 1453 lb./ac.
 S.E. of K marginal mean = 751 lb./ac.
 S.E. of body of F×N table = 2056 lb./ac.
 S.E. of body of K×N table = 1300 lb./ac.
 S.E. of body of K×F table = 1678 lb./ac.

Crop :- Tomato (Rabi).

Ref :- As. 56(40).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'M'.

Object :—To study the effect of P on Tomato in acid soil.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Ahu* Paddy. (c) Cowdung at 150 mds./ac. (ii) (a) Old alluvial acid soil. (b) N.A. (iii) 12.11.1956. (iv) (a) 5 ploughings followed by laddering. (b) Transplanting. (c) —. (d) 3' × 3'. (e) 1. (v) Cowdung at 150 mds./ac. (vi) N.A. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 1.34°. (x) 11.2.1957 to 29.3.1957.

2. TREATMENTS :

3 levels of P_2O_5 as Super : $P_0=0$, $P_1=60$ and $P_2=120$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 17' × 33'. (iii) 3. (iv) (a) and (b) 17 × 11'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Tomato yield. (iv) (a) 1956—1959. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Expt. was conducted by Agri. Chemist.

5. RESULTS :

(i) 22051 lb./ac. (ii) 5783 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tomato in lb./ac.

Treatment	P_0	P_1	P_2
Av. yield	22109	23286	20758

S.E./mean = 3339 lb./ac.

Crop :- Tomato (Rabi).

Ref :- As. 57(41).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'M'.

Object :—To study the effect of P on Tomato in acid soil.

1. BASAL CONDITIONS :

(i) and (ii) Same as in expt. no. 56(40) above. (iii) 28.10.1957. (iv) to (viii) Same as in expt. no. 56(40) above. (ix) 2.77°. (x) 13.2.1958 to 16.3.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(40) above.

5. RESULTS :

(i) 19116 lb./ac. (ii) 1053 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tomato in lb./ac.

Treatment	P_0	P_1	P_2
Av. yield	18171	19553	19624

S.E./mean = 608 lb./ac.

Crop :- Tomato (Rabi).

Ref :- As. 58(36).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'M'.

Object :—To study the effect of P on Tomato in acid soil.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Ahu* Paddy. (c) Cowdung at 150 mds/ac. (ii) (a) Old alluvial acid soil. (b) N.A. (iii) 12.11.1958. (iv) (a) Five ploughings followed by laddering. (b) Transplanting. (c)—. (d) 3'×3'. (e) 1. (v) Cowdung at 150 mds/ac. (vi) N.A. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 1.36". (x) 21.2.1959 to 27.3 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(40) on page 94.

5. RESULTS :

(i) 12110 lb./ac. (ii) 3171 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tomato in lb./ac.

Treatment	P ₀	P ₁	P ₂
Av. yield	8409	13881	14041

S.E./mean = 1831 lb./ac.

Crop :- Tomato (*Rabi*).

Ref :- As. 59(35).

Site :- Govt. Agri. Farm, Jorhat.

Type :- 'M'.

Object :—To study the effect of P on Tomato in acid soil.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Ahu* Paddy. (c) Cowdung at 150 mds/ac. (ii) (a) Old alluvial acid soil. (b) N.A. (iii) 26.10.1959. (iv) (a) Five ploughings followed by laddering. (b) Transplanting. (c)—. (d) 3'×3'. (e) 1. (v) Cowdung at 150 mds/ac. (vi) N.A. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 2.08". (x) 3.2.1960 to 26.2.1960.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 56(40) on page 94.

5. RESULTS :

(i) 4087 lb./ac. (ii) 503 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of tomato in lb./ac.

Treatment	P ₀	P ₁	P ₂
Av. yield	3184	4458	4617

S.E./mean = 291 lb./ac.

Crop :- Sugarcane.

Ref :- As. 59(62).

Site :- Sugarcane Res. Stn., Burlikson.

Type :- 'M'.

Object :—To study the effect of P in presence of N, under limed and unlimed conditions.

1. BASAL CONDITIONS :

(i) (a) Sugarcane. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer below*. (iii) 28.1.1959 to 5.2.1959. (iv) (a) One ploughing followed by two harrowings. (b) Planted in trenches 9" deep (c) N.A. (d) Between rows-4'. (e) N.A. (v) Nil. (vi) CO-419 (late). (vii) Unirrigated. (viii) Two weedings and 2 earthings. (ix) 66.31". (x) 8.3.1960 to 12.3.1960.

2. TREATMENTS :

Main-plot treatments :

2 levels of slaked lime : L₀=0 and L₁=12 mds./ac.

*Coarse Sand 5.1%, Fine Sand—39.6% Silt 36.0% Clay—12.0% Moisture—6.0%,
N₂—1.73%, P₂O₅ 0.003% K₂O—0.004% pH 5.1 pH(KNO₃)—4.2.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 2 sources of 160 lb./ac. of N : $S_1 = \text{F.Y.M.}$ and $S_2 = \text{A/S.}$ (2) 3 levels of P_2O_5 as Super : $P_0 = 0$, $P_1 = 60$ and $P_2 = 120$ lb./ac.**3. DESIGN :**(i) Split-plot. (ii) (a) 2 main-plots/block ; 6 sub-plots/main-plot. (b) $98' \times 192'$. (iii) 4. (iv) (a) $49 \times 32'$ (b) $45' \times 24'$. (v) N.A. (vi) Yes.**4. GENERAL :**

(i) Fair. (ii) Nil. (iii) Sugarcane yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 14.95 tons/ac. (ii) (a) 1.93 tons/ac. (b) 3.73 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	Mean	S_1	S_2
L_0	15.01	14.47	13.21	14.23	15.29	13.18
L_1	13.71	17.81	15.48	15.67	15.64	15.69
Mean	14.36	16.14	14.35	14.95	15.46	14.44
S_1	13.86	16.58	15.94			
S_2	14.86	15.70	12.75			

S.E. of difference of two

- L marginal means = 0.30 tons/ac.
- S marginal means = 1.08 tons/ac.
- P marginal means = 1.32 tons/ac.
- P means at the same level of L = 1.82 tons/ac.
- S means at the same level of L = 1.52 tons/ac.
- L means at the same level of P = 1.55 tons/ac.
- L means at the same level of S = 1.12 tons/ac.
- means in the body of $P \times S$ table = 1.86 tons/ac.

Crop :- Sugarcane.**Ref :- As. 54(15).****Site :- Sugarcane Res. Stn., Jorhat.****Type :- 'M'.**

Object :—To study the effect of organic and inorganic manures and their combinations under limed and unlimed conditions.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—ratoon—Fallow. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy loam of old alluvium. (b) N.A. (iii) 19.4.1954 to 23.4.1954. (iv) (a) to (e) N.A. (v) Cowdung at 100 mds/ac. (vi) CO-419 (late). (vii) Unirrigated. (viii) N.A. (ix) 72.60°. (x) 1.3.1955 to 8.3.1955.

2. TREATMENTS :**Main-plot treatments :**2 levels of lime : $L_0 = 0$ and $L_1 = 12$ mds/ac. of slaked lime.**Sub-plot treatments :**7 manurial doses : $M_0 = \text{Control}$, $M_1 = 150$ md./ac. of cowdung, $M_2 = 300$ md./ac. of cowdung, $M_3 = 300$ lb. ac. of A/S, $M_4 = 600$ lb./ac. of A/S, $M_5 = 150$ lb./ac. of A/S+75 md./ac. of cowdung and $M_6 = 300$ lb./ac. of A/S+150 md. ac. of cowdung.**3. DESIGN :**(i) Split-plot. (ii) (a) 2 main-plots/block and 7 sub-plots/main-plot. (b) $49' \times 224'$. (iii) 3. (iv) $49' \times 32'$ (b) $45' \times 24'$. (v) N.A. (vi) Yes.**4. GENERAL :**

(i) Fair. (ii) N.A. (iii) Stripped cane yield. (iv) (a) 1953—1955. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 16.17 tons/ac. (ii) (a) 5.55 tons/ac. (b) 2.16 tons/ac. (iii) M effect is significant. (iv) Av. yield of cane in tons/ac.

	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	Mean
L ₀	11.40	16.00	15.72	14.19	15.07	17.27	19.85	15.64
L ₁	14.75	14.89	19.55	16.15	18.35	15.84	17.32	16.71
Mean	13.07	15.50	17.64	15.17	16.71	16.56	18.58	16.17

S.E. of difference of two

1. L marginal means = 1.71 tons/ac.
2. M marginal means = 1.25 tons/ac.
3. M means at the same level of L = 1.76 tons/ac.
4. L means at the same level of M = 2.87 tons/ac.

Crop :- Sugarcane.

Ref :- As. 55(28).

Site :- Sugarcane Res. Stn., Jorhat.

Type :- 'M'.

Object :—To study the effect of organic and inorganic manures and their combinations under limed and unlimed conditions.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—ratoon—Fallow. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy loam of old alluvium. (b) N.A. (iii) 17.2.1955 to 24.2.1955. (iv) (a) 1 ploughing followed by 2 harrowings. (b) Planted in trenches 7" deep. (d) Between rows—4'. (e) N.A. (v) Cowdung at 100 mds/ac. (vi) CO—419 (late). (vii) Unirrigated. (viii) Two weedings and earthings. (ix) 78.83%. (x) 4.4.1956 to 10.4.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(15) on page 96.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Stripped cane yield. (iv) (a) 1953—1955. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.28 tons/ac. (ii) (a) 4.58 tons/ac. (b) 2.32 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	Mean
L ₀	15.30	16.44	18.48	17.26	18.74	17.20	16.57	17.14
L ₁	15.89	16.77	18.22	17.00	17.74	16.26	20.08	17.42
Mean	15.60	16.60	18.35	17.13	18.24	16.73	18.33	17.28

S.E. of difference of two

1. L marginal means = 1.41 tons/ac.
2. M marginal means = 1.34 tons/ac.
3. M means at the same level of L = 1.89 tons/ac.
4. L means at the same level of M = 2.25 tons/ac.

Crop :- Sugarcane.**Ref :- As. 56(25).****Site :- Sugarcane Res. Stn., Jorhat.****Type :- 'M'.**

Object :—To study the best method and time for application of N as F.Y.M.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—ratoon—Fallow. (b) Fallow. (c) N.A. (ii) Reddish sandy loam of old alluvium (b) N.A. (iii) 21st to 28th March, 1956. (iv) (a) 1 ploughing followed by 2 harrowings. (b) Planted in trenches 9" deep. (c) N.A. (d) Between lines—4'. (e) N.A. (v) Nil. (vi) CO—419. (vii) Unirrigated. (viii) 2 weedings and 2 earthings. (ix) 72.75". (x) 19th to 25th March, 1957.

2. TREATMENTS :T₁=160 lb./ac. of N broadcast on 25th January, 1956.T₂=160 lb./ac. of N broadcast on 30th June, 1956.T₃=160 lb./ac. of N applied in trenches on 31st January, 1956.T₄=160 lb./ac. of N applied in trenches on 21st and 22nd March, 1956.T₅= 80 lb./ac. of N applied in trenches on 14th Feb., 1956 and 80 lb./ac. of N applied on 19th and 20th June, 1956 along with 1st earthing.

N applied as F.Y.M.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 49'×32'. (b) 45'×32'. (v) and (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Stripped cane yield. (iv) (a) 1956—1957. (b) and (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 14.89 tons/ac. (ii) 2.60 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅
Av. yield	11.62	13.78	17.59	15.68	15.79

S.E./mean = 1.06 tons/ac.

Crop :- Sugarcane.**Ref :- As. 57(26).****Site :- Sugarcane Res. Stn., Jorhat.****Type :- 'M'.**

Object :—To study the best method and time for application of N as F.Y.M.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—ratoon—Fallow. (b) Fallow. (c) N.A. (ii) (a) Reddish sandy loam of old alluvium. (b) N.A. (iii) 28th March to 4th April 1957. (iv) (a) 1 ploughing followed by 2 harrowings. (b) Planted in 9" deep trenches. (c) N.A. (d) Between lines—4'. (e) N.A. (v) Nil. (vi) CO—419. (vii) Unirrigated (viii) 2 weedings and 2 earthings. (ix) 91.47". (x) 6th to 10th April, 1958.

2. TREATMENTS :T₁=160 lb./ac. of N broadcast on 21st Feb., 1957.T₂=160 lb./ac. of N broadcast on 21st and 22nd Feb., 1957.T₃=160 lb. ac. of N applied in trenches on 20th Feb., 1957.T₄=160 lb./ac. of N applied in trenches on 28th March, 1957.T₅= 80 lb./ac. of N applied in trenches on 5th March, 1957 and 80 lb./ac. of N applied on 11th July, 1957 along with 1st earthing.

Source of N is N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 49'×32'. (b) 45'×32'. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Fair. (ii) N.A. (iii) Stripped cane yield. (iv) (a) 1956—1957. (b) and (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

- (i) 9.49 tons/ac. (ii) 1.95 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅
Av. yield	10.06	8.72	9.69	8.18	10.78

S.E./mean = 0.79 ton/ac.

Crop :- Sugarcane.

Site :- Sugarcane Res. Stn., Jorhat.

Ref :- As. 58(19).

Type :- 'M'.

Object :—To study the best method of application of F.Y.M.

1. BASAL CONDITIONS :

- (i) (a) Sugarcane—ratoon. (b) Ratoon. (c) Nil. (ii) (a) Reddish sandy loam of old alluvium. (b) N.A. (iii) N.A. (iv) (a) One ploughing followed by two harrowings. (b) Planted in trenches 9" deep. (c) N.A. (d) Between rows—4'. (e) N.A. (v) Nil. (vi) CO—419 (late). (vii) Unirrigated. (viii) weedings and 2 earthing. (ix) 86.27%. (x) 3.4.1959 to 9.4.1959.

2. TREATMENTS :

T₁=400 md./ac. of F.Y.M. broadcast one month before trenching.

T₂=400 md./ac. of F.Y.M. broadcast just before trenching.

T₃=400 md./ac. of F.Y.M. applied in trenches one month before planting.

T₄=400 md./ac. of F.Y.M. applied in trenches just before planting.

T₅=200 md./ac. of F.Y.M. applied in trenches one month before planting and 200 md./ac. of F.Y.M. applied with first earthing.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 49'×32'. (b) 45'×24'. (v) and (vi) Yes.

4. GENERAL :

- (i) Fair. (ii) Nil. (iii) Stripped cane yield. (iv) (a) 1956—N.A. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 16.25 tons/ac. (ii) 2.71 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅
Av. yield	15.25	15.93	17.44	15.67	16.98

S.E./mean = 1.11 tons/ac.

Crop :- Sugarcane.

Site :- Govt. Agri. Farm, Lembucherra.

Ref :- As. 58(1).

Type :- 'M'.

Object :—To study the response of N at various levels on the yield of Sugarcane.

1. BASAL CONDITIONS :

- (i) (a) No. (b) Jute. (c) Cowdung at 100 mds/ac. as B.D. and A/S at 100 lb./ac. as top dressing. (ii) (a) Sandy loam. (b) N.A. (iii) 18.5.1958. (iv) (a) Ploughing and hoeing. (b) Planted in trenches 9" deep. (c) to (e) N.A. (v) 40 lb./ac. of P₂O₅ as B.M. applied in trenches. (vi) CO—527. (vii) Irrigated. (viii) Weeding once, hoeing once and earthing up twice. (ix) 64.83%. (x) 23.2.1959.

2. TREATMENTS :

5 levels of N : N₀=0, N₁=40, N₂=80, N₃=120 and N₄=160 lb./ac.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5. (b) 24'×40'. (iii) 4. (iv) (a) 24'×8'. (b) 21'×5'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Sugarcane yield. (iv) (a) No. (b) and (c)—. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 13.93 tons/ac. (ii) 4.45 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	N ₀	N ₁	N ₂	N ₃	N ₄
Av. yield	11.56	11.93	13.83	14.76	17.58

S.E./mean = 2.28 tons/ac.

Crop :- Sugarcane.

Ref :- As. 59(61).

Site :- Sugarcane Res. Stn., Burlikson.

Type :- 'C'.

Object :- To study the effect of time and method of harvesting.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—ratoon. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer expt. no. 59(62) on page 95. (iii) 10 to 12.2.1959. (iv) (a) One ploughing followed by two harrowings. (b) Planted in trenches 9" deep. (c) N.A. (d) Between rows—4'. (e) N.A. (v) Nil. (vi) CO—419 (late). (vii) Unirrigated. (viii) 2 weedings and 2 earthings. (ix) 66.31". (x) As per treatments.

2. TREATMENTS :

Main-plot treatments :

2 methods of harvesting : H₁=Flush with ridge and H₂=Flush with ground.

Sub-plot treatments :

5 dates of harvesting : T₁=15.1.1960, T₂=15.2.1960, T₃=15.3.1960, T₄=15.4.1960 and T₅=15.5.1960.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication and 5 sub-plots/main-plot. (b) 98' × 160'. (iii) 3. (iv) (a) 49' × 32'. (b) 45' × 24'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Sugarcane yield. (iv) (a) 1959—N.A. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.76 tons/ac. (ii) (a) 3.04 tons/ac. (b) 4.33 tons/ac. (iii) T effect alone is highly significant. (iv) Av. yield of cane in tons/ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	Mean
H ₁	17.37	25.33	16.93	18.84	9.30	17.55
H ₂	19.01	15.71	13.62	10.94	10.54	13.96
Mean	18.19	20.52	15.28	14.89	9.92	15.76

S.E. of difference of two

1. H marginal means = 1.11 tons/ac.
2. T marginal means = 2.50 tons/ac.
3. T means at the same level of H = 3.54 tons/ac.
4. H means at the same level of T = 2.37 tons/ac.

