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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.).

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INDEX OF FIELD EXPERIMENTS**

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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 along with the place where it is located, e.g. Agri. Res. Stn. for Agricultural Research Station.

For Central Institutes, the corresponding standard abbreviations have been adopted e.g. I.A.R.I. for 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.—Nitro. Phosphate
Ammo. Phos.—Ammonium Phosphate
A/S—Ammonium Sulphate
A/S/N.—Ammonium Sulphate Nitrate
C/A/N—Calcium Ammonium Nitrate

A/N—Ammonium Nitrate
A/C—Ammonium Chloride
C/N—Chilean Nitrate
N—Nitrogen
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	Hindi	Punjabi
1.	Paddy	<i>Oryza sativa</i> L.	Dhan	Dhan	Dhano	Vadlu, Biyyamu	Nel	Nellu	Bhatta	Bhat	Dangar	Dhan, Chawal	Chaul; Dhan
2.	Wheat	<i>Triticum sativum</i> Lamk. ; <i>Triticum aestivum</i> L.	Gaum, Ghehu	Gam	Gaham	Godumalu	Kothumai	Gothambu	Godhi	Gahu	Ghahu	Gehon	Kanak
3.	Barley	<i>Hordeum vulgare</i> L.	Ja'dhan	Joba	Jaba, Barli or Jabadhana	Barley	Baarli arisi	Barley	Barley akki	Satu ; Jav	Jav	Jau	Jaun
4.	Potato	<i>Solanum tuberosum</i> L.	Alooguti	Alu	Bilati Alu	Bangala-dumpa, Uralagadda	Uruzhai kilangu	Urala kizangu	Alu gedde	Batata	Aloo, Batata	Aaloo	Alu
5.	Brinjal	<i>Solanum melongena</i> L.	Bengena	Begun	Baigan	Vankaya	Katharikai	Vazhuthana	Badade kayi	Vange	Veagan	Baingan	Bengan ; Bataun
6.	Cauliflower	<i>Brassica oleracea</i> L. var. <i>botrytis</i> L.	Phool Kabi	Fulkapi	Fula kobi	Poogobi	Gospoovu	Cauliflower	Hukosu	Phul kobi, Fulvar	Fulkobi, Fulvar	Phool Gobhy	Phul gobhi
7.	Bhindi	<i>Hibiscus esculentus</i> ; <i>Abelmoschus esculentus</i> Moench.	Bhendi	Dhenrosh	Vendi	Benda	Bendai Kai	Venda	Bende kayi	Bhendi	Bhida Bhinda	Bhindi	Bhindi ; Tori
8.	Tomato	<i>Lycopersicon esculentum</i> Mill	Bilahi	Bilati begun	Bilati began bapatala ghan	Tomato ; Ramamulaka Seema vankaya	Thakkali	Thakkali	Tomato	Welwangi Tambati	Vilatiwagan Tameta	Tamattar	Tamatar
9.	Onion	<i>Allium cepa</i> L.	Piyaz	Piaj	Peas, Ulli	Ulli	Vengayam ; Erangagam	Ulli	Eerulli	Kanda	Dungli ; Kando	Piaz	Ganda ; Payaz
10.	Cabbage	<i>Brassica oleracea</i> L. var. <i>capitata</i> L.	Bandha Kabi	Bandhakapi	Bandha Kobi	L. Akugobi	Muttaikose	Muttakose	Yele kosu	Kobi	Kobij	Patgobhy	Band gobhi
11.	Pea	<i>Pisum sativum</i> L.	Motor mah	Baramatar	Matar	Bataneelu	Pattani	Pattani	Batani	Matar	Vatana	Muttar	Mattar
12.	Arhar	<i>Cajanus cajan</i> Milsp ; <i>Cajanus indicus</i> Sprengl	Arahar	Arahar	Harad	Kandulu	Thuvarai	Thuvaran Payaru	Thogari	Tur	Tuver	Arhar	Harhar ; Arhar
13.	Khesari	<i>Lathyrus sativus</i> L.	Khesar	Khesari	Khesari	Kasari Pappu	Kaesari paruppu	—	Chikka-thogari	Lakh	Lang	Chattri Mattar	—

GLOSSARY OF VERNACULAR NAMES OF CROPS—contd.

Sl. No.	Name of Crop	Botanical Name	Assamese	Bengali	Oriya	Telugu	Tamil	Malayalam	Kannada	Marathi	Gujarati	Hindi	Punjabi
14.	Gram	<i>Cicer arietinum</i> L.	Butmah	Chola	Boot	Sanagalu	Kadalai, Sundal Kadalai	Kadala	Kadale	Harbara	Chana	Chana	Chhole ; Chana
15.	Sugarcane	<i>Saccharum officinarum</i> L.	Kuhiar	Akh	—	Cheruku	Karumbu	Karimbu	Kabbu	Oos	Sherdi	Ganna ; Kamad ; Naishakar Jute	Kamad ; Ganna ; Eakh Patsan
16.	Jute	<i>Corchorus</i> spp.	Marapat	Shada pat ; Tosha pat	Jhota	Janumu	Chanapai	Chanambu	Senabu	Joot	Moti		
17.	Groundnut	<i>Arachis hypogaea</i> L.	China Badam	Cheena badam	China- badam	Nelashanga	Nilakadalai	Nilakkadala	Kadale kayi	Bhuimug	Bhoising Magafali	Mungphali	Mungfali
18.	Til	<i>Sesamum indicum</i> L.	Til	Til	Rasi	Navvulu	Ellu	Ellu	Yellu	Til, Tili	Tal	Til	Til
19.	Linseed	<i>Linum usitatissimum</i> L.	Tisi	Tishi	Peshi	Avise	Alivithai	Cheruch- anavithu	Agase	Javas, Alsi	Alsi	Alsi	Alsi
20.	Toria	<i>Brassica campestris</i> var. <i>toria</i> Duth.	Sariah	Tori sarisha	—	Ava	Kadugu	—	—	Saras	Sarsav	Toria	Toria
21.	Mustard	<i>Brassica juncea</i> Coss.	Sariah	Rai Sarisha	Rai	Avalu	Kadugu	Kaduku	Kempu- sasive Bale	Mohri	Rai	Rai	Rai
22.	Banana	<i>Musa paradisiaca</i> L.	Kol	Paka kala	Kadali	Arati	Vazhai pazam	Vazha		Kele	Kela	Kela	Kela

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WEST BENGAL

1. General :

The State of West Bengal is situated between 21° 31' and 27° 14' North Latitudes, 86° 35' and 89° 53' East Longitudes. Along the north of the State stand the Himalyan ranges. The Bay of Bengal washes its southern boundary. In the east lie Bhutan, Assam and East Pakistan in the north Sikkim, in the west Nepal and Bihar and in the south-west Orissa State. The total area of the State, as per 'Agricultural Situation in India' is 21,874 thousand acres. The land utilization statistics of the State are given in Table 1.

TABLE 1

Land utilization statistics of West Bengal State (1962-63)

Classification	Area in '000 acres.
Net area by professional survey	21874
Forests	2737
Net area available for cultivation	3196
Other uncultivated land	1554
Current fallow	936
Net area sown	13451
Gross area sown	15792
Area sown more than once	2341

(Source :- Department of Agriculture, Govt. of West Bengal).

2. Topography :

West Bengal can be divided into two natural geographical divisions. They are (1) the great plain of the Ganges and (2) Himalayan West Bengal. The upper limit of the first tract is the northern limit of West Dinajpur. The elevation of this tract increases as one goes farther west. The Bhagirathi acts as the great drain as well as boundary of this tract. To the east of this tract all rivers flow north to south with a south-easterly slant except Jalangi and Churni in Nadia which turn westward into the Bhagirathi. The second natural division, Himalayan West Bengal, is dominated by the mighty Himalayan range in the north wherefrom all rivers take their rise and flow southward with an easterly slant.

3. Soils :

The greater part of the plains of West Bengal is covered by alluvium. Laterite is noticed on the west and north from Orissa through Midnapur, Burdwan and Birbhum to the flanks of the Rajmahal hills where, in places, it is as much as 200 feet thick. Thick gneiss of the well foliated type, frequently passing into mica schist, constitutes the greater portion of the Darjeeling Himalayas.

According to the soil types, the State can be divided into two main divisions described as below :

Himalayan West Bengal Division :

The Himalayan region is made up of the Darjeeling, Jalpaiguri and Cooch Behar districts. The soil is quite heavy and dark coloured, containing high percentage of organic matter and nitrogen. The soils of Darjeeling district appear to be highly weathered. The texture of the soils varies from clay to clay loam. The contents of lime, manganese, potash and phosphate are low perhaps due to heavy leaching. The content of alumina is much higher than ferric oxide. The humid and cold climate is evidently responsible for the accumulation of organic matter. The soils of Western Duars besides being highly deficient

in lime, show lack of phosphate and are mechanically less weathered than the rest of the soils. The soils of Jalpaiguri are of sandy nature, the proportion of sand being considerably greater in proportion to clay. The soils have lost the major amount of lime and have become highly deficient in potash and phosphate but are quite high in nitrogen content.

West Bengal Plain Division :

Portions of Murshidabad, Bankura and entire Burdwan have the appearance of undulating plateau. It is composed mainly of the old alluvium and the area between the Damodar and the Bhagirathi is interspersed with some basaltic and granitic hills with laterite capping. The western part of this region is said to be occupied by lateritic soils. Probably the red soils are transported soils from the hills of Chhota Nagpur plateau. The soils of the Chhota Nagpur region divide themselves into two groups. To the first group belong the soils of Midnapur, Bankura, Burdwan and Birbhum. The soils of this group are almost similar in their chemical composition and physical properties. The second group of soils from Malda, Murshidabad, Howrah and Hoogly are mostly alluvial. Nadia soils contain calcium carbonate and are alkaline.

Besides the tracts mentioned above rest of Bengal is composed of low levels. The soils of southern most coastal part of the province are impregnated with saline deposits. This region has mostly alluvial soils which vary in texture from sandy to heavy clay. A peculiar feature of the alluvial region is the occurrence of 'bheels'. They are either old river beds or are formed by the gradual raising of river banks. The soils are dark bluish and heavy textured. They however, do not always contain a high percentage of nitrogen.

4. Climate & Rainfall :

An important feature of the climatic conditions of the State is the periodic winds that blow across it. The seasonal winds are known as the monsoon. Two-thirds of the rainfall takes place from middle of March to end of October. The climate is, briefly speaking, tropical, of high humidity and moderately high temperature, with alternate dry and wet seasons. During the other months, temperature is lower and humidity moderate. In the cold season the average temperature is 64°F and during the hot season 83°F. The high rainfall in Darjeeling and Jalpaiguri is due to the proximity of the mountains. Cyclonic storms usually prevail over longer periods and affect larger areas. During very hot days the air often remains full of moisture. Thunder storms are not rare happenings in the State. During hot seasons they occur every year and bring much coveted showers after long sultry days.

The season-wise normal rainfall for regions of the State is shown in Table 2.

TABLE 2.

Season-wise rainfall in mm for different divisions of West Bengal.

Divisions	June to September	October to December	January to February	March to May	Total
Himalayan W.B.	2436	177	30	483	3126
Gangetic W.B.	1085	134	39	178	1436

(Source : "Monthly and annual normals of rainfall and of rainy days" published by the Director General of Observatory, New Delhi).

5. Irrigation :

About 3534 thousand acres of land is under irrigation which accounts for about 22.4% of the net cropped area. The distribution of the irrigated area according to source of irrigation is given in the Table 3 below :

TABLE 3

Area irrigated and different sources of irrigation 1962-63.

Source of irrigation	Area in '000 acres	%
Govt. canals	1269	35.91
Private canals	958	27.11
Tanks	812	22.98
Wells	40	1.13
Others	455	12.87
Total	3534	100.00

(Source : Department of Agriculture, Govt. of West Bengal.)

6. Agricultural production and normal cropping pattern :

Paddy is by far the most important crop of the State. It covers a little over 71% of the total cropped area. Pulse crops account for about 1.9% of the total cropped area, while oil seed crops account for a little over 2%. The area, total production and mean acre yields of different crops in the State are given in Table 4 below.

TABLE 4

Area, total production and mean acre yields of some important crops in West Bengal (1963-64)

Name of the crop	Area in '000 acres	Total production in '000 tons	Mean yield in lb./ac.
Rice	11,197	5250	1050
Wheat	136	32	527
Maize	135	35	581
Barley	98	23	526
Ragi	27	3	249
Jowar	7	2	640
Small millets	24	6	560
Gram	390	89	511
Tur	113	38	753
Other pulses	1386	258	417
Potato	162	527	3.25@
Tabacco	37	11	666
Ginger	3	2	1493
Chillies	19	8	943
Sugarcane	81	1513	18.68@
Jute	1102	3270*	1187
Mesta	296	710*	959
Mustard	215	28	292
Til	14	2	320
Linseed	105	10	213
Other oil seeds	7	2	640

@Tons/ac.

*Bales of 400 lbs. each.

(Source : Directorate of Economics and Statistics, Ministry of Food and Agriculture).

7. Agricultural Research and Experimental Stations :

Agricultural Research Stations at Chinsurah, Burdwan, Berhampore, Bhanjang, Cooch Behar and Malda are some of the important stations in the State. Paddy is the main crop on which maximum number of experiments are reported for the period of 1954-59. They

account for about 54.9% of the total number of experiments. Next in importance is potato, which accounts for about 14.5% of the total number of experiments reported. The present volume contains 339 experiments reported from the State for the period 1954-59. The distribution of these experiments, crop-wise and type-wise, is given in table 5 below. Besides these experiments, a total number of 145 experiments belonging to Coordinated Model Agro-nomic Experiments Project conducted by the Indian Council of Agricultural Research on cultivator's fields are also included in the compendium.

TABLE 5
Crop-wise and type-wise distribution of Experiments

Crop	M	MV	C	CV	CM	I	IM	D	Total
Paddy	157	2	10	4	11	—	—	2	186
Wheat	19	—	—	5	—	—	—	—	24
Barley	1	—	—	—	—	—	—	—	1
Potato	27	—	6	—	7	—	1	8	49
Brinjal	—	—	—	1	—	—	—	—	1
Cauliflower	1	—	—	4	—	—	—	—	5
Bhindi	—	—	—	1	—	—	—	—	1
Tomato	—	—	—	5	—	—	—	—	5
Onion	—	—	—	1	—	—	—	—	1
Cabbage	—	—	—	3	—	—	—	—	3
Pea	—	—	—	1	—	—	—	—	1
Arhar	—	—	5	—	—	—	—	—	5
Khesari	1	—	—	—	—	—	—	—	1
Gram	—	—	1	—	—	—	—	—	1
Sugarcane	7	—	—	—	—	—	—	—	7
Jute	3	—	—	—	—	—	—	—	3
Groundnut	—	—	6	—	—	—	—	—	6
Til	—	—	4	—	—	—	—	—	4
Linseed	—	—	2	—	—	—	—	—	2
Toria	2	—	—	—	—	—	—	—	2
Mustard	2	—	—	—	—	—	—	—	2
Mixed cropping	—	—	—	—	—	—	—	—	6
Banana	6	—	7	—	—	9	—	—	23
Total	227	2	41	25	18	9	1	10	339

About 67% of the experiments are purely manurial type and nearly 22% of the experiments are of cultural, cultural-cum-varietal and manurial types.

Randomised blocks design is the most commonly adopted design which accounts for about 67.6% of the total number of experiments. About 21.6% of the experiments are laid out in split-plot or strip-plot designs. About 9% are laid out in confounded designs. Plot sizes in all the experiments vary from 23 sq. ft. to 1800 sq. ft. Number of replications adopted in an experiment is as high as 12 and in confounded experiments the minimum number of replications is even $\frac{1}{2}$. Number of plots taken in a block in the case of R.B.D. ranges between 2 and 27, while number of sub-plots per main-plot varies from 2 to 15.

PARTICULARS OF RESEARCH STATIONS, WEST BENGAL

1. State Agricultural Farm, Bankura.

A. General information :

(i) In Bankura *tehsil* of Bankura district. Latitude—23.25°N, Longitude—87.10°E and Altitude—84 metres. Gently undulating ground. (ii) Lateritic tract. (iii) Established in 1922. (iv) Paddy, cotton, groundnut, jute, maize, soyabean, *dhaincha* are grown during *kharif* season and wheat during *rabi* season. (v) The following experiments are conducted: (a) Varietal trial and performance trial on cotton, groundnut, soyabean, maize and wheat to determine suitable varieties, observe the performances of these crops in this tract. (b) Trial to evolve disease resistant paddy varieties and to find out the effect of G.M. with phosphate on paddy in different situations.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
27	33	31	20	8	2	2	1	3	3	3	10	143

(Average rainfall data is based on the period 1950—1959).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation facilities are available from the tanks by operating irrigation pump. (ii) Proper drainage system exists.

D. Soil type and soil analysis :

(i) Laterite, 1½' deep and gravel in structure. (ii) Chemical analysis :

	Early <i>aman</i> land	Low lying <i>aman</i> land	High land
Organic matter	—	—	2.62
Moisture (air dry)	2.260	2.380	1.60
Al ₂ O ₃ and Fe ₂ O ₃	—	—	9.96
CaO	0.340	0.200	0.17
MgO	0.410	0.580	0.43
P ₂ O ₅	0.025	0.034	0.034
K ₂ O	0.520	0.590	0.860
pH	6.0	6.2	5.8
Nitrogen	0.040	0.055	0.028

(iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—11, Total=11.

2. State Agricultural Farm, Berhampore.

A. General information :

(i) In Murshidabad district. Latitude—24.08°N, Longitude—88.16°E and Altitude—62' above mean sea level. Composed of high and low land surrounded by *Bheel* on all sides with

excellent facilities for irrigation all the year. (ii) Sandy loam (alluvial) (iii) Established in 1921. (iv) Oil seed and pulses (*rabi*) followed by paddy and other *kharif* oilseeds and pulses. Sugarcane—fallow—oilseeds—pulses and potato. (v) Manurial, agronomical and breeding aspects of oilseeds, pulses, paddy, sugarcane, potato and wheat crops.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
20	25	31	22	15	1	—	1	1	2	7	10	135

(Average rainfall data is based on the period —N.A.)

C. Irrigation and drainage facilities :

- (i) (a) and (b) Irrigation facilities are available since the establishment of the farm.
(ii) Proper drainage system exists.

D. Soil type and soil analysis :

(i) Sandy loam and brownish in colour. (ii) Chemical analysis : pH 6.2 to 8.4, Total nitrogen 0.02 to 0.04%, Total P_2O_5 0.04 to 0.23%, Total K_2O 0.40 to 1.33%, Total calcium 0.22 to 2.17% and Organic matter 0.32 to 0.53%, (iii) Mechanical analysis —N.A.

E. No. of experiments :

Paddy—12, Potato—4, Arhar—5, Sugarcane—1, Groundnut—6, Til—4, Linseed—2, Mixed cropping—3, Total—37.

3. State Agricultural Farm, Bhanjang.

A. General information :

(1) In Ghum, Bhanjang *tehsil* of Darjeeling district. Altitude—7,200' Elevation is ranging from 6,800' to 7,200' from sea level. Situated on the western side of a hillock. Naturally, terrace cultivation is followed. (ii) Hilly tract. (iii) Established to 1957. (iv) Potato (summer only) (v) Research is being done on potato crop.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
53	99	63	16	4	—	—	5	2	3	31	36	312

(Average rainfall data is for the year 1958).

C. Irrigation and drainage facilities :

- (i) (a) and (b) Irrigation facilities are available since 1957. (ii) Proper drainage system exists.

D. Soil type and soil analysis :

(i) Loamy, brown in colour, depth ranging from 3' to 8'. (ii) Chemical analysis and (ii) Mechanical analysis—N.A.

E. No. of experiments :

Potato—16, Total—16.

4. State Agricultural Farm Burdwan.

A. General information :

(i) In Burdwan district. Latitude—23°N, Longitude 88°E and Altitude—102'. Plain land consisting of medium high, medium low and low *aman* paddy lands. (ii) Damodar flat lands. (iii) Established in 1950. (iv) *Kharif* : *Aus* paddy, jute, *aman* paddy. *Rabi* : Wheat, mustard and pulses. (v) As per decision of the Departmental Expert Committee and I.C.A.R. Schemes as approved by the Director of Agriculture, West Bengal.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
27	22	47	52	56	—	—	—	—	4	—	18	226

(Average rainfall data is for the year 1959-1960.)

C. Irrigation and drainage facilities :

(i) (a) and (b) A part of the field is under assured irrigation by Baluka *jheel* across the farm, tank and deep tube well since 1954. (iii) Drainage is no problem excepting during inundation of flood water.

D. Soil type and soil analysis :

(i) Grey in colour and granular in structure. (ii) Chemical analysis : pH 5.2 to 6.3, Soluble salt 0.25 to 0.70 milli mhos./cm., available nitrogen 171 to 269 lb./ac., available P_2O_5 11 to 23 lb./ac. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—36, Wheat—5, Potato—7, Sugarcane—6, Total=54.

5. State Agricultural Farm, Chinsurah.**A. General information :**

(i) In Chinsurah *tehsil* of Hooghly district. Latitude—22°52' N, Longitude—88°24' E, Altitude—28. The farm is situated in the Gangariverine zone of West Bengal and the whole farm area is low lying, mainly suitable for paddy cultivation. (ii) Gangetic old alluvial flat low land. (iii) Established in 1908. (iv) Mainly single cropped, partially double and tripple cropping are also practised. (v) To evolve new high yielding strains, optimum doses of fertilizers, cultural operation methods, requirement of water, protective measures on pests and diseases, specially on paddy.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
27	29	30	21	10	2	—	1	3	4	6	15	148

(Average rainfall data is based on the period 1942 to 1952.)

C. Irrigation and drainage facilities :

(i) (a) and (b) Inadequate irrigation facilities are available since 1935. (ii) Proper drainage system exists.

D. Soil type and soil analysis :

(i) Clayey, 12" deep, blackish brown in colour and fine in structure. (ii) Chemical analysis : pH 6.8, N 0.08%, P_2O_5 0.09%, K_2O 0.86%, C.A. 0.84%, A_2O_3 13.68%, Carbon 0.76%, sesqui oxide 21.44%. (iii) Mechanical analysis : Air dry Moisture 7.43%, clay 55.75%, silt 30.0%, fine sand 6.53% and coarse sand 0.79%.

E. No. of experiments :

Paddy—75, Banana—22, Total—97.

6. State Agricultural Farm, Cooch Behar.**A. General information :**

(i) In Cooch Behar *tehsil* of Cooch Behar district. Latitude—26° 20' N, Longitude—89°28' E and Altitude—136'. The land of the farm is uneven (ii) N.A (iii) Established in 1937. (iv) *Kharif*: *Aus* paddy, *aman* paddy, jute, maize, fodder, G.M., *rabi* : wheat, pulse, sugarcane, tobacco, winter vegetables, mustard and potato. (v) Experiments on manurial, varietal and agronomic aspects are conducted in this farm both in *rabi* and *kharif* seasons.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
77	50	85	30	20	1	1	3	1	2	11	61	342

(Average rainfall data is based on the period 1956 to 1958.)

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation facilities are not available. (ii) No proper drainage system exists.

D. Soil type and soil analysis :

(i) Sandy loam, 4' to 6' deep, light grey to grey in colour, loose in structure. (ii) Chemical analysis and (iii) Mechanical analysis :

Depth	0—6"	6"—20"	20" to 31"	31"—41"
Airdry moisture	3.32	0.52	1.34	0.26
Loss on ignition	4.91	1.18	4.89	0.90
Sesquioxide	10.25	12.44	15.95	9.26
Ca O	0.27	0.56	1.56	1.16
MgO	0.10	0.08	0.12	0.09
K ₂ O	0.46	0.71	0.84	0.74
P ₂ O ₅	0.13	0.05	0.05	0.05
Coarse sand	1.19	1.41	0.68	24.82
Fine sand	70.66	77.47	28.72	65.72
Silt	20.73	15.58	59.79	6.01
Clay	5.8	3.31	8.36	2.60
CaCO ₃	—	0.25	1.00	0.50
pH	6.1	7.1	7.3	7.3
Total Base 0.5N	4.2	19.4	59.8	38.4
acetic acid m.e.%				
0.5N acetic acid soil	2.4	16.8	47.6	36.8
Ca m.e.%				
Carbon	0.453	0.139	0.194	0.08
Nitrogen	0.062	0.014	0.021	0.008

E. No. of experiments

Paddy—10, Wheat—3, Jute—1, Total=14.

6. State Seed Multiplication Farm, Fulia**A. General information :**

(i) In Santpur *tehsil* of Nadia district. Latitude—20° 10' N, Longitude—88°34'E and Altitude 48' above main sea level. Undulating lands. (ii) Ganga riverine. (iii) Established in 1953. (iv) *Kharif*—Aus, paddy jute and *aman* paddy; *Rabi*—wheat, gram, potato and mustard. (v) Seed multiplication cotton and root crops.

B. Normal rainfall in cm.:

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
36	32	29	35	14	—	—	2	5	2	6	3	164

(Average rainfall data is based on the period 1956 to 1959).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation is done by the deep tube wells since 1953 (ii) No proper drainage system exists.

D. Soil type and soil analysis :

(i) 6" to 1½' deep, light brown to dark brown in colour, single grain to crumb structure.
(ii) Chemical analysis :

	High land	Low land
P ₂ O ₅	0.076	0.124
K ₂ O	1.72	1.46
pH	6.8	7.2
Nitrogen	0.032	1.30

(iii) Mechanical analysis—N.A.

E. No. of experiments :

Wheat—1, Potato—3, Jute—1, Total=5.

8. State Agriculture Farm, Gosaba.

A. General information :

(i) In Gosaba tehsil of 24 Parganas district. Latitude—22°11'N, Longitude—88°48'E and Altitude—14'M.S.L. (ii) Clay to clay loam. (iii) N.A.(N) Paddy etc. (v) N.A.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
26	39	37	23	14	3	—	5	2	—	2	3	154

(Average rainfall data is for the year 1956—1957).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation and drainage facilities are not available. (ii) No proper drainage system exists.

D. Soil type and soil analysis :

(i) Clay loam, 9" deep, grey in colour. (ii) Fe₂O₃, 4.98 to 6.42%, MgO 2.04 to 2.30%, Al₂O₃ 8.44 to 11.08%, Mn₃O₄ 0.06 to 0.11%, CaO 0.50 to 0.97%, P₂O₅ 0.108 to 0.113% Cl 0.18 to 0.52% pH 7.30 to 8.13 (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—1, Total=1.

9. State Agricultural Farm, Haringhat.

A. General information to C. Irrigation and drainage facilities :

Information—N.A.

D. Soil type and soil analysis :

(i) Loam. (ii) Chemical analysis : Nitrogen 0.12%, Total P₂O₅ 0.009%, Available P₂O₅ 0.0054%, pH 7.0 (iii) Mechanical analysis—N.A.

E. No. of experiments .

Paddy—1, Total—1.

10. State Agricultural Farm, (Govt. Farm) Hathwara, (Purulia).**A. General information :**

(i) In Hathwara *tehsil* of Purulia district. Latitude—23°22' N, Longitude—86°24' E, Altitude—700'. Undulating land. (ii) Laterite. (iii) Established in 1956. (iv) *Bhadui* millets and pulses, paddy and *kulthi*. (v) Trials on promising selections of erect spreading groundnut.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
37	29	26	37	12	—	—	1	—	4	1	6	153

(Period—N. A.)

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation is done by well water. There are six wells in all. (ii) Proper drainage system exists.

D. Soil type and soil analysis :

(i) Sandy loam, 6" to 1' deep, reddish in colour, gravelly in structure. (ii) Chemical analysis : pH 5.2, Soluble salt 0.028%, available nitrogen 193 lb./ac., available P_2O_5 31 lb./ac. (iii) Mechanical analysis : Sandy loam, chips and pieces in all the samples.

E. No. of experiments :

Paddy—8, Wheat—1, Potato—1, Total=10.

11. State Agricultural Farm, Kalimpong.**A. General information :**

(i) In Dongra block *tehsil* of Kalimpong district. Latitude—27°N, Longitude—89°E and Altitude—3200' to 3800'. Gently slopping with terraces. (ii) Eastern Himalayan tract (Darjeeling Hill). (iii) Established in 1907. (iv) *Kharif*—Maize, paddy and vegetables. *Rabi* : Mustard, wheat and vegetables. (v) N.A.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
51	70	50	33	6	1	—	2	—	3	8	10	234

(Average rainfall data is based on the period 1949—1958).

C. Irrigation and drainage facilities :

(i) (a) and (b) Town Sewage in about 10 acres of land. (ii) No proper drainage system exists.

D. Soil type and soil analysis :

(i) Sandy, clay loam, 1' to 4' deep, red and dark brown in colour. (ii) Chemical analysis : pH 6.0, nitrogen 0.14%, P_2O_5 0.007%, potash 0.007%. (iii) Mechanical analysis —N.A.

E. No. of experiments :

Paddy—1, Wheat—1, Cauliflower—3, Tomato—2, Onion—1, Cabbage—2, Pea—1, Total=11.

12. State Agricultural Farm, Kalyani.**A. General information to D. soil type and soil analysis :**

Information—N.A.

E. No. of experiments :

Wheat—4, Potato—4, Mustard—2, Total=10.

13. Horticultural Research Station, Krishnagar.**A. General information.**

(i) In Krishnagar Sadar *tehsil* of Nadia district. Latitude—23° 24', Longitude—88° 31' and Altitude 48' above M.S.L. Flat and plain land. (ii) Non alluvium tract. (iii) Established in 1934. (iv) Mainly fruits and vegetables. (v) N.A.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
23	31	27	24	12	1	—	1	3	3	8	13	146

(Average rainfall data is based on 20 years).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation is done by 2" and 1½" tube well since 1934 and 1958 respectively. (ii) Only surface drainage is practised.

D. Soil type and soil analysis :

(i) Loam to silty loam, light to dark grey in colour and granular in structure. (ii) Chemical analysis : pH 6.1 to 6.8, available nitrogen 193.2 to 277.2 lb./ac., available P₂O₅ 16.0 to 131.0 lb./ac. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Banana—1, Total=1.

14. State Agricultural Farm, Krishnagar.**A. General information to D. Soil type and soil analysis :**

Information—N.A.

E. No. of experiments :

Wheat—1, Brinjal—1, Cauliflower—2, *Bhindi*—1, Tomato—3, Cabbage—1, Total=9.

15. Jute Seed Multiplication Farm, Krishnagar.**A. General information :**

(i) In Krishnagar *tehsil* of Nadia district. (ii) N.A. (iii) Established in 1952. (iv) Jute, mustard, gram, wheat, *aus* paddy. (v) N.A.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
23	35	44	32	5	—	—	4	—	—	1	35	179

(Average rainfall data is for the year 1965—1966).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation facilities are available since 1954. (ii) No proper drainage system exists.

D. Soil type and soil analysis :

(i) Clay loam, grey in colour. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Potato—6, Jute—1, Total=7.

16. State Seed Multiplication Farm, Majhian.**A. General information :**

(i) In West Dinajpur district. Latitude—25° 23' N, Longitude—88° 31' E. (ii) Sandy loam. (iii) to (iv) N.A. (v) Reserch is being done on *aman* paddy and *rabi* crops.

B. Normal rain fall in cm.

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
30	35	34	29	10	1	—	8	—	1	—	—	148

(Average rain fall data is for the year 1956—1957).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation facilities are not available. (ii) No proper drainage system exists.

D. Soil type and soil analysis :

(i) Sandy loam, 6" deep, loam and clay loam. (ii) Chemical analysis : Fe_2O_3 2.21% K_2O 0.15%, CaO 0.15%, P_2O_5 0.61%, pH 5.8 C 5.8%, N 0.08% (iii) Mechanical analysis: Coarse sand 6.2% fine sand 43.65%, silt 32.05% and clay 16.75%

E. No. of experiments :

Paddy—3, Total=3.

17. State Agricultural Farm, Malda.**A. General information :**

(i) In Meheshpur *tehsil* of Malda district. Soil becomes hard during *rabi* season. Quality of soil is good, levelling of land is also satisfactory but not up to the desired standard. (ii) Clay loam (stiff). (iii) Established in 1926. (iv) *Kharif*—Paddy, jute, *jowar*, cotton etc., *rabi* : mustard, wheat, *lentil*, *til* etc. (v) N.A.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
36	42	23	13	3	—	—	4	—	—	1	9	131

(Average rainfall is for the year 1965—1966).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation is done by deep tube well and tank since 1952. (ii) No proper drainage system exists.

D. Soil type and soil analysis :

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

E. No. of experiments :

Paddy—1, Wheat—4, Barley—1, Potato—6, *Toria*—2, Total=14.

18. State Agricultural Farm, Maynaguri.**A. General information :**

(i) In Madhya Khagrahari *tehsil* of Jalpaiguri. Latitude— $22^{\circ}25'$ N, Longitude— $87^{\circ}19'$ E and Altitude—272' G.T.S. In general plots are gradually slopping towards both east and south. (ii) *Tista* riverine tract. (iii) Established in 1926. (iv) *Kharif*—*Aman* paddy, jute, sugarcane, maize, *jowar* and vegetable, *rabi* : wheat—mustard—tobacco—maize and vegetable. (v) To carry out field experiments suggested by different experts.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
92	120	91	33	14	—	—	3	—	2	11	41	407

(Average rainfall data is based on the period 1954—58).

C. Irrigation and drainage facilities :

- (i) (a) and (b) Irrigation done by perennial river flowing just by the side of the farm.
 (ii) Provided with a sluice gate at the deeper point of the farm for exit of excess of accumulated rain water.

D. Soil type and soil analysis :

(i) Clay, grey black soil. (ii) Chemical analysis : Average pH value of medium plots is 5.6. In general the high land plots are low in organic content like potash and lime. Other information are not available. (iii) Mechanical analysis. The high land plots are in general of sandy loam type and low land plots are of clay loam type. Other information is not available.

E. No. of experiments :

Paddy—5, Total=5.

19. State Agricultural Farm, Midnapore.**A. General information :**

(i) In Faringdanga *tehsil* of Midnapore district. Latitude—22°25' N, Longitude—87°19', and Altitude—149' above M.S.L. High land. (ii) Red laterite zone. (iii) Established in 1937. (iv) Paddy (*aus* and *aman*), groundnut, sugarcane, *jowar*, maize, mustard, potato and wheat etc. (v) Mainly manurial and varietal trials are conducted at this farm.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
30	29	29	22	13	3	—	1	3	4	4	14	152

(Period—N.A.)

C. Irrigation and drainage facilities .

(i) (a) and (b) Irrigation facilities are partly available since 1959. (ii) Drainage system is sound and good.

D. Soil type and soil analysis :

(i) Sandy loam, 1" to 1½" deep, red in colour and crumb in structure. (ii) Chemical analysis : pH 6.1, loss on ignition 2.75%, Fe₂O₃ 1.95%, Al₂O₃ 3.99%, CaO 0.22%, MgO 0.20%, P₂O₅ 0.05%, K₂O 0.27% and N 0.05%. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—6, Potato—1, Total=7.

20. State Seed Multiplication Farm, Nalhati.**A. General information :**

(i) In Nalhati, Gopalpur *tehsil* of Birbhum district. The lay out of the farm is not yet done. The plots are irregular in shape. The lands are undulating and thereby terrace cultivation is practised. (ii) Laterite tract. (iii) Established in 1955. (iv) Paddy, sugarcane, wheat, pulses and orchard. (v) Complex manurial trial, radio phosphate on paddy and varietal trials on sugarcane, manurial and varietal trial on wheat are conducted.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
26	22	39	24	7	3	—	5	2	—	—	10	138

(Average rainfall data is for the year 1966).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation is done by canal, tanks and *jheel* since 1963. (ii) Proper drainage system exists.

D. Soil type and soil analysis :

(i) Loamy, clayey and clay loam, 2½' deep, brown, black and ash in colour. (ii) Chemical analysis.

Particulars	PH	Soluble Salt milli mohs/cm.	Organic Carbon %	Available phosphate lb./ac.
Block A High	5.2 (A)	0.25 (N)	0.48 (L)	18.4 (L)
Medium	5.6 (A)	0.22 (N)	0.54 (M)	19.6 (L)
Low	6.1 (A)	0.15 (N)	0.30 (L)	25.0 (M)
Block B High	6.4 (N)	0.35 (N)	0.48 (L)	30.4 (M)
Medium	7.4 (N)	0.30 (N)	0.51 (M)	15.6 (L)
Low	6.8 (N)	0.35 (N)	0.39 (L)	15.6 (L)
Block C High	6.1 (N)	0.26 (N)	0.51 (M)	38.4 (M)
Medium	5.7 (A)	0.10 (N)	0.39 (L)	23.0 (M)
Low	5.9 (A)	0.15 (N)	0.39 (L)	23.0 (M)
Block D High	5.9 (A)	0.25 (N)	0.36 (L)	19.2 (L)
Medium	5.0 (A)	0.18 (N)	0.30 (L)	26.0 (M)
Low	5.6 (A)	0.35 (N)	0.57 (M)	13.6 (L)
Block E High	6.7 (N)	0.25 (N)	0.36 (L)	11.2 (L)
Medium	6.0 (N)	0.27 (N)	0.33 (L)	12.0 (L)
Low	5.1 (A)	0.16 (N)	0.54 (M)	12.0 (L)
Block F High	6.6 (N)	0.40 (N)	0.54 (M)	26.4 (M)
Medium	6.0 (N)	0.25 (N)	0.63 (M)	16.4 (L)
Low	5.2 (A)	0.19 (N)	0.54 (M)	22.0 (M)
Block G High	5.7 (A)	0.23 (N)	0.39 (L)	22.0 (M)
Medium	5.5 (A)	0.35 (N)	0.30 (L)	18.0 (L)
Low	5.7 (A)	0.19 (N)	0.30 (L)	33.0 (M)
Block H Low	5.2 (A)	0.20 (N)	0.42 (L)	18.0 (L)
Orchard Block A.	5.6 (A)	0.20 (N)	0.32 (L)	22.0 (M)
Low block	5.3 (A)	0.10 (N)	0.57 (M)	18.0 (L)

A—acid, N—normal, L—low and M—medium.

(iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—2, *Khesari*—1, Total=3.

21. State Agricultural Farm, Rangbull.**A. General information to D. Soil type and soil analysis :**

Information—N.A.

E. No. of experiments :

Potato—1, Total=1.

22. State Agricultural Farm, Sriniketan.**A. General information :**

(i) In Sural Mauza *tehsil* of Birbhum district. Latitude—23°39'N, Longitude—87°42'E and Altitude—191' above M.S.L. The area in which the experiments are being conducted was a *danges* land. The experiments started after proper levelling with a slight slope to the western side for proper drainage. (ii) Old alluvial tract. (iii) Established in 1924. (iv) N.A. (v) To conduct experiments under the guidance of Government of West Bengal on paddy and manure.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
11	25	27	31	10	—	—	3	—	—	3	10	120

(Average rainfall data is for the year 1958—1959).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation is done by tank water since 1930. (ii) Proper drainage system exists.

D. Soil type and soil analysis :

(i) Old alluvium upto a depth of 3', *murrum* beneath 3', straw colour upto 3'. Granular up to the depth of 6" to 9". (ii) Chemical analysis, N 0.04%, P_2O_5 , 0.002%, K_2O 0.034%, Fe_2O_3 2.925%, Mn_2O_4 0.025%, Al_2O_3 4.627%, CaO 0.116%. (iii) Mechanical analysis : Moisture 2.56%, coarse sand 46.27%, fine sand 21.85%, total sand 59.91%, silt 10.00%, clay 12.75% and pH 5.6.

E. No. of experiments :

Paddy—2, Total=2

23. State Agricultural Farm, Suri.**A. General information :**

(i) In Suri *tehsil* of Birbhum district, 2 miles from Suri Railway Station. Latitude $23^{\circ}55'N$, Longitude— $87^{\circ}32'$ and Altitude 219'M.S.L. (ii) Lateritic tract. (iii) Established in 1922. (iv) Paddy and *rabi* crops (v) N.A.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
26	33	32	41	9	1	—	9	2	2	—	—	131

(Average rain fall data is for the year 1956—1957).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation facilities are not available. (ii) No proper drainage system exists.

D. Soil type and soil analysis .

(i) Lateritic sandy loam, 6" deep (ii) Chemical analysis : Fe_2O_3 4.08%, CaO 0.21%, K_2O 0.32%, Al_2O_3 5.45%, P_2O_5 0.05%, C 0.54%, N 0.06% Ex. Ca. m.e. 4.24%, pH 5.60 (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—12, Total=12.

24. State Agricultural Farm, Tollyganj.**A. General information :**

(i) In 24 Parganas district. Latitude $22^{\circ}33'N$, Longitude— $88.23'E$. (ii) Gangetic high land. (iii) Established in 1950. (iv) N.A. (v) Experiments are conducted on wheat, cotton, and paddy.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
13	32	24	31	12	2	—	5	2	2	3	11	137

(Average rainfall data is for the year 1958—1959).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation facilities are not available. (ii) No proper drainage system exists.

D. Soil type and soil analysis :

(i) Gangatic alluvial, 0 to 9" deep, light grey and weak crumb structure. (ii) Chemical analysis : CaO 0.67%, P₂O₅ 0.21%, K₂O 0.35%. Ex. basis 0.5, A.c. m.e. 13.75%, Ex. Ca 12.25%, C 0.93% and N 0.07% (iii). Mechanical analysis—N.A.

E. No. of experiments :

Gram—1, Total=1.

25. State Agricultural Research Institute (College Farm), Tollyganj.**A. General information:**

(i) In 24 Parganas district. Latitude—22°33'N, Longitude 88°23'E and Altitude 21' M.S.L. (ii) Gangatic high land. (iii) N.A. (iv) Wheat, cotton and paddy. (v) N.A.

B. Normal rainfall in cm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
13	32	24	31	12	2	—	5	2	2	3	11	137

(Average rainfall data is for the year 1958—1959).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation facilities are not available. (ii) Proper drainage system exists.

D. Soil type and soil analysis :

(i) Gangatic alluvial, 9" deep. Light grey, weak crumb structure. (ii) Chemical analysis: CaO 0.67%, P₂O₅ 0.21%, K₂O 0.35%, Ex. bases 0.5. A.C. me 13.75%, Ex. Ca 12.75%, C 0.93%, N 0.07%, pH 6.77 to 6.82 (iii) Mechanical analysis—N.A.

E. No. of experiments :

Wheat—4, Mixed cropping—3, Total=7.

Crop :- Paddy (Aman).

Ref :- W.B. 54(58).

Site :- State Agri. Farm, Bankura.

Type :- M'.

Object :-To study the effect of different seed rates of dhaincha on the following crop of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—*Dhaincha*. (b) As per treatments. (c) 10 lb./ac. of N as A/S and 40 lb./ac. of P₂O₅ as Super. (ii) (a) Laterite. (b) Refer soil analysis, Bankura. (iii) 18.6.1954/29.8.1954. (iv) (a) 3 ploughings and 2 laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Ajan*—254 (medium). (vii) Unirrigated. (viii) 1 weeding and 1 hoeing. (ix) 25.29". (x) 9.12.1954.

2. TREATMENTS :

9 seed rates of *dhaincha* : R₀=0, R₁=5, R₂=10, R₃=15, R₄=20, R₅=25, R₆=30, R₇=35 and R₈=40 srs/ac.

Dhaincha was sown on 18.6.1954, germinated on 22.6.1954, harvested and ploughed in on 7.8.1954.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 31½'×20½'. (b) 30'×19½'. (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1981 lb./ac. (ii) 171.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	R ₀	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆	R ₇	R ₈
Av. yield	1498	1916	1898	2129	2102	1966	2084	2002	2234

S.E./mean = 85.7 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 55(53).

Site :- State Agri. Farm, Bankura.

Type :- 'M'.

Object :-To study the effect of different seed rates of dhaincha on the following crop of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—*Dhaincha*. (b) As per treatments. (c) 10 lb./ac. of N as A/S and 40 lb./ac. of P₂O₅ as Super. (ii) (a) Laterite. (b) Refer soil analysis, Bankura. (iii) 26.6.1955/22.8.1955. (iv) (a) 3 ploughings and 2 laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Ajan*—246 (medium). (vii) Unirrigated. (viii) 1 weeding and 1 hoeing. (ix) 15.88". (x) 12.12.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(58) above.

Dhaincha was sown on 26.6.1955, harvested and ploughed in on 13.8.1955.

5. RESULTS

(i) 1384 lb./ac. (ii) 317.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	R ₀	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆	R ₇	R ₈
Av. yield	863	1126	1398	1507	1539	1694	1712	1149	1467

S.E./mean = 158.9 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 56(9).