Crop :- Cotton.

Ref :- As. 54(8).

Site :- Cotton Res. Stn., Tura.

Type :- 'M'.

Object :- To test the relative effect of different nitrogenous manures on Cotton crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) Nil. (ii) (a) Red sandy clay soil. (b) N.A. (iii) April 1954. (iv) (a) Ploughing and weeding. (b) Dibbling. (c) to (e) N.A. (v) Nil. (vi) *G. arboreum var. cornum* (medium). (vii) Unirrigated. (viii) One weeding. (ix) 117.80%. (x) December 1954.

2. TREATMENTS :

4 manures to give 60 lb./ac. of N : M_0 =No manure, M_1 =A/S, M_2 =Cowdung and M_3 =Oilcake. Manures applied one week before sowing.

3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Attack of pink boll worm, red bug, aphid and wilt. Spraying Gammexane and Guesarol. (iii) *Kapas* yield. (iv) (a) 1949—1955. (b) and (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 126.9 lb./ac. (ii) 49.64 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	62.2	77.6	216.2	151.4

S.E./mean = 20.26 lb./ac.

Crop :- Cotton.

Ref :- As. 55(8).

Site :- Cotton Res. Stn., Tura.

Type :- 'M'.

Object :—To test the relative effect of nitrogenous manures applied to Cotton crop.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Red sandy clay soil. (b) N.A. (iii) 22.4.1955. (iv) (a) Ploughing and weeding. (b) Dibbling. (c) to (e) N.A. (v) Nil. (vi) *G. arboreum var. cornum*. (vii) Unirrigated. (viii) Weeding with small hand hoe. (ix) 139.40%. (x) December 1955.

2. TREATMENTS :

4 manures to give 60 lb./ac. of N : M_0 =No manure, M_1 =A/S, M_2 =Cowdung and M_3 =Mustard oilcake. Manures applied one week before sowing.

3. DESIGN

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 18'×28'. (b) 15'×26'. (v) Yes. (vi) N.A.

4. GENERAL:

(i) N.A. (ii) Attack of pink boll worm, red bug, wilt and aphid. Spraying Gammexane and Guesarol. (iii) *Kapas* yield. (iv) (a) 1949—1955. (b) and (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 144.9 lb./ac. (ii) 71.44 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	100.3	113.6	235.1	130.5

S.E./mean = 31.9 lb./ac.

Crop :- Cotton.

Ref :- As. 56(13).

Site :- Cotton Res. Stn., Tura.

Type :- 'C'.

Object :—To find out the optimum time of sowing for Cotton.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Red sandy clay soil. (b) N.A. (iii) As per treatments. (iv) (a) *Jhum* system of cultivation. (b) Dibbling. (c) to (e) N.A. (v) Nil. (vi) *G. arboreum var. cornum* (medium). (vii) Unirrigated. (viii) Weeding. (ix) 139.40". (x) N.A.

2. TREATMENTS :

6 dates of sowing : $D_1=15.3.1956$, $D_2=1.4.1956$, $D_3=16.4.1956$, $D_4=1.5.1956$, $D_5=16.5.1956$ and $D_6=1.6.1956$.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) $32' \times 18'$. (b) $30' \times 16'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (iii) Attack of pink boll worm, red bug, aphid and wilt. Spraying Gammexane and Guesarol. (iii) *Kapas* yield. (iv) (a) to (c) No. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 309 lb./ac. (ii) 128.2 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6
Av. yield	335	437	290	316	251	228

S.E./mean = 52.34 lb./ac.

Crop :- Cotton.

Site :- Cotton Res. Stn., Tura.

Ref :- As. 55(9).

Type :- 'C'.

Object :—To study the economics of production of Cotton.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Red sandy clay soil. (b) N.A. (iii) 6, 7.4.1955. (iv) (a) Ploughing and weeding. (b) Dibbling. (c) to (e) N.A. (v) A/S dibbled at 200 lb./ac. two months after sowing. (vi) *G. arboreum var. cornum* (medium). (vii) Unirrigated. (viii) One weeding. (ix) 139.40". (x) Dec., 1955.

2. TREATMENTS :

1. Hill paddy+D. 46-2-1 (improved type of cotton).
2. Cotton alone.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a) $33' \times 18'$. (b) $30' \times 16'$. (v) Yes. (vi) N.A.

4. GENERAL :

(i) N.A. (ii) Attack of pink boll worm, steam weevil, red bug, aphid and wilt—spraying Gammexane and Guesarol. (iii) *Kapas* yield. (iv) (a) to (c) No. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 276.6 lb./ac. (ii) 168.7 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	1	2
Av. yield	181.4	371.8

S.E./mean = 68.9 lb./ac.

Crop :- Cotton.

Site :- Cotton Res. Stn., Tura.

Ref :- As. 56(12).

Type :- 'C'.

Object :—To study the economics of production of Cotton.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Red sandy clay soil. (b) N.A. (iii) April, 1956. (iv) (a) *Jhum* system of cultivation. (b) Dibbling. (c) to (e) N.A. (v) N.A. (vi) *G. arboreum var. cornum* (medium). (vii) Unirrigated. (viii) Weeding. (ix) 159.15%. (x) Dec., 1956.

2. TREATMENTS :

1. Cotton+groundnut.
2. Cotton+sannhemp.
3. Cotton alone.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Attack of pink boll worm, aphis, wilt and bug—spraying with Gammexane and Guesarol. (iii) *Kapas* yield. (iv) (a) to (c) No. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 71.67 lb./ac. (ii) 52.79 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	1	2	3
Av. yield	44.0	32.0	139.0

S.E./mean = 21.55 lb./ac.

Crop :- Jute.

Site :- Jute Seed Multiplication Farm, Barapetta.

Ref :- As. 57(3).

Type :- 'M'.

Object :—To compare the manurial values of C/N and A/S.

1. BASAL CONDITIONS :

(i) (a) Jute—Mustard. (b) Mustard. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 28.6.1957. (iv) (a) to (e) N.A. (v) About 50 md. of cowdung applied one month before sowing. (vi) J.R.O. 632. (vii) Unirrigated. (viii) One weeding and thinning. (ix) 42.73%. (x) 24, 25.10.1957.

2. TREATMENTS :

All combinations of (1) and (2) + a control.

(1) 2 levels of N : $N_1=20$ and $N_2=40$ lb./ac.

(2) 2 sources of N : $S_1=C/N$ and $S_2=A/S$.

3. DESIGN :

(i) R.B.D (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 22'×33'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Fibre yield. (iv) (a) 1958. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 766 lb./ac. (ii) 151.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of fibre in lb./ac.

Control = 615 lb./ac.

	N_1	N_2	Mean
S_1	750	900	825
S_2	825	750	783
Mean	783	825	804

S.E. of N or S marginal mean = 53.49 lb./ac.

S.E. of body of table or control mean = 75.65 lb./ac.

Crop :- Jute.**Ref :- As. 58(4).****Site :- Jute Seed Multiplication Farm, Barapetta.****Type :- 'M'.**

Object :—To compare the manurial values of C/N and A/S.

1. BASAL CONDITIONS :

(i) (a) Jute—Mustard. (b) Mustard. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 6.6.1958. (iv) (a) to (e) N.A. (v) Nil. (vi) J.R.O. 632. (vii) Unirrigated. (viii) One weeding and thinning. (ix) 85.45", (ix) 6.10.1958 to 9.10.1958.

2. TREATMENTS :

Same as in expt. no. 57(3) on page 103.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 49'×20'. (b) 45'×16'. (v) 2'×2'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of semi-looper and hairy cater-piller. Dusting and hand picking. (iii) Green crop and fibre yield. (iv) (a) 1957—1958. (b) and (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1446 lb./ac. (ii) 279.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of fibre in lb./ac.

Control = 1316 lb./ac.

	N ₁	N ₂	Mean
S ₁	1346	1301	1324
S ₂	1800	1467	1633
Mean	1573	1384	1478

S.E. of N or S marginal mean = 98.8 lb./ac.

S.E. of body of table or control mean = 139.6 lb./ac.

Crop :- Jute (Kharif).**Ref :- As. 54(22).****Centre :- Nowgong, Kamrup, Goalpara and Darrang (c.f.).****Type :- 'M'.**

Object :—To study the effect of inorganic fertilizers on the yield of Jute fibre.

1. BASAL CONDITIONS :(i) (a) to (c) N.A. (ii) Loam. (iii) Nil. (iv) JRC 212 *capsularis* (improved). (v) (a) N.A. (b) Broadcasting. (c) 10 lb./ac. (d) and (e) —. (vi) 1st week of May. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Middle of Sept.**2. TREATMENTS :**

- Control.
- A/S at 100 lb./ac.
- A/S at 150 lb./ac.
- A/S at 150 lb./ac. + Single Super at 187.5 lb./ac.
- A/S at 150 lb./ac. + Mur. of Pot. at 80 lb./ac.
- A/S at 150 lb./ac. + Single Super at 187.5 lb./ac. + Mur. of Pot. at 80 lb./ac.

3. DESIGN :

(i) and (ii) 12 blocks were selected, 2 each in Nowgong and Goalpara, 3 in Darrang and 5 in Kamrup districts. (iii) (a) 34'×134'. (b) 33'×132'. (iv) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Weight of dry fibre. (iv) (a) 1954—contd. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 1117 lb./ac. (ii) 393 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of fibre in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	912	999	1018	1161	1272	1341

S.E./mean = 113 lb./ac.

Crop :- Jute (Kharif).

Ref :- As. 55(36).

Centre :- Nowgong, Kamrup, Goalpara and Darrang (c.f.). Type :- 'M'.

Object :—To study the effect of inorganic fertilizers on the yield of Jute fibre.

1. BASAL CONDITIONS and 2. TREATMENTS:

Same as in expt. no 54(22) on page 104.

3. DESIGN:

(i) and (ii) 14 blocks were selected, 6 in Nowgong, 5 in Kamrup, 1 in Goalpara and 2 in Darrang districts.
(iii) (a) 34'×134'. (b) 33'×132'. (iv) Yes.

4. GENERAL:

Same as in expt. no. 54(22) on page 104.

5. RESULTS:

(i) 1017 lb./ac. (ii) 188 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of fibre in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	723	915	1012	1069	1185	1195

S.E./mean = 50 lb./ac.

Crop :- Jute (Kharif).

Ref :- As. 56(45).

Centre :- Nowgong, Kamrup, Goalpara and Darrang (c.f.). Type :- 'M'.

Object :—To study the effect of inorganic fertilizers on the yield of Jute fibre.

1. BASAL CONDITIONS and 2. TREATMENTS:

Same as in expt. no. 54(22) on page 104.

3. DESIGN:

(i) and (ii) 10 blocks were selected, 2 each in Nowgong, Kamrup and Goalpara districts and 4 in Darrang district. (iii) (a) 34'×134'. (b) 33'×132'. (iv) Yes.

4. GENERAL:

Same as in expt. no. 54(22) on page 104.

5. RESULTS:

(i) 1295 lb./ac. (ii) 194 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of fibre in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	920	1142	1272	1491	1432	1510

S.E./mean = 61 lb./ac.

Crop :- Jute (Kharif).**Ref :- As. 57(52).****Centre :- Nowgong, Kamrup, and Goalpara (c.f.).****Type :- 'M'.**

Object :—To study the effect of inorganic fertilizers on the yield of Jute fibre.

1. BASAL CONDITIONS :

Same as in expt. no. 54(22) on page 104.

2. TREATMENTS :

Same as in expt. no. 54(22) on page 104.

3. DESIGN :

(i) and (ii) 12 blocks were selected, 6 from Nowgong, 2 from Kamrup and 4 from Goalpara districts. (iii) (a) 34' × 134'. (b) 33' × 132'. (iv) Yes.

4. GENERAL :

Same as in expt. no. 54(22) on page 104.

5. RESULTS :

(i) 1225 lb./ac. (ii) 237 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of fibre in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	960	1093	1165	1349	1271	1512

S.E./mean = 68 lb./ac.

Crop :- Jute (Kharif).**Ref :- As. 58(66).****Centre :- Nowgong, Kamrup and Goalpara (c.f.).****Type :- 'M'.**

Object :—To study the effect of inorganic fertilizers on the yield of Jute fibre.

1. BASAL CONDITIONS :

Same as in expt. no. 54(22) on page 104.

2. TREATMENTS :

Same as in expt. no. 54(22) on page 104.

3. DESIGN :

(i) and (ii) 7 blocks were selected, 4 from Nowgong, 2 from Goalpara and 1 from Kamrup districts. (iii) (a) 34' × 134'. (b) 33' × 132'. (iv) Yes.

4. GENERAL :

Same as in expt. no. 54(22) on page 104.

5. RESULTS :

(i) 1358 lb./ac. (ii) 254 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of fibre in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	1099	1232	1171	1533	1473	1643

S.E./mean = 96 lb./ac.

Crop :- Jute (Kharif).**Ref :- As. 59(63).****Centre :- Nowgong, Kamrup and Goalpara (c.f.).****Type :- 'M'.**

Object :—To study the effect of inorganic fertilizers on the yield of Jute fibre.

1. BASAL CONDITIONS :

Same as in expt. no. 54(22) on page 104.

2. TREATMENTS :

Same as in expt. no. 54(22) on page 104.

3. DESIGN :

(i) and (ii) 7 blocks, 4 from Nowgong, 1 from Kamrup and 2 from Goalpara districts were selected. (iii) (a) 34'×134'. (b) 33'×132'. (iv) Yes.

4. GENERAL :

Same as in expt. no. 54(22) on page 104.

5. RESULTS :

(i) 1295 lb./ac. (ii) 301 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of fibre in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	1018	1113	1262	1457	1427	1492

S.E./mean = 114 lb./ac.

Crop :- Jute (Kharif).**Ref :- As. 55(35).****Centre :- Nowgong, Kamrup and Goalpara (c.f.).****Type :- 'M'.**

Object :—To study the effect of inorganic fertilizers on the yield of Jute fibre.

1. BASAL CONDITIONS :(i) (a) to (c) N.A. (ii) Loam. (iii) Nil. (iv) JRO-632 *olitorius* (improved). (v) (a) N.A. (b) Broadcasting. (c) 6 lb./ac. (d) and (e) —. (vi) 1st week of May. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) Middle of September.**2. TREATMENTS :**

Same as in expt. no. 54(22) on page 104.

3. DESIGN :

(i) and (ii) 3 blocks, one from each district were selected. (iii) (a) 34'×134'. (b) 33'×132'. (iv) Yes.

4. GENERAL :

Same as in expt. no. 54(22) on page 104.

5. RESULTS :

(i) 886 lb./ac. (ii) 81 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of fibre in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	659	744	829	96	951	1017

S.E./mean = 47 lb./ac.

Crop :- Jute (Kharif).**Ref :- As. 56(46).****Centre :- Kamrup, Goalpara and Darrang (c.f.).****Type :- 'M'.**

Object :—To study the effect of inorganic fertilizers on the yield of Jute fibre.

1. BASAL CONDITIONS :

Same as in expt. no. 55(35) on page 107.

2. TREATMENTS :

Same as in expt. no. 54(22) on page 104.

3. DESIGN :

(i) and (ii) 5 blocks were selected, 2 each in Kamrup and Goalpara districts and one in Darrang district.
(iii) (a) 34'×134'. (b) 33'×132'. (iv) Yes.

4. GENERAL :

Same as in expt. no. 54(22) on page 104.

5. RESULTS :

(i) 1819 lb./ac. (ii) 186 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of fibre in lb./ac

Treatment	1	2	3	4	5	6
Av. yield	1464	1835	1932	1947	1979	1755

S.E./mean = 83 lb./ac.

Crop :- Jute (Kharif).

Ref :- As. 57(53).

Centre :- Nowgong, Kamrup and Goalpara (c.f.).

Type :- 'M'.

Object :- To study the effect of inorganic fertilizers on the yield of Jute fibre.

1. BASAL CONDITIONS :

Same as in expt. no. 55(35) on page 107.

2. TREATMENTS :

Same as in expt. no. 54(22) on page 104.

3. DESIGN :

(i) and (ii) 4 blocks, one each from Kamrup and Goalpara districts and 2 from Nowgong district, were selected. (iii) (a) 34'×134'. (b) 33'×132'. (iv) Yes.

4. GENERAL :

Same as in expt. no. 54(22) on page 104.

5. RESULTS :

(i) 1794 lb./ac. (ii) 284 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of fibre in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	1504	1763	1588	1984	1846	2077

S.E./mean = 142 lb./ac.

Crop :- Jute (Kharif).

Ref :- As. 58(57).

Centre :- Nowgong and Kamrup (c.f.).

Type :- 'M'.

Object :- To study the effect of inorganic fertilizers on the yield of Jute fibre.

1. BASAL CONDITIONS :

Same as in expt. no. 55(35) on page 107.

2. TREATMENTS :

Same as in expt. no. 54(22) on page 104.

3. DESIGN :

(i) 5 blocks were selected, 3 from Nowgong and 2 from Kamrup districts. (ii) —. (iii) (a) 34'×134'. (b) 33'×132'. (iv) Yes.

4. GENERAL :

Same as in expt. no. 54(22) on page 104.