Site :- State Agri. Farm, Bankura.

Type :- 'M'.

Object :—To study the effect of different seed rates of dhaincha on the following crop of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—*Dhaincha*. (b) As per treatments. (c) 10 lb./ac. of N as A/S and 40 lb./ac. of P_2O_5 as Super. (ii) (a) Laterite. (b) Refer soil analysis, Bankura. (iii) 30.6.1956/23.8.1956. (iv) (a) 3 ploughings and 2 laddering. (b) Transplanted. (c) 10 srs /ac. (d) $9^{\circ} \times 9^{\circ}$. (e) 2 to 3. (v) Nil. (vi) *Ajan*—246 (medium). (vii) Unirrigated. (viii) 1 weeding and 1 hoeing. (ix) 42.50%. (x) 14.12.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(58) on page 1.

5. RESULTS :

(i) 2332 lb./ac. (ii) 232.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	R ₀	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆	R ₇	R ₈
Av. yield	2161	2288	2129	2356	2388	2225	2366	2697	2379

S.E./mean = 116.2 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(21).

Site :- State Agri. Farm, Bankura.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Lateritic soil (*kamali* land). (b) Refer soil analysis, Bankura. (iii) 16.6.1954/24.8.1954. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) 15 srs/ac. (d) $9^{\circ} \times 9^{\circ}$. (e) 3. (v) Nil. (vi) Bankura—25 (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 39.09%. (x) 8.12.1954.

2. TREATMENTS :

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

(1) 2 levels of N : $N_1=40$ and $N_2=60$ lb./ac.

(2) 2 methods of application of N : $M_1=$ Top dressing and $M_2=$ Layering.

N applied after 4 weeks of transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) $27.75' \times 18'$. (b) $27' \times 17.25'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Negligible. (iii) Grain and straw yield. (iv) (a) 1952—1956. (b) Yes. (c) N.A. (v) (a) Bankura on shale land. (b) No. (vi) Due to inadequate rainfall in July and August, the work of transplanting was hampered and due to lack of rain in November (milky stage), the crop got a set back. (vii) N.A.

5. RESULTS :

(i) 2113 lb./ac. (ii) 150.6 lb./ac. (iii) Control vs. fertilizers and M effects are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1327 lb./ac.

	N ₁	N ₂	Mean
M ₁	2099	2139	2119
M ₂	2397	2602	2500
Mean	2248	2370	2309

S.E. of any marginal mean = 53.2 lb./ac.
 S.E. of body of table or control mean = 75.3 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(18).

Site :- State Agri. Farm, Bankura.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Lateritic soil (*kamali* land). (b) Refer soil analysis, Bankura. (iii) 25.6.1955/8.9.1955. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) 15 srs./ac. (d) 9"×9". (e) 3. (v) Nil. (vi) Bankura—25 (medium). (vii) 2 weedings. (ix) 36.18". (x) 8.12.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(21) on page 2.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—1955. (b) Yes. (c) No. (v) (a) Bankura on shole land. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 1781 lb./ac. (ii) 196.4 lb./ac. (iii) Control vs. fertilizers and M effects are significant. (iv) Av. yield of grain in lb./ac.

Control = 1567 lb./ac.

	N ₁	N ₂	Mean
M ₁	1936	1923	1930
M ₂	1514	1964	1739
Mean	1724	1944	1834

S.E. of any marginal mean = 69.4 lb./ac.
 S.E. of body of table or control mean = 98.2 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 56(57).

Site :- State Agri. Farm, Bankura.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite, (*Kamali* land). (b) Refer soil analysis, Bankura. (iii) 22.6.1956/1.8.1956. (iv) (a) 3 ploughings and 2 ladderings. (b) Transplanting. (c) 10 srs./ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) Bankura—25 (medium). (vii) Unirrigated. (viii) 1 weeding and 1 hoeing at the time of manuring. (ix) 42.5". (x) 5.12.1956.

2. TREATMENTS and 3. DESIGN

Same as in expt. no. 54(21) on page 2.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1952—1956. (b) Yes. (c) Nil. (v) (a) Bankura on shole land. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 1900 lb./ac. (ii) 202.6 lb./ac. (iii) Only 'control vs. others' effect is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1490 lb./ac.

	N ₁	N ₂	Mean
M ₁	1984	1839	1912
M ₂	2118	2071	2094
Mean	2051	1955	2003

S.E. of any marginal mean = 71.6 lb./ac.

S.E. of body of table or control mean = 101.3 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(22).

Site :- State Agri. Farm, Bankura.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Lateritic soil (shole land). (b) Refer soil analysis, Bankura. (iii) 16.6.1954/30.8.1954. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) 15 srs./ac. (d) 9" × 9". (e) 3. (v) Nil. (vi) *Bhasamanik* (Chinsuruh type 3, medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 39.09". (x) 14.12.1954.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(21) on page 2.

GENERAL :

(i) Normal. No lodging. (ii) Negligible. (iii) Grain and straw yield. (iv) (a) 1952—1955. (b) Yes. (c) No. (v) (a) Bankura on *Kamali* land. (b) No. (vi) Due to inadequate rainfall in July and August, the work of transplanting was hampered and due to lack of rains in the month of November (milky stage), the crop got set back. (vii) Nil.

5. RESULTS :

(i) 2035 lb./ac. (ii) 121.6 lb./ac. (iii) Main effects of M, N and 'control vs. fertilizers' are highly significant. Interaction N × M is significant. (iv) Av. yield of grain in lb./ac.

Control = 1649 lb./ac.

	N ₁	N ₂	Mean
M ₁	1836	1935	1886
M ₂	2181	2573	2377
Mean	2008	2254	2131

S.E. of any marginal mean = 43.0 lb./ac.

S.E. of body of table or control mean = 60.8 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 55(19).

Site :- State Agri. Farm, Bankura.

Type :- 'M'.

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

1. BASAL CONDITIONS:

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Lateritic soil (shole land). (b) Refer soil analysis, Bankura. (iii) 25.6.1955/16.8.1955. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) 15 srs./ac. (d) 9"×9". (e) 3. (v) Nil. (vi) *Bhasamanik* (chinsurah type 3, medium). (vii) Unirrigated. (viii) 2 weedings (ix) 36.18". (x) 5.12.1955.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 54(21) on page 2.

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—1955. (b) Yes. (c) No. (v) (a) Bankura on *Kamali land*. (b) No. (vi) and (vii) Nil.

5. RESULTS:

(i) 2045 lb./ac. (ii) 224.5 lb./ac. (iii) 'Control vs. others' effect is highly significant and main effect of N is significant. (iv) Av. yield of grain in lb./ac.

Control = 1689 lb./ac.

	N ₁	N ₂	Mean
M ₁	1883	2157	2020
M ₂	2064	2433	2248
Mean	1974	2295	2134

S.E. of any marginal mean = 79.4 lb./ac.

S.E. of body of table or control mean = 112.2 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 56(8).

Site :- State Agri. Farm, Bankura.

Type :- 'M'.

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

1. BASAL CONDITIONS:

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite (shole land). (b) Refer soil analysis, Bankura. (iii) 22.6.1956/2.8.1956. (iv) (a) 3 ploughings and 2 ladderings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (late). (vii) Unirrigated. (viii) 1 weeding and 1 hoeing at the time of manuring. (ix) 42.50". (x) 13.12.1956.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 54(21) on page 2.

4. GENERAL:

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1952—1956. (b) Yes. (c) No. (v) (a) Bankura on *Kamali land*. (b) No. (vi) and (vii) Nil.

5. RESULTS:

(i) 2337 lb./ac. (ii) 164.1 lb./ac. (iii) 'Control vs. others' effect is highly significant. M effect and interaction M×N are significant. (iv) Av. yield of grain in lb./ac.

Control = 2019 lb./ac.

	N ₁	N ₂	Mean
M ₁	2188	2385	2286
M ₂	2496	2595	2546
Mean	2342	2490	2416

S.E. of any marginal mean = 57.3 lb./ac.
 S.E. of body of table or control mean = 82.0 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 57(9).

Site :- State Agri. Farm, Bankura.

Type :- 'M'.

Object :- To study the effect of different levels and method of application of A/S on the yield of Paddy.

1. BASAL CONDITIONS

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite (shole land). (b) Refer soil analysis Bankura. (iii) 6.7.1957/19.8.1957. (iv) (a) 3 ploughings and 2 ladderings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (Late). (vii) Unirrigated. (viii) 1 weeding and 1 hoeing at the time of manuring. (ix) 34.08. (x) 9.12.1957.

2. TREATMENTS :-

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

(1) 3 levels of N : N₁=20, N₂=40 and N₃=60 lb./ac.(2) 2 methods of application of N : M₁=Top dressing and M₂=By layering.

N as A/s applied after one month of transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 27½'×18'. (b) 27'×17½'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain and straw. (iv) 1957—1958. (b) Yes. (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 3060 lb./ac. (ii) 261.3 lb./ac. (iii) N and "control vs. others" effects are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 2391 lb./ac.

	N ₁	N ₂	N ₃	Mean
M ₁	2706	3258	3189	3051
M ₂	2746	3450	3677	3291
Mean	2726	3354	3433	3171

S.E. of N marginal mean = 92.4 lb./ac.
 S.E. of M marginal mean = 75.4 lb./ac.
 S.E. of body of table or control mean = 130.7 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 58(5).

Site :- State Agri. Farm, Bankura.

Type :- 'M'.

Object :- To study the effect of different levels and methods of application of A/S on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite (shole land). (b) Refer soil analysis, Bankura. (iii) 29.6.1958/28.8.1958. (iv) (a) 3 ploughings and laddering. (b) Transplanting. (c) N.A. (d) 9'×9'. (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (late). (vii) Unirrigated. (viii) 1 weeding and 1 hoeing at the time of manuring. (ix) 34.46". (x) 20.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(9) on page 6.
N as A/S was applied on 29.9.1958.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1957—1958. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2083 lb./ac. (ii) 165.2 lb./ac. (iii) 'Control vs. others' effect is highly significant. N effect is significant (iv) Av. yield of grain in lb./ac.

Control = 1547 lb./ac.

	N ₁	N ₂	N ₃	Mean
M ₁	1996	2205	2141	2114
M ₂	2048	2263	2380	2230
Mean	2022	2234	2260	2172

S.E. of N marginal mean = 58.4 lb./ac.
S.E. of M marginal mean = 47.7 lb./ac.
S.E. of body of table or control mean = 82.6 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 54(56).

Site :- State Agri. Farm, Berhampur.

Type :- 'M'.

Object :- To study the effect of continuous application of different combinations of N, P and F.Y.M. on the yield of grain and straw.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Lentil. (c) Nil. (ii) (a) Fine sandy loam. (b) Refer soil analysis, Berhampur. (iii) 7 to 18 6.1954. (iv) (a) 4 ploughings laddering and hand hoeing. (b) Broadcast. (c) 1 md./ac. (d) and (e) N.A. (v). Nil. (vi) *Dharia*. (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 34.53", (x) 29.9 1954 to 3.10 1954.

2. TREATMENTS :

Main-plot treatments :

All combination of (1) and (2)

(1) 5 levels of N as A/S : N₀=0, N₁=30, N₂=60, N₃=90 and N₄=120 lb./ac.

(2) 3 levels of P₂O₅ as B.M. : P₀=0, P₁=20 and P₂=40 lb./ac.

Sub-plot treatments :

2 levels of F.Y.M. : F₀=0 and F₁=100 mds/ac.

B.M. and F.Y.M. applied at the time of general preparation of land and A/S broadcasted after sowing.

3. DESIGN :

(i) Split-plot. (ii) (a) 15 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 37'×16'. (b) 35'×14'. (v) 1'×1'. (vi) Yes.

4. GENERAL:

(i) Good. Plots with higher doses of N lodged. (ii) Nil. (iii) Tillering and height of plants, straw and grain yield of paddy. (iv) (a) 1949—contd. (b) Yes. (c) No. (v) (a) Chinsurah and Suri. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 1087 lb./ac. (ii) (a) 410.7 lb./ac. (b) 235.6 lb./ac. (iii) Main effects of N and F are highly significant. Interaction $F \times P$ is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	F ₀	F ₁
P ₀	472	920	1595	1490	1157	1127	968	1285
P ₁	435	1147	1129	1426	1552	1138	930	1346
P ₂	372	923	1112	1289	1282	996	926	1066
Mean	426	997	1279	1402	1330	1087	941	1232
F ₀	306	796	1141	1279	1183			
F ₁	546	1197	1417	1524	1478			

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|------------------------------------|-----------------|
| 1. N marginal means | = 118.6 lb./ac. | 5. N means at the same level of F | = 193.3 lb./ac. |
| 2. P marginal means | = 91.8 lb./ac. | 6. F means at the same level of P | = 71.0 lb./ac. |
| 3. F marginal means | = 43.0 lb./ac. | 7. P means at the same level of F | = 149.7 lb./ac. |
| 4. F means at the same level of N | = 96.2 lb./ac. | S.E. of body of $N \times P$ table | = 145.2 lb./ac. |

Crop :- Paddy (*Aus*).

Ref :- W.B. 55(95).

Site :- State Agri. Farm, Berhampur.

Type :- 'M'.

Object :- To study the effect of continuous application of N, P and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Berhampur. (iii) 1st week of June, 1955. (iv) (a) 3 to 4 ploughings and laddering (b) Broadcast. (c) to (e) N.A. (v) N.A. (vi) *Dharia* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) 1 to 15.10.1955.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 54(56) on page 7.

4. GENERAL:

(i) Fair. (ii) Nil. (iii) Yield of grain. (iv) (a) 1949—contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Suri. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS:

(i) 1778 lb./ac. (ii) (a) 359.1 lb./ac. (b) 332.3 lb./ac. (iii) Main effects of N and F are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	F ₀	F ₁
P ₀	1025	1611	2114	2094	2124	1794	1670	1918
P ₁	1201	1861	2162	1839	2237	1860	1703	2017
P ₂	1102	1563	1741	1937	2053	1679	1471	1886
Mean	1109	1678	2006	1957	2138	1778	1615	1940
F ₀	903	1541	1889	1779	1963			
F ₁	1316	1816	2122	2134	2313			

S.E. of difference of two

1. N marginal means	= 103.7 lb./ac.	5. N means at the same level of F	= 141.2 lb./ac.
2. P marginal means	= 80.3 lb./ac.	6. F means at the same level of P	= 105.1 lb./ac.
3. F marginal means	= 60.7 lb./ac.	7. P means at the same level of F	= 109.4 lb./ac.
4. F means at the same level of N	= 135.7 lb./ac.	S.E. of body of N×P table	= 127.0 lb./ac.

Crop :- Paddy (Aus).

Ref :- W.B. 57(64).

Site :- State Agri. Farm, Berhampore.

Type :- 'M'.

Object :- To study the effect of continuous application of N, P and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Berhampore. (iii) Last week of June 1957. (iv) (a) 3 to 4 ploughings and laddering. (b) Broadcast. (c) 1 md./ac. (d) and (e) N.A. (v) Nil. (vi) *Dular* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) Middle of October 1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(56) on page 7.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1949—contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Suri. (b) N.A. (vi) Nil. (vii) Experiment conducted during the year 1956 failed.

5. RESULTS :

(i) 1420 lb./ac. (ii) (a) 238.1 lb./ac. (b) 174.0 lb./ac. (iii) Main effects of N and F are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	F ₀	F ₁
P ₀	912	1308	1503	1750	1794	1453	1327	1580
P ₁	880	1486	1634	1514	1717	1446	1297	1596
P ₂	719	1199	1550	1642	1692	1360	1254	1466
Mean	837	1331	1562	1635	1734	1420	1293	1547
F ₀	702	1179	1457	1533	1593			
F ₁	973	1483	1668	1737	1876			

S.E. of difference of two

1. N marginal means	= 68.7 lb./ac.	5. N means at the same level of F	= 85.1 lb./ac.
2. P marginal means	= 53.2 lb./ac.	6. F means at the same level of P	= 55.0 lb./ac.
3. F marginal means	= 31.9 lb./ac.	7. P means at the same level of F	= 65.9 lb./ac.
4. F means at the same level of N	= 71.0 lb./ac.	S.E. of body of N×P table	= 84.2 lb./ac.

Crop :- Paddy (Aus).

Ref :- W.B. 58(56).

Site :- State Agri. Farm, Berhampore.

Type :- 'M'.

Object :- To study the effect of continuous application of N, P and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Berhampore. (iii) 1st week of July, 1958. (iv) (a) Ploughing. (b) Broadcast. (c) 1 md./ac. (d) and (e) N.A. (v) Nil. (vi) *Dular* (medium). (vii) Unirrigated. (viii) Weeding and thinning. (ix) N.A. (x) Middle of October, 1958.

2. TREATMENTS and DESIGN :

Same as in expt. no. 54(56) on page 7.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1949— contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Suri. (b) N.A. (vi) and (vii) N.A.

5. RESULTS :

(i) 694 lb./ac. (ii) (a) 261.9 lb./ac. (b) 167.6 lb./ac. (iii) N effect is significant and F effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	F ₀	F ₁
P ₀	444	702	698	752	653	650	608	692
P ₁	680	797	708	663	782	726	622	830
P ₂	516	654	965	721	673	706	640	772
Mean	547	718	790	712	703	694	623	765
F ₀	465	612	770	649	620			
F ₁	628	824	810	775	786			

S.E. of difference of two

- | | | | |
|-----------------------------------|----------------|-----------------------------------|----------------|
| 1. N marginal means | = 75.6 lb./ac. | 5. N means at the same level of F | = 89.8 lb./ac. |
| 2. P marginal means | = 58.6 lb./ac. | 6. F means at the same level of P | = 53.0 lb./ac. |
| 3. F marginal means | = 30.6 lb./ac. | 7. P means at the same level of F | = 69.5 lb./ac. |
| 4. F means at the same level of N | = 68.4 lb./ac. | S.E. of body of N×P table | = 92.6 lb./ac. |

Crop :- Paddy (*Aus*).

Ref :- W.B. 59(59).

Site :- State Agri. Farm, Berhampore.

Type :- 'M'.

Object :—To study the effect of continuous application of N, P and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Berhampore. (iii) 1st week of July, 1959. (iv) (a) Ploughing. (b) Broadcast. (c) 1 md./ac. (d) and (e) N.A. (v) Nil. (vi) *Dular* (medium). (vii) Unirrigated. (viii) 3 weedings. (ix) N.A. (x) Middle of October, 1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no 54(56) on page 7.

4. GENERAL

(i) Normal. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1949—contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Suri. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 807 lb./ac. (ii) (a) 293.8 lb./ac. (b) 250.5 lb./ac. (iii) N effect is significant and F effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	F ₀	F ₁
P ₀	562	790	976	940	770	808	697	918
P ₁	719	888	890	894	914	861	717	1006
P ₂	620	628	914	780	811	751	634	868
Mean	634	769	927	871	832	807	683	931
F ₀	510	645	839	828	592			
F ₁	757	893	1015	915	1072			

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. N marginal means | = 84.8 lb./ac. | 5. N means at the same level of F | = 111.5 lb./ac. |
| 2. P marginal means | = 65.7 lb./ac. | 6. F means at the same level of P | = 79.2 lb./ac. |
| 3. F marginal means | = 45.7 lb./ac. | 7. P means at the same level of F | = 86.4 lb./ac. |
| 4. F means at the same level of N | = 102.3 lb./ac. | S.E. of body of N×P table | = 103.9 lb./ac. |

Crop :- Paddy (Aus).

Ref :- W.B. 54(53).

Site :- State Agri. Farm, Berhampore.

Type :- 'M'.

Object :- To study the effect of continuous application of N, P and lime on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy—Fallow. (b) Lentil. (c) Nil. (ii) (a) Fine sandy loam. (b) Refer soil analysis, Berhampore. (iii) 7 to 18 6.1954. (iv) (a) 4 ploughings and ladderings. (b) Broadcast. (c) 1 md/ac. (d) and (e) N.A. (v) Nil. (vi) *Dharial* (vii) Unirrigated. (viii) 2 to 3 weedings and 2 to 3 hoeings. (ix) 34.53%. (x) 29.9.1954 to 3.10.1954.

2. TREATMENTS:

Main-plot treatments:

3 levels of P₂O₅ as B.M. : P₀=0, P₁=20 and P₂=40 lb./ac.

Sub-plot treatments:

All combinations of (1) and (2)

(1) 4 levels of N as A/S : N₀=0, N₁=30, N₂=60 and N₃=90 lb./ac.(2) 3 levels of lime : L₀=0, L₁=4 and L₂=8 cwt./ac.

3. DESIGN:

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 12 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 23.5'×20.5' and 23.5'×20.0' (in 2 replications each). (b) 21.5'×18.5' and 21.5'×18.0' (in 2 replications each). (v) 1'×1'. (vi) Yes.

4. GENERAL:

(i) Good. Plots with higher doses of N lodged. (ii) Nil. (iii) Tillering and height of plants. Grain and straw yield. (iv) (a) 1949—contd. (b) Yes. (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS:

(i) 1022 lb./ac. (ii) (a) 451.4 lb./ac. (b) 308.7 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	L ₀	L ₁	L ₂
P ₀	389	906	1237	1356	974	976	935	1012
P ₁	409	1076	1387	1440	1078	1052	1096	1086
P ₂	361	850	1394	1447	1013	933	1106	1001
Mean	389	944	1339	1414	1022	987	1046	1033
L ₀	444	915	1311	1277				
L ₁	401	994	1353	1434				
L ₂	323	923	1354	1532				

S.E. of difference of two

1. P marginal means	= 92.1 lb./ac.	5. P means at the same level of N	= 142.8 lb./ac.
2. N marginal means	= 72.8 lb./ac.	6. L means at the same level of P	= 109.1 lb./ac.
3. L marginal means	= 63.0 lb./ac.	7. P means at the same level of L	= 128.0 lb./ac.
4. N means at the same level of P	= 126.0 lb./ac.	S.E. of body of N×L table	= 89.1 lb./ac.

Crop :- Paddy (Aus).**Ref :- W.B. 55(96).****Site :- State Agri. Farm, Berhampore.****Type :- 'M'.**

Object:—To study the effect of continuous application of N, P and Lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Berhampore. (iii) Last week of May to 1st week of June, 1955. (iv) (a) 3 to 4 ploughings and laddering. (b) Broadcasting. (c) to (e) N.A. (v) N.A. (vi) *Dharial* (medium). (vii) Unirrigated. (viii) 1 to 2 weedings. (ix) and (x) N.A.