5. RESULTS :

(i) 1520 lb./ac. (ii) 118 lb./ac. (iii) Treatments differences are highly significant. (iv) Av. yield of fibre in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	1287	1551	1511	1620	1537	1612

S.E./mean = 53 lb./ac.

Crop :- Jute (Kharif).

Ref :- As. 59(64).

Centre :- Nowgong (c.f.).

Type :- 'M'.

Object :—To study the effect of inorganic fertilizers on the yield of Jute fibre.

1. BASAL CONDITIONS :

Same as in expt. no. 55(35) on page 107.

2. TREATMENTS :

Same as in expt. no. 54(22) on page 104.

3. DESIGN :

(i) 2 blocks were selected. (ii) —. (iii) (a) 34'×134'. (b) 32'×132'. (iv) Yes.

4. GENERAL :

Same as in expt. no. 54(22) on page 104.

5. RESULTS :

(i) 1101 lb./ac. (ii) 127 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of fibre in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	1037	1074	1048	1083	1166	1197

S.E./mean = 90 lb./ac.

Crop :- Jute.

Ref :- As. 56(11).

Site :- Jute Seed Multiplication Farm, Barapetta.

Type :- 'M'.

Object :—To study the response of different varieties of Jute to application of N.

1. BASAL CONDITIONS :

(i) (a) Jute—Mustard (b) Mustard. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 20 and 21.3.1956. (iv) (a) to (e) N.A. (v) About 50 md. of cowdung applied one month before sowing. (vi) As per treatments. (vii) Unirrigated. (viii) Two weedings and two thinnings. (ix) 87". (x) 29.8.1956.

2. TREATMENTS :

Strips in one direction :

4 varieties : $V_1=J.R.C. 212$, $V_2=J.R.C. 321$, $V_3=D. 154$ and $V_4=Local$.

Strips in the other direction :

4 levels of N : $N_0=0$, $N_1=20$, $N_2=40$ and $N_3=60$ lb./ac.

N applied as A/S.

3. DESIGN :

(i) Strip-plot. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 28'×24'. (b) 24'×20'. (v) 2'×2'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Fibre yield. (iv) (a) 1956—1960. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 574.3 lb./ac. (ii) (a) 364.8 lb./ac. (b) 264.8 lb./ac. (c) 228.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of fibre in lb./ac.

	V ₁	V ₂	V ₃	V ₄	Mean
N ₀	453.8	408.4	476.4	521.8	465.1
N ₁	657.9	521.8	726.0	589.9	623.9
N ₂	431.1	771.4	612.6	431.1	561.6
N ₃	726.0	567.2	635.3	657.9	646.6
Mean	567.2	567.2	612.6	550.2	574.3

S.E. of difference of two

1. V marginal means	= 129.0 lb./ac.
2. N marginal means	= 93.6 lb./ac.
3. N means at the same level of V	= 190.1 lb./ac.
4. V means at the same level of N	= 168.1 lb./ac.

Crop :- Jute.

Ref :- As. 57(2).

Site :- Jute Seed Multiplication Farm, Barapetta.

Type :- 'MV'.

Object :—To study the response of different varieties of Jute to application of N.

1. BASAL CONDITIONS :

(i) (a) Jute—Mustard. (b) Mustard. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 16.4.1957. (iv) (a) to (e) N.A. (v) About 50 md/ac. of cowdung applied one month before sowing (vi) As per treatments. (vii) Unirrigated. (viii) Two weedings and two thinnings. (ix) 75.02%. (x) 1 to 17.9.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(11) on page 109.

4. GENERAL :

(i) Fair. (ii) Attack of semi-loopers and hairy caterpillars—dusting and hand picking. (iii) Fibre yield. (iv) (a) 1956—1960. (b) and (c) Yes. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1417 lb./ac. (ii) (a) 422.4 lb./ac. (b) 472.2 lb./ac. (c) 274.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of fibre in lb./ac.

	V ₁	V ₂	V ₃	V ₄	Mean
N ₀	1021	1134	1202	1089	1112
N ₁	1384	1588	1634	1248	1464
N ₂	1770	1565	1883	1225	1611
N ₃	1611	1543	1497	1270	1480
Mean	1447	1457	1554	1208	1417

S.E. of difference of two

1. V marginal means	= 149.3 lb./ac.
2. N marginal means	= 167.0 lb./ac.
3. N means at the same level of V	= 224.7 lb./ac.
4. V means at the same level of N	= 236.7 lb./ac.

Crop :- Jute.**Ref :- As. 58(1).****Site :- Jute Seed Multiplication Farm, Barapetta.****Type :- 'MV'.**

Object :—To study the response of different varieties of Jute to application of N.

1. BASAL CONDITIONS :

(i) (a) Jute—Mustard. (b) Mustard. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 18, 19.4.1958. (iv) (a) to (e) N.A. (v) About 50 md./ac. of cowdung applied one month before sowing. (vi) As per treatments. (vii) Unirrigated. (viii) One weeding and one thinning. (ix) 104.36". (x) 2, 3 and 12.9.1958.

2. TREATMENTS :**Main-plot treatments :**4 varieties : V_1 =J.R.C. 212, V_2 =J.R.C. 321, V_3 =D. 154 and V_4 =Local.**Sub-plot treatments :**4 levels of N as A/S : $N_0=0$, $N_1=20$, $N_2=40$ and $N_3=60$ lb./ac.**3. DESIGN :**

(i) Split-plot. (ii) (a) 4 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 28'×24'. (b) 24'×20'. (v) 2'×2'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Light attack of hairy cater-piller—controlled by dusting and hand picking. (iii) Fibre yield. (iv) (a) 1956—1960. (b) and (c) Yes. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 860.7 lb./ac. (ii) (a) 286.2 lb./ac. (b) 282.2 lb./ac. (iii) Only V effect is significant. (iv) Av. yield of fibre in lb./ac.

	V_1	V_2	V_3	V_4	Mean
N_0	884.8	703.3	839.4	726.0	788.4
N_1	862.1	771.4	1202.4	748.7	896.1
N_2	748.7	998.3	1111.7	703.3	890.5
N_3	703.3	703.3	1225.1	839.4	867.8
Mean	799.7	794.1	1094.6	754.4	860.7

S.E. of difference of two

1. V marginal means	= 101.2 lb./ac.
2. N marginal means	= 99.8 lb./ac.
3. N means at the same level of V	= 199.5 lb./ac.
4. V means at the same level of N	= 200.3 lb./ac.

Crop :- Groundnut (Kharif).**Ref :- As. 57(46).****Site :- Agri. College, Jorhat.****Type :- 'M'.**Object :—To find out the effect of lime and P_2O_5 on Groundnut.

1. BASAL CONDITIONS

(i) (a) N.A. (b) Vegetables (pea, cabbage etc.). (c) Cowdung at 100 mds/ac. (ii) (a) Sandy loam (b) N.A. (iii) 4.6.1957. (iv) (a) 4 ploughings followed by laddering. (b) Dibbling. (c) N.A. (d) 16"×12". (e) One. (v) Cowdung at 50 mds/ac. (vi) T.M.V.—3. (vii) Unirrigated. (viii) Three weedings. (ix) N.A. (x) 6.11.1957.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of lime : $L_0=0$ and $L_1=1000$ lb./ac. of slaked lime.

(2) 2 levels of P_2O_5 as Super : $P_0=0$, $P_1=25$ lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) 8'×18'. (iii) 3. (iv) (a) and (b) 8'×4.5'. (v) No. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Pod yield. (iv) (a) 1957—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vi) Nil.

5. RESULTS :

(i) 124 lb./ac. (ii) 67 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pod in lb./c.

	P_0	P_1	Mean
L_0	131	152	137
L_1	109	116	112
Mean	115	134	124

S.E. of any marginal mean = 27 lb./ac.

S.E. of body of table = 39 lb./ac.

Crop :- Groundnut (*Kharif*).

Ref :- As. 58(41).

Site :- Agri. College, Jorhat.

Type :- 'M'.

Object :—To find out the effect of lime and P_2O_5 on Groundnut.

1. BASAL CONDITIONS :

(i) and (ii) Same as in expt. no. 57(46) on page 111. (iii) 10.5.1958. (iv) to (ix) Same as in expt. no. 57(46) on page 111. (x) 14.10.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(46) on page 111.

5. RESULTS :

(i) 556 lb./ac. (ii) 119 lb./ac. (iii) $P \times L$ interaction alone is highly significant. (iv) Av. yield of pod in lb./ac.

	P_0	P_1	Mean
L_0	569	516	543
L_1	415	722	569
Mean	492	619	556

S.E. of any marginal mean = 48 lb./ac.

S.E. of body of table = 68 lb./ac.

Crop :- Groundnut (Kharif).**Ref :- As. 59(32).****Site :- Govt. Agri. Farm, Jorhat.****Type :- 'M'.**

Object :—To study the effect of fertilizers on Groundnut.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Cauliflower. (c) Cowdung at 150 mds/ac., A/S at 50 lb./ac. of N and Super at 50 lb./ac. of P_2O_5 . (ii) (a) Old alluvial acid soil. (b) N.A. (iii) 3.6.1959. (iv) (a) Five ploughings followed by laddering. (b) Line sowing. (c) N.A. (d) $24'' \times 6''$. (e) N.A. (v) Cowdung at 61 mds/ac. broadcast. (vi) Local. (vii) Unirrigated. (viii) Weeding and hoeing. (ix) 5.39. (x) 23.11.1959 to 28.11.1959.

2. TREATMENTS : T_0 = Control. T_1 = 20 lb./ac. of N as C/A/N. T_2 = 20 lb./ac. of N as C/A/N + 40 lb./ac. of P_2O_5 as Super. T_3 = 20 lb./ac. of N as C/A/N + 40 lb./ac. of P_2O_5 as Super + 40 lb./ac. of K_2O as Mur. Pot.**3. DESIGN :**(i) R.B.D. (ii) (a) 4. (b) $44' \times 12'$. (iii) 4. (iv) (a) and (b) $11' \times 12'$. (v) No. (vi) Yes.**4. GENERAL :**

(i) Fair. (ii) Nil. (iii) Pod yield. (iv) (a) 1959—contd. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Expt. was conducted by Agri. Chemist.

5. RESULTS :

(i) 2006 lb./ac. (ii) 267 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of pod in lb./ac.

Treatment.	T_0	T_1	T_2	T_3
Av. yield	1629	2124	2145	2124

S.E./mean = 134 lb./ac.

Crop :- Mustard (Rabi).**Ref :- As. 56(41).****Site :- Govt. Agri. Farm, Jorhat.****Type :- 'M'.**Object :—To study the effect of different forms of P_2O_5 on the yield of Mustard.**1. BASAL CONDITIONS :**

(i) (a) N.A. (b) *Ahu* Paddy. (c) 100 md/ac. of cowdung and 40 lb./ac. of P_2O_5 . (ii) (a) Old alluvial acid soil. (b) N.A. (iii) 23.11.1956. (iv) (a) Five ploughings followed by laddering. (b) Broadcasting. (c) $3\frac{1}{2}$ srs./ac. (d) and (e) N.A. (v) 100 md./ac. of cowdung. (vi) Local *Sarson*. (vii) Unirrigated. (viii) Nil. (ix) 1.1. (x) 13.2.1957.

2. TREATMENTS :

3 sources of P_2O_5 : S_0 = No P_2O_5 , S_1 = *Kotka* phosphate and S_3 = Super.
 P_2O_5 applied at 40 lb./ac.

3. DESIGN :(i) R B.D. (ii) (a) 3. (b) $76' \times 24'$. (iii) 4. (iv) (a) and (b) $24' \times 19'$. (v) No. (vi) Yes.**4. GENERAL :**

(i) Fair. (ii) Nil. (iii) Seed yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Expt. was conducted by Agri. Chemist.

5. RESULTS :

(i) 834 lb./ac. (ii) 115 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of seed in lb./ac.

Treatment	S_0	S_1	S_2
Av. yield	640	936	927

S.E./mean = 57 lb./ac.

Crop :- Mustard (Rabi).**Ref :- As. 57(39).****Site :- Govt. Agri. Farm, Jorhat.****Type :- 'M'.**Object :—To study the effect of P_2O_5 applied in different forms on the yield of Mustard.**1. BASAL CONDITIONS :**

(i) (a) N.A. (b) *Ahu* Paddy. (c) 100 md./ac. of cowdung and 40 lb./ac. of P_2O_5 . (ii) (a) Old alluvial acid soil. (b) N.A. (iii) 25.11.1957. (iv) (a) 5 ploughings followed by laddering (b) Broadcasting. (c) 3 srs./ac. (d) and (e) N.A. (v) 100 md./ac. of cowdung. (vi) Local *Sarson*. (vii) Unirrigated. (viii) 1 weeding. (ix) 2.3". (x) 11.2.1958 to 14.2.1958.

2. TREATMENTS :

Same as in expt. no. 56(41) on page 113.

3. DESIGN :(i) R.B.D. (ii) (a) 3. (b) $32' \times 81'$. (iii) 4. (iv) (a) and (b) $32' \times 27'$. (v) No. (vi) Yes.**4. GENERAL :**

(i) Not good. (ii) Nil. (iii) Yield of seed. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 76 lb./ac. (ii) 30 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	S ₀	S ₁	S ₂
Av. yield	53	84	92

S.E./mean = 15.0 lb./ac.

Crop :- Mustard (Rabi).**Ref :- As. 57(43).****Site :- Res. Farm, Kokilamukh.****Type :- 'M'.**

Object :—To determine the effect of different nitrogenous fertilizers on the yield of Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer below.* (iii) 12.12.1957. (iv) (a) N.A. (b) Broadcasting. (c) 3 srs./ac. (d) and (e) N.A. (v) Nil. (vi) M—27 (*Sarson*). (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 12.3.1958.

2. TREATMENTS :T₀ = Control.T₁ = A, S at 200 lb./ac.T₂ = Urea at 90 lb./ac.T₃ = A/S/N at 154 lb./ac.T₄ = C/N at 250 lb./ac.**3. DESIGN :**(i) R.B.D. (ii) (a) 5. (b) $18' \times 60'$. (iii) 8. (iv) (a) and (b) $18' \times 12'$. (v) No. (vi) Yes.***Soil analysis, Kokilamukh.**

(i) Chemical analysis (%) :

Depth	N	Avl. P_2O_5	Avl. K_2O	pH (water extract)	pH (K_2O extract)	Acidity
0—9"	0.174	0.043	0.013	5.0	4.7	39.2
9"—18"	0.101	0.039	0.018	5.9	4.8	28.0

(ii) Mechanical analysis (%) :

Depth	Coarse sand	Fine sand	Silt	Clay	Moisture	Loss on ignition
0—9"	0.5	49.5	24.0	22.0	2.0	4.8
9"—18"	1.0	48.9	28.0	20.0	1.4	3.0

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of seed. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 182 lb./ac. (ii) 38 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of seed in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄
Av. yield	35	293	48	294	238

S.E./mean = 13.44 lb./ac.

Crop :- Mustard (Rabi).

Ref :- As. 58(32).

Site :- Res. Farm, Kokilamukh.

Type :- 'M'.

Object :—To determine the effect of different nitrogenous fertilizers on the yield of Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer in expt. no. 57(43) on page 114. (iii) 27.11.1958. (iv) (a) N.A. (b) Broadcasting. (c) 3 srs./ac. (d) and (e) N.A. (v) Nil. (vi) M—27 (Sarson). (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 9.3.1959.

2. TREATMENTS :

T₀=Control.
T₁=A/S at 200 lb./ac.
T₂=Urea at 90 lb./ac.
T₃=A/S/N at 154 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 18'×12'. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of seed. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 131 lb./ac. (ii) 69 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	73	189	153	107

S.E./mean = 28.17 lb./ac.

Crop :- Mustard (Rabi).

Ref :- As. 57(44).

Site :- Res. Farm, Kokilamukh.

Type :- 'M'.

Object :—To find out the effect of N, P and K on the yield of Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 10.12.1957. (iv) (a) N.A. (b) Line sowing. (c) 3 srs./ac. (d) Between lines—1'. (e) N.A. (v) Nil. (vi) M—27 (Sarson). (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 8.3.1958.

2. TREATMENTS :

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

(1) 2 levels of N as A/S : $N_0=0$ and $N_1=40$ lb./ac.

(2) 2 levels of P_2O_5 as Triple Super : $P_0=0$ and $P_1=40$ lb./ac.

(3) 2 levels of K_2O as Mur. Pot. : $K_0=0$ and $K_1=40$ lb./ac.

3. DESIGN :

(i) 2³ Fact. (ii) (a) 8. (b) 96'×18'. (iii) 8. (iv) (a) and (b) 18'×12'. (v) No. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of seed. (iv) (a) 1957—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 264.0 lb./ac. (ii) 49.0 lb./ac. (iii) Effect of N, P and interactions NP and NPK are highly significant. K effect and interaction NK are significant. (iv) Av. yield of seed in lb./ac.

	P_0	P_1	Mean	K_0	K_1
N_0	80	210	145	176	114
N_1	330	436	383	384	382
Mean	205	323	264	280	248
K_0	178	381			
K_1	231	265			

S.E. of any marginal mean = 8.66 lb./ac.

S.E. of body of any table = 12.25 lb./ac.

Crop :- Mustard (Rabi).

Ref :- As. 58(33).

Site :- Res. Farm, Kokilamukh.

Type :- 'M'.