2. TREATMENTS :**Treatments in one direction :**

All combinations of (1) and (2)

(1) 4 levels of N as A/S : $N_0=0$, $N_1=30$, $N_2=60$ and $N_3=90$ lb./ac.(2) 3 levels of lime : $L_0=0$, $L_1=4$ and $L_2=8$ cwt./ac.**Treatments in orthogonal direction :**3 levels of P_2O_5 as B.M. : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.

A/S and B.M. applied 4 weeks after transplanting. Lime applied once in 4 years.

3. DESIGN :

(i) Strip-plot. (ii) (a) 12 strips in one direction and 3 in orthogonal direction. (b) N.A. (iii) 4. (iv) (a) 23.5'×20.5' and 23.5'×20.0' (in 2 replications each). (b) 21.5'×18.5' and 21.5'×18.0' (in 2 replications each). (v) 1'×1'. (vi) Yes.

4. GENERAL ;

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1949—contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Suri. (b) N.A. (vi) N.A. (vii) Experiment conducted during 1956 failed and the layout design is modified in 1955.

5. RESULTS :

(i) 1222 lb./ac. (ii) 308.4 lb./ac. for NL. 467.3 lb./ac. for P 301.2 lb./ac. for P×NL. (iii) Main effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	Mean	L_0	L_1	L_2
P_0	673	1318	1581	1335	1227	1245	1224	1211
P_1	807	1551	1401	1351	1277	1235	1301	1296
P_2	619	1179	1454	1399	1163	1095	1204	1189
Mean	700	1349	1479	1362	1222	1192	1243	1232
L_0	725	1224	1488	1330				
L_1	738	1432	1468	1334				
L_2	636	1391	1480	1422				

S.E. of difference of two

1. N marginal means	= 72.7 lb./ac.	5. N means at the same level of P	= 124.0 lb./ac.
2. L marginal means	= 63.0 lb./ac.	6. P means at the same level of L	= 129.1 lb./ac.
3. P marginal means	= 95.4 lb./ac.	7. L means at the same level of P	= 107.3 lb./ac.
4. P means at the same level of N	= 143.0 lb./ac.	S.E. of body of N×L table	= 89.0 lb./ac.

Crop :- Paddy (Aus).**Ref :- W.B. 57(65).****Site :- State Agri. Farm, Barhampore.****Type :- 'M'.**

Object :—To study the effect of continuous application of A/S, B.M. and lime applied individually and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Barhampore. (iii) 1st week of August 1957. (iv) (a) 3 to 4 ploughings and laddering. (b) Broadcast. (c) 1 md./ac. (d) and (e) N.A. (v) Nil. (vi) *Dular* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) Last week of October 1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(96) on page 12.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1949—contd. (b) Yes. (c) N.A. (v) (a) Suri and Chinsurah. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1246 lb./ac. (ii) 167.8 lb./ac. for NL. 304.0 lb./ac. for P. 211.6 lb./ac. for P×NL. (iii) N effect is highly significant and interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	L ₀	L ₁	L ₂
P ₀	473	1418	1517	1562	1243	1239	1238	1251
P ₁	632	1388	1662	1657	1335	1295	1370	1340
P ₂	566	1060	1455	1555	1159	1122	1167	1189
Mean	557	1289	1545	1591	1246	1219	1258	1260
L ₀	581	1270	1469	1554				
L ₁	561	1283	1572	1616				
L ₂	529	1315	1593	1604				

S.E. of difference of two

- | | | | |
|-----------------------------------|----------------|-----------------------------------|----------------|
| 1. N marginal means | = 39.6 lb./ac. | 5. N means at the same level of P | = 80.9 lb./ac. |
| 2. L marginal means | = 34.3 lb./ac. | 6. P means at the same level of L | = 87.1 lb./ac. |
| 3. P marginal means | = 62.1 lb./ac. | 7. L means at the same level of P | = 70.0 lb./ac. |
| 4. P means at the same level of N | = 97.2 lb./ac. | S.E. of body of N×L table | = 48.4 lb./ac. |

Crop :- Paddy (Aus).**Ref :- W.B. 58(57).****Site :- State Agri. Farm, Barhampore.****Type :- 'M'.**

Object :—To study the effect of continuous application of N, P and lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Barhampore. (iii) Last week of July to 1st week of August 1958. (iv) (a) Ploughing and laddering. (b) Broadcast. (c) 1 md./ac. (d) and (e) N.A. (v) N.A. (vi) *Dular*. (vii) Unirrigated. (viii) Weeding and thinning. (ix) N.A. (x) Last week of October 1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(96) on page 12.

4. GENERAL :

(i) Poor. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1949—contd. (b) Yes. (c) N.A. (v) Suri and Chinsurah. (b) N.A. (vi) and (vii) N.A.

5. RESULTS :

(i) 371 lb./ac. (ii) 161.2 lb./ac. for NL, 286.1 lb./ac. for P and 563.3 lb./ac. for NL×P. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	L ₀	L ₁	L ₂
P ₀	141	551	345	396	358	321	401	353
P ₁	184	552	517	363	404	366	423	423
P ₂	174	424	462	341	350	383	362	305
Mean	166	509	441	367	371	357	395	360
L ₀	152	565	410	300				
L ₁	181	467	469	465				
L ₂	166	495	445	335				

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. N marginal means | = 38.0 lb./ac. | 5. N means at the same level of P | = 191.5 lb./ac. |
| 2. L marginal means | = 32.9 lb./ac. | 6. P means at the same level of L | = 172.8 lb./ac. |
| 3. P marginal means | = 53.4 lb./ac. | 7. L means at the same level of P | = 165.9 lb./ac. |
| 4. P means at the same level of N | = 207.6 lb./ac. | S.E. of body of N×L table | = 46.5 lb./ac. |

Crop :- Paddy (Aus).

Ref :- W.B. 59(60).

Site :- State Agri. Farm, Berhampore.

Type :- 'M'.

Object :- To study the effect of continuous application of N, P and lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Berhampore. (iii) Middle week of July 1959. (iv) (a) Ploughing and laddering. (b) Broadcast. (c) to (e) N.A. (v) Nil. (vi) *Dular* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) Last week of October 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55,96) on page 12.

5. RESULTS :

(i) 739 lb./ac. (ii) 273.0 lb./ac. for NL, 294.9 lb./ac. for P and 259.0 lb./ac. for (NL)×P. (iii) P effect is significant, N effect is highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	L ₀	L ₁	L ₂
P ₀	386	699	875	883	711	627	671	834
P ₁	547	908	965	1000	855	753	887	924
P ₂	427	548	843	787	651	655	665	634
Mean	453	718	894	890	739	678	741	797
L ₀	468	674	851	720				
L ₁	420	723	921	900				
L ₂	471	758	911	1050				

S.E. of difference of two

1. N marginal means	= 64.3 lb./ac.	5. N means at the same level of P	= 107.7 lb./ac.
2. L marginal means	= 55.7 lb./ac.	6. P means at the same level of L	= 96.0 lb./ac.
3. P marginal means	= 60.2 lb./ac.	7. L means at the same level of P	= 93.3 lb./ac.
4. P means at the same level of N	= 109.6 lb./ac.	S.E. of body of N×L table	= 78.8 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 54(35).****Site :- State Agri. Farm., Burdwan.****Type :- 'M'.**

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

1. BASAL CONDITIONS:

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 27.7.1954. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Patnai*—23 (Chinsurah 7, medium). (vii) Unirrigated. (viii) Weeding and spading each once. (ix) 37.97". (x) 17.12.1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 methods of applications of 60 lb./ac. of P_2O_5 as Super : M_0 =Control (no P_2O_5), M_1 =Super ploughed in and M_2 = $\frac{1}{2}$ ploughed in and $\frac{1}{2}$ broadcast 4 weeks after transplanting.

(2) 2 levels of sod. molybdate : S_0 =0 and S_1 =4 ozs/ac. sprayed as water solution 4 weeks after transplanting.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 62'×14'. (b) 60'×12'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. No lodging. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3112 lb./ac. (ii) 295.2 lb./ac. (iii) Only M effect is highly significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	Mean
S_0	2755	3165	3356	3092
S_1	2726	3072	3601	3133
Mean	2740	3118	3478	3112

S.E. of M marginal mean = 104.4 lb./ac.

S.E. of S marginal mean = 85.2 lb./ac.

S.E. of body of table = 147.6 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 55(77).****Site :- State Agri. Farm., Burdwan.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Loam and clay loam. (b) Refer soil analysis, Burdwan. (iii) 2nd week of July, 1955. (iv) (a) 3 to 4 ploughings and spading. (b) Transplanting. (c) N.A. (d) 9' x 9'. (e) 2 to 3. (v) 80 to 100 mds /ac. of cowdung. (vi) *Patnai* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings and 2 harrowings. (ix) 32.37". (x) 2nd to 3rd week of December, 1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(35) on page 15.

5. RESULTS :

(i) 3221 lb./ac. (ii) 538.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	Mean
S ₀	3479	3022	2767	3089
S ₁	3191	3613	3253	3352
Mean	3335	3418	3010	3221

S.E. of M marginal mean = 190.5 lb./ac.
 S.E. of S marginal mean = 155.6 lb./ac.
 S.E. of body of table = 269.5 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 56(57).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To study the effect of Super and molybdenum on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) Middle of July, 1956. (iv) (a) 2 to 3 ploughings. (b) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) N.A. (vi) *Patnai* (medium). (vii) Unirrigated. (viii) 1 to 2 weedings. (ix) and (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(35) on page 15.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1954—1959. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2069 lb./ac. (ii) 230.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	Mean
S ₀	1865	2047	2090	2001
S ₁	2146	2117	2146	2136
Mean	2006	2082	2118	2069

S.E. of M marginal mean = 81.6 lb./ac.
 S.E. of S marginal mean = 66.7 lb./ac.
 S.E. of body of table = 115.5 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 57(14).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To study the effect of Super and molybdenum on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A./5.8.1957. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9" x 9". (e) 2 to 3. (v) Nil. (vi) *Raghusoil* (medium). (vii) Irrigated. (viii) Weeding and spading once. (ix) 40.67". (x) 11.12.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(35) on page 15.

5. RESULTS :

(i) 3336 lb./ac. (ii) 476.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	Mean
S ₀	3244	3368	3077	3230
S ₁	3298	3586	3446	3443
Mean	3271	3477	3261	3336

S.E. of M marginal mean = 168.3 lb./ac.
 S.E. of S marginal mean = 137.4 lb./ac.
 S.E. of body of the table = 238.1 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 58(63).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To study the effect of Super and molybdenum on the yield Paddy.

1. BASAL CONDITIONS

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 16.8.1958. (iv) (a) Ploughing (b) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) N.A. (vi) *Raghusoil* (medium) (vii) N.A. (viii) 2 to 3 weedings. (ix) N.A. (x) 11.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(35) on page 15.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1954—1959. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1762 lb./ac. (ii) 206.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	Mean
S ₀	1635	1781	1740	1719
S ₁	1668	1855	1890	1804
Mean	1652	1818	1815	1762

S.E. of M marginal mean = 73.0 lb./ac.
 S.E. of S marginal mean = 59.6 lb./ac.
 S.E. of body of the table = 103.2 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 59(32).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To study the effect of Super and Sodium molybdate on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 24.8.1959. (iv) (a) 6 ploughings and 4 ladderings. (b) Line transplanting. (c) 15 srs./ac. (d) 9'×9'. (e) 2. (v) Nil. (vi) *Raghusail*. (vii) Unirrigated. (viii) 1 weeding. (ix) 49 2". (x) 14.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(35) on page 15.

Super applied on 23.8.1959 and 23.10.1959. Sodium molybdate on 25.9.1959.

4. GENERAL :

(i) Fair. No lodging. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1954—1959. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1403 lb./ac. (ii) 202.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M ₀	M ₁	M ₂	Mean
S ₀	1521	1354	1388	1421
S ₁	1361	1420	1373	1385
Mean	1441	1387	1380	1403

S.E. of M marginal mean = 71.6 lb./ac.
 S.E. of S marginal mean = 58.4 lb./ac.
 S.E. of body of table = 101.2 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(39).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To study the effect of basic slag, Super and organic matter on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 14 to 16.8.1958. (iv) (a) 4 to 5 ploughings. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Raghusail* (medium). (vii) Unirrigated. (viii) Weeding and thinning. (ix) N.A. (x) 12 to 15.12.1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 sources of 40 lb./ac. of P₂O₅ : S₀=No P₂O₅, S₁=Basic slag and S₂=Super.

(2) 4 types of G.M. : G₀=No G.M., G₁=5 tons/ac. of paddy straw, G₂=5 tons/ac. of cowdung+5 tons/ac. of wheat straw and G₃=10 tons/ac. of water hyacinth.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 28'×20', (b) 26'×18'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1958—1960. (b) Yes. (c) N.A. (v) (a) and (b) No. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2714 lb./ac. (ii) 260.4 lb./ac. (iii) Main effect of G alone is highly significant. (iv) Av. yield of grain in lb./ac.

	G ₀	G ₁	G ₂	G ₃	Mean
S ₀	2266	2597	3010	2724	2649
S ₁	2681	2579	3111	2752	2781
S ₂	2483	2441	3189	2740	2713
Mean	2477	2539	3103	2739	2714

S.E. of S marginal mean = 53.2 lb./ac.
 S.E. of G marginal mean = 61.4 lb./ac.
 S.E. of body of table = 105.3 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 59(31).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To study the effect of basic slag, Super and organic matter on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 6 and 7.8.1959. (iv) (a) 6 ploughings and 4 ladderings. (b) Line transplantation. (c) 15 srs./ac. (d) 9"×9". (e) 2. (v) Nil. (vi) *Raghusail*. (vii) Unirrigated. (viii) 1 weeding. (ix) 49.2". (x) 12.12.1959.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of P₂O₅: S₀=No P₂O₅, S₁=40 lb./ac. of P₂O₅ as Super and S₂=40 lb./ac. of P₂O₅ as basic slag.

(2) 4 levels of G.M.: G₀=No G.M., G₁=5 tons/ac. of paddy straw. G₂=5 tons/ac. of cowdung and G₃=5 tons/ac. of water hyacinth.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 28'×20'. (b) 26'×18'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1958—1960. (b) Yes. (c) N.A. (v) (a) Midnapore. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 2508 lb./ac. (ii) 351.9 lb./ac. (iii) Main effect of G alone is highly significant. (iv) Av. yield of grain in lb./ac.

	G ₀	G ₁	G ₂	G ₃	Mean
S ₀	2079	2267	2901	2534	2445
S ₁	2211	2622	2658	2472	2491
S ₂	2315	2682	2929	2430	2589
Mean	2202	2524	2829	2477	2508

S.E. of S marginal mean = 71.8 lb./ac.
 S.E. of G marginal mean = 82.9 lb./ac.
 S.E. of body of table = 143.7 lb./ac.

Crop :- Paddy (Aus).**Ref :- W.B. 54(47).****Site :- State Agri. Farm, Burdwan.****Type :- 'M'.**

Object :— To study the effect of bulky organic manure and A/S on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Wheat. (c) 200 lb./ac. of A/S+200 lb./ac. of Super. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) N.A./17.6.1954. (iv) (a) 3 ploughings and laddering by country method. (b) Transplanting. (c) 10 srs./ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Dular* (early). (vii) 2 weedings by Japanese weeder. (ix) 35.41". (x) 10.9.1954.

2. TREATMENTS :

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

(1) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=20$ lb./ac.(2) 5 sources of 40 lb./ac. of N : $S_1=A/S$, $S_2=T.C.$, $S_3=Village$ compost, $S_4=Water$ hyacinth compost and $S_5=Sewage$ sludge.

Manures applied at the time of puddling.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 5. (iv) (a) 48'×18'. (b) 46'×16'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1951—1954. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2431 lb./ac. (ii) 281.3 lb./ac. (iii) 'Control vs. others' effect alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1666 lb./ac.

	S_1	S_2	S_3	S_4	S_5	Mean
P_0	2601	2564	2408	2390	2588	2510
P_1	2629	2525	2459	2472	2444	2506
Mean	2615	2544	2434	2431	2516	2508

S.E. of S marginal mean = 89.0 lb./ac.

S.E. of P marginal mean = 56.3 lb./ac.

S.E. of body of table = 125.8 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 57(7).****Site :- State Agri. Farm, Burdwan.****Type :- 'M'.**

Object :—To study the effect of B.M., Super and basic slag on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Sugarcane. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan, (iii) 3.8.1957. (iv) (a) 4 to 5 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Raghusail*. (vii) Irrigated. (viii) 2 weedings. (ix) 13.90". (x) 9.12.1957.

2. TREATMENTS :**Main-plot treatments :**3 sources of P_2O_5 : $S_1=B.M.$, $S_2=Super$ and $S_4=Basic$ slag.**Sub-plot treatments :**4 levels of P_2O_5 : $P_0=0$, $P_1=20$, $P_2=40$ and $P_3=60$ lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 20' × 28'. (b) 18' × 26'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 2792 lb./ac. (ii) (a) 403.3 lb./ac. (b) 370.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	P ₃	Mean
S ₁	—	2912	3192	2984	3029
S ₂	—	2689	2793	2744	2742
S ₃	—	2633	2689	2857	2726
Mean	2670	2745	2891	2862	—

S.E. of difference of two

1. S marginal means = 134.4 lb./ac.
2. P marginal means = 123.3 lb./ac.
3. P means at the same level of S = 213.6 lb./ac.
4. S means at the same level of P = 220.2 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 57(24).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To find out the effect of different doses and sources of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat. (b) Wheat. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A./7.6.1957. (iv) (a) 4 to 5 ploughings and laddering. (b) Sown in lines. (c) 25 to 30 srs./ac. (d) N.A. (e) 2 to 3. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 2 weedings and 1 hoeing. (ix) N.A. (x) 16.9.1957.

2. TREATMENTS :

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

- (1) 2 levels of N : N₁ = 40 and N₂ = 60 lb./ac.
- (2) 2 sources of N : S₁ = A/S and S₂ = A/C.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 34' × 26'. (b) 32' × 24'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of stem-borer. (iii) Grain and straw yield. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2966 lb./ac. (ii) 397.2 lb./ac. (iii) 'Control vs. others' effect alone is highly significant. (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	Mean
N ₁	2938	2999	2969
N ₂	3474	3484	3479
Mean	3206	3242	3224

S.E. of any marginal mean = 125.6 lb./ac.
S.E. of body of table = 177.7 lb./ac.

Crop :- Paddy (*Aus*).

Ref :- W.B. 59(27).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To find out the effect of different doses and sources of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Wheat—Paddy. (b) Wheat. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 16.6.1959. (iv) (a) 6 ploughings and 4 laddering. (b) Broadcasting. (c) 30 srs./ac. (d) and (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 1 weeding. (ix) 47.6". (x) 27 and 29.9.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(24) on page 21.
Maures applied on 20.7.1959.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1957—contd. (b) Yes. (c) N.A. (v) to (vii) N.A.

5. RESULTS :

(i) 2345 lb./ac. (ii) 222.4 lb./ac. (iii) N effect alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1702 lb./ac.

	S ₁	S ₂	Mean
N ₁	2472	2354	2413
N ₂	2488	2709	2598
Mean	2480	2531	2506

S.E. of any marginal mean = 70.3 lb./ac.
S.E. of body of table = 99.5 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(34).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To study the effect of A/S and lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) N.A./23.7.1954. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) 10 to 12 srs./ac. (d) 9" × 9". (e) 2 to 3. (v) Nil. (vi) *Patnai* 23 (Chinsurah 7, medium). (vii) Irrigated. (viii) One weeding. (ix) 37.97". (x) 8.12.1954.

2. TREATMENTS :

All combinations of (1) and (2) :

(1) 3 levels of N as A/S : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.

(2) 3 levels of lime : $L_0=0$, $L_1=4$ and $L_2=8$ cwt./ac.

Lime was applied at the time of general preparation of land and A/S broadcasted on 24.8.1954.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) $62' \times 14'$. (b) $60' \times 12'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Grain and straw yield. (iv) (a) 1952-1955. (b) Yes. (c) N.A. (v) (a) Chinsurah. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2778 lb./ac. (ii) 240.2 lb./ac. (iii) N effect and interaction $N \times L$ are highly significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean
L_0	2362	2756	3114	2744
L_1	2616	2807	3046	2823
L_2	2883	2743	2675	2767
Mean	2620	2769	2945	2778

S.E. of any marginal mean = 56.6 lb./ac.

S.E. of body of table = 98.1 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 55(78).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To study the effect of A/S and lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Loam and clay loam. (b) Refer soil analysis, Burdwan. (iii) Last week of July, 1955. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) N.A. (d) $9'' \times 9''$. (e) 2 to 3. (v) 100 mds./ac. of cowdung. (vi) N.A. (vii) Unirrigated. (viii) 2 to 3 weeding. (ix) 30.37%. (x) 15 to 28 12.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(34) on page 22.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1952-1955. (b) Yes. (c) No. (v) (a) Chinsurah and Cooch Bihar. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3163 lb./ac. (ii) 428.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean
L_0	3260	3176	3183	3206
L_1	2935	3067	3300	3101
L_2	3134	3116	3295	3182
Mean	3110	3120	3259	3163

S.E. of any marginal mean	= 100.9 lb./ac.
S.E. of the body of table	= 174.8 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(36).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To study the effect of different levels and methods of application of A/S on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A./29.7.1954. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9'×9'. (e) 2 to 3. (v) Nil. (vi) *Patnai* 23 (Chinsurah 7, medium). (vii) Irrigated. (viii) Weeding and spading each once. (ix) 37.97'. (x) 12.12.1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N as A/S : $N_0=0$, $N_1=15$, $N_2=30$ and $N_3=45$ lb./ac.

(2) 2 methods of application : M_1 =Spread on surface and M_2 =Thrust in.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 5. (iv) (a) 48'×18'. (b) 46'×16'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. No lodging. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1952—1954. (b) Yes. (c) N.A. (v) (a) Chinsurah. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2889 lb./ac. (ii) 142.0 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	Mean
M_1	2539	2831	3080	3046	2874
M_2	2713	2964	2888	3046	2903
Mean	2626	2898	2984	3046	2889

S.E. of N marginal mean	= 44.9 lb./ac.
S.E. of M marginal mean	= 31.8 lb./ac.
S.E. of body of table	= 63.5 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(55).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) N.A. (d) 9'×9'. (e) 2 to 3. (v) N.A. (vi) *R-ghusail* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) and (x) N.A.

2. TREATMENTS :

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

(1) 2 levels of N as A/S : $N_0=0$ and $N_1=20$ lb./ac.

(2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=20$ lb./ac.

(3) 2 levels of K_2O as Pot. Sul. : $K_0=0$ and $K_1=20$ lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 38'×30'. (b) 36'×28'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1955—1959. (b) Yes. (c) N.A. (v) (a) Chinsurah, Midnapore, Cooch Behar and Purulia. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2404 lb./ac. (ii) 123.6 lb./ac. (iii) Main effects of N and P are highly significant. Interactions N×P and N×K are significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	2128	2402	2265	2238	2292
N ₁	2506	2576	2541	2613	2468
Mean	2317	2489	2403	2426	2380
K ₀	2340	2510			
K ₁	2293	2467			

S.E. of any marginal mean = 30.9 lb./ac.
S.E. of body of any table = 43.7 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 56(5).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A. (iv) (a) 3 to 4 ploughings and 1 ladder. (b) Transplanting. (c) N.A. (d) 5"×9". (e) 2 to 3. (v) N.A. (vi) *Raghusail* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(55) on page 24.

5. RESULTS :

(i) 2132 lb./ac. (ii) 142.6 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	1874	2054	1964	1958	1970
N ₁	2265	2338	2301	2278	2324
Mean	2069	2196	2132	2118	2147
K ₀	2072	2164			
K ₁	2066	2228			

S.E. of any marginal mean = 35.6 lb./ac.
S.E. of body of any table = 50.4 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 57(22).****Site :- State Agri. Farm, Burdwan.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A./29.7.1957. (iv) (a) 3 to 4 ploughings and ladderings. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Raghusail* (medium). (vii) Unirrigated. (viii) Weeding 2 times and spading once. (ix) 13.90". (x) 12.12.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(55) on page 24.

Source of K₂O is Mur. Pot. instead of Pot. Sul. Mur. Pot. and Super applied on 28.7.1954 and A/S applied on 29.8.1957.**4. GENERAL :**

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1959. (b) Yes. (c) N.A. (v) (a) Chinsurah, Midnapore, Cooch Behar and Purulia. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2338 lb./ac. (ii) 258.9 lb./ac. (iii) Only K effect is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	2137	2428	2282	2159	2406
N ₁	2376	2412	2394	2320	2468
Mean	2256	2420	2338	2240	2437
K ₀	2195	2284			
K ₁	2318	2557			

S.E. of any marginal mean

= 64.7 lb./ac.

S.E. of body of any table

= 91.5 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 58(12).****Site :- State Agri. Farm, Burdwan.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) Paddy - Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A./14.8.1958. (iv) (a) 3 to 4 ploughings and ladderings. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Raghusail* (medium). (vii) Unirrigated. (viii) Weeding 2 times and spading once. (ix) 18.75". (x) 12.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(55) on page 24.

Source of K₂O is Mur. Pot. instead of Pot. Sul.**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1959. (b) Yes. (c) N.A. (v) (a) Chinsurah, Midnapore, Cooch Behar and Purulia. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1772 lb./ac. (ii) 283.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	1518	1834	1676	1587	1765
N ₁	1849	1889	1869	1791	1947
Mean	1683	1861	1772	1689	1856
K ₀	1589	1789			
K ₁	1777	1935			

S.E. of any marginal mean
S.E. of boby of any table

= 72.2 lb./ac.
= 102.1 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 59(23).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A./21 and 22.8.1959. (iv) (a) 3 to 4 ploughings and ladderings. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Raghusail* (medium). (vii) Unirrigated. (viii) 2 weedings and 1 spading. (ix) 30.81". (x) 15.12.1959 to 16.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(55) on page 24.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1959. (b) Yes. (c) N.A. (v) (a) Chinsurah, Midnapore, Cooch Behar and Purulia. (b) N.A. (vi) Due to overflooding the effect of fertilizer is not marked this year. (vii) Nil.

5. RESULTS :

(i) 1106 lb./ac. (ii) 179.1 lb./ac. (iii) P effect is highly significant while N effect is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	935	1107	1021	1059	983
N ₁	1097	1288	1192	1185	1199
Mean	1016	1197	1106	1122	1091
K ₀	1026	1218			
K ₁	1006	1176			

S.E. of any marginal mean
S.E. of body of any table

= 44.8 lb./ac.
= 63.3 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(36).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Wheat—Paddy. (b) Wheat. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) Middle of August, 1958. (iv) (a) 3 ploughings and spading twice. (b) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) N.A. (vi) *Dharial* (medium). (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) Last week of December, 1958.

2. TREATMENTS :

5 sources of 40 lb./ac. of N: S_0 =Control (no manure), S_1 =A/S, S_2 =Urea, S_3 =A/C and S_4 =C/N.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 34'×26'. (b) 32'×24'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) $\frac{1}{2}$ Yield of grain. (iv) (a) 1957—1960. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2256 lb./ac. (ii) 275.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	1907	2444	1972	2491	2468

S.E./mean = 123.1 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(31).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To study the effect of trace elements mixture on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A./1.8.1954. (iv) (a) 3 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9'×9'. (e) 2 to 3. (v) Nil. (vi) *Patnai*—23 (Chinsurah 7, medium). (vii) Unirrigated. (viii) Weeding and spading once. (ix) 37.97%. (x) 15.12.1954.

2. TREATMENTS :

4 manurial treatments: M_0 =Control, M_1 =Trace elements mixture (consisting of zink, boron, copper, manganese and molybdenum in traces), M_2 =30 lb./ac. of N as A/S+trace elements and M_3 =30 lb./ac. of N as A/S+Super.

Water solution of trace elements sprayed 4 weeks after transplantation. Super (quantity—N.A.) ploughed in at the time of general preparation of land and A/S broadcast 4 weeks after transplantation.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 48'×18'. (b) 46'×16'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—1954. (b) Yes. (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2605 lb./ac. (ii) 127.8 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
Av. yield	2335	2602	2809	2672

S.E./mean = 57.2 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 54(33).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To study the effect of G.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A./17.7.1954. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Patnai*—23 (Chinsurah'7, medium). (vii) Unirrigated. (viii) Weeding and spading once each. (ix) 37.29". (x) 1.12.1954.

2. TREATMENTS :

5 seed rates of G.M. crops : R₀=No G.M., R₁=12, R₂=16, R₃=20 srs./ac. of *dhaincha* and R₄=15 srs./ac. of *sannhemp*.

G.M. ploughed in at the time of flowering stage.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 27'×31'. (b) 25'×29'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Negligible. (iii) Grain and straw yield. (iv) (a) 1951--1954. (b) Yes. (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2451 lb./ac. (ii) 84.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	R ₀	R ₁	R ₂	R ₃	R ₄
Av. yield	1995	2512	2661	2167	2920

S.E./mean = 42.0 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 55(79).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) N.A./29.7.1955. (iv) (a) 4 to 5 ploughings and harrowing. (b) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) 80 to 100 mds./ac. of cowdung. (vi) N.A. (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) 30.12.1955.

2. TREATMENTS :

All combinations of (1) and (2)+control (3 plots)

(1) 3 levels of N as A/S : N₁=15, N₂=30 and N₃=45 lb./ac.

(2) 3 sources of N : S₁=A/S, S₂=A/N and S₃=Urea.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 48'×18'. (b) 46'×16'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain. (iv) (a) 1955—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3563 lb./ac. (ii) 392.0 lb./ac. (iii) Only 'control vs. rest' effect is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 3226 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	3332	3515	3583	3477
N ₂	3758	3834	3724	3772
N ₃	3633	3766	3933	3777
Mean	3574	3705	3747	3675

S.E. of any marginal or control mean = 113.2 lb./ac.

S.E. of body of table = 196.0 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 56(39).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) Last week of July, 1956. (iv) (a) Ploughings (3 to 4). (b) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) 100 mds./ac. of cowdung. (vi) *Patnai* (medium). (vii) Unirrigated. (viii) Weeding (2 to 3) and thinning. (ix) N.A. (x) 1st week of January, 1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(79) on page 29.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—contd. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2399 lb./ac. (ii) 287.3 lb./ac. (iii) 'Control vs. rest' and main effect of N are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 2048 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	2356	2220	2210	2262
N ₂	2619	2436	2427	2494
N ₃	2935	2685	2752	2791
Mean	2637	2447	2463	2516

S.E. of any marginal or control mean = 82.9 lb./ac.

S.E. of body of table = 143.6 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 57(25).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

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

1. BASAL CONDITIONS:

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 31.7.1957. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Raghusail* (medium). (vii) Irrigated. (viii) 1 weeding and 1 spading. (ix) 13.90". (x) 9.12.1957.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 55(79) on page 29.

4. GENERAL:

(i) Very good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—contd. (b) Yes. (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 3451 lb./ac. (ii) 436.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 3586 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	3432	3318	3288	3346
N ₂	3485	3394	3577	3485
N ₃	3371	3425	3364	3387
Mean	3429	3379	3410	3406

S.E. of any marginal or control mean = 87.2 lb./ac.
S.E. of body of table = 195.0 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 58(14).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

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

1. BASAL CONDITIONS:

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 8.8.1958. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Raghusail* (medium). (vii) Irrigated. (viii) 1 weeding and 1 spading. (ix) 18.75". (x) 11.12.1958.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 55(79) on page 29.

4. GENERAL:

(i) Very good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—contd. (b) Yes. (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 2787 lb./ac. (ii) 253.9 lb./ac. (iii) N and 'control vs. others' effects are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 2335 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	2618	2709	2762	2696
N ₂	2987	2850	3166	3001
N ₃	3120	2945	3208	3091
Mean	2908	2835	3045	2929

S.E. of any marginal or control mean = 50.8 lb./ac.

S.E. of body of table = 113.5 lb./ac.

Crop :- Paddy (*Aman*).**Ref :- W.B. 59(29).****Site :- State Agri. Farm, Burdwan.****Type :- 'M'.**

Object :- To study the effect of different doses and sources of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 17.8.1959 and 18.8.1959. (iv) (a) 6 ploughings and 4 ladderings. (b) Line transplantation. (c) 15 srs./ac. (d) 9" x 9". (e) 2. (v) Nil. (vi) *Raghusail*. (vii) Unirrigated. (viii) 1 weeding. (ix) 49.2". (x) 13.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(79) on page 29.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) Chinsurah. (b) No. (vi) Nil. (vii) A/N was not applied as it was not available in time.

5. RESULTS :

(i) 1988 lb./ac. (ii) 232.6 lb./ac. (iii) 'Control vs. Others' effect is highly significant. N and S effects are significant. (iv) Av. yield of grain in lb./ac.

Control = 1774 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	2093	1804	2142	2013
N ₂	2161	1830	2070	2020
N ₃	2207	2078	2157	2147
Mean	2154	1904	2123	2060

S.E. of any marginal or control mean = 46.5 lb./ac.

S.E. of body of table = 104.0 lb./ac.

Crop :- Paddy (*Aman*).**Ref :- W.B. 54(32).****Site :- State Agri. Farm, Burdwan.****Type :- 'M'.**

Object :- To find out the optimum requirements of N and P and their combination for increasing the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 8, 10.8.1954. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9"×9". (e) 2 to 3 seedlings. (v) Nil. (vi) *Nagra* (Chinsurah 5, medium). (vii) Unirrigated. (viii) 1 weeding and 1 hoeing. (ix) 37.97". (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of N as A/S : $N_0=0$, $N_1=15$, $N_2=30$, $N_3=45$ and $N_4=60$ lb./ac.

(2) 5 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$, $P_2=40$, $P_3=60$ and $P_4=80$ lb./ac.

Super applied at the time of general preparation of land and A/S 4 weeks after transplantation.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 5. (iv) (a) 38'×22'. (b) 36'×20'. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—1955. (b) Yes. (c) N.A. (v) (a) Chinsurah, Haringhata, Majnaguri, Cooch-Bihar and 7 cultivators' fields. (b) N.A. (vi) and (vii) Nil.

5. RESULTS

(i) 1992 lb./ac. (ii) 351.5 lb./ac. (iii) N effect alone is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	P_3	P_4	Mean
N_0	1635	1725	1236	1298	1344	1448
N_1	1614	1642	1876	1661	1664	1691
N_2	1997	2251	1991	2163	1875	2055
N_3	2212	2175	2396	2471	2184	2288
N_4	2416	2334	2388	2302	2765	2480
Mean	1975	2025	2017	1979	1966	1992

S.E. of any marginal mean = 70.3 lb./ac.

S.E. of body of table = 157.2 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(20).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To find out the optimum requirement of N and P under different soil climatic conditions alone and in combination.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 31.7.1955 to 2.8.1955. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. (d) 9"×9". (e) 2 to 3 seedlings. (v) Nil. (vi) *Nagra*. (vii) Unirrigated. (viii) 1 weeding and one hoeing. (ix) 50.77". (x) 11 to 14.12.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(32) on page 32.

Super applied at the time of general preparation of land on 30.7.1955 and A/S broadcast on 5.9.1955.

4. GENERAL :

(i) Very good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—1955. (b) Yes. (c) N.A. (v) (a) Cooch-Bihar, Chinsurah, Majnaguri, Midnapur and on 7 cultivators' fields. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2444 lb./ac. (ii) 280.1 lb./ac. (iii) P effect is highly significant and N effect is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	P ₃	P ₄	Mean
N ₀	1734	2091	2323	2493	2760	2280
N ₁	2051	2084	2488	2719	2791	2427
N ₂	1968	2531	2384	2569	2782	2447
N ₃	2068	2428	2632	2759	2773	2532
N ₄	2176	2284	2634	2888	2688	2534
Mean	1999	2284	2492	2686	2759	2444

S.E. of any marginal mean = 56.0 lb./ac.

S.E. of body of table = 125.2 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B.54(45).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :—To see the effect of Super and molybdenum along with G.M.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 28.7.1954. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. sown in the nursery bed. (d) 9' × 9'. (e) 2 to 3. (v) Nil. (vi) *Patnai*—23 (medium). (vii) Irrigated. (viii) 2 weedings and 1 spading. (ix) 19.53%. (x) 13.12.1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of P₂O₅ as Super : P₀=0 and P₁=30 lb./ac.

(2) 2 levels of sodium molybdate : S₀=0 and S₁=4 oz./ac.

Super broadcast during general preparation of land. Water solution of sodium molybdate sprayed 4 weeks after transplanting. Dhanicha seeds were sown at 16 srs./ac. to all plots.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 62' × 14'. (b) 60' × 12'. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—1959. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 4645 lb./ac. (ii) 586.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	Mean
P ₀	4403	4504	4453
P ₁	4791	4884	4837
Mean	4597	4694	4645

S.E. of any marginal mean = 207.5 lb./ac.

S.E. of body of table = 293.5 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 55(54).****Site :- State Agri. Farm, Burdwan.****Type :- 'M'.**

Object :— To study the effect of Super and Molybdenum along with G.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 1st week of August, 1955. (iv) (a) Land was prepared by 2 ploughings, 1 laddering and puddling. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Painai*—23 (late). (vii) Irrigated. (viii) Weeding 2 times and spading once. (ix) N.A. (x) Last week of December, 1955.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=30$ lb./ac.(2) 2 levels of Sodium Molybdate : $S_0=0$ and $S_1=4$ ozs./ac.Fertilizers were applied at the time of general preparation of land. Super was broadcast and Sodium molybdate sprayed in the form of water solution. *Dhaincha* was sown at 16 srs./ac. to all plots.**3. DESIGN :**

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 62'×14'. (b) 60'×12'. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—1959. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3348 lb./ac. (ii) 180.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S_0	S_1	Mean
P_0	3265	3380	3322
P_1	3357	3388	3373
Mean	3311	3384	3348

S.E. of any marginal mean = 64.0 lb./ac.
S.E. of body of table = 90.5 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 56(4).****Site :- State Agri. Farm, Burdwan.****Type :- 'M'.**

Object :—To study the effect of Super and Molybdenum along with G.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 1st week of August, 1956. (iv) (a) Land was prepared by 2 ploughings, 1 laddering and puddling. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Painai*—23 (late). (vii) Irrigated. (viii) Weeding 2 times and spading once. (ix) N.A. (x) Last week of December, 1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(54) above.

5. RESULTS :

(i) 3128 lb./ac. (ii) 377.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	Mean
P ₀	2707	3168	2938
P ₁	3260	3376	3318
Mean	2984	3272	3128

S.E. of any marginal mean = 133.6 lb./ac.

S.E. of body of table = 188.9 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 57(15).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :-To study the effect of applying Super and Molybdenum along with Dhaincha on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 11.8.1957. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Raghusail* (medium). (vii) Irrigated. (viii) Weeding twice and spading once. (ix) 40.67". (x) 10.12.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(54) on page 35.

Dhaincha (seed at 16 srs./ac. in all plots) turned in.

5. RESULTS :

(i) 3191 lb./ac. (ii) 177.0 lb./ac (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	Mean
P ₀	2932	3204	3068
P ₁	3204	3423	3314
Mean	3068	3314	3191

S.E. of any marginal mean = 62.6 lb./ac.

S.E. of body of table = 88.5 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(13).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :-To study the effect of Super and Molybdenum along with G.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 12.8.1958. (iv) (a) Land was prepared by 2 ploughings, 1 laddering and puddling. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Patnai*—23 (late). (vii) Irrigated. (viii) 2 weedings and 1 spading. (ix) N.A. (x) 10.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(54) on page 35.

5. RESULTS :

(i) 2980 lb./ac. (ii) 355.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	Mean
P ₀	2816	2927	2872
P ₁	2946	3231	3088
Mean	2881	3079	2980

S.E. of any marginal mean = 125.5 lb./ac.
S.E. of body of table = 177.5 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 59(30).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object:—To study the effect of Super and Molybdenum along with Dhaincha as G.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 22.8.1959. (iv) (a) 6 ploughings and 4 ladderings. (b) Line transplantation. (c) 15 srs./ac. (d) 9"×9". (e) 2. (v) Nil. (vi) *Raghusail* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 49.2". (x) 14.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(54) on page 35.

Date of sowing of *dhaincha* seed at 15 srs./ac. is 14.6.1959.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1954—1959. (b) Yes. (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1983 lb./ac. (ii) 295.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	Mean
P ₀	1949	2054	2002
P ₁	2108	1821	1964
Mean	2028	1938	1983

S.E. of any marginal mean = 104.4 lb./ac.
S.E. of body of table = 147.6 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 55(59).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) and (c) N.A. (ii) (a) Gangetic. (b) Refer soil analysis, Chinsurah. (iii) N.A. (iv) (a) 2 ploughings. (b) Transplanting in lines. (c) 50 lb./ac. (d) 9'×9'. (e) 2. (v) N.A. (vi) *Patnai* (*Gosaba*—23) (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) and (x) N.A.

2. TREATMENTS :

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

- (1) 2 levels of N : $N_0=0$ and $N_1=20$ lb./ac.
 (2) 2 levels of P_2O_5 : $P_0=0$ and $P_1=20$ lb./ac.
 (3) 2 levels of K_2O : $K_0=0$ and $K_1=20$ lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 28'×38'. (b) 26'×36'. (v) 1' around. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1954—contd. (b) Yes. (c) N.A. (v) (a) Cooch Behar, Burdwan, Midnapore and Hatwara. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2229 lb./ac. (ii) 110.1 lb./ac. (iii) Main effects of N and P are highly significant. Interactions N×P and N×K are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	Mean	K_0	K_1
N_0	2066	2173	2120	2132	2107
N_1	2183	2494	2338	2249	2428
Mean	2174	2333	2229	2190	2268
K_0	2062	2318			
K_1	2287	2348			

S.E. of any marginal mean = 27.5 lb./ac.

S.E. of body of any table = 38.9 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 56(26).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Gangetic. (b) Refer soil analysis, Chinsurah. (iii) N.A. (iv) (a) 2 ploughings. (b) Transplanting in lines. (c) 50 lb./ac. (d) 9'×9'. (e) 2. (v) and (vi) N.A. (vii) Unirrigated. (viii) 1 weeding. (ix) and (x) N.A.

2. TREATMENTS to 4 GENERAL :

Same as in expt. no. 55(59) on page 37.

5. RESULTS :

(i) 2573 lb./ac. (ii) 308.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	2471	2560	2516	2418	2614
N ₁	2650	2610	2630	2572	2688
Mean	2561	2585	2573	2495	2651
K ₀	2498	2492			
K ₁	2624	2678			

S.E. of any marginal mean = 77.2 lb./ac.
S.E. of body of any table = 109.2 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 57(21).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Gangetic. (b) Refer soil analysis, Chinsurah. (iii) N.A. (iv) (a) 2 ploughings. (b) Transplanting in lines. (c) 50 lb./ac. (d) 9"×9". (e) 2: (v) N.A. (vi) *Patnai* (*Gosaba*—23) (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no 55(59) on page 37.

5. RESULTS :

(i) 5587 lb./ac. (ii) 325.9 lb./ac. (iii) Only N effect is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	5318	5582	5450	5489	5412
N ₁	5683	5764	5723	5758	5688
Mean	5501	5673	5587	5624	5550
K ₀	5494	5753			
K ₁	5508	5592			

S.E. of any marginal mean = 81.5 lb./ac.
S.E. of body of any table = 115.2 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(21).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Gangetic alluvium soil. (b) Refer soil analysis, Chinsurah. (iii) 14.8.1958. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in lines. (c) 50 lb./ac. (d) 9"×9". (e) 2: (v) Nil. (vi) *Patnai* (*Gosaba*—23) (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 3.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(59) on page 37.

5. RESULTS :

(i) 1599 lb./ac. (ii) 235.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	1495	1621	1558	1532	1584
N ₁	1563	1717	1640	1536	1745
Mean	1529	1669	1599	1534	1664
K ₀	1454	1614			
K ₁	1604	1724			

S.E. of any marginal mean = 59.0 lb./ac.
 S.E. of body of any table = 83.4 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 59(40).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium soil ; neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 3.7.1959. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) N.A. (d) 9' × 9'. (e) 2. (v) Nil. (vi) *Patnai*—23 (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 55.51". (x) 1.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(59) on page 37.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—1959. (b) Yes. (c) N.A. (v) (a) Midnapore, Cooch Behar, Burdwan and Hatwara. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2437 lb./ac. (ii) 115.5 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₁	2320	2374	2347	2307	2388
	2493	2560	2527	2536	2517
Mean	2407	2467	2437	2421	2453
K ₀	2398	2444			
K ₁	2415	2490			

S.E. of any marginal mean = 28.9 lb./ac.
 S.E. of body of any table = 40.8 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 55(76).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :—To study the effect of G.M. as dhaincha at different stages of age on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Gangetic alluvium. (b) Refer soil analysis, Chinsurah. (iii) Last week of July. (iv) (a) 2 to 3 ploughings and laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 weedings and interculture. (ix) 35.05". (x) Last week of December.