Object :—To find out the effect of N,P and K on the yield of Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 25.11.1958. (iv) (a) N.A. (b) Line sowing. (c) 3 srs/ac. (d) Between lines—1'. (e) N.A. (v) Nil. (vi) M—27 (Sarson). (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 27.2.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(44) on page 115.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Yield of seed. (iv) (a) 1957—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 452 lb./ac. (ii) 76 lb./ac. (iii) Effect of N and interaction NPK are highly significant. P effect and interaction NK are significant. (iv) Av. yield of seed in lb./ac.

	P_0	P_1	Mean	K_0	K_1
N_0	382	407	395	391	398
N_1	478	542	510	549	471
Mean	430	475	452	470	435
K_0	433	507			
K_1	427	443			

S.E. for any marginal mean = 13.43 lb./ac.
 S.E. of body of any table = 19.00 lb./ac.

Crop :- Mustard.

Site :- Res. Farm, Kokilamukh.

Ref :- As. 56(29).

Type :- 'M'.

Object :- To find out the optimum dose of phosphatic fertilizer as Triple Super for Mustard.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Mustard. (c) A/S at 200 lb./ac. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 6.11.1956. (iv) (a) Country method of ploughing, laddering and harrowing. (b) Line sowing. (c) 3 srs/ac. (d) 1' between lines. (e) N.A. (v) Nil. (vi) M-27 (*sarson* early). (vii) Unirrigated. (viii) Weeding and earthing were done 15 to 20 days after sowing. (ix) 17.18". (x) 12.2.1957.

2. TREATMENTS :

7 doses of Triple Super : $P_0=0$, $P_1=10$, $P_2=20$, $P_3=30$, $P_4=40$, $P_5=50$ and $P_6=60$ lb./ac.
 Fert lizers were applied 5 days before sowing and mixed with soil by hoeing.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) N.A. (b) $42' \times 12'$. (v) 2' between plots. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of seed, height and tiller count. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 417.9 lb./ac. (ii) 59.03 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	P_0	P_1	P_2	P_3	P_4	P_5	P_6
Av. yield	413.2	432.1	424.9	399.7	416.8	397.9	440.2

S.E./mean = 24.10 lb./ac.

Crop :- Mustard.

Site :- Res. Farm, Kokilamukh.

Ref :- As. 57(19).

Type :- 'M'.

Object :- To find out the optimum dose of phosphatic fertilizer as Triple Super for Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) A/S at 200 lb./ac. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 20.11.1957. (iv) (a) Country method of ploughing, laddering and harrowing. (b) Line sowing. (c) 3 srs./ac. (d) 1' between lines. (e) N.A. (v) Nil. (vi) M-27 (*sarson* early). (vii) Unirrigated. (viii) Weeding and earthing were done 15 to 20 days after sowing. (ix) 11.55". (x) 15.2.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(29) above.

4. GENERAL :

(i) Satisfactory, plots with treatment P_5 had a better growth. (ii) No. (iii) Seed yield, height and tiller count. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 303.3 lb./ac. (ii) 66.69 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	P ₀	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆
Av. yield	267.4	296.2	328.6	312.4	279.1	332.2	307.0

S.E./mean = 27.23 lb./ac.

Crop :- Mustard.

Ref :- As. 58(8).

Site :- Res. Farm, Kokilamukh.

Type :- 'M'.

Object :—To find out the optimum dose of phosphatic fertilizer as Triple Super for Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) A/S at 200 lb./ac. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 19.11.1958. (iv) (a) Country method of ploughing, laddering and harrowing. (b) Line sowing. (c) 3 srs./ac. (d) 1' between lines. (e) Nil. (v) Nil. (vi) M-27 (*sarson*—early). (vii) Weeding and earthing were done 15 to 20 days after sowing. (ix) 15.57". (x) 28.2.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(29) on page 117.

4. GENERAL :

(i) Growth in plots with treatment P₆ was better than other plots. Growth in control plot was poor. (ii) Severe attack of saw-fly. Spraying and dusting of Gammexane. (iii) Seed yield, height and tiller count. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 205.3 lb./ac. (ii) 58.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of seed in lb./ac.

Treatment	P ₀	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆
Av. yield	73.8	183.7	223.3	234.1	230.5	220.6	271.0

S.E./mean = 24.04 lb./ac.

Crop :- Mustard (*Rabi*).

Ref :- As. 56(44).

Site :- Res. Farm, Kokilamukh.

Type :- 'M'.

Object :—To determine the effect of C/N and A/S on the yield of Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) N.A. (iv) (a) N.A. (b) Broadcasting. (c) 4 srs/ac. (d) and (e) N.A. (v) Nil. (vi) M—27(mustard). (vii) Unirrigated. (viii) to (x) N.A.

2. TREATMENTS :

T₀=Control.
T₁=C/N at 125 lb./ac.
T₂=A₁S at 100 lb./ac.
T₃=C₁N at 250 lb./ac.
T₄=A₁S at 200 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 60'×18'. (iii) 4. (iv) (a) and (b) 18'×12'. (v) No. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of seed. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 385.0 lb./ac. (ii) 68.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of seed in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃	T ₄
Av. yield	199	280	448	347	652

S.E./mean = 34.0 lb./ac.

Crop :- Mustard (Rabi).

Ref :- As. 55(27).

Site :- Res. Farm, Kokilamukh.

Type :- 'M'.

Object :—To find out the optimum time of application of A/S to Mustard crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pulse. (c) Cowdung at 40 mds/ac.+oilcake at 15 mds/ac. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 17.10.1955. (iv) (a) Ploughing followed by laddering. (b) Line sowing. (c) 3 srs./ac. (d) 1' between lines. (e) N.A. (v) Nil. (vi) M—27 (*Sarson*, early). (vii) Unirrigated. (viii) 1 weeding and 2 earthings. (ix) 17.8". (x) 18.1.1956.

2. TREATMENTS :

4 times of application of N: T₀=No manure, T₁=Full dose 5 days before sowing, T₂=Half 5 days before sowing and half 20 days after sowing and T₃=Full dose 20 days after sowing. N applied at 40 lb./ac. as A/S.

DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 44'×56'. (iii) 6. (iv) (a) 44'×14'. (b) 42'×12'. (v) 2' between plots. (vi) Yes.

4. GENERAL :

(i) Poor growth in T₀ and T₃ plots ; satisfactory in T₁ and T₂ plots. (ii) Affected by mustard saw-fly before flowering. Gammexane dusted. (iii) Height, no. of tillers and yield of seed. (iv) (a) 1955—1957. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 489 lb./ac. (ii) 60.72 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of seed in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	209	644	585	518

S.E./mean = 24.79 lb./ac.

Crop :- Mustard (Rabi).

Ref :- As. 56(38).

Site :- Res. Farm, Kokilamukh.

Type :- 'M'.

Object :—To find out the optimum time of application of A/S to Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) Cowdung at 40 md./ac.+Oil cake at 15 md./ac. (ii) (a) Sandy loam. (b) Refer expt no. 57(43) on page 114. (iii) Nil. (iv) (a) Ploughing followed by laddering. (b) Line sowing. (c) 3 srs./ac. (d) 1' between lines. (e) N.A. (v) Nil. (vi) M—27 (*Sarson*, early). (vii) Unirrigated. (viii) 1 weeding and 2 earthings. (ix) 17.58". (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(27) above.

4. GENERAL :

(i) Poor growth in T₀ and T₃ plots, satisfactory in T₁ and T₂ plots. (ii) Affected by mustard aphids. Dusting of Gammexane. (iii) Height of plants, no. of tillers and yield of seed. (iv) (a) 1955—1957. (b) Yes. (c) Nil (v) (a) and (b) Nil. (vi) and (vii) Nil

5. RESULTS :

(i) 163 lb./ac. (ii) 45.36 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of seed in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	81	259	189	124

S.E./mean = 18.52 lb./ac.

Crop :- Mustard (Rabi).

Ref :- As. 57(34).

Site :- Res. Farm, Kokilamukh.

Type :- 'M'.

Object :—To find out the optimum time of application of A/S to Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) Cowdung at 40 mds/ac. + oilcake at 15 mds/ac. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) N.A. (iv) (a) Ploughing followed by laddering. (b) Line sowing (c) 3 srs./ac. (d) 1' between lines. (e) N.A. (v) Nil. (vi) M—27 (Sarson, early). (vii) Unirrigated. (viii) Weeding and earthing once. (ix) 11.55". (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(27) on page 119.

4. GENERAL :

(i) Poor growth in T₀ and T₃ plots, satisfactory in other plots. (ii) Affected badly by mustard saw-fly. Gammexane applied. (iii) Height, no. of tillers and yield of seed. (iv) (a) 1955—1957. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 194 lb./ac. (ii) 40.34 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of seed in lb./ac.

Treatment	T ₀	T ₁	T ₂	T ₃
Av. yield	112	324	223	194

S.E./mean = 16.47 lb./ac.

Crop :- Mustard (Rabi).

Ref :- As. 59(SFT)

Centre :- Darrang (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) Nil. (iv) N.A. (v) (a) N.A. (b) Broadcast. (c) N.A. (d) and (e)—(vi) Oct. 1959. (vii) to (x) N.A.

2. TREATMENTS :

0 = Control (no manure).

n = 20 lb./ac. of N as A/S.

p = 20 lb./ac. of P₂O₅ as Super.

np = 20 lb./ac. of N as A/S +
20 lb./ac. of P₂O₅ as Super.

k = 20 lb./ac. of K₂O as Mur. Pot.

nk = 20 lb./ac. of N as A/S + 20 lb./ac. of K₂O as Mur. Pot.

pk = 20 lb./ac. of P₂O₅ as Super + 20 lb./ac. of K₂O as Mur. Pot.

npk = 20 lb./ac. of N as A/S + 20 lb./ac. of P₂O₅ as Super + 20 lb./ac. of K₂O as Mur Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant has been posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in

the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on a *kharif* cereal, 8 on a *rabi* cereal, 8 on a cash crop, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The above experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 40. ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Fair to normal. (ii) N.A. (iii) Seed yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n	p	np	k	nk	pk	npk
Av. yield	123.4	255.1	213.9	320.9	205.7	164.6	296.2	485.5

G.M.=258.2 lb./ac. ; S.E.=48.89 lb./ac. and no. of trials=4.

Crop :- Mustard (*Rabi*).

Ref :- As. 59(SFT).

Centre :- Goalpara (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) Type A on page 120 conducted at Darrang.

5. RESULTS:

Treatment	0	n	p	np	k	nk	pk	npk
Av. yield	222.2	230.4	296.2	395.0	164.6	205.7	320.9	419.7

G.M.=281.8 lb./ac., S.E.=56.8 lb./ac. and no. of trials=2.

Crop :- Mustard (*Rabi*).

Ref :- As. 59(SFT).

Centre :- Kamrup (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) Type A on page 120 conducted at Darrang.

5. RESULTS :

Treatment	0	n	p	np	k	nk	pk	npk
Av. yield	329.1	567.8	551.3	666.5	576.0	501.9	757.0	633.6

G.M.=572.9 lb./ac., S.E.=81.2 lb./ac. and no. of trials=2.

Crop :- Mustard (*Rabi*).

Ref :- As. 59(SFT).

Centre :- Lakhimpur (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Mustard and levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) Nil. (iv) N.A. (v) (a) N.A. (b) Broadcast. (c) N.A. (d) and (e) —. (vi) Oct.—Nov. 1959. (vii) to (ix) N.A. (x) March 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) Type A on page 120 conducted at Darrang.

5. RESULTS :

Treatment	0	n	p	np	k	nk	pk	npk
Av. yield	452.6	423.8	464.9	444.3	473.1	444.3	526.6	761.1

G.M.=498.8 lb./ac. ; S.E.=71.67 lb./ac. and no. of trials =4.

Crop :- Mustard (Rabi).

Ref :- As. 59(SFT).

Centre :- Sibsagar (c.f.).

Type :- 'M'.

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Hilly. (iii) Nil. (iv) N.A. (v) (a) N.A. (b) Broadcast. (c) N.A. (d and (e) —. (vi) Nov. 1959. (vii) to (ix) N.A. (x) February to March 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) Type A on page 120 conducted at Darrang.

5. RESULTS :

Treatment	0	n	p	np	k	nk	pk	npk
Av. yieldt	353.8	385.1	390.0	441.1	337.4	365.3	419.7	437.8

G.M.=391.3 lb./ac. ; S.E.=39.54 lb./ac. and no. of trials =5.

Crop :- Mustard (Rabi).

Ref :- As. 59 (SFT).

Centre :- Darrang (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) Nil. (iv) N.A. (v) (a) N.A. (b) Broadcasting. (c) N.A. (d) and (e) —. (vi) December 1959. (vii) to (ix) N.A. (x) February—March 1960.

2. TREATMENTS :

0 =Control.

n_1 =20 lb./ac. of N as A/S.

n_2 =40 lb./ac. of N as A/S.

n_1' =20 lb./ac. of N as Urea.

n_2' =40 lb./ac. of N as Urea.

n_1''' =20 lb./ac. of N as C/A.N.

n_2''' =40 lb./ac. of N as C,A.N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant has been posted in each zone. The field assistant conducts the trials in one Revenue circle or thana and the circle/thana is changed once in two years within the same zone. Each field Assistant is required to conduct 31 trials in a year 8 on a kharif cereal, 8 on a rabi cereal, 8 on cash crop, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The above experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Below normal. (ii) N.A. (iii) Seed yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) N.A.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield	90.5	107.0	123.4	98.7	131.7	123.4	123.4

G.M.=114.0 lb./ac. ; S.E.=8.29 lb./ac. and no. of trials=3.

Crop :- Mustard (*Rabi*).

Ref :- As. 59(SFT).

Centre :- Kamrup (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 3. DESIGN :

Same as in expt. no. 59 (SFT) Type B on page 122 conducted at Darrang.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Seed yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) N.A.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield	238.6	386.7	526.6	567.8	732.3	543.1	641.8

G.M.=519.6 lb./ac. ; S.E.=22.42 lb./ac. and no. of trials =2.

Crop :- Mustard (*Rabi*).

Ref :- As. 59(SFT).

Centre :- Lakhimpur (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 3. DESIGN :

Same as in expt. no. 59(SFT) Type B on page 122 conducted at Darrang.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Seed yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) N.A.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield	493.7	699.4	493.7	592.5	592.5	740.6	781.7

G.M.=627.7 lb./ac. ; S.E.=166.58 lb./ac. and no. of trails =2.

Crop :- Mustard (*Rabi*).

Ref :- As. 59(SFT).

Centre :- Sibsagar (c.f.).

Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Hilly. (iii) N.A. (iv) N.A. (v) (a) Ploughing, harrowing and planking. (b) Broadcasting. (c) N.A. (d) and (e)—. (vi) Nov. 1959. (vii) to (ix) N.A. (x) Feb.—March 1960.

2. TREATMENTS and 3. DESIGN

Same as in expt. no. 59 (SFT) Type B on page 122 conducted at, Darrang.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Seed yield. (iv) (a) 1958—contd. (b, No. (c) N.A. (v) As per design. (vi) and (vii) N.A.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield	600.7	699.4	757.0	765.3	748.8	699.4	806.4

G.M. = 725.3 lb./ac. ; S.E. = 56.4 lb./ac. and no. of trials = 8

Crop :- Mustard (Rabi).

Ref :- As. 54(21).

Site :- Res. Farm, Kokilamukh.

Type :- 'C'.

Object :- To determine the effect of rotational cultivation on the yield of Mustard.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 12.11.1954. (iv) (a) N.A. (b) Line sowing. (c) 4 srs./ac. (d) 1' between line. (e) N.A. (v) A, S at 200 lb./ac. broadcast. (vi) Mustard—M-27. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 14.12.1955.

2. TREATMENTS .

Treatment	1953—1954		1954—1955		1955—1956		1956—1957		1957—1958		1958—1959	
	Kh	R	Kh	R	Kh	R	Kh	R	Kh	R	Kh	R
T ₁	A	M	A	M	A	M	A	M	A	M	A	M
T ₂	A	F	G	M	A	F	G	M	A	F	G	M
T ₃	G	M	A	F	G	M	A	F	G	M	A	F
T ₄	A	M	G	M	A	K	A	M	G	M	A	K
T ₅	G	M	A	K	A	M	G	M	A	K	A	M
T ₆	A	K	A	M	G	M	A	K	A	M	G	M

Kh—Kharif, R—Rabi, A—Ahu Paddy, M—Mustard, F—Fallow, G—Green manure, and M—Matikalai.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 42' × 72'. (iii) 6. (iv) (a) 42' × 12'. (b) 40' × 10'. (v) and (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of seed. (iv) (a) 1953—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 62.01 lb./ac. (ii) 17.01 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	T ₁	T ₂	T ₄	T ₆
Av. yield	56	58	67	66

S.E./mean = 6.9 lb./ac.

Crop :- Mustard (Rabi).

Ref :- As. 55(34).

Site :- Res. Farm, Kokilamukh.

Type :- 'C'.

Object :- To determine the effect of rotational cultivation on the yield of Mustard.

1. BASAL CONDITIONS:

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 12.11.1955. (iv) (a) N.A. (b) Line sowing. (c) 4 srs/ac. (d) 1' between lines. (e) N.A. (v) A/S at 200 lb./ac. broadcast. (vi) Mustard—M-27. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 14.2.1956.

2. TREATMENTS to 4. GENERAL.

Same as in expt. no. 54(21) on page 124.

5. RESULTS:

(i) 131.0 lb./ac. (ii) 66.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of seed in lb./ac.