2. TREATMENTS :

6 ages of *dhaincha* crop when ploughed in : $R_1=3$, $R_2=4$, $R_3=5$, $R_4=6$, $R_5=7$ and $R_6=8$ weeks.
Dhaincha sown at 20 srs./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 34'×19', (b) 32'×17'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) (a) No. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2187 lb./ac. (ii) 356.0 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	R_5	R_6
Av. yield	2058	2297	2291	2408	2200	1869

S.E./mean = 178.0 lb/ac.

Crop :- Paddy (Aman).**Ref :- W.B. 56(35).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) Nil. (ii) (a) Gangetic alluvium. (b) Refer soil analysis, Chinsurah. (iii) Last week of July. (iv) (a) 3 to 4 ploughings and spading. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 34.85". (x) Middle of December.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(76) above.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—contd. (b) Yes. (c) N.A. (v) (a) No. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2594 lb./ac. (ii) 228.7 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	R_5	R_6
Av. yield	2560	2573	2605	2511	2615	2760

S.E./mean = 114.3 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 57(37).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :-To study the effect of G.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) Nil. (ii) (a) Ganga low land (alluvium). (b) Refer soil analysis, Chinsurah. (iii) 1st week of August. (iv) (a) 2 to 3 ploughings and harrowing. (b) Transplanting. (c) N.A. (d) 9" × 9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings and interculture. (ix) 20.77". (x) 15th December 1957 to 1st week of January, 1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(76) on page 41.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—contd. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2160 lb./ac. (ii) 263.2 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	R ₅	R ₆
Av. yield	2266	2185	2275	1894	2074	2266

S.E./mean = 131.6 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 58(22).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :-To study the effect of G.M. as Dhaincha at different stages of age on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Gangetic alluvium soil. (b) Refer soil analysis, Chinsurah. (iii) 31.7.1958. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in lines. (c) 50 lb./ac. (d) 9" × 9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 5.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(76) on page 41.

Sowing dates of *dhaincha* are 17.5.1958, 24.5.1958, 31.5.1958, 7.6.1958, 14.6.1958 and 21.6.1958. Date of ploughing down *dhaincha* is 15.7.1958.

5. RESULTS :

(i) 2086 lb./ac. (ii) 249.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆
Av. yield	1538	1519	1680	2023	2052	1566

S.E./mean = 12.9 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 59(38).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :-To study the residual effect of G.M. (dhaincha) on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium soil, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 5.7.1959. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 55.51%. (x) 6.1.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(76) on page 41.

Residual effect of treatments applied during the previous year studied.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1958 (1959—residual effect is studied). (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2158 lb./ac. (ii) 149.5 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆
Av. yield	2036	2011	2353	2207	2029	2312

S.E./mean = 74.7 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(14).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object:—To find out the optimum requirement of N and P on the yield of Paddy under different soil and climatic conditions.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 11/12.8.1954. (iv) (a) The field was ploughed 3 to 4 times before transplantation. (b) Transplanting. (c) 5 to 7 srs./ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Patnai*—23 (C.H. 7, medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) 14/15.12.1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of N as A/S : N₀=0, N₁=15, N₂=30, N₃=45 and N₄=60 lb./ac.

(2) 5 levels of P₂O₅ as Super : P₀=0, P₁=20, P₂=40, P₃=60 and P₄=80 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 5. (iv) (a) 38'×22'. (b) 36'×20'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 2594 lb./ac. (ii) 381.8 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	2577	2881	2712	2352	2476	2600
P ₁	2573	2804	2919	2863	2088	2649
P ₂	2517	2628	2472	2766	2568	2590
P ₃	2600	2699	2860	2471	2402	2606
P ₄	2639	2831	2458	2293	2408	2526
Mean	2581	2769	2684	2549	2388	2594

S.E. of any marginal mean = 76.4 lb./ac.
S.E. of body of table = 170.8 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(72).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object:—To find out the optimum requirement of N and P on the yield of paddy under different soil and climatic conditions.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Ganga low land clay. (b) Refer soil analysis, Chinsurah. (iii) 3rd week of July, 1955. (iv) (a) Ploughings (3 to 4) and spading. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2. (v) 80 mds./ac. of F.Y.M. (vi) *Patnai* (*Gesabon*—23). (vii) Unirrigated. (viii) 2 to 3 weedings and harrowing. (ix) 35.05". (x) Last week of December, 1955.

2. TREATMENTS and 3. DESIGN :

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

4. GENERAL :

(i) Normal. (ii) No. (iii) Yield of grain. (iv) (a) 1953—contd. (b) Yes. (c) N.A. (v) (a) Mainagari, Cooch Behar, Haringhata, Midnapur, Burdwan and Malda. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1833 lb./ac. (ii) 346.7 lb./ac. (iii) Main effect of N is highly significant and that of P is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	1500	1656	1799	1739	1676	1674
P ₁	1552	1786	1911	1808	1804	1772
P ₂	1581	1858	2058	1969	1959	1885
P ₃	1677	1934	2390	2080	1907	1998
P ₄	1630	1842	1877	1963	1857	1834
Mean	1588	1815	2007	1912	1841	1833

S.E. of any marginal mean = 69.3 lb./ac.
S.E. of body of table = 155.0 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(12).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object:—To find out the responses to continuous application of lime and N alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 19.7.1953. (iv) (a) The field was ploughed 3 to 4 times before transplantation. (b) Transplanting. (c) 5 to 7 srs /ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (Chinsurah 3, medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) 22/23.12.1954.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 levels of N as A/S : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.

(2) 3 levels of lime : $L_0=0$, $L_1=20$ and $L_2=40$ lb./ac.

A/S applied by broadcast after 4 weeks of transplantation. Lime applied once after every 4 years.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) $34' \times 19'$. (b) $32' \times 17'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1945—contd. (b) Yes. (c) N.A. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2671 lb./ac. (ii) 134.4 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	L_0	L_1	L_2	Mean
N_0	2457	2546	2548	2517
N_1	2587	2727	2748	2687
N_2	2782	2784	2862	2809
Mean	2609	2686	2719	2671

S.E. of any marginal mean = 38.8 lb./ac.

S.E. of body of table = 67.2 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 55(69).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To study the effect of A/S alone and in combination with lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 24.7.1955. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) 5 to 7 srs./ac. (d) $9'' \times 9''$. (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) $35.05''$. (x) 27.12.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(12) on page 44.

5. RESULTS :

(i) 2353 lb./ac. (ii) 327.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean
L_0	2269	2357	2511	2379
L_1	2390	2191	2482	2354
L_2	2379	2142	2459	2327
Mean	2346	2230	2484	2353

S.E. of any marginal mean = 94.5 lb./ac.

S.E. of body of table = 163.6 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 56(28).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :—To study the effect of A/S alone and in combination with lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As per treatments. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 1st week of August, 1956. (iv) (a) 3 to 4 ploughings and 2 puddlings. (b) Transplanting. (c) 5 to 7 srs./ac. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weeding. (ix) 24 94". (x) Last week of December to 1st week of January, 1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(12) on page 44.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain. (iv) (a) 1945—contd. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2102 lb./ac. (ii) 277.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean
L ₀	2038	2212	2157	2136
L ₁	2096	2021	2070	2062
L ₂	2254	1917	2152	2108
Mean	2129	2050	2126	2102

S.E. of any marginal mean = 80.2 lb./ac.
S.E. of body of table = 138.9 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 57(35).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :—To study the effect of A/S alone and in combination with lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As per treatments. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 23.7.1957. (iv) (a) 3 to 4 ploughings and 1 puddling. (b) Transplanting. (c) 5 to 7 srs./ac. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weeding. (ix) 20.77". (x) 29.12.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(12) on page 44.

5. RESULTS :

(i) 2389 lb./ac. (ii) 260.0 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean
L ₀	2154	2433	2506	2364
L ₁	2028	2488	2374	2297
L ₂	2261	2640	2620	2507
Mean	2148	2520	2500	2389

S.E. of any marginal mean = 75.1 lb./ac.
S.E. of body of table = 130.0 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(20).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object:—To find out the response to continuous application of lime and N alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Gangetic alluvium soil. (b) Refer soil analysis, Chinsurah. (iii) 27.7.1958. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in lines. (c) 50 lb./ac. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamahik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 21.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(12) on page 44.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1945—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1705 lb./ac. (ii) 216.7 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean
L ₀	1568	1723	1953	1748
L ₁	1568	1460	2019	1682
L ₂	1563	1669	1827	1705
Mean	1566	1617	1933	1705

S.E. of any marginal mean = 62.5 lb./ac.
S.E. of body of table = 108.3 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 59(39).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object:—To find out the response to continuous application of lime and N alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium soil, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 11.7.1959. (iv) (a) 2 weedings and 1 puddling. (b) Transplanted in rows. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 55.51". (x) 6.1.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(12) on page 44.

A/S applied on 11.8.1959 and lime applied in 1957.

5. RESULTS :

(i) 2413 lb./ac. (ii) 179.2 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean
L ₀	2377	2466	2584	2464
L ₁	2237	2472	2504	2404
L ₂	2173	2561	2378	2371
Mean	2262	2500	2477	2413

S.E. of any marginal mean = 51.7 lb./ac.
 S.E. of body of table = 89.6 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(10).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :—To study the residual effect of continuous application of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 11.7.1954.
 (iv) (a) The field was ploughed 3 to 4 times before transplantation. (b) Transplanting. (c) N.A. (d) 9'×9'.
 (e) 2 to 3 (v) Nil. (vi) *Bhasamanik* (Chinsurah 3—medium). (vii) Unirrigated. (viii) 2 to 3 weedings.
 (ix) N.A. (x) 6 and 7 12.1954.

2. TREATMENTS :

4 doses of P₂O₅ as B.M. : P₀=0, P₁=20, P₂=40 and P₃=60 lb./ac.
 No B.M. was applied during this year.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64'×15'. (b) 61'×12'. (v) 1.5'×1.5'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1944—contd. (b) Yes. (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 3296 lb./ac. (ii) 177.6 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	3209	3317	3354	3305

S.E./mean = 56.2 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(70).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :—To study the effect of continuous application of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 13.7.1955.
 (iv) (a) 2 ploughings and 1 harrowing. (b) Transplanting. (c) 5 to 7 srs./ac. (d) 9'×9'. (e) 2. (v) Nil.
 (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 35.05'. (x) 29.12.1955.

2. TREATMENTS :

4 doses of P₂O₅ as B.M. : P₀=0, P₁=20, P₂=40 and P₃=60 lb./ac.
 P₂O₅ applied as B.M. at the time of general preparation of land.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 10. (iv) (a) 64'×15'. (b) 61'×12'. (v) 1.5'×1.5'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1954—contd. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) No. (vii) Nil.

5. RESULTS :

(i) 2048 lb./ac. (ii) 293.5 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	1925	1954	2032	2282

S.E./mean = 92.8 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 56(29).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To study the effect of continuous application of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 1st week of July, 1956. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 44.63". (x) Last week of December, to 1st week of January, 1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(70) on page 48.
P₂O₅ as B.M. applied on 20.7.1956.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1944—contd. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2448 lb./ac. (ii) 226.9 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	2343	2379	2638	2433

S.E./mean 71.78 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 57(33).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To study the effect of the continuous application of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) Last week of July, 1957. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) 5 to 6 srs./ac. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 20.77". (x) 1st week of January, 1958.

TREATMENTS and 3. DESIGN :

Same as in expt. no 55(70) on page 48.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain. (iv) (a) 1944—contd. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3217 lb./ac. (ii) 347.4 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	2989	3069	3344	3468

S.E./mean = 109.9 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 58(19).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object : -To study the effect of continuous application of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Gangetic alluvium soil. (b) Refer soil analysis, Chinsurah. (iii) 18.7.1958. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in lines. (c) 50 lb./ac. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 5.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(70) on page 48.
Details of application are not available.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1944—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2356 lb./ac. (ii) 276.8 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	2316	2344	2403	2362

S.E./mean = 87.5 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 59(41).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :—To study the effect of continuous application of B.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium soil, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 6.7.1959. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 4.1.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. 55(70) on page 48.
Fertilizer applied on 28.6.1957.

5. RESULTS :

(i) 2800 lb./ac. (ii) 173.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	P ₀	P ₁	P ₂	P ₃
Av. yield	2604	2796	2875	2925

S.E./mean = 54.8 lb./ac.

Crop :- Paddy (Boro).

Ref :- W.B. 58(61).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :—To study the effect of organic and inorganic manures on the growth and yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Ganga low land clay. (b) Refer soil analysis, Chinsurah. (iii) 15.11.1958/1.1.1959. (iv) (a) 3 to 4 ploughings and 1 laddering. (b) Transplanted. (c) 25 lb./ac. (d) 9"×9". (e) 1. (v) N.A. (vi) Chinsurah Boro—I. (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 2.6". (x) Last week of April, 1959.

2. TREATMENTS :

4 sources of 100 lb./ac. of N : S₀=Control (no manure), S₁=Mustard cake, S₂=A/S and S₃=Mustard cake+A/S.

Manures applied during final puddling of the field.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 42'9"×23'3". (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1958—1960. (b) Yes. (c) No. (v) (a) No. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2901 lb./ac. (ii) 419.4 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	2457	3132	2867	3146

S.E./mean = 209.7 lb./ac.

Crop :- Paddy (Boro).

Ref :- W.B. 59(61).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :—To study the effect of organic and inorganic manures on the growth and yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Ganga low land clay. (b) Refer soil analysis, Chinsurah. (iii) 16.11.1959/1.1.1960. (iv) (a) 3 to 4 ploughings and 3 ladderings. (b) Transplanted. (c) 25 lb./ac. (d) 9"×9". (e) 1. (v) N.A. (vi) Chinsurah Boro—I. (vii) Irrigated. (viii) 3 to 4 weedings. (ix) 3.6". (x) Last week of April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(61) above.

5. RESULTS :

(i) 2991 lb./ac. (ii) 299.8 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	2722	3122	2963	3156

S.E./mean = 149.9 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 57(49).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To find out the effect of G.M. and Super on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Ganga low land. (b) Refer soil analysis, Chinsurah. (iii) Middle of July, 1957. (iv) (a) 4 to 5 ploughings. (b) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) N.A. (vi) *Bhasamanik*. (vii) Unirrigated. (viii) 2 to 3 weedings and thinning. (ix) N.A. (x) Last week of December, 1957.

2. TREATMENTS :

Main-plot treatments :

3 types of cropping : T₁=*Dhaincha* followed by *Aman*-Paddy, T₂=*Dhaincha* with *Aman* paddy and T₃=*Aman* paddy alone.

Sub-plot treatments :

2 levels of P₂O₅ : P₀=0 and P₁=30 lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 64' × 15'. (b) 61' × 12'. (v) 1.5' × 1.5'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1956—1958. (b) and (c) N.A. (v) (a) No. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2569 lb./ac. (ii) (a) 598.1 lb./ac. (b) 241.6 lb./ac. (iii) Main effect of P is highly significant. Main effect of T and interaction P × T are significant. (iv) Av. yield of grain in lb./ac.

	T ₁	T ₂	T ₃	Mean
P ₀	2742	2204	2376	2440
P ₁	3248	2604	2242	2698
Mean	2995	2404	2309	2569

S.E. of difference of two

1. T marginal means = 244.2 lb./ac.
2. P marginal means = 80.5 lb./ac.
3. P means at the same level of T = 139.6 lb./ac.
4. T means at the same level of P = 263.0 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 58(17).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To find out the effect of G.M. and Super on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Gangetic alluvium soil. (b) Refer soil analysis, Chinsurah. (iii) 3.8.1958. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanting in lines. (c) 50 lb./ac. (d) 9'×9'. (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 19.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(49) on page 52.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1210 lb./ac. (ii) (a) 203.5 lb./ac. (b) 208.9 lb./ac. (iii) Only T effect is highly significant. (iv) Av. yield of grain in lb./ac.

	T ₁	T ₂	T ₃	Mean
P ₀	1425	1092	962	1160
P ₁	1492	1195	1094	1260
Mean	1458	1144	1028	1210

S.E. of the difference of two

1. T marginal means = 83.1 lb./ac.
2. P marginal means = 69.6 lb./ac.
3. P means at the same level of T = 85.3 lb./ac.
4. T means at the same level of P = 119.1 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(58).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay soil. (b) Refer soil analysis, Chinsurah. (iii) 14.8.1955. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) N.A. (d) 9'×9'. (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (Chinsurah 3, medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 45.04%. (x) 17, 19.1.1956.

2. TREATMENTS :

All combinations of (1) and (2) + control (3 plots)

(1) 3 levels of N : N₁=15, N₂=30 and N₃=45 lb./ac.

(2) 3 sources of N : S₁=A/S, S₂=A/N and S₃=Urea.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 38'×22'. (b) 36'×20'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1500 lb./ac. (ii) 185.1 lb./ac. (iii) N effect and interaction N×S are significant. (iv) Av. yield of grain in lb./ac.

Control = 1343 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	1522	1492	1504	1506
N ₂	1561	1351	1802	1571
N ₃	1706	1548	1494	1583
Mean	1596	1464	1600	1553

S.E. of any marginal or control mean = 53.4 lb./ac.
 S.E. of body of table = 92.6 lb./ac.

Crop :- Paddy (Aman).**Ref. :- W-B. 57(45).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Ganga low land, clay. (b) Refer soil analysis, Chinsurah. (iii) Last week of July, 1957. (iv) (a) 4 to 5 ploughings. (b) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) N.A. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings and 2 thinnings. (ix) N.A. (x) 22 to 24.12.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(58) on page 53.

5. RESULTS :

(i) 2039 lb./ac. (ii) 260.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2022 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	1985	1903	2176	2021
N ₂	2029	1979	2141	2050
N ₃	2144	1992	2054	2063
Mean	2053	1958	2124	2045

S.E. of any marginal or control mean = 75.3 lb./ac.
 S.E. of the body of table = 130.4 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 58(24).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Gangatic. (b) Refer soil analysis, Chinsurah. (iii) 17.8.1958. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in lines. (c) N.A. (d) 9'×9'. (e) 2. (v) N.A. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 7.12.1958.

2. TREATMENTS and 3. DESIGN :

me as in expt. no. 55(58) on page 53.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1955—1959. (b) Yes. (c) N.A. (v) (a) Burdwan (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 7387 lb./ac. (ii) 176.3 lb./ac. (iii) Main effect of N, 'control vs. others' and interaction N×S are highly significant and main effect of S is significant. (iv) Av. yield of grain in lb./ac.

Control = 6484 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	7035	7711	7352	7366
N ₂	8104	7526	8297	7976
N ₃	8085	7113	7972	7723
Mean	7441	7450	7874	7688

S.E. of any marginal or control mean = 50.9 lb./ac.
S.E. of body of table = 88.1 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 59(42).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :— To study the effect of N as A/S, A/N and Urea on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 18.7.1959. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted. (c) N.A. (d) 9"×9". (e) 2. (vi) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 19.1.1960.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 55(58) on page 53.

5. RESULTS :

(i) 1606 lb./ac. (ii) 186.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 1482 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	1574	1579	1704	1619
N ₂	1648	1704	1711	1688
N ₃	1674	1719	1507	1633
Mean	1632	1667	1641	1647

S.E. of any marginal or control mean = 53.7 lb./ac.
S.E. of body of table = 93.0 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 59(46).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Gangetic alluvium, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 16.7.1959. (iv) (a) 10 ploughings. (b) Line sowing. (c) 15 srs./ac. (d) 9' × 9'. (e) 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 55.2'. (x) 17.12.1959.

2. TREATMENTS :

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

(1) 3 levels of N as A/S : $N_1=30$, $N_2=90$ and $N_3=180$ lb./ac.

(2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=200$ lb./ac.

(3) 2 levels of K_2O as Mur. Pot. : $K_0=0$ and $K_1=200$ lb./ac.

Super applied on 14.7.1959 while Mur. Pot and A/S applied on 17.8.1958.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 64' × 15'. (b) 61' × 12'. (v) 1.5' × 15'. (vi) Yes.

4. GENERAL :

(i) Plants with N_2 and N_3 lodged. Fair growth. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1959—contd. (b) Yes. (c) N.A. (v) (a) Cooch Behar. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2100 lb./ac. (ii) 276.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N_1	N_2	N_3	Mean	K_0	K_1
P_0	2220	1832	1918	1990	2025	1955
P_1	2396	2056	2180	2211	2310	2111
Mean	2308	1944	2049	2100	2168	2033
K_0	2382	2024	2097			
K_1	2234	1864	2002			

S.E. of N marginal mean = 79.8 lb./ac.

S.E. of P or K marginal mean = 65.1 lb./ac.

S.E. of body of $N \times P$ or $N \times K$ table = 112.8 lb./ac.

S.E. of body of $P \times K$ table = 92.1 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(13).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To study the suitable method of application of A/S on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 20 and 21.7.1954. (iv) (a) The filed was ploughed 3 to 4 times before transplantation. (b) Transplantation. (c) 5 to 7 srs./ac. (d) 9' × 9'. (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (Chinsurah 3, medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) 15 and 16.12.1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N as A/S : $N_1=15$, $N_2=30$, $N_3=45$ and $N_4=60$ lb./ac.

(2) 2 methods of application of N : M_1 =Broadcasted on surface and M_2 =Thrust in.

A/S applied on 3.9.1954.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) 34' × 19'. (b) 32' × 17'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1952—1954. (b) Yes. (c) N.A. (v) (a) Burdwan. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2652 lb./ac. (ii) 332.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₁	N ₂	N ₃	N ₄	Mean
M ₁	2676	2820	2583	2444	2631
M ₂	2702	2742	2662	2589	2674
Mean	2689	2781	2622	2516	2652

S.E. of N marginal mean = 96.0 lb./ac.
 S.E. of M marginal mean = 67.9 lb./ac.
 S.E. of body of table = 135.8 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 54(11).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To find the effect of N and F.Y.M. applied alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 17.7.1954. (iv) (a) The field was ploughed 3 to 4 times before transplanting. (b) Transplanting. (c) 5 to 7 srs./ac. (d) 9'×9'. (e) 2 to 3. (v) Nil. (vi) *Bhasamanik*—(Chinsurah 3, medium). (vii) Unirrigated. (viii) 2 to 3 weeding. (ix) N.A. (x) 24 to 26.12.1954.

2. TREATMENTS :

Main-plot treatments :

2 doses of F.Y.M. : F₀=0 and F₁=100 mds./ac.

Sub-plot treatments :

5 doses of N as A/S : N₀=0, N₁=30, N₂=60, N₃=90 and N₄=120 lb./ac.

F.Y.M. applied at the time of general preparation of land on 7.6.1954 and A/S broadcasted 4 weeks after transplantation.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication and 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 34'×19'. (b) 32'×17'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1945—contd. (b) Yes. (c) N.A. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2194 lb./ac. (ii) (a) 312.5 lb./ac. (b) 225.1 lb./ac. (iii) N effect and interaction N×F are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
F ₀	2042	2286	2157	2255	2149	2178
F ₁	2437	2564	2240	2134	1681	2211
Mean	2240	2425	2198	2194	1915	2194

S.E. of the difference of two

- | | |
|-----------------------------------|-----------------|
| 1. F marginal means | = 98.8 lb./ac. |
| 2. N marginal means | = 112.6 lb./ac. |
| 3. N means at the same level of F | = 159.2 lb./ac. |
| 4. F means at the same level of N | = 172.7 lb./ac. |

Crop :- Paddy (*Aman*).**Ref :- W.B. 55(68).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :- To study the effect of N and F.Y.M. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) As per treatments. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 1st week of August 1955. (iv) (a) Ploughing 3 to 4 times and puddling 1 to 2. (b) Transplanting. (c) 5 to 7 srs./ac. (d) 9" × 9". (e) 2. (v) N.A. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 22.07". (x) Last week of December, 1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(11) on page 57.

5. RESULTS :

(i) 1591 lb./ac. (ii) (a) 475.1 lb./ac. (b) 445.5 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
F ₀	1937	2107	1835	1433	1468	1756
F ₁	1981	2119	1510	823	701	1427
Mean	1959	2113	1672	1128	1084	1591

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. F marginal means | = 150.2 lb./ac. |
| 2. N marginal means | = 222.8 lb./ac. |
| 3. N means at the same level of F | = 315.0 lb./ac. |
| 4. F means at the same level of N | = 318.9 lb./ac. |

Crop :- Paddy (*Aman*).**Ref :- W.B. 56(27).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :- To study the effect of N and F.Y.M. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 23.7.1956. (iv) (a) Ploughing 3 to 4 times and puddling. (b) Transplanting. (c) 5 to 7 srs./ac. (d) 9" × 9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 3 to 4 weedings. (ix) 44.63". (x) 15.12.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no 54(11) on page 57.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1945—contd. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (v) and (vii) Nil.

5. RESULTS:

(i) 1602 lb./ac. (ii) (a) 488.3 lb./ac. (b) 184.1 lb./ac. (iii) Main effect of N is highly significant and interaction N×F is significant. Main effect of F is not significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
F ₀	1988	2103	1800	1778	1464	1827
F ₁	1913	1504	1218	1228	1022	1377
Mean	1950	1804	1509	1503	1243	1602

S.E. of difference of two

1. F marginal means = 154.4 lb./ac.
2. N marginal means = 92.0 lb./ac.
3. N means at the same level of F = 120.2 lb./ac.
4. F means at the same level of N = 194.0 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 57(34).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To study the effect of N and F.Y.M. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 29.7.1957. (iv) (a) Ploughing 2 to 3 and puddling 3 times. (b) Transplanting. (c) 5 to 7 srs./ac. (d) 5"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 20.77". (x) 26.12.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(11) on page 57.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1945—contd. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2031 lb./ac. (ii) (a) 352.0 lb./ac. (b) 392.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
F ₀	2220	2491	2099	2113	2079	2200
F ₁	2095	2130	1946	1662	1479	1862
Mean	2158	2310	2022	1888	1779	2031

S.E. of difference of two

1. F marginal means = 111.3 lb./ac.
2. N marginal means = 196.0 lb./ac.
3. N means at the same level of F = 277.2 lb./ac.
4. F means at the same level of N = 272.8 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 58(18).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :-To study the effect of N and F.Y.M. alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Gangetic alluvium soil. (b) Refer soil analysis, Chinsurah. (iii) 27.7.1958. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in lines. (c) 50 lb./ac. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 21.12.1953.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(11) on page 57.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of paddy grain and straw. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1556 lb./ac. (ii) (a) 341.4 lb./ac. (b) 292.1 lb./ac. (iii) Interaction N×F alone is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
F ₀	1359	1446	1687	1839	1493	1565
F ₁	1660	1820	1675	1456	1127	1548
Mean	1510	1633	1681	1648	1310	1556

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. F marginal means | = 107.9 lb./ac. |
| 2. N marginal means | = 146.0 lb./ac. |
| 3. N means at the same level of F | = 206.5 lb./ac. |
| 4. F means at the same level of N | = 214.0 lb./ac. |

Crop :- Paddy (Aman).

Ref :- W.B. 59(37).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :-To study the effect of N and F.Y.M. alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium soil, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 13.7.1959. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 55.51". (x) 5.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(11) on page 57.

4. GENERAL :

(i) Good. No lodging. (ii) N I. (iii) Grain and straw yield. (iv) (a) 1945—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1873 lb./ac. (ii) (a) 215.7 lb./ac. (b) 163.2 lb./ac. (iii) Main effects of F and N alone are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
F ₀	1872	2234	2163	2167	2002	2087
F ₁	1699	1912	1709	1559	1416	1659
Mean	1786	2073	1936	1863	1709	1873

S.E. of difference of two

1. F marginal means = 68.2 lb./ac.
2. N marginal means = 81.6 lb./ac.
3. N means at the same level of F = 115.4 lb./ac.
4. F means at the same level of N = 123.7 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 55(56).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :—To compare the effects of A/S and Urea on Paddy when applied at different times.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium soil, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 3rd week of July, 1955. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik*. (vii) Unirrigated. (viii) 1 weeding. (ix) 45.04°. (x) 2nd week of January, 1956.

2. TREATMENTS :

Main-plot treatments :

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

Sub-plot treatments :

5 times of application of N : T₁=Full dose at the puddling time, T₂=Full dose 4 weeks after transplantation, T₃=½ dose at the puddling time and ½ dose 4 weeks after transplantation, T₄=½ dose each at puddling time, 4 weeks after transplantation and before flowering and T₅=½ dose 4 weeks after transplantation and ½ dose before flowering.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 38'×22'. (b) 36'×20'. (v) 1'×1' (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1955—1959. (b) Yes. (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1587 lb./ac. (ii) (a) 280.7 lb./ac. (b) 168.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	Mean
S ₁	1580	1562	1639	1372	1351	1501
S ₂	1769	1671	1713	1583	1629	1673
Mean	1674	1616	1676	1478	1490	1587

S.E. of difference of two

1. S marginal means = 88.8 lb./ac.
2. T marginal means = 84.4 lb./ac.
3. T means at the same level of S = 119.4 lb./ac.
4. S means at the same level of T = 138.8 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 56(22).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :—To compare the effects of A/S and Urea on Paddy when applied at different times.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium soil, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 3rd week of July, 1956. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) N.A. (d) 9" × 9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 61.68". (x) 2nd week of January, 1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(56) on page 61.

5. RESULTS :

(i) 1516 lb./ac. (ii) (a) 172.0 lb./ac. (b) 123.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	Mean
S ₁	1434	1571	1492	1595	1488	1516
S ₂	1357	1511	1608	1610	1491	1516
Mean	1396	1541	1550	1603	1490	1516

S.E. of difference of two

- | | |
|-----------------------------------|----------------|
| 1. S marginal means | = 54.4 lb./ac. |
| 2. T marginal means | = 61.5 lb./ac. |
| 3. T means at the same level of S | = 87.0 lb./ac. |
| 4. S means at the same level of T | = 94.9 lb./ac. |

Crop :- Paddy (Aman).**Ref :- W.B. 57(17).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :—To compare the effects of A/S and Urea on Paddy when applied at different times.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium soil, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 3rd week of July, 1957. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) N.A. (d) 9" × 9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 47.94". (x) 2nd week of January, 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(56) on page 61.

5. RESULTS :

(i) 2267 lb./ac. (ii) (a) 401.9 lb./ac. (b) 198.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	Mean
S ₁	2156	2015	2252	1919	2068	2082
S ₂	2486	2531	2353	2378	2517	2453
Mean	2321	2273	2302	2148	2292	2267

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. S marginal means | = 127.1 lb./ac. |
| 2. T marginal means | = 99.0 lb./ac. |
| 3. T means at the same level of S | = 140.0 lb./ac. |
| 4. S means at the same level of T | = 178.5 lb./ac. |

Crop :- Paddy (Aman).**Ref :- W.B. 58(15).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :—To compare the effects of A/S and Urea on Paddy when applied at different times.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium soil, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 3rd week of July, 1958. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 2nd week of January, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(56) on page 61.

5. RESULTS :

(i) 2083 lb./ac. (ii) (a) 392.9 lb./ac. (b) 159.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	Mean
S ₁	2033	2083	1936	2001	2138	2038
S ₂	2222	2144	2104	2063	2109	2128
Mean	2127	2114	2020	2032	2124	2083

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. S marginal means | = 124.2 lb./ac. |
| 2. T marginal means | = 79.6 lb./ac. |
| 3. T means at the same level of S | = 112.6 lb./ac. |
| 4. S means at the same level of T | = 159.9 lb./ac. |

Crop :- Paddy (Aman).**Ref :- W.B. 59(35).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :—To compare the effects of A/S and Urea on Paddy when applied at different times.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium soil, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 20.7.1959. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 55.51". (x) 13.1.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(56) on page 61.

5. RESULTS :

(i) 1422 lb./ac. (ii) (a) 203.9 lb./ac. (b) 214.5 lb./ac. (iii) Only S effect is significant. (iv) Av. yield of grain in lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	Mean
S ₁	1277	1300	1494	1174	1292	1307
S ₂	1445	1323	1595	1629	1695	1537
Mean	1361	1312	1544	1402	1494	1422

S.E. of difference of two

1. S marginal means = 64.5 lb./ac.
2. T marginal means = 107.2 lb./ac.
3. T means at the same level of S = 151.7 lb. ac.
4. S means at the same level of T = 150.2 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 54(66).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :—To study the effect of continuous application of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Clay in texture. (b) Refer soil analysis, Chinsurah. (iii) 1st week of August, 1954. (iv) (a) Ploughing and laddering. (b) Transplanted. (c) 15 srs./ac. (d) 9'×9'. (e) 2 to 3. (v) N.A. (vi) *Jhingasail* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) Middle of December to last week of December, 1954.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 5 levels of N as A/S : N₀=0, N₁=30, N₂=60, N₃=90 and N₄=120 lb./ac.

(2) 3 levels of P₂O₅ as B.M. : P₀=0, P₁=20 and P₂=40 lb./ac.

Sub-plot treatments :

2 levels of F.Y.M. : F₀=0 and F₁=100 mds./ac.

B.M. and F.Y.M. were applied at the time of general preparation of land and A/S 4 weeks after transplantation.

3. DESIGN :

(i) Split-plot. (ii) (a) 15 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 19'×34'. (b) 17'×32'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Plants got lodged during flowering stage. Details—N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1954—contd. (b) Yes (c) N.A. (v) (a) Suri and Berhampore. (b) N.A. (vi) Slightly effected due to storm and rain. (vii) N.A.

5. RESULTS :

(i) 1840 lb./ac. (ii) (a) 376.1 lb./ac. (b) 292.1 lb./ac. (iii) Main effects of N and F are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	P ₀	P ₁	P ₂
F ₀	2130	2257	2088	1678	1384	1907	1956	1871	1895
F ₁	1936	2119	1912	1552	1344	1773	1798	1731	1789
Mean	2033	2188	2000	1615	1364	1840	1877	1801	1842
P ₀	2160	2301	2084	1575	1264				
P ₁	1910	2077	1861	1614	1543				
P ₂	2030	2186	2055	1656	1285				

S.E. of difference of two

1. N marginal means	= 88.6 lb./ac.	5. N means at the same level of F	= 112.1 lb./ac.
2. P marginal means	= 68.7 lb./ac.	6. F means at the same level of P	= 75.4 lb./ac.
3. F marginal means	= 43.5 lb./ac.	7. P means at the same level of F	= 86.9 lb./ac.
4. F means at the same level of N	= 97.4 lb./ac.	S.E. of body of N×P table	= 108.6 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 55(N.A.).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :—To study the effect of continuous application of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Clay in texture. (b) Refer soil analysis, Chinsurah. (iii) August, 1955. (iv) (a) Ploughing. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) Last week of December, 1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(66) on page 64.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Suri and Berhampore. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1910 lb./ac. (ii) (a) 352.3 lb./ac. (b) 327.0 lb./ac. (iii) N effect and interaction N×F are highly significant. F effect is significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	P ₀	P ₁	P ₂
F ₀	1725	2483	2325	1866	1448	1969	1877	2031	2030
F ₁	1629	2824	2349	1344	1108	1851	1862	1829	1861
Mean	1677	2654	2337	1605	1278	1910	1870	1915	1946
P ₀	1786	2572	2248	1559	1184				
P ₁	1602	2631	2366	1670	1298				
P ₂	1642	2750	2398	1587	1351				

S.E. of difference of two

1. N marginal means	= 83.0 lb./ac.	5. N means at the same level of F	= 113.3 lb./ac.
2. P marginal means	= 64.3 lb./ac.	6. F means at the same level of P	= 84.4 lb./ac.
3. F marginal means	= 48.7 lb./ac.	7. P means at the same levels of F	= 87.8 lb./ac.
4. F means at the same level of N	= 109.0 lb./ac.	S.E. of body of N×P table	= 101.7 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 56(48).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :— To study the effect of continuous application of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis. Chinsurah. (iii) Middle of August 1956. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) N.A. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) Last week of December 1956.

2. TREATMENTS :

Same as in expt. no. 54(66) on page 64.

3. DESIGN :

(i) Split-plot. (ii) (a) 15 main-plots/replication and 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 32.5' × 19'. (b) 30.5' × 17'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Suri and Berhampore. (b) N.A. (vi) Crop suffered due to severe flood followed by terrific storm. (vii) Nil.

5. RESULTS :

(i) 1849 lb./ac. (ii) (a) 322.6 lb./ac. (b) 274.0 lb./ac. (iii) Only main effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	P ₀	P ₁	P ₂
F ₀	2099	2010	1822	1724	1637	1858	1851	1884	1840
F ₁	2180	1788	1711	1735	1785	1840	1843	1846	1831
Mean	2140	1899	1766	1730	1711	1849	1847	1865	1836
P ₀	2041	1945	1799	1768	1684				
P ₁	2225	1970	1789	1576	1763				
P ₂	2153	1783	1711	1845	1686				

S.E. of difference of two

- | | | | |
|-----------------------------------|----------------|-----------------------------------|----------------|
| 1. N marginal means | = 76.0 lb./ac. | 5. N means at the same level of F | = 99.8 lb./ac. |
| 2. P marginal means | = 58.9 lb./ac. | 6. F means at the same level of P | = 70.7 lb./ac. |
| 3. F marginal means | = 40.8 lb./ac. | 7. P means at the same level of F | = 77.3 lb./ac. |
| 4. F means at the same level of N | = 91.3 lb./ac. | S.E. of the body of N × P table | = 93.1 lb./ac. |

Crop :- Paddy (*Aman*).

Ref :- W.B. 57(62).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :— To study the effect of continuous applications of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 1st week of August 1957. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) 5 to 7 srs./ac. (d) 9" × 9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik*. (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) Middle of December, 1956.

2. TREATMENTS :

Same as in expt. no. 54(66) on page 64.

3. DESIGN :

(i) Split-plot. (ii) (a) 15 main-plots/replication and 4 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 32.5' × 19'. (b) 30.5' × 17'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Normal. (b) N.A. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Suri and Berhampore. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1822 lb./ac. (ii) (a) 456.0 lb./ac. (b) 330.2 lb./ac. (iii) Main effect of N is highly significant. Interaction N × P is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	P ₀	P ₁	P ₂
F ₀	2074	2183	1992	1437	1478	1833	1859	1788	1851
F ₁	2330	2193	1768	1478	1289	1812	1879	1772	1785
Mean	2202	2188	1880	1458	1383	1822	1869	1780	1818
P ₀	2171	2252	1982	1492	1448				
P ₁	2190	1948	1934	1421	1408				
P ₂	2246	2365	1725	1460	1294				

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. N marginal means | = 107.5 lb./ac. | 5. N means at the same level of F | = 132.7 lb./ac. |
| 2. P marginal means | = 83.3 lb./ac. | 6. F means at the same level of P | = 85.3 lb./ac. |
| 3. F marginal means | = 49.2 lb./ac. | 7. P means at the same level of F | = 102.8 lb./ac. |
| 4. F means at the same level of N | = 110.1 lb./ac. | S.E. of the body of N×P table | = 131.6 lb./ac. |

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(54).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) Middle of August 1958. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) Last week of December 1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(66) on page 64.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) Suri and Berhampore. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1567 lb./ac. (ii) (a) 378.0 lb./ac. (b) 233.5 lb./ac. (iii) N effect and interaction N×F are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	P ₀	P ₁	P ₂
F ₀	1816	1716	1664	1460	1332	1598	1687	1538	1568
F ₁	2016	1740	1385	1347	1199	1537	1574	1530	1508
Mean	1916	1728	1525	1403	1265	1567	1630	1534	1538
P ₀	1886	1748	1754	1438	1326				
P ₁	1837	1733	1444	1332	1322				
P ₂	2025	1703	1376	1439	1147				

S.E. of difference of two

- | | | | |
|-----------------------------------|----------------|-----------------------------------|-----------------|
| 1. N marginal means | = 89.1 lb./ac. | 5. N means at the same level of F | = 104.7 lb./ac. |
| 2. P marginal means | = 69.0 lb./ac. | 6. F means at the same level of P | = 60.3 lb./ac. |
| 3. F marginal means | = 34.8 lb./ac. | 7. P means at the same level of F | = 81.1 lb./ac. |
| 4. F means at the same level of N | = 77.8 lb./ac. | S.E. of the body of N×P table | = 109.1 lb./ac. |

Crop :- Paddy (Aman).

Ref :- W.B. 59(43).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To study the effect of N, P and F.Y.M. applied alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Gangetic alluvium, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 8.8.1959. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 10.12.1959 to 13.12.1959.

2. TREATMENTS :

Same as in expt. no. 54(66) on page 64.

F.Y.M. applied on 22.6.1959, B.M. applied on 6.6.1959 and while A/S on 7.9.1959.

3. DESIGN :

(i) Split-plot. (ii) (a) 15 main-plots/replication ; 2 sub-plots, main-plot. (b) N.A. (iii) 6. (iv) (a) 32½'×19'. (b) 30½'×17'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. Plants in N₂, N₃ and N₄ plots were lodged due to rain and storm. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948—contd. (b) Yes. (c) Nil. (v) (a) Berhampore and Suri. (b) Nil. (vi) and (viii) Nil.

5. RESULTS :

(i) 2078 lb./ac. (ii) (a) 578.8 lb./ac. (b) 679.6 lb./ac. (iii) N effect is highly significant. F effect and interaction N×F are significant while all other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	ean	P ₀	P ₁	P ₂
F ₀	2291	2218	2145	2049	1872	2115	2033	2181	2131
F ₁	2312	2334	1979	1808	1771	2041	2042	2061	2020
Mean	2302	2276	2062	1929	1821	2078	2038	2121	2075
P ₀	2232	2204	2070	1758	1924				
P ₁	2370	2309	2034	2022	1868				
P ₂	2303	2314	2082	2006	1670				

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. N marginal means | = 136.4 lb./ac. | 5. N means at the same level of F | = 210.4 lb./ac. |
| 2. P marginal means | = 105.7 lb./ac. | 6. F means at the same level of P | = 175.5 lb./ac. |
| 3. F marginal means | = 101.3 lb./ac. | 7. P means at the same level of F | = 162.9 lb./ac. |
| 4. F means at the same level of N | = 226.5 lb./ac. | S.E. of body of N×P table | = 167.1 lb./ac. |

Crop :- Paddy (Aman).

Ref :- W.B. 54(67).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To study the effect of continuous application of N, P and lime applied individually and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay in texture. (b) Refer soil analysis, Chinsurah. (iii) Middle week of August, 1954. (iv) (a) 2 to 3 ploughings and laddering. (b) Transplanted. (c) 15 to 17 srs./ac. (d) 9"×5". (e) 2. (v) N.A. (vi) *Jhingha sail* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) Last week of December, 1954.

2. TREATMENTS :**Treatments in one direction :**

All combinations of (1) and (2)

(1) 5 levels of N as A/S : $N_0=0$, $N_1=30$, $N_2=60$, $N_3=90$ and $N_4=120$ lb./ac.(2) 3 levels of lime : $L_0=0$, $L_1=4$ and $L_2=8$ cwt./ac.**Treatments in orthogonal direction :**3 levels of P_2O_5 as B.M. : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.

A/S and B.M. broadcast 6 weeks after transplantation. Lime applied once in 4 years.

3. DESIGN :(i) Strip-plot. (ii) (a) 15 strips in one direction ; 3 strips in orthogonal direction. (b) N.A. (iii) 6. (iv) (a) $34' \times 19'$. (b) $32' \times 17'$. (v) $1' \times 1'$. (vi) Yes.**4. GENERAL :**

(i) Plants lodged during flowering stages due to rains. (ii) N.A. (iii) Yield of grain. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Suri and Behampore. (b) N.A. (vi) Crop slightly effected due to rain and storm. (vii) N.A.