Treatment	T ₁	T ₃	T ₅	T ₆
Av. yield	166	138	128	92

S.E./mean = 26.9 lb./ac.

Crop :- Mustard (Rabi).

Ref :- As. 56(43).

Site :- Res. Farm, Kokilamukh.

Type :- 'C'.

Object :—To determine the effect of rotational cultivation on the yield of Mustard.

1. BASAL CONDITIONS:

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 12.11.1956. (iv) (a) N.A. (b) Line sowing. (c) 4 srs/ac. (d) Between lines—1'. (e) N.A. (v) A/S at 200 lb./ac. broadcast. (vi) Mustard—M-27 (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 14.2.57.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no 54(21) on page 124.

5. RESULTS:

(i) 238 lb./ac. (ii) 45 lb./ac. (iii) Treatment differences are highly significant. (iv) Av yield of seed in lb./ac.

Treatment	T ₁	T ₂	T ₄	T ₅
Av. yield	275	167	268	241

S.E./mean = 18.4 lb./ac.

Crop :- Mustard (Rabi).

Ref :- As. 57(42).

Site :- Res. Farm, Kokilamukh.

Type :- 'C'.

Object :—To determine the effect of rotational cultivation on the yield of Mustard.

1. BASAL CONDITIONS:

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) Refer expt no. 57(43) on page 114. (iii) 28.10.1957 (iv) (a) N.A. (b) Line sowing. (c) 4 srs/ac. (d) Between lines—1'. (e) N.A. (v) A/S at 200 lb./ac. broadcast. (vi) Mustard—M—27. (viii) Unirrigated. (viii) N.A. (ix) N.A. (x) 4.2.1958.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 54(21) on page 124.

5. RESULTS:

(i) 125 lb./ac. (ii) 29 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	T ₁	T ₃	T ₄	T ₆
Av. yield	136	119	115	129

S.E./mean = 11.9 lb./ac.

Crop :- Mustard (Rabi).**Ref :- As. 58(30).****Site :- Res. Farm, Kokilamukh.****Type :- 'C'.**

Object :—To determine the effect of rotational cultivation on the yield of Mustard.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 28.10.1958. (iv) (a) N.A. (b) Line sowing. (c) srs./ac. (d) Between lines—1'. (e) N.A. (v) A/S broadcast at 200 lb./ac. (vi) Mustard—M-27. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 31.1.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(21) on page 124.

5 RESULTS :

(i) 95 lb./ac. (ii) 40 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of seed in lb./ac.

Treatment	T ₁	T ₂	T ₅	T ₆
Av. yield	142	82	77	81

S.E./mean = 16.3 lb./ac.

Crop :- Mustard (Rabi).**Ref :- As. 54(18).****Site :- Res. Farm, Kokilamukh.****Type :- 'C'.**

Object :—To determine the optimum seed rate for Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 30.10.1954. (iv) (a) Ploughing followed by laddering. (b) Broadcasting. (c) As per treatments. (d, and e) —. (v) A/S at 200 lb./ac. applied on 7.11.1954. (vi) M—27 (Sarson). (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 27.1.1955.

2. TREATMENTS :4 seed rates: R₁=6, R₂=8, R₃=10 and R₄=12 lb./ac.**3. DESIGN :**

(i) R.B.D. (ii) (a) 4. (b) 42'×48'. (iii) 6. (iv) (a) 42'×12'. (b) 40'×10'. (v) and (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Yield of seed. (iv) (a) 1954—1955. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 20.42 lb./ac. (ii) 3.93 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of seed in lb./ac.

Treatment	R ₁	R ₂	R ₃	R ₄
Av. yield	13.61	17.02	23.82	27.22

S.E./mean = 1.60 lb./ac.

Crop :- Mustard (Rabi).**Ref :- As. 55(32).****Site :- Res. Farm, Kokilamukh.****Type :- 'C'.**

Object :—To determine the optimum seed rate for Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sady loam. (b) Refer expt. no. 57(43) on page 114. (iii) N.A. (iv) (a) Ploughing followed by laddering. (b) Broadcasting. (c) As per treatments. (d) and (e) —. (v) A/S at 200 lb./ac. applied on 19.11.1955. (vi) M—27 (*Sarson*). (vii) Unirrigated. (viii) Nil. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(18) on page 126.

5. RESULTS :

(i) 1229 lb./ac. (ii) 67 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of seed in lb./ac.

Treatment	R ₁	R ₂	R ₃	R ₄
Av. yield	1141	1153	1234	1386

S.E./mean = 27.0 lb./ac.

Crop :- Mustard (*Rabi*).

Ref :- As. 55(30).

Site :- Res. Farm, Kokilamukh.

Type :- 'C'.

Object :- To find the optimum sowing season with different seed rates for Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) As per treatments. (iv) (a) Ploughing followed by laddering. (b) Broadcasting. (c) As per treatments (d) and (e) —. (v) Nil. (vi) M—27. (vii) Unirrigated. (viii) and (ix) N.A. (x) 30.12.1955., 19.1.1956, 18.2.1956 and 12.3.1956.

2. TREATMENTS :

Main-plot treatments :

6 dates of sowing : D₁=1.10.1955, D₂=16.10.1955, D₃=31.10.1955., D₄=15.11.1955., D₅=30.11.1955, and D₆=15.12.1955.

Sub-plot treatments :

4 seed rates : R₁=6, R₂=8, R₃=10 and R₄=12 lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 4 sub-plots/main-plot. (b) 48'×48'. (iii) 4. (iv) (a) 8'×12'. (b) 6'×10'. (v) 2' between plots. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of seed. (iv) (a) 1953—1955. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 9183 lb./ac. (ii) (a) 987 lb./ac. (b) 1198 lb./ac. (iii) Main effects of D, R and interaction D×R are highly significant. (iv) Av. yield of seed in lb./ac.

	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	Mean
R ₁	2541	12796	14520	16517	4719	205	8550
R ₂	2723	18241	15791	15972	5581	363	9778
R ₃	1271	19602	14702	14883	4991	363	9302
R ₄	1997	18695	14702	14066	4855	296	9102
Mean	2133	17333	14928	15359	5037	307	9183

S.E. of difference of two

1. D marginal means	= 349.0 lb./ac.
2. R marginal means	= 345.8 lb./ac.
3. R means at the same level of D	= 847.1 lb./ac.
4. D means at the same level of R	= 812.3 lb./ac.

Crop :- Mustard.**Ref :- As. 55(19).****Site :- Res. Farm, Kokilamukh.****Type :- 'C'.**

Object :—To compare the efficiency of line sowing at different spacings with broadcasting for Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) A/S at 200 lb./ac. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 5.11.1955. (iv) (a) Country method of ploughing, laddering, harrowing. (b) As per treatments. (c) 3 srs./ac. (d) As per treatments. (e) N.A. (v) A/S applied at 200 lb./ac. 5 days before sowing. (vi) M—27 (*Sarson*, early). (vii) Unirrigated. (viii) Weeding and earthing were done 15 to 20 days after sowing. (ix) 16.82". (x) 8.2.1956.

2. TREATMENTS :

4 spacings between lines : S_0 =Broadcasting, S_1 =6" (24 lines/plot), S_2 =9" (16 lines/plot) and S_3 =12" (12 lines/plot).

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 42'×12'. (v) 2' between plots. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Height, no. of tillers/plant and seed yield. (iv) (a) 1955—1957. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 546.4 lb./ac. (ii) 94.36 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of seed in lb./ac.

Treatment	S_0	S_1	S_2	S_3
Av. yield	471.3	484.1	692.8	537.5

S.E./mean = 47.18 lb./ac.

Crop :- Mustard.**Ref :- As. 56(28).****Site :- Res. Farm, Kokilamukh.****Type :- 'C'.**

Object :—To compare the efficiency of line sowing at different spacings with broadcasting for Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) A/S applied at 200 lb./ac. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 13.11.1956. (iv) (a) Country method of ploughing, laddering and harrowing. (b) As per treatments. (c) 3 srs./ac. (d) As per treatments. (e) N.A. (v) A/S applied at 200 lb./ac. 5 days before sowing. (vi) M—27 (*Sarson*, early). (vii) Unirrigated. (viii) Weeding and earthing were done 15 to 20 days after sowing. (ix) 17.18". (x) 11.2.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(19) above.

4. GENERAL :

(i) Satisfactory. (ii) Slight attack by saw-fly—dusting with Gammexane. (iii) Yield of seed, height of plant, and no. of tillers/plant. (iv) (a) 1955—1957. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 909.2 lb./ac. (ii) 80.84 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃
Av. yield	822.4	953.4	908.8	952.1

S.E./mean = 40.42 lb./ac.

Crop :- Mustard.

Ref :- As. 57(20).

Site :- Res. Farm, Kokilamukh.

Type :- 'C'.

Object :—To compare the efficiency of line sowing at different spacings with broadcasting for Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) A/S at 200 lb./ac. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 16.11.1957. (iv) (a) Country method of ploughing, laddering and harrowing. (b) As per treatments. (c) 3 srs/ac. (d) As per treatments. (e) N.A. (v) A/S applied at 200 lb./ac. 5 days before sowing. (vi) M-27 (*Sarson*, early). (vii) Unirrigated. (viii) Weeding and earthing were done 15 to 20 days after sowing. (ix) 11.55". (x) 17.2.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(19) on page 128.

4. GENERAL :

(i) Satisfactory. (ii) Slightly attacked by aphids—dusting with Gammexane. (iii) Yield of mustard seed, height of plant and no. of tillers/plant. (iv) (a) 1955—1957. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 667.1 lb./ac. (ii) 52.45 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃
Av. yield	655.0	703.6	657.7	652.3

S.E./mean = 26.22 lb./ac.

Crop :- Mustard.

Ref :- As. 56(31).

Site :- Res. Farm, Kokilamukh.

Type :- 'CV'.

Object :—To find out the optimum seed rate for different varieties of Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Arhar*, *Mung* and *Matikalai*. (c) Oilcake at 13 to 15 mds/ac. and cowdung at 30 to 40 mds/ac. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 3.11.1956. (iv) (a) Country method of ploughing, laddering and harrowing. (b) Line sowing. (c) As per treatments. (d) 1' between lines. (e) N.A. (v) A/S at 200 lb./ac. 5 days before sowing. (vi) As per treatments. (vii) Unirrigated. (viii) 1 weeding and 2 earthings with *khurpi* and hoe. (ix) 17.58". (x) 15.2.1957 to 21.2.1957.

2. TREATMENTS :

Main-plot treatments :

3 varieties : V₁=M-27 (*Sarson*), V₂=M-2 (*Rai*). and V₃=M-60 (*Toria*).

Sub-plot treatments :

5 seed rates : R₁=2, R₂=2.5, R₃=3, R₄=3.5 and R₅=4 srs/ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 20' × 14' (b) 18' × 12'. (v) 2' between plots. (vi) Yes.

4. GENERAL :

(i) Satisfactory, but *Rai* plants had better growth. (ii) *Sarson* and *Toria* were affected by white rust disease. Controlled by spraying copper fungicide at 2 chs. in 2 gallons of water. (iii) Yield of seed, height and no. of tillers/plant. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 959.3 lb./ac. (ii) (a) 161.4 lb./ac. (b) 120.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of seed in lb./ac.

	R ₁	R ₂	R ₃	R ₄	R ₅	Mean
V ₁	1020.9	957.9	1002.0	973.7	1055.6	1002.0
V ₂	1039.8	1069.8	926.4	920.1	765.7	944.4
V ₃	901.2	920.1	891.8	989.4	954.8	931.4
Mean	987.3	982.6	940.1	961.1	925.4	959.3

S.E. of difference of two

1. V marginal means = 51.04 lb./ac.
2. R marginal means = 49.23 lb./ac.
3. R means at the same level of V = 85.28 lb./ac.
4. V means at the same level of R = 91.77 lb./ac.

Crop :- Mustard.

Ref :- As. 57(18).

Site :- Res. Farm, Kokilamukh.

Type :- 'CV'.

Object :—To find out the optimum seed rate for different varieties of Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Arhar*, *Mung* and *Matikalai*. (c) Oilcake manure at 13 to 15 mds./ac. and cowdung at 30 to 40 mds/ac. (ii) (a) Sandy loam. (b) Refer expt. no. (57)43 on page 114. (iii) 15.11.1957. (iv) (a) Country method of ploughing, laddering and harrowing, etc. (b) Line sowing. (c) As per treatments. (d) Between lines—1'. (e) N.A. (v) A/S at 200 lb./ac. applied 5 days before sowing and mixed with soil by hoeing. (vi) As per treatments. (vii) Unirrigated. (viii) Weeding and 2 earthings with *khurpi* and hoe. (ix) 11.55". (x) 17.2.1958 to 25.2.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(31) on page 129.

4. GENERAL :

(i) *Rai* plants had better growth. (ii) During the flowering period the expt. was affected by saw-fly. Controlled by dusting with Gammexane and hand picking. (iii) Seed yield, height and tiller count. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 564.8 lb./ac. (ii) (a) 89.08 lb./ac. (b) 82.44 lb./ac. (iii) Main effect of V is highly significant. Main effect of R is significant. Interaction is not significant. (iv) Av. yield of seed in lb./ac.

	R ₁	R ₂	R ₃	R ₄	R ₅	Mean
V ₁	488.4	483.7	617.6	570.3	573.5	546.7
V ₂	683.8	633.4	661.7	538.8	690.1	641.6
V ₃	444.3	491.6	570.3	491.6	532.5	506.1
Mean	538.8	536.2	616.6	533.6	598.7	564.8

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. V marginal means | = 28.17 lb./ac. |
| 2. R marginal means | = 33.66 lb./ac. |
| 3. R means at the same level of V | = 58.29 lb./ac. |
| 4. V means at the same level of R | = 59.26 lb./ac. |

Crop :- Mustard (Rabi).**Ref :- As. 58(31).****Site :- Res. Farm, Kokilamukh.****Type :- 'CV'.**

Object :—To find out the optimum seed rate for different varieties of Mustard.

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 5.11.1958. (iv) (a) N.A. (b) Line sowing. (c) As per treatments. (d) Between lines—1'. (e) N.A. (v) A/S at 200 lb./ac. broadcast. (vi) As per treatments. (vii) Unirrigated. (viii) and (ix) N.A. (x) 15.2.1959.

2. TREATMENTS :

Same as in expt. no. 56(31) on page 129.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication and 5 sub-plots/main-plot. (b) 54'×60'. (iii) 4. (iv) (a) and (b) 18'×12'. (v) No. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of seed. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 417 lb./ac. (ii) (a) 127 lb./ac. (b) 74 lb./ac. (iii) V effect is highly significant. R effect is significant. Interaction V×R is highly significant. (iv) Av. yield of seed in lb./ac.

	R ₁	R ₂	R ₃	R ₄	R ₅	Mean
V ₁	495	506	595	495	454	509
V ₂	366	290	239	227	187	262
V ₃	416	441	558	552	435	480
Mean	426	412	464	424	358	417

S.E. of difference of two

- | | |
|-----------------------------------|----------------|
| 1. V marginal means | = 40.2 lb./ac. |
| 2. R marginal means | = 30.2 lb./ac. |
| 3. R means at the same level of V | = 52.3 lb./ac. |
| 4. V means at the same level of R | = 61.7 lb./ac. |

Crop :- Mustard.**Ref :- As. 55(20).****Site :- Res. Farm, Kokilamukh.****Type :- 'CV'.**

Object :—To find out the optimum sowing time for different varieties of Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) A/S applied at 200 lb./ac. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (vi) As per treatments. (iv) (a) Country method of ploughing, laddering and harrowing. (b) Line sowing. (c) 3 lb./ac. (d) 1' between lines. (e) N.A. (v) A/S applied at 200 lb./ac. 5 days before each sowing. (vi) As per treatments. (vii) Unirrigated. (viii) Weeding and earthing was done after 15 days of each sowing. (ix) 16.82". (x) D₁—30.12.1955 to 11.1.1956, D₂—31.1.1956 to 6.1.1956, D₃—6.2.1956 to 13.2.1956, D₄—18.2.1956 to 23.2.1956 and D₅—2.3.1956 to 10.3.1956.

2. TREATMENTS :

Main-plot treatments .

5 dates of sowing : $D_1=1.10.1955$, $D_2=16.10.1955$, $D_3=31.10.1955$, $D_4=15.11.1955$ and $D_5=30.11.1955$.

Sub-plot treatments :

3 varieties : $V_1=M-27$ (*Sarson*), $V_2=M-2$ (*Rai*) and $V_3=M-60$ (*Toria*).

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) $18' \times 12'$. (v) 2' between plots. (vi) Yes.

4. GENERAL :

(i) Growth of *Rai* variety was better. There was no lodging. (ii) Attacked by saw-fly. Controlled by dusting with Gammexane. (iii) Seed yield, height and tiller count. (iv) (a) 1955—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 504.2 lb./ac. (ii) (a) 105.0 lb./ac. (b) 76.0 lb./ac. (iii) Main effects of D, V and interaction $D \times V$ are highly significant. (iv) Av. yield of seed in lb./ac.

	D_1	D_2	D_3	D_4	D_5	Mean
V_1	47.3	614.4	608.2	630.2	340.3	448.1
V_2	492.4	718.4	787.8	650.7	390.7	608.0
V_3	241.0	564.8	518.4	623.9	334.0	456.4
Mean	260.2	632.6	638.1	634.9	355.0	504.2

S.E. of difference of two

1. D marginal means = 42.85 lb./ac.
2. V marginal means = 24.03 lb./ac.
3. V means at the same level of D = 53.73 lb./ac.
4. D means at the same level of V = 61.33 lb./ac.

Crop :- Mustard.

Ref :- As. 56(30).

Site :- Res. Farm, Kokilamukh.

Type :- 'CV'.

Object :—To find out the optimum sowing period for different varieties of Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) A/S at 200 lb./ac. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) As per treatments. (iv) (a) Country method of ploughing, laddering and harrowing. (b) Line sowing. (c) 3 srs ac. (d) 1' between lines. (e) N.A. (v) A/S applied at 200 lb./ac. 5 days before sowing. (vi) As per treatments. (vii) Unirrigated. (viii) Weeding and earthing 15 days after sowing. (ix) 17.18". (x) $D_1=10.1.1957$, $D_2=24.1.1957$, $D_3=4.2.1957$, $D_4=14.2.1957$ and $D_5=5.3.1957$.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(20) on page 131.

4. GENERAL :

(i) Growth of *Rai* was better. (ii) Attack of white rust—controlled by spraying copper fungicide. (iii) Seed yield, height and tiller count. (iv) (a) 1955—1956. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 459.6 lb./ac. (ii) (a) 142.0 lb./ac. (b) 168.2 lb./ac. (iii) Main effect of D is highly significant. Main effect of V is significant. (iv) Av. yield of seed in lb./ac.

	D ₁	D ₂	D ₃	D ₄	D ₅	Mean
V ₁	145.0	762.6	642.8	352.9	264.7	433.6
V ₂	290.3	838.2	664.9	570.3	409.6	555.2
V ₃	59.9	601.8	661.7	438.0	189.1	390.1
Mean	166.0	734.2	656.5	453.8	287.8	459.6

S.E. of difference of two

1. D marginal means = 58.0 lb./ac.
2. V marginal means = 53.2 lb./ac.
3. V means at the same level of D = 118.9 lb./ac.
4. D means at the same level of V = 113.1 lb./ac.

Crop :- Mustard.

Ref :- As. 57(17).

Site :- Res. Farm, Kokilamukh.

Type :- 'CV'.

Object :- To find out the optimum sowing period for different varieties of Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) A/S applied at 200 lb./ac. (ii) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) As per treatments. (iv) (a) Country method of ploughing, laddering and harrowing. (b) Line sowing. (c) 3 srs/ac. (d) 1' between lines. (e) N.A. (v) A/S at 200 lb./ac. applied 5 days before each sowing. (vi) As per treatments. (vii) Unirrigated. (viii) Weeding and earthing 15 days after each sowing. (ix) 11.55°. (x) D₁—16.1.1958, D₂—28.1.1958, D₃—10.2.1958, D₄—19.2.1958 and D₅—4.3.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(20) . n page 131.

GENERAL :

(i) Growth of *Rai* plots was better. There was no lodging. (ii) Nil. (iii) Seed yield, height and tiller count. (iv) (a) 1955—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 314.3 lb./ac. (ii) (a) 162.3 lb./ac. (b) 91.69 lb./ac. (iii) Main effects of D, V and interaction D×V are all highly significant. (iv) Av. yield of seed in lb./ac.

	D	D ₂	D ₃	D ₄	D ₅	Mean
V ₁	239.5	346.6	227.3	346.6	88.2	259.6
V ₂	579.8	617.6	526.2	453.8	176.5	470.8
V ₃	116.6	337.2	390.7	113.4	104.0	212.4
Mean	312.0	433.8	398.1	304.6	122.9	314.3

S.E. of difference of two

1. D marginal means = 66.27 lb./ac.
2. V marginal means = 28.99 lb./ac.
3. V means at the same level of D = 64.84 lb./ac.
4. D means at the same level of V = 84.81 lb./ac.

Crop :- Mustard (Rabi).
Site :- Res. Farm, Kokilamukh.

Ref :- As. 58(28).
Type :- 'CV'.

Object :—To find out the optimum sowing period for different varieties of Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) As per treatments. (iv) (a) Ploughing followed by laddering. (b) Broadcasting. (c) 6 lb./ac. (d) and (e) —. (v) A/S at 200 lb./ac. (vi) As per treatments. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 30.1.1959, 12, 23.2.1959 and 6.3.1959.

2. TREATMENTS :

Main-plot treatments :

4 dates of sowing : $D_1=16.10.1958$, $D_2=31.10.1958$, $D_3=15.11.1958$ and $D_4=30.11.1958$.

Sub-plot treatments :

3 varieties : $V_1=M-27$ (Sarson), $V_2=M-2$ (Rai) and $V_3=M-60$ (Torla).

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 3 sub-plots/main-plot. (b) $54' \times 60'$. (iii) 4. (iv) (a) $12' \times 18'$. (b) $10' \times 16'$. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of seed. (iv) (a) 1955—1958. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 483 lb./ac. (ii) (a) 194 lb./ac. (b) 94 lb./ac. (iii) None of the effects is significant. (iv) Av. yie'd of seed in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	459	621	502	442	506
V_2	417	501	544	383	464
V_3	596	451	485	383	479
Mean	491	527	510	403	483

S.E. of difference of two

1. D marginal means = 79.2 lb./ac.
2. V marginal means = 33.2 lb./ac.
3. V means at the same level of D = 47.0 lb./ac.
4. D means at the same level of V = 96.0 lb./ac.

Crop :- Mustard (Rabi).
Site :- Res. Farm, Kokilamukh.

Ref :- As. 58(52).
Type :- 'D'.

Object :—To find out suitable pesticide to control saw-fly in Mustard.

1. BASAL CONDITIONS :

(i) (a) No. (b) Mustard. (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 2.12.1958. (iv) (a) Ploughing and harrowing. (b) Broadcasting. (c) to (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 3, 4 and 6.3.1959.

2. TREATMENTS :

6 treatments : D_0 =Control, D_1 =Gammexane dust at 12 lb./ac., D_2 =Dieldrex dust at 12 lb./ac., D_3 =Endrex at 1 lb. in 300 lb./ac. of water, D_4 =Guesarol at 1 lb. in 300 lb./ac. of water and D_5 =Hexidol at 1 lb. in 300 lb./ac. of water.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) $72' \times 13'$. (iii) 5. (iv) (a) $13' \times 12'$. (b) $12' \times 11'$. (v) $\frac{1}{2}' \times \frac{1}{2}'$. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attack of saw-fly. Control measures as per treatments. (iii) 3 sq. ft area was selected at random from each plot and percentage of affected plants observed. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 5.73%. (ii) 2.33%. (iii) Treatment differences are highly significant. (iv) Av. percentage of affected plants.

Treatment	D ₀	D ₁	D ₂	D ₃	D ₄	D ₅
Av. percentage	9.31	6.28	6.78	3.95	3.64	4.41

$$\text{S.E./mean} = 1.04\%$$

Crop :- Mustard (Rabi).

Ref :- As. 59(49).

Site :- Res. Farm, Kokilamukh.

Type :- 'D'.

Object :- To find out suitable pesticide to control saw-fly in Mustard.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Mustard. (c) N.A. (ii) (a) Sandy loam. (b) Refer expt. no. 57(43) on page 114. (iii) 6.12.1959. (iv) (a) Ploughing, harrowing. (b) Broadcasting. (c) to (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 3, 4.3.1960.

2. TREATMENTS :

7 treatments : D₀=Control, D₁=Gammexane dusting at 12 lb./ac., D₂=Endrex at 30 c.c. in 30 gallons of water per acre, D₃=Guesarol at 1 lb./ac. in 30 gallons of water, D₄=Hexidol W.D.P. at 30 gallons of water, D₅=Paramar 50 at 30 c.c. in 30 gallons/ac. of water and D₆=N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 147'×16'. (iii) 5. (iv) (a) 21'×16'. (b) 20'×15'. (v) 6"×6". (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Attack of saw-fly. Control measures as per treatments. (iii) 3 sq. ft. area was selected at random from each plot and percentage of affected plants observed. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 6.37%. (ii) 0.66%. (iii) Treatment differences are highly significant. (iv) Av. percentage of affected plants.

Treatment	D ₀	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆
Av. percentage	9.59	6.54	4.12	5.57	6.42	4.20	8.16

$$\text{S.E./mean} = 0.29\%$$

Crop :- Ginger (Rabi).

Ref :- 56(37).

Site :- Ginger Res. Stn., Naya Bunglow.

Type :- 'M'.

Object :- To study the effect of different levels of N, P and K on Ginger crop.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Red loam. (b) N.A. (iii) 26.4.1956. (iv) (a) Ploughing, pulverising and weeding. (b) Planting in double rows. (c) N.A. (d) 12" between plants and 2' between double rows. (e) One rhizome shoot/hole. (v) Cowdung at 250 mds/ac. applied. (vi) G—55/7 local. (vii) Unirrigated. (viii) Weeding and earthing twice. (ix) 69.09%. (x) 5, 6.2.1957.

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 K_2O : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

3. DESIGN :

- (i)
- 3^3
- confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a)
- $9' \times 11'$
- , (b)
- $7' \times 10'$
- . (v) One row all round (vi) Yes.

4. GENERAL :

- (i) Good. (ii) No. (iii) Yield of rhizomes. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 6465 lb./ac. (ii) 2054 lb./ac. (iii) Only P and K effects are significant. (iv) Av. yield of rhizome in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	5393	6119	7779	5393	6327	7571	6430
N_1	5601	5808	7779	5704	6638	6845	6396
N_2	6534	7156	6019	5912	6949	6845	6569
Mean	5843	6361	7192	5670	6638	7087	6465
K_0	4875	5601	6534				
K_1	5704	6949	7260				
K_2	6949	6534	7779				

S.E. of N, P or K marginal mean = 342 lb./ac.

S.E. of body of any table = 593 lb./ac.

Crop :- Ginger (Rabi).**Ref :- As. 57(33).****Site :- Ginger Res. Stn., Naya Bunglow.****Type :- 'M'.**

Object :- To study the effect of different levels of N, P and K on Ginger crop.

1. BASAL CONDITIONS :

- (i) (a) to (c) No. (ii) (a) Red loam. (b) N.A. (iii) 2.5.1957. (iv) (a) Ploughing, pulverising and weeding. (b) Planting in double rows. (c) N.A. (d)
- $12'$
- between plants and
- $2'$
- between double rows. (e) One rhizome shoot/hole. (v) Cowdung at 250 mds/ac applied. (vi) G-55/7 local. (vii) Unirrigated. (viii) Weeding and earthing twice. (ix) 74.64%. (x) 11 to 14.12.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(37) on page 135.

4. GENERAL :

- (i) Not good. (ii) Attacked by rhizome rot. Sprayed Perenox and Bordeaux's mixture. (iii) Yield of rhizomes. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 1613 lb./ac. (ii) 632 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of rhizome in lb./ac.

	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
N ₀	1608	1711	1659	1867	1556	1556	1659
N ₁	1556	1659	1867	1400	1711	1971	1694
N ₂	1348	1815	1296	1556	1193	1711	1487
Mean	1504	1728	1607	1608	1487	1746	1613
K ₀	1556	1608	1659				
K ₁	1245	1711	1504				
K ₂	1711	1867	1659				

S.E. of N, P or K marginal mean = 105 lb./ac.
 S.E. of body of any table = 182 lb./ac.

Crop :- Ginger.

Ref :- As. 58(12).

Site :- Ginger Res. Stn., Naya Bunglow.

Type :- 'M'.

Object :- To study the effect of different levels of N, P and K on Ginger crop.

1. BASAL CONDITIONS :

(i) (a) to (c) No. (ii) (a) Red loam. (b) N.A. (iii) 30.4.1958. (iv) (a) Ploughing, pulverising and weeding. (b) Planting in double rows. (c) N.A. (d) 12" between plants and 2' between double rows. (e) One rhizome shoot/hole. (v) Cowdung at 250 mds/ac. applied. (vi) G-55/1 *Nadia* (late). (vii) Unirrigated. (viii) Weeding and earthing twice. (ix) 74.74%. (x) 30 and 31.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(37) on page 135.

4. GENERAL :

(i) Medium. (ii) No. (iii) Yield of rhizomes. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4091 lb./ac. (ii) 1245 lb./ac. (iii) Interaction N×P is significant. No other effect is significant. (iv) Av. yield of rhizome in lb./ac.

	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
N ₀	3526	4667	3786	3319	3967	4693	3993
N ₁	4149	4900	4149	4382	4563	4252	4399
N ₂	4641	3630	3371	3993	4122	3526	3881
Mean	4105	4399	3769	3898	4218	4157	4091
K ₀	3423	4512	3760				
K ₁	4097	4512	4045				
K ₂	4797	4172	3500				

S.E. of N, P or K marginal mean = 207 lb./ac.
 S.E. of body of any table = 359 lb./ac.

Crop :- Ginger (Rabi).**Ref :- As. 56(36).****Site :- Ginger Res. Stn., Naya Bunglow.****Type :- 'M'.**

Object :—To find out the effect of different forms of N on Ginger crop.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Red loam. (b) N.A. (iii) 24.4.1956. (iv) (a) Ploughing, pulverising and weeding. (b) Planting in double rows. (c) N.A. (d) 12" between plants and 2' between double rows. (e) One rhizome shoot/hole. (v) Cowdung at 250 mds/ac. (vi) G—55/7 (local). (vii) Unirrigated. (viii) Weeding and earthing twice. (ix) 69.09". (x) 29.1.1957.

2. TREATMENTS :

All combinations of (1) and (2) + a control

(1) 2 levels of N : $N_1=20$ and $N_2=40$ lb./ac.(2) 3 sources of N : $S_1=A/S$, $S_2=$ Mustard oilcake and $S_3=A/S$ +mustard oilcake.**3. DESIGN :**

(i) R.B.D. (ii) (a) 7. (b) 77'×14'. (iii) 4. (iv) (a) 11'×14'. (b) 10'×12'. (v) One line on all sides. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Yield of rhizomes. (iv) (a) 1956—N.A. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4409 lb./ac. (ii) 948.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of rhizome in lb./ac.

Control=3812 lb./ac.

	S_1	S_2	S_3	Mean
N_1	3993	4901	4356	4417
N_2	4356	4719	4719	4598
Mean	4175	4810	4538	4508

S.E. of marginal mean of N = 273.9 lb./ac.

S.E. of marginal mean of S = 335.4 lb./ac.

S.E. of body of table = 474.4 lb./ac.

Crop :- Ginger (Rabi).**Ref :- As. 57(32).****Site :- Ginger Res. Stn., Naya Bunglow.****Type :- 'M'.**

Object :—To see the effect of different forms of N on Ginger crop.

1. BASAL CONDITIONS :

(i) (a) No. (b) Ginger. (c) Nil. (ii) (a) Red loam. (b) N.A. (iii) 4.5.1957. (iv) (a) Ploughing, pulverising and weeding. (b) Planting in double rows. (c) N.A. (d) 12" between plants and 2' between double rows. (e) One rhizome shoot/hole. (v) Cowdung at 250 mds./ac. (vi) G—55/7 (local). (vii) Unirrigated. (viii) Weeding and earthing twice. (ix) 74.64". (x) 10.12.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(36) above.

4. GENERAL :

(i) Not good. (ii) Affected by rhizome rot ; Perenox and Bordeaux's mixture sprayed. (iii) Yield of rhizome. (iv) (a) 1956—N.A. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1180 lb./ac. (ii) 540.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of rhizomes in lb./ac.

Control = 817 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	1452	1361	817	1210
N ₂	1089	998	1724	1270
Mean	1271	1179	1271	1240

S.E. of marginal mean of N = 156.1 lb./ac.

S.E. of marginal mean of S = 191.2 lb./ac.

S.E. of body of table = 270.4 lb./ac.

Crop :- Ginger.**Ref :- AS. 58(11).****Site :- Ginger Res. Stn., Naya Bunglow.****Type :- 'M'.**

Object :—To see the effect of different forms of N on Ginger crop.

BASAL CONDITIONS :

(i) (a) No (b) Ginger. (c) As per treatments. (ii) (a) Red loam. (b) N.A. (iii) 28.4.1958. (iv) (a) Ploughing, pulverising and weeding. (b) Plantation in double rows. (c) N.A. (d) 12" between plants and 2' between double rows. (e) One rhizome shoot/hole. (v) Cowdung at 250 mds/ac. (vi) G—55/7 (local). (vii) Unirrigated. (viii) Weeding and earthing twice. (ix) 74.74". (x) 26.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(36) on page 138.

4. GENERAL :

(i) Not good. (ii) Whole experiment was attacked by rhizome rot. Perenox and Bordeaux's mixture were sprayed. (iii) Yield of rhizomes. (iv) (a) 1956—N.A. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 597 lb./ac. (ii) 609.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of rhizome in lb./ac.

Control = 681 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	363	590	726	560
N ₂	454	681	681	605
Mean	409	636	704	583

S.E. of marginal mean of N = 176.0 lb./ac.

S.E. of marginal mean of S = 215.6 lb./ac.

S.E. of body of table = 304.9 lb./ac.

Crop :- Ginger (Rabi).**Ref :- As. 56(34).****Site :- Ginger Res. Stn., Naya Bunglow.****Type :- 'C'.**

Object :—To determine the best time and method of planting for Ginger crop.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Red loam. (b) N.A. (iii) As per treatments. (iv) (a) Ploughing, pulverising and weeding. (b) As per treatments. (c) N.A. (d) As per treatments. (e) One rhizome shoot/hole.

(v) 250 mds/ac. of cowdung before planting. (vi) G—55/7 (local). (vii) Unirrigated. (viii) Weeding and earthing twice. (ix) 69.09%. (x) 25.1.1957.

2. TREATMENTS :

Main-plot treatments :

2 methods of planting : M_1 = Planting in double rows with 12" spacing between plants and 2' between rows. M_2 = Planting in single rows with 12" spacing between plants and 1½' between rows.

Sub-plot treatments :

4 dates of planting : D_1 = 1.4.1956, D_2 = 11.4.1956, D_3 = 21.4.1956 and D_4 = 1.5.1956.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 11' × 17'. (b) 10' × 15'. (v) One line around. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of rhizomes. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3145 lb./ac. (ii) (a) 2412 lb./ac. (b) 830 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of rhizome in lb./ac.

	D_1	D_2	D_3	D_4	Mean
M_1	1742	3290	2904	4257	3048
M_2	2904	3290	3290	3485	3242
Mean	2323	3290	3097	3871	3145

S.E. of difference of two

1. M marginal means = 988 lb./ac.
2. D marginal means = 479 lb./ac.
3. M means at the same level of D = 1149 lb./ac.
4. D means at the same level of M = 678 lb./ac.

Crop :- Ginger (Rabi).

Ref :- As. 57(30).

Site :- Ginger Res. Stn., Naya Bunglow.

Type :- 'C'.

Object :- To determine the best time and method of planting for Ginger crop.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Red loam. (b) N.A. (iii) As per treatments. (iv) (a) Ploughing, pulverising and weeding. (b) As per treatments. (c) N.A. (d) As per treatments. (e) One rhizome short/hole v 250 md./ac. of cowdung before planting. (vi) G—55,7 (local). (vii) Unirrigated. (viii) Weeding and earthing twice. (ix) 74.64%. (x) 20.1.1958.

2. TREATMENTS :

Main-plot treatments :

Same as in expt. no. 56(34) on page 139.

Sub-plot treatments :

4 dates of planting : D_1 = 1.4.1957, D_2 = 11.4.1957, D_3 = 21.4.1957 and D_4 = 1.5.1957.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56(34) on page 139.

5. RESULTS :

(i) 9353 lb./ac. (ii) (a) 2386 lb./ac. (b) 1258 lb./ac. (iii) Effect of D is highly significant. No other effect is significant. (iv) Av. yield of rhizome in lb./ac.

	D ₁	D ₂	D ₃	D ₄	Mean
M ₁	7163	11519	8712	8228	8906
M ₂	10067	11132	9002	9002	9801
Mean	8615	11326	8857	8615	9353

S.E. of difference of two

1. M marginal means = 974 lb./ac.
2. D marginal means = 726 lb./ac.
3. M means at the same level of D = 1319 lb./ac.
4. D means at the same level of M = 1027 lb./ac.

Crop :- Ginger.

Ref :- As. 58(9).

Site :- Ginger Res. Stn., Naya Bunglow.

Type :- 'C'.

Object :—To determine the best time and method of planting for Ginger crop.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Red loamy soil. (b) N.A. (iii) As per treatments. (iv) (a) Ploughing, pulverising and weeding. (b) As per treatments. (c) N.A. (d) As per treatments. (e) One rhizome shoot/hole. (v) 250 mds/ac. of cowdung before planting. (vi) G—55/7 (local). (vii) Unirrigated. (viii) Weeding and earthing—2 times. (ix) 74.74%. (x) 3.2.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(34) on page 139.

5. RESULTS :

(i) 3781 lb./ac. (ii) (a) 1089 lb./ac. (b) 1011 lb./ac. (iii) Effect of D is highly significant. No other effect is significant. (iv) Av. yield of rhizome in lb./ac.

	D ₁	D ₂	D ₃	D ₄	Mean
M ₁	4598	5034	3436	2033	3775
M ₂	5808	4501	2807	2033	3787
Mean	5203	4767	3122	2033	3781

S.E. of difference of two

1. M marginal means = 444 lb./ac.
2. D marginal means = 584 lb./ac.
3. M means at the same level of D = 842 lb./ac.
4. D means at the same level of M = 826 lb./ac.

Crop :- Ginger (Rabi).

Ref :- As. 56(35).

Site :- Ginger Res. Stn., Naya Bunglow.

Type :- 'C'.

Object :—To determine the best time of harvesting for Ginger crop.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Red loam. (b) N.A. (iii) 10.4.1956. (iv) (a) Ploughing, pulverising and 2 weedings. (b) Planting in double rows. (c) N.A. (d) 12" between plants and 2' between double rows. (e) One rhizome shoot/hole. (v) Cowdung applied at 250 mds/ac. at the time of planting the rhizomes. (vi) G—55/7 (local). (vii) Unirrigated. (viii) Earthing and weeding twice. (ix) 69.07%. (x) As per treatments.

2. TREATMENTS :

4 dates of harvesting : D₁=20.11.1956, D₂=6.12.1956, D₃=21.12.1956 and D₄=6.1.1957.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 7'×22'. (b) 5'×20'. (v) 1' around the net plot. (vi) Yes.

4. GENERAL:

(i) Good. (ii) A few plants were attacked by rhizome rot. Bordeaux's mixture and Perenox were sprayed. (iii) Yield of rhizomes. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b, N.A. (vi) and (vii, Nil.

5. RESULTS :

(i) 6244 lb./ac. (ii) 1162 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of rhizome in lb./ac.

Treatment	D ₁	D ₂	D ₃	D ₄
Av. yield	5663	5953	7550	5808

S.E./mean = 474.3 lb./ac.

Crop :- Ginger.

Ref :- As. 58(10).

Site :- Ginger Res. Stn., Naya Bunglow.

Type :- 'C'.

Object :—To determine the best time of harvesting Ginger crop.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Red loam. (b) N.A. (iii) 24.4.1958. (iv) (a) Ploughing, pulverising and weeding. (b) Planting in double rows. (c) N.A. (d) 12" between plants and 2' between double rows. (e) One rhizome shoot/hole. (f) Cowdung applied at 250 mds/ac. at the time of planting. (vi) G—55/7 (local). (vii) Unirrigated. (viii) 2 weedings and earthings. (ix) 74.74%. (x) As per treatments.

2. TREATMENTS :

4 dates of harvesting : D₁=20.11.1958, D₂=6.12.1958, D₃=21.12.1958 and D₄=6.1.1959.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 12'×11'. (b) 10'×10'. (v) 2' between plots. (vi) Yes.

4. GENERAL :

(i) Medium. (ii) Nil. (iii) Yield of rhizomes. (iv) (a) 1956—N.A. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3231 lb./ac. (ii) 1316 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of rhizome in lb./ac.

Treatment	D ₁	D ₂	D ₃	D ₄
Av. yield	3122	3049	2904	3848

S.E./mean = 537.2 lb./ac.

Crop :- Ginger (Rabi).

Ref :- As. 57(31).

Site :- Ginger Res. Stn., Naya Bunglow.

Type :- 'C'.

Object :—To determine the best time of harvesting for Ginger crop.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Red loam. (b) N.A. (iii) 1.5.1957. (iv) (a) Ploughing, pulverising and weeding. (b) Planting in double rows. (c) N.A. (d) 12" between plants and 2' between double rows. (e) One rhizome shoot/hole. (f) Cowdung applied at 250 mds/ac. at the time of planting. (vi) G—55/7 (local). (vii) Unirrigated. (viii) Earthing and weeding—twice. (ix) 74.64%. (x) As per treatments.

2. TREATMENTS :

4 dates of harvesting : $D_1=20.11.1957$, $D_2=6.12.1957$, $D_3=21.12.1957$ and $D_4=6.1.1958$.

3. DESIGN :

Same as in expt. no. 56(35) on page 141.

4. GENERAL :

(i) The crop condition was good up to middle of July 1957. (ii) Whole experiment was affected by rhizome rot. Bordeaux's mixture and Perenox were sprayed. (iii) Yield of rhizomes. (iv) (a) 1956—N.A. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3013 lb./ac. (ii) 528 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of rhizome in lb./ac.

Treatment	D_1	D_2	D_3	D_4
Av. yield	3412	3412	2178	3049

S.E./mean = 215.5 lb./ac.

Crop :- Ginger.

Ref :- As. 59(60).

Site :- Ginger Res. Stn., Naya Bunglow.

Type :- 'C'.

Object :—To determine the best time of harvesting for Ginger crop.

1. BASAL CONDITIONS :

(i) (a) No. (b) Ginger. (c) Nil. (ii) (a) Red loam. (b) N.A. (iii) 2.5.1959. (iv) (a) Ploughing and pulverising. (b) Planting in double rows. (c) N.A. (d) 12" between plants and 2' between double rows. (e) One rhizome shoot/hole. (v) Cowdung applied at 250 mds/ac. at the time of planting. (vi) G—55/1 *Nadia* (late). (vii) Unirrigated. (viii) 2 weedings and earthing. (ix) 98.23". (x) As per treatments.

2. TREATMENTS :

4 dates of harvesting : $D_1=20.11.1959$, $D_2=6.12.1959$, $D_3=21.12.1959$ and $D_4=6.1.1960$.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 12'×44'. (iii) 4. (iv) (a) 12'×11'. (b) 10'×10'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Medium. (ii) The crop was attacked by rhizome rot. Bordeaux's mixture sprayed. (iii) Yield of rhizomes. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 572 lb./ac. (ii) 1838 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of rhizome in lb./ac.

Treatment	D_1	D_2	D_3	D_4
Av. yield	6316	6425	5881	4465

S.E./mean = 919.1 lb./ac.

Crop :- Ginger.

Ref :- As. 59(57).

Site :- Ginger Res. Stn., Naya Bunglow.

Type :- 'C'.

Object :—To find out the effect of giving shade to Ginger plants.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Red loam. (b) N.A. (iii) 1.5.1959. (iv) (a) Ploughing and pulverising (b) In double rows. (c) N.A. (d) 12" between plants and 2' between double rows. (e) One rhizome shoot/hole. (v) Cowdung at 250 mds/ac. applied before planting. (vi) G—55/1 *Nadia*. (late). (vii) Unirrigated. (viii) 1 weeding and earthing. (ix) 98.23". (x) 24.12.1959.

2. TREATMENTS :

1. Plants open to sun.
2. Plants under shade of G.M. crop planted between rows.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 17'×24'. (iii) 3 (iv) (a) 17'×12'. (b) 15'×10'. (v) and (vi) Yes.

4. GENERAL :

(i) Medium. (ii) The crop was attacked by rhizome rot. Bordeaux's mixture sprayed. (iii) Yield of rhizomes. (iv) (a) 1959-1960. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 7791 lb./ac. (ii) 2178 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of rhizome in lb./ac.

Treatment	1	2
Av. yield	9194	6389

S.E./mean = 1257 lb./ac.

Crop :- Ginger.

Ref :- As. 59(58).

Site :- Ginger Res. Stn., Naya Bunglow.

Type :- 'CV'.

Object :—To find out the best system of spacing for different varieties of Ginger.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) N.I. (ii) (a) Red loam. (b) N.A. (iii) 5.5.1959. (iv) (a) Ploughing and pulverising. (b) In double rows. (c) N.A. (d) As per treatments. (e) 1 rhizome shoot/hole. (v) Cowdung at 250 mds/ac. applied before planting. (vi) As per treatments. (vii) Unirrigated. (viii) 2 weedings and 1 earthing. (ix) 98.23". (x) 30.12.1959.

2. TREATMENTS :

Main-plot treatments :

2 varieties : $V_1 = G-55/1$ Nadia (late) and $V_2 = G-55/7$ local (late).

Sub-plot treatments :

3 spacings between plants : $S_1 = 6''$, $S_2 = 9''$ and $S_3 = 12''$.

2' spacing left between double rows.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block, 3 sub-plots/main-plot. (b) 14'×72'. (iii) 3. (iv) (a) 14'×12'. (b) 12'×10'. (v) and (vi) Yes.

4. GENERAL :

(i) Good. (ii) V_2 plots were attacked by rhizome rot. Bordeaux's mixture sprayed. (iii) Yield of rhizomes (iv) (a) No. (b) and (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 7458 lb./ac. (ii) (a) and (b) N.A. (iii) N.A. (iv) Av. yield of rhizome in lb./ac.

	S_1	S_2	S_3	Mean
V_1	14257	10770	14157	13061
V_2	2298	1695	1572	1855
Mean	8277	6233	7864	7458

S.E.'s N.A.

Crop :- Cardamom.**Ref :- As. 59(15).****Site :- Composite Res. Stn., Nongpoh.****Type :- 'C'.**

Object :- To find out a suitable pre-sowing treatment of seed for Cardamom crop.

1. BASAL CONDITIONS :

(i) Newly reclaimed. (ii) (a) Red laterite. (b) N.A. (iii) By seedlings. (iv) Munzerabad (round type). (v) 25.10.1959. Seed sown in well prepared beds in lines at 3" x 3" spacing. (vi) Nil. (vii) Cowdung at 100 mds/ac. applied a fortnight before sowing. (viii) Mulching with thatch grass, weeding twice and regular watering. (ix) Nil. (x) Unirrigated. (xi) 85.89%. (xii) Nil.

2. TREATMENTS :

4 pre-sowing seed treatments : T₁=Rinsed with water, T₂=Mixed with ash, T₃=Mixed with ash and shaking the seed with sand in bottle and T₄=Rinsed with water and shaking the seed with sand in bottle.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) 100 seedlings. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) General application of copper fungicide at 6 oz. per 10 gallons of water. (iii) Germination record. (iv) (a) No. (b) Nil. (v) and (vi) Nil.

5. RESULTS :

(i) 25.67 % (ii) 5.47 % (iii) Treatment differences are not significant. (iv) Mean germination percentage.

Treatment	T ₁	T ₂	T ₃	T ₄
Mean Percentage	22.33	25.67	27.33	27.33

S.E./mean = 3.16%

Crop :- Cardamom.**Ref :- As. 59(16).****Site :- Composite Res. Stn., Nongpoh.****Type :- 'C'.**

Object :- To find out a suitable pre-sowing treatment of seed for Cardamom crop.

1. BASAL CONDITIONS :

(i) Newly reclaimed. (ii) (a) Red laterite. (b) N.A. (iii) By seedlings. (iv) Munzerabad (oblong). (v) 25.10.1959. Seeds sown in well prepared beds in lines at 3" x 3" spacing. (vi) Nil. (vii) Cowdung at 100 mds./ac. applied a fortnight before sowing. (viii) Mulching with thatch grass, weeding twice and regular watering. (ix) Nil. (x) Unirrigated. (xi) 85.89%. (xii) Nil.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(15) above.

5. RESULTS :

(i) 26.33%. (ii) 6.89%. (iii) Treatment differences are not significant. (iv) Mean germination percentage.

Treatment	T ₁	T ₂	T ₃	T ₄
Mean Percentage	27.67	18.67	24.67	34.33

S.E./mean = 3.98%.

Crop :- Cardamom.**Ref :- As. 59(17).****Site :- Composite Res. Stn., Nongpoh.****Type :- 'C'.**

Object :- To find out a suitable pre-sowing treatment of seed for Cardamom crop.

1. BASAL CONDITIONS

(i) Newly reclaimed. (ii) (a) Red laterite. (b) N.A. (iii) By seedlings. (iv) Munzerabad (round type). (v) 24.10.1959. Seeds sown in well prepared beds in lines at 3"×3" spacing. (vi) Nil. (vii) Cowdurg at 100 mds./ac. applied a fortnight before sowing. (viii) Mulching with thatch grass, weeding twice and regular watering. (ix) Nil. (x) Unirrigated. (xi) 85.89". (xii) Nil.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(15) on page 145.

5. RESULTS :

(i) 36.08%. (ii) 7.58%. (iii) Treatment differences are not significant. (iv) Mean germination percentage.

Treatment	T ₁	T ₂	T ₃	T ₄
Mean Percentage	30.67	29.33	40.33	44.00

S.E./mean = 4.38%.

Crop :- Cardamom.

Ref :- As. 59(18).

Site :- Composite Res. Stn., Nongpoh.

Type :- 'C'.

Object :—To find out a suitable pre-sowing treatment of seed for cardamom crop.

1. BASAL CONDITIONS :

(i) Newly reclaimed. (ii) (a) Red laterite. (b) N.A. (iii) By seedlings. (iv) Munzerabad (oblong type). (v) Seeds sown in well prepared beds in lines at 3"×3" spacing. (vi) Nil. (vii) Cowdung at 100 mds/ac. applied a fortnight before sowing. (viii) Mulching with thatch grass, weeding twice and regular watering. (ix) Nil. (x) Unirrigated. (xi) 85.89". (xii) Nil.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 59(15) on page 145.

5. RESULTS:

(i) 46.17%. (ii) 6.12%. (iii) Treatment differences are highly significant. (iv) Mean germination percentage.

Treatment	T ₁	T ₂	T ₃	T ₄
Mean Percentage	39.67	40.00	48.67	56.33

S.E./mean = 3.53%.

Crop :- Coconut.

Ref :- As. 58(26).

Site :- Regional Coconut Res. Stn., Kahikuchi.

Type :- 'M'.

Object :—To find out the suitable manure for raising quality seedlings for Coconut.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Alluvial loam. (b) Refer below.* (iii) N.A. (iv) Local tall. (v) 12.5.1958.

*Table showing the analysis of soil sample on % air-dry basis.

Depth	Course sand	Fine sand	Site	Mois- ture	Clay	Loss on ignition	Avl. N	Avl. P	Avl. K	pH water extract	pH water extract	Acidity ppm.
Surface	11.2	20.5	24.0	1.8	38	4.8	0.13	0.005	0.02	5.0	4.8	89
1' below	10.0	15.6	44.0	2.0	26	4.6	0.10	0.001	0.02	5.0	4.4	151
2' "	0.3	5.4	34.0	2.6	44	3.0	0.08	0.001	0.01	5.0	4.4	397
3' "	8.6	15.7	29.0	3.6	41	6.6	0.06	0.009	0.01	5.0	4.6	319

Planted at $1\frac{1}{2}' \times 1\frac{1}{4}'$ spacing. (vi) 6 months. (vii) Nil. (viii) Weeding and hoeing. (ix) Nil. (x) Irrigated. (xi) 71.59%. (xii) Nil.

2. TREATMENTS :

6 manures : M_0 =Control, M_1 =Cowdung, M_2 =Compost, M_3 =Oilcake, M_4 =B.M. and M_5 =Ash. Quantity applied N.A. Manure applied in June by encircling every plant.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) 10. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Height, girth and no. of functioning leaves. (iv) (a) 1958—contd. (b) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

I. Height.

(i) 82.01 mm. (ii) 8.12 mm. (iii) Treatment differences are significant. (iv) Av. height per tree in mm.

Treatment	1	2	3	4	5	6
Av. height	87.0	78.2	90.0	78.4	84.4	74.2

S.E./mean = 3.63 mm.

II. Girth

(i) 8.5 mm. (ii) 1.1 mm. (iii) Treatment differences are not significant. (iv) Av. girth per tree in mm.

Treatment	1	2	3	4	5	6
Av. girth	8.2	8.0	9.2	8.6	8.8	8.2

S.E./mean = 0.47 mm.

III. No. of functioning leaves

(i) 3.7 leaves. (ii) 0.4 leaves. (iii) Treatment differences are significant. (iv) Av. no. of functioning leaves/tree.

Treatment	1	2	3	4	5	6
Av. no. of leaves	3.6	4.0	4.2	3.6	3.4	3.4

S.E./mean = 0.18 leaves

Crop :- Coconut.

Ref :- As. 59(25).

Site :- Regional Coconut Res. Stn., Kahikuchi.

Type :- 'M'.

Object :- To find out suitable manure for raising quality seedlings of Coconut.

1. BASAL CONDITIONS :

(i) Cultivable waste ; newly reclaimed. (ii) (a) Alluvial loam. (b) Refer expt. no. 58(26) on page 146. (iii) By seed nuts. (iv) Local tall. (v) 16.6.1959 planted at $1\frac{1}{2}' \times 1\frac{1}{4}'$ spacing. (vi) 6 months. (vii) Nil. (viii) Weeding and hoeing. (ix) Nil. (x) Irrigated. (xi) 61.7%. (xii) —.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(26) on page 146.

5. RESULTS :

I. Height

(i) 78.19 mm. (ii) 18.19 mm. (iii) Treatment differences are not significant. (iv) Av. height of plants in mm.

Treatment	1	2	3	4	5	6
Av. height	77.08	81.24	81.72	70.76	68.92	89.40

S.E./mean = 8.13 mm.

II. Girth

(i) 7.73 mm. (ii) 1.03 mm. (iii) Treatment differences are significant. (iv) Av. girth of plants in mm.

Treatment	1	2	3	4	5	6
Av. girth	8.04	8.08	8.00	7.22	6.48	8.58

S.E./mean = 0.46 mm.

III. No. of functioning leaves

(i) 2.58 leaves. (ii) 0.67 leaves. (iii) Treatment differences are not significant. (iv) Av. no. of functioning leaves/tree.

Treatment	1	2	3	4	5	6
Av. no. of leaves	2.50	2.52	2.80	2.24	2.58	2.88

S.E./mean = 0.30 leaves.

Crop :- Coconut.

Ref :- As. 59(26).

Site :- Regional Coconut Res. Stn., Kahikuchi.

Type :- 'C'.

Object :—To find out best time of planting nuts for raising quality seedlings of Coconut.

1. BASAL CONDITIONS :

(i) Cultivable waste ; newly reclaimed. (ii) (a) Alluvial loam. (b) Refer expt. no. 58(26) on page 146. (iii) By seed nuts. (iv) Local tall. (v) Between lines—1½' ; within lines—1¼'. (vi) —. (vii) Nil. (viii) Hoeing and weeding. (ix) Nil. (x) Irrigated. (xi) 61.7%. (xii) Nil.

2. TREATMENTS :

3 dates of planting seed nuts : D₁=Early February, D₂=Mid April and D₃=Late June.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) 50 nuts/plot. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Percentage of germination, height, girth no. of functioning leaves and total production of leaves. (iv) (a) 1959 (b) N.A. (v) and (vi) Nil.

5. RESULTS :

I. % germination

(i) 48.44%. (ii) 8.80 % (iii) Treatment differences are not significant. (iv) Av. percentage of germination.

Treatment	D ₁	D ₂	D ₃
Av. Percentage	55.33	46.66	43.33

S.E./mean = 5.08%

II. Height

(i) 58.04 m.m. (ii) 10.85 m.m. (iii) Treatment differences are not significant. (iv) Av. height/plant in mm.

Treatment	D ₁	D ₂	D ₃
Av. height	72.50	58.81	42.82

S.E./mean = 6.26 mm.

III. Girth

(i) 5.52 mm. (ii) 0.62 mm. (iii) Treatment differences are highly significant. (iv) Av. girth/plant in mm.

Treatment	D ₁	D ₂	D ₃
Av. girth	6.77	5.25	4.53

S.E./mean = 0.36 mm.

IV. No. of functioning leaves.

(i) 1.89 leaves. (ii) 0.50 leaves. (iii) Treatment differences are not significant. (iv) Av. no. of functioning leaves/plant.

Treatment	D ₁	D ₂	D ₃
Av. no. of leaves	2.17	1.86	1.63

S.E./mean = 0.29 leaves

V. Total no. of leaves

(i) 3.27 leaves. (ii) 0.49 leaves. (iii) Treatment differences are not significant. (iv) Av. no. of leaves plant.

Treatment	D ₁	D ₂	D ₃
Av. no. of leaves	3.88	3.17	2.77

S.E./mean = 0.28 leaves

Crop :- Coconut.**Ref :- As. 58(25).****Site :- Regional Coconut Res. Stn., Kahikuchi.****Type :- 'C'.**

Object :--To evolve the best method of planting nuts for getting quality seedlings of Coconut.

1. BASAL CONDITIONS :(i) Cultivable waste ; newly reclaimed. (ii) (a) Alluvial loam. (b) Refer expt. no. 58(26) on page 146. (iii) By seed nuts. (iv) Local tall. (v) 12.5.1958 planted at $1\frac{1}{2}' \times 1\frac{1}{4}'$ spacing. (vi) —. (vii) Nil. (viii) Thirty hoeings 18 weedings. (ix) Nil. (x) Irrigated. (xi) 71.57%. (xii) —.**2. TREATMENTS :**3 methods of planting nuts in the nursery : M_1 =Horizontally, M_2 =Vertically and M_3 =Obliquely.**3. DESIGN :**

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) 50 seed nuts/plot. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Height and girth measurement, no. of functioning leaves and percentage germination. (iv) (a) 1958—contd. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :**I. Height**

(i) 47.94 mm. (ii) 3.39 mm. (iii) Treatment differences are significant. (iv) Av. height/plant in mm.

Treatment	M_1	M_2	M_3
Av. height	51.35	41.58	50.89

S.E./mean = 1.96 mm.

II. Girth

(i) 6.69 mm. (ii) 0.46 mm. (iii) Treatment differences are not significant. (iv) Av. girth/plant in mm.

Treatment	M_1	M_2	M_3
Av. girth	6.25	6.97	6.86

S.E./mean = 0.27 mm.

III. No. of functioning leaves

(i) 2.75 leaves. (ii) 0.15 leaves. (iii) Treatment differences are significant. (iv) Av. no. of functioning leaves/plant.

Treatment	M_1	M_2	M_3
Av. no. of leaves	2.85	2.60	2.81

S.E./mean = 0.09 leaves.

IV. % germination

(i) 89.8%. (ii) 5.74%. (iii) Treatment differences are not significant. (iv) Av. % of germination.

Treatment	M_1	M_2	M_3
Av. Percentage	84.6	91.3	93.9

S.E./mean = 3.31%.

Crop :- Coconut.**Ref :- As. 59(24).****Site :- Regional Coconut Res. Stn., Kahikuchi.****Type :- 'C'.**

Object : To evolve the best method of planting nuts for getting quality seedlings of Coconut.

1. BASAL CONDITIONS :(i) Cultivable waste ; newly reclaimed. (ii) (a) Alluvial loam. (b) Refer expt. no. 58(26) on page 146. (iii) By seed nuts. (iv) Local tall. (v) 15.4 1959 planted at $1\frac{1}{2}' \times 1\frac{1}{4}'$ spacing. (vi) —. (vii) Nil. (viii) Twenty eight hoeings and twenty six weedings. (ix) Nil. (x) Irrigated. (xi) 61.7%. (xii) Nil.**2. TREATMENTS to 4. GENERAL :**

Same as in expt. 58(25) above.

5. RESULTS :**I. Height**

(i) 51.28 mm. (ii) 2.88 mm. (iii) Treatment differences are highly significant. (iv) Av. height/plant in mm.

Treatment	M_1	M_2	M_3
Av. height	62.71	33.69	57.45

S.E./mean = 1.66 mm.

II. Girth

(i) 4.64 mm. (ii) 0.62 mm. (iii) Treatment differences are highly significant. (iv) Av. girth/plant in mm.

Treatment	M_1	M_2	M_3
Av. girth	5.79	3.05	5.1

S.E./mean = 0.36 mm.

III. No. of functioning leaves.

(i) 2.59 leaves. (ii) 0.34 leaves. (iii) Treatment differences are significant. (iv) Av. no. of functioning leaves/plant.

Treatment	M ₁	M ₂	M ₃
Av. no. of leaves	2.96	1.95	2.85
S.E./mean = 0.20 leaves.			

IV. % germination.

(i) 43.33%. (ii) 8.19%. (iii) Treatment differences are significant. (iv) Av. % of germination.

Treatment	M ₁	M ₂	M ₃
Av. Percentage	52.00	28.66	49.33
S.E./mean = 4.73%.			

Crop :- Cashewnut.

Site :- Composite Res. Stn., Khanikar.

Ref :- As. 59(41).

Type :- 'M'.

Object :—To find out the optimum dose of N for the development of Cashew seedlings.

1. BASAL CONDITIONS :

(i) Uncultivated grazing land. (ii) (a) Clay loam. (b) N=0.17%, P=0.004% P₂O₅, K=.046% K₂O and pH=5.1. (iii) By seed. (iv) South Indian origin. (v) Seeds sown on 10.6.1959. transplanting on 27.7.1959 and spacing 20'×20'. (vi) 47 days. (vii) Nil. (viii) One weeding. (ix) Nil. (x) Unirrigated. (xi) 74.8°. (xii) Nil.

2. TREATMENTS :

5 manures : M₀=Control, M₁=Cowdung, M₂=Cowdung+4 oz./seedling of A/S, M₃=Cowdung+6oz./seedling of A/S and M₄=Cowdung+8 oz./seedling of A/S.
Cowdung wherever given, was applied at 10 lb./seedling.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) 6. (v) Single row. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Plant height. (iv) (a) 1959—N.A. (b) N.A. (v) N.A. (vi) and (vii) N.I.

5. RESULTS :

(i) 49 inches. (ii) 5.9 inches. (iii) Treatment differences are not significant. (iv) Av. height of plants in inches.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄
Av. height	41	50	48	53	53
S.E./mean = 2.9 inches.					

Crop :- Pineapple.

Site :- Pineapple Res. Stn., Kahikuchi.

Ref :- As. 59(56).

Type :- 'M'.

Object :—To find out the response of Pineapple to organic manures.

1. BASAL CONDITIONS :

(i) Forest. (ii) (a) Loamy type. (b) Top soil : N—0.179 ; Avl. P—0.012 ; Avl. K—0.014. Sub-soil . N—0.125 ; Avl. P—0.015 ; Avl. K—0.006. pH—5 (KNO₃ extract). (iii) Vegetative. (iv) Queen. (v) 15.9.1958 ; digging holes at 45"×45" spacing. (vi) 5 months. (vii) 250 md./ac. of F.Y.M. before planting. (viii) Twelve hoeings and 6 weedings. (ix) Nil. (x) Unirrigated. (xi) 62.6°. (xii) Nil.

2. TREATMENTS :

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

- (1) 2 levels of N : N₀=0 and N₁=300 lb./ac. of mustard oilcake.
- (2) 2 levels of P : P₀=0 and P₁=120 lb./ac. of B.M.
- (3) 2 levels of K₂O : K₀=0 and K₁=300 lb./ac. of wood ash.

3. DESIGN :

(i) 2³ Fact. in L. Sq. (ii) (a) 8. (b) N.A. (iii) 8. (iv) 49 (including 24 plants of guard row). (v) 1 row. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Plant height taken one year after planting. (iv) (a) 1958—1962. (b) N.A. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 60.32 cm. (ii) 7.51 cm. (iii) N×P effect alone is highly significant. (iv) Av. height of plants in cm.

	N ₀	N ₁	P ₀	P ₁	Mean
K ₀	62.29	61.81	63.02	61.08	62.05
K ₁	57.60	59.60	58.04	59.16	58.60
Mean	59.94	60.70	60.53	60.12	60.32
P ₀	57.11	63.95			
P ₁	62.78	57.46			

S.E. of any marginal mean = 1.33 cm.

S.E. of body of any table = 1.88 cm.

Crop :- Pineapple.

Ref :- As. 59(55).

Site :- Pineapple Res. Stn., Kahikuchi.

Type :- 'M'.

Object :—To find out the performance of Pineapple in application of fertilizer.

1. BASAL CONDITIONS :

(i) Forest. (ii) (a) Loamy type. (b) Top soil : N—0.179 ; Avl. P—0.012 ; Avl. K—0.014. Sub-soil : N—0.125 ; Avl. P—0.015 ; Avl. K—0.006. pH—5 (KNO₃ extract). (iii) Vegetative. (iv) Giantkew. (v) 2.10.1958 ; digging holes at 45"×45" spacing. (vi) 4 months. (vii) 250 md. of F.Y.M. (viii) Twelve hoeings and six weedings. (ix) Nil. (x) Unirrigated. (xi) 62.6". (xii) Nil.

2. TREATMENTS :

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

(1) 2 levels of N as A/S : N₀=0 and N₁=100 lb./ac.

(2) 2 levels of P₂O₅ as Super : P₀=0 and P₁=300 lb./ac.

(3) 2 levels of K₂O as Pot. Sul. : K₀=0 and K₁=200 lb./ac.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59(56) on page 150.

5. RESULTS :

(i) 89.13 cm. (ii) 52.47 cm. (iii) N×P×K effect alone is significant. (iv) Av. height of plants in cm.

	N ₀	N ₁	Mean	P ₀	P ₁
K ₀	86.27	88.37	87.32	88.77	85.87
K ₁	89.74	92.14	90.94	92.59	89.29
Mean	88.01	90.25	89.13	90.68	87.58
P ₀	91.22	90.14			
P ₁	84.79	90.37			

S.E. of any marginal mean = 9.28 cm.
S.E. of body of any table = 13.12 cm.

Crop :- Black Pepper.

Ref :- As. 59(43).

Site :- Composite Res. Stn., Khanikar.

Type :- 'C'.

Object :- To find out the best time of planting cuttings for root formation.

1. BASAL CONDITIONS :

(i) Uncultivated grazing land. (ii) (a) Clay loam. (b) N—0.17% ; P—0.004% P_2O_5 ; K—0.046% K_2O and pH—5.1. (iii) Cuttings. (iv) Local. (v) As per treatments at 9" × 6" spacing. (vi) —. (vii) 5 md. cow-dung/100 sq. ft, 2 md. sand for the expt. area. (viii) Plants are grown under thatch cover ; weeding as and when necessary. (ix) Nil. (x) Irrigated. (xi) 74.8". (xii) Nil.

2. TREATMENTS :

12 dates of planting : $D_1=1.4.1959$, $D_2=1.5.1959$, $D_3=1.6.1959$, $D_4=1.7.1959$, $D_5=1.8.1959$, $D_6=1.9.1959$, $D_7=1.10.1959$, $D_8=1.11.1959$, $D_9=1.12.1959$, $D_{10}=1.1.1960$, $D_{11}=1.2.1960$ and $D_{12}=1.3.1960$.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) 30. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) % of rooting and height of plant after two months. (iv) (a) and (b) No. (v) and (vi) Nil.

5. RESULTS :

I. % of germination

(i) 21.36 %. (ii) 4.51 %. (iii) Treatment differences are highly significant. (iv) Av. % of germination.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6 to D_{12} .
Av. Percentage	94.40	65.43	45.53	27.77	23.20	Nil.

S.E./mean = 2.60 %.

II. Height

(i) 1.2 inches. (ii) 0.9 inches. (iii) Treatment differences are significant. (iv) Av. height, plant in inches.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6 to D_{12}
Av. height	7.3	2.5	2.3	1.2	0.5	Nil.

S.E./mean = 0.52 inches.