5. RESULTS :(i) 1817 lb./ac. (ii) 366.1 lb./ac. for NL 344.8 lb./ac. for P. 210.3 lb./ac. for NLP. (iii) Main effect of N and interaction $N \times P$ are highly significant while main effect of P and interaction $L \times P$ are significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	N_4	Mean	L_0	L_1	L_2
P_0	1910	2126	2068	1893	1494	1898	1880	1839	1974
P_1	1952	2196	1884	1687	1388	1821	1735	1901	1828
P_2	1971	2123	1794	1532	1240	1732	1672	1746	1779
Mean	1944	2148	1915	1704	1374	1817	1762	1829	1860
L_0	1914	2031	1902	1669	1296				
L_1	1893	2202	1997	1651	1401				
L_2	2026	2212	1847	1791	1425				

S.E. of difference of two

- | | | | |
|-----------------------------------|----------------|------------------------------------|----------------|
| 1. N marginal means | = 70.5 lb./ac. | 5. N means at the same level of P | = 90.8 lb./ac. |
| 2. L marginal means | = 54.6 lb./ac. | 6. P means at the same level of L | = 67.9 lb./ac. |
| 3. P marginal means | = 51.4 lb./ac. | 7. L means at the same level of P | = 70.3 lb./ac. |
| 4. P means at the same level of N | = 80.1 lb./ac. | S.E. of body of $N \times L$ table | = 86.3 lb./ac. |

Crop :- Paddy (Aman).**Ref :- W.B. 55(N.A.).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.****Object :-**To study the effect of continuous application of N, P and lime applied individually and in combinations on the yield of Paddy.**1. BASAL CONDITIONS :**(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay in texture. (b) Refer soil analysis, Chin surah. (iii) Middle of August, 1955. (iv) (a) 2 to 3 ploughings and laddering. (b) Transplanting. (c) N.A. $9'' \times 9''$. (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) Last week of December, 1955.**2. TREATMENTS and 3. DESIGN :**

Same as in expt. no. 54(67) on page 68.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Suri and Berhampore. (b) N.A. (vi) and (vii) N.A.

5. RESULTS :

(i) 2084 lb./ac. (ii) 432.4 lb./ac. for NL, 285.1 lb./ac. for P, 341.8 lb./ac. for NLP (iii) Main effects of N and P alone are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	L ₀	L ₁	L ₂
P ₀	2027	2481	2331	1620	1400	1972	1932	2001	1983
P ₁	2145	2639	2389	1805	1566	2109	2048	2116	2162
P ₂	2344	2713	2289	1884	1621	2170	2116	2234	2160
Mean	2172	2611	2336	1770	1529	2084	2032	2117	2102
L ₀	2158	2561	2287	1695	1460				
L ₁	2162	2632	2387	1792	1610				
L ₂	2196	2640	2334	1822	1517				

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|-----------------------------------|-----------------|
| 1. N marginal means | = 83.2 lb./ac. | 5. N means at the same level of L | = 124.8 lb./ac. |
| 2. L marginal means | = 64.5 lb./ac. | 6. P means at the same level of L | = 83.6 lb./ac. |
| 3. P marginal means | = 42.5 lb./ac. | 7. L means at the same level of P | = 96.7 lb./ac. |
| 4. P means at the same level of N | = 110.4 lb./ac. | S.E. of body of N×L table | = 101.9 lb./ac. |

Crop :- Paddy (Aman).

Ref :- W.B. 56(49).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :—To study the effect of continuous application of N, P and lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 1st to 2nd week of August, 1956. (iv) (a) Ploughing. (b) Transplanting. (c) 16 srs./ac. (d) 9'×9'. (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) 3rd week of December, 1956.

2. TREATMENTS :

Same as in expt. no. 54(67) on page 68.

3. DESIGN :

(i) Strip-plot. (ii) (a) 15 strips in one direction ; 3 strips in orthogonal direction. (b) N.A. (iii) 6. (iv) (a) 32.5'×17.5'. (b) 30.5'×15.5'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Suri and Berhampore. (b) N.A. (vi) Crop suffered due to floods followed by storm. (vii) Nil.

5. RESULTS :

(i) 1638 lb./ac. (ii) (a) 28.8 lb./ac. for NL, (b) 246.9 lb./ac. for P, (c) 181.0 lb./ac. for NL×P. (iii) Main effect of N is highly significant and interaction N×P is significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	L ₀	L ₁	L ₂
P ₀	1786	1780	1661	1533	1541	1660	1654	1636	1690
P ₁	1713	1639	1482	1607	1505	1589	1554	1588	1626
P ₂	1823	1682	1545	1625	1653	1666	1758	1624	1615
Mean	1774	1700	1563	1588	1566	1638	1655	1616	1644
L ₀	1848	1683	1595	1605	1546				
L ₁	1716	1732	1582	1535	1513				
L ₂	1759	1685	1511	1624	1639				

S.E. of difference of two

- | | | | |
|-----------------------------------|----------------|-----------------------------------|----------------|
| 1. N marginal means | = 44.0 lb./ac. | 5. N means at the same level of P | = 66.1 lb./ac. |
| 2. L marginal means | = 34.1 lb./ac. | 6. P means at the same level of L | = 53.0 lb./ac. |
| 3. P marginal means | = 36.8 lb./ac. | 7. L means at the same level of P | = 51.2 lb./ac. |
| 4. P means at the same level of N | = 65.3 lb./ac. | S.E. of the body of N×L table | = 53.9 lb./ac. |

Crop :- Paddy (*Anan*).

Ref :- W.B. 57(63).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :—To study the effect of continuous application of N, P and lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) Last week of July to 1st week of August, 1957. (iv) (a) Ploughing. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) 1st week of December, 1957.

TREATMENTS :

Same as in expt. 1 o. 54(67) on page 68.

3. DESIGN :

(i) Strip-plot. (ii) (a) 15 strips in one direction ; 3 strips in orthogonal direction. (b) N.A. (iii) 6. (iv) (a) 32.5'×17.5'. (b) 30.5'×15.5'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Suri and Berhampore. (b) N.A. (vi) and (vii) N.A.

5. RESULTS :

(i) 1874 lb./ac. (ii) 552.2 lb./ac. for NL, 525.0 lb./ac. for P, 363.1 lb./ac. for NL×P (iii) Main effect of N and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	L ₀	L ₁	L ₂
P ₀	1683	1962	2080	1802	1587	1823	1877	1805	1786
P ₁	1850	2181	2180	1913	1441	1933	1904	2003	1891
P ₂	1980	2177	2115	1574	1490	1867	1865	1807	1930
Mean	1838	2140	2125	1763	1506	1874	1882	1872	1869
L ₀	1858	2207	2103	1807	1434				
L ₁	1790	2136	2099	1694	1641				
L ₂	1866	2077	2172	1788	1443				

S.E. of difference of two

1. N marginal means	= 105.3 lb./ac.	5. N means at the same level of P	= 145.1 lb./ac.
2. L marginal means	= 82.3 lb./ac.	6. P means at the same level of L	= 109.5 lb./ac.
3. P marginal means	= 54.1 lb./ac.	7. L means at the same level of P	= 112.4 lb./ac.
4. P means at the same level of N	= 133.6 lb./ac.	S.E. of the body of N×L table	= 130.2 lb./ac.

Crop :- Paddy (*Aman*).**Ref :- W.B. 58(55).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :—To study the effect of continuous application of N, P and lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) Last week of August, 1958. (iv) (a) 2 to 3 ploughings. (b) Transplanting. (c) N.A. (d) 9'×9'. (e) 2. (v) Nil. (vi) *Bhasamanik*. (vii) Unirrigated. (viii) 3 weeding. (ix) N.A. (x) 1st week of January, 1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(67) on page 68.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Suri and Berhampore (on *Aus* paddy and from 1949—1950). (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1555 lb./ac. (ii) 409.9 lb./ac. for NL, 600.9 lb./ac. for P, 286.8 lb./ac. for NL×P. (iii) Main effect of N and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean	L ₀	L ₁	L ₂
P ₀	1445	1639	1891	1738	1634	1679	1636	1722	1680
P ₁	1519	1466	1644	1431	1288	1470	1495	1420	1494
P ₂	1596	1578	1708	1434	1269	1517	1458	1530	1563
Mean	1520	1561	1748	1551	1397	1555	1530	1557	1579
L ₀	1515	1493	1608	1632	1401				
L ₁	1466	1571	1950	1426	1373				
L ₂	1579	1618	1685	1594	1417				

S.E. of difference of two

1. N marginal means	= 78.9 lb./ac.	5. N means at the same level of P	= 111.0 lb./ac.
2. L marginal means	= 61.1 lb./ac.	6. P means at the same level of L	= 108.1 lb./ac.
3. P marginal means	= 89.6 lb./ac.	7. L means at the same level of P	= 86.0 lb./ac.
4. P means at the same level of N	= 123.8 lb./ac.	S.E. of body of N×L table	= 96.6 lb./ac.

Crop :- Paddy (*Aman*).**Ref :- W.B. 59(36).****Site :- State Agri. Farm, Chinsurah.****Type :- 'M'.**

Object :—To study the effect of continuous application of N, P and lime applied individually and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Pa'dy. (b) Fallow. (c) Nil. (ii) (a) Gangetic alluvium soil, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 1.8.1959. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) N.A. (d) 9"×9". (e) 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 55.51%. (x) 15 to 20.12.1959.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 5 levels of N as A/S : $N_0=0$, $N_1=30$, $N_2=60$, $N_3=90$ and $N_4=120$ lb./ac.

(2) 3 levels of Lime : $L_0=0$, $L_1=4$ and $L_2=8$ cwt./ac.

Sub-plot treatments :

3 levels of P_2O_5 as B.M. : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.

Lime applied once in 4 years on 23.5.1956, B.M. applied on 27.6.1959 and A/S applied on 1.9.1959.

3. DESIGN :

(i) Split-plot. (ii) (a) 15 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) $32\frac{1}{2}' \times 17\frac{1}{2}'$. (b) $30\frac{1}{2}' \times 15\frac{1}{2}'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Good. Plants receiving 60 lb./ac. or more N were lodged due to rain and storm. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) No. (v) (a) Suri and Berhampore. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2190 lb./ac. (ii) (a) 579.6 lb./ac. (b) 539.6 lb./ac. (iii) Main effects of N is highly significant, L and P effects are significant. Interactions $N \times P$ and $N \times L \times P$ are significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	N_4	Mean	L_0	L_1	L_2
P_0	2255	2405	2344	2117	2176	2259	2160	2290	2328
P_1	2407	2346	2152	1946	1860	2142	2096	2184	2146
P_2	2469	2470	2147	1897	1861	2169	2166	2163	2177
Mean	2377	2407	2214	1987	1966	2190	2141	2212	2217
L_0	2373	2417	2100	1871	1942				
L_1	2398	2382	2320	1983	1979				
L_2	2360	2422	2222	2106	1976				

S.E. of difference of two

- | | | | |
|-----------------------------------|-----------------|------------------------------------|-----------------|
| 1. N marginal means | = 111.5 lb./ac. | 5. N means at the same level of P | = 184.4 lb./ac. |
| 2. L marginal means | = 86.4 lb./ac. | 6. P means at the same level of L | = 139.3 lb./ac. |
| 3. P marginal means | = 80.4 lb./ac. | 7. L means at the same level of P | = 142.8 lb./ac. |
| 4. P means at the same level of N | = 179.9 lb./ac. | S.E. of bcdy of $N \times L$ table | = 136.6 lb./ac. |

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(44).

Site :- State Agri. Farm, Cooch Behar.

Type :- 'M'.

Object :- To find out the optimum requirement of N and P for yield of Paddy under different soil climatic conditions for Paddy.

1. BASAL CONDITIONS :

(i) (a) Single cropping. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 6 and 7.8.1954. (iv) (a) 5 to 6 ploughings and harrowings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 3 to 4. (v) Nil. (vi) *Indrasail*. (vii) Unirrigated. (viii) Nil. (ix) 125.71%. (x) 30.12.1955 and 2.1.1955.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 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.

(2) 5 levels of P_2O_5 as Super : $P_0=0$, $P_1=15$, $P_2=30$, $P_3=45$ and $P_4=60$ lb./ac.

Super ploughed in on 6.8.1954 while A/S broadcasted on 16 and 17.9.1954.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 5. (iv) (a) $38' \times 22'$. (b) $36' \times 20'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1953—1955. (b) Yes. (c) N.A. (v) (a) Chinsurah, Burdwan, Midnapore, Mynagari, Malda and Haringhata. (b) N.A. (vi) Nil. (vii) Experiment conducted during the year 1955 failed.

5. RESULTS :

(i) 1793 lb./ac. (ii) 125.8 lb./ac. (iii) Main effect of N is highly significant while P effect is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	P_3	P_4	Mean
N_0	1780	1612	1599	1617	1689	1659
N_1	1698	1743	1799	1767	1879	1777
N_2	1929	1630	2103	1916	2035	1923
N_3	1804	1617	2091	1729	1829	1814
N_4	1804	1842	1885	1711	1729	1794
Mean	1803	1689	1895	1748	1832	1793

S.E. of any marginal mean = 25.2 lb./ac.

S.E. of body of table = 56.3 lb./ac.

Crop :- Paddy (Kharif).

Ref :- W.B. 57(8).

Site :- State Agri. Farm, Cooch Behar.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) N.A. (iv) (a) 4 to 6 ploughings and ladderings. (b) Line sowing. (c) N.A. (d) $9'' \times 9''$. (e) 2. (v) and (vi) N.A. (vii) Un-irrigated. (viii) to (x) N.A.

2. TREATMENTS :

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

(1) 2 levels of N as A/S : $N_0=0$ and $N_1=20$ lb./ac.

(2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=20$ lb./ac.

(3) 2 levels of K_2O as Pot. Sul. : $K_0=0$ and $K_1=20$ lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) $27.5' \times 38'$. (b) $25.5' \times 36'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1957—contd. (b) Yes. (c) N.A. (v) (a) Burdwan, Midnapore, Chinsurah and Purulia. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1070 lb./ac. (ii) 245.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	1027	1037	1032	1054	1010
N ₁	1011	1203	1107	1190	1024
Mean	1019	1120	1070	1122	1017
K ₀	990	1254			
K ₁	1048	986			

S.E. of any marginal mean = 61.3 lb./ac.
S.E. of body of table = 86.7 lb./ac.

Crop :- Paddy (Kharif).

Ref :- W.B. 58(11).

Site :- State Agri. Farm, Cooch Behar.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) N.A. (iv) (a) 4 to 6 ploughings and ladderings. (b) Line sowing. (c) N.A. (d) 9"×9". (e) 2. (v) N.A. (vi) *Dudsar* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 15.12.1958 to 20.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(8) on page 74.

N and K applied on 22.9.1958 while P applied on 17.7.1958.

5. RESULTS :

(i) 1798 lb./ac. (ii) 207.8 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	1694	1678	1686	1703	1670
N ₁	1934	1884	1909	1920	1898
Mean	1814	1781	1798	1811	1784
K ₀	1852	1770			
K ₁	1776	1792			

S.E. of any marginal mean = 52.0 lb./ac.
S.E. of body of table = 73.5 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 59(21).

Site :- State Agri. Farm, Cooch Behar.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 8 and 9.8.1959. (iv) (a) 4 to 6 ploughing and ladderings. (b) Line transplanting. (c) 12 to 15 srs./ac. (d) 9'×9'. (e) 2. (v) Nil. (vi) *Dudsar* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 11 and 12.12.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(8) on page 74.

Sources of K₂O is Mur. Pot. while Super applied on 8.8.1959.

5. RESULTS :

(i) 2344 lb./ac. (ii) 246.3 lb./ac. (iii) N effect and interaction P×K are highly significant. P effect is significant while all other effects are not significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	2120	2208	2164	2081	2246
N ₁	2360	2690	2525	2614	2436
Mean	2240	2449	2344	2347	2341
K ₀	2098	2596			
K ₁	2381	2300			

S.E. of any marginal mean = 61.6 lb./ac.

S.E. of body of any table = 87.1 lb./ac.

Crop :- Paddy (*Aman*).

Site :- State Agri. Farm, Cooch Behar.

Ref :- W.B. 59(22).

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Silty and fine sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 13 and 14.8.1959. (iv) (a) 4 to 6 ploughings and harrowings. (b) Line transplanting. (c) 12 to 15 srs./ac. (d) 9'×9'. (e) 3. (v) Nil. (vi) *Dudsar* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 17.12.1959.

2. TREATMENTS :

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

(1) 3 levels of N as A/S : N₁=30, N₂=90 and N₃=180 lb./ac.

(2) 2 levels of P₂O₅ as Super : P₀=0 and P₁=200 lb./ac.

(3) 2 levels of K₂O as Mur. Pot. : K₀=0 and K₁=200 lb./ac.

Super applied on 13.8.1959 and top dressed on 25.9.1959.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 39'×28'. (b) 37'×26'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) No. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2402 lb./ac. (ii) 212.4 lb./ac. (iii) N and P effects and interaction N×P×K are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N ₁	N ₂	N ₃	Mean	K ₀	K ₁
P ₀	2359	2684	2518	2520	2577	2464
P ₁	2268	2502	2084	2285	2300	2269
Mean	2313	2593	2301	2402	2438	2366
K ₀	2329	2546	2441			
K ₁	2298	2640	2161			

S.E. of N marginal mean	= 61.3 lb./ac.
S.E. of P or K marginal mean	= 50.1 lb./ac.
S.E. of body of N×P or N×K table	= 86.7 lb./ac.
S.E. of body of P×K table	= 70.8 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 56(2).

Site :- State Agri. Farm, Cooch Behar.

Type :- 'M'.

Object :- To study the residual effect of lime and P applied to dhaincha on the following Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Single cropping. (b) *Dhaincha* sown on 18.5.1956. and uprooted on 3.8.1956. (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 3.8.1956. (iv) (a) 6 ploughings and ladderings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 3 to 4. (v) A/S top dressed at 1 md./ac. on 5.9.1956, and 4.10.1956. in ½ doses. (vi) *Latisail*. (vii) Unirrigated. (viii) 1 weeding on 29.5.1956. (ix) N.A. (x) 3.1.1957.

2. TREATMENTS:

All combinations of (1) and (2).

(1) 3 levels of lime : L₀=0, L₁=¼ and L₂=½ ton/ac.

(2) 3 levels of Super : P₁=100, P₂=200 and P₃=300 lb./ac.

Lime broadcast on 14.4.1956 and Super broadcast on 27.4.1956 to the previous *dhaincha* crop.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 29'×15'. (b) 27'×13'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1955—1957. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 855 lb./ac. (ii) 137.4 lb./ac. (iii) Only P effect is significant. (iv) Av. yield of grain in lb./ac.

	P ₁	P ₂	P ₃	Mean
L ₀	601	921	993	838
L ₁	762	832	962	852
L ₂	805	840	978	874
Mean	723	864	978	855

S.E. of any marginal mean	= 39.7 lb./ac.
S.E. of body of table	= 68.7 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 57(6).****Site :- State Agri. Farm, Cooch Behar.****Type :- 'M'.**

Object :—To study the residual effect of lime and P applied to dhaincha on the following Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Single cropping. (b) *Dhaincha* sown on 24.5.1957 and turned in on 30.7.1957. (c) As per treatments.
 (ii) (a) Sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 1.9.1957. (iv) (a) 6 ploughings and ladder-
 ing. (b) Transplanting. (c) N.A. (d) 9'×9'. (e) 3 to 4. (v) Nil. (vi) *Latisail*. (vii) Unirrigated. (viii)
 Nil. (ix) N.A. (x) 24 and 25.12.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(2) on page 77.

Data of application—N.A.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1955—1957. (b) Yes. (c) N.A. (v) (a) and
 (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 931 lb./ac. (ii) 300.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P ₁	P ₂	P ₃	Mean
L ₀	866	1225	881	991
L ₁	984	1065	952	989
L ₂	678	890	875	814
Mean	831	1060	903	931

S.E. of any marginal mean = 86.7 lb./ac.
 S.E. of body of table = 150.1 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 55(75).****Site :- State Agri. Farm, Haringhat.****Type :- 'M'.**

Object :—To find out the optimum requirement of A/S and Super on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam. (b) N.A. (iii) 3rd week of July, 1955. (iv) (a) 4 to 5 ploughings. (b)
 Transplanting. (c) N.A. (d) 9'×9'. (e) 3. (v) 80 to 100 mds./ac. of F.Y.M. (vi) *Patnai*. (vii) Unirrigated.
 (viii) 2 to 3 weedings. (ix) N.A. (x) Last week of December to 1st week of January, 1956.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of P₂O₅ as Super : P₀=0, P₁=20, P₂=40, P₃=60 and P₄=80 lb./ac.(2) 5 levels of N as A/S : N₀=0, N₁=15, N₂=30, N₃=45 and N₄=60 lb./ac.Super was ploughed in before transplanting and A/S was applied as top dressing 4 weeks after trans-
planting.**3. DESIGN :**

(i) Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 5. (iv) (a) 38'×22'. (b) 36'×20'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1953—contd. (b) Yes. (c) N.A. (v) (a) Mayanaguri, Cooch
 Behar, Chinsurah, Burdwan, Malda and Midnapore. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 213 lb./ac. (ii) 245.2 lb./ac. (iii) All the effects are highly significant. (iv) Av. yield of grain
 in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	2514	2501	2377	1867	2153	2282
P ₁	2240	2203	1954	1929	1805	2026
P ₂	2589	2141	2414	1780	2066	2198
P ₃	1892	2551	2103	2066	1966	2116
P ₄	2327	2116	1867	1904	1966	2036
Mean	2312	2302	2143	1909	1991	2132

S.E. of any marginal mean = 49.0 lb./ac.
S.E. of body of table = 109.7 lb./ac.

Crop :- Paddy.

Ref :- W.B. 55(6t).

Site :- State Agri. Farm, Hathwara (Purulia).

Type :- 'M'.

Object :—To test the effect of T.C. on soil fertility and Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Paddy after Paddy. (b) Paddy. (c) 36 mds. of F.Y.M.+42 lb. of Super and A/S each. (ii) (a) Sandy, acidic. (b) Refer soil analysis, Hathwara. (iii) 13.6.1955/31.8.1955. (iv) (a) 5 ploughings by *desi* plough. (b) Sowing in nursery bed by Local method and transplanting by Japanese method. (c) 20 srs./ac. (d) 12" × 12". (e) 6. (v) Nil. (vi) B.K.—141 (improved, early). (vii) Unirrigated. (viii) Weeding once. (ix) 28.34". (x) 13.11.1955.

2. TREATMENTS :

6 manurial treatments : M₀=Control (no manure), M₁=Compost+40 lb./ac. of N as A/S, M₂=Compost +80 lb./ac. of N as A/S, M₃=Compost+40 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super, M₄=M₁+40 lb./ac. of P₂O₅ as Super and M₅=40 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 57' × 19'. (b) 55.5' × 17.5'. (v) 9" × 9". (vi) Yes.

4. GENERAL :

(i) Unsatisfactory growth. (ii) Nil. (iii) Weight of grain and straw, no. of tillers and height. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) No. (vi) Nil. (vii) Heavy drought.

5. RESULTS :

(i) 549 lb./ac. (ii) 63.6 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	407	452	473	496	461	1004

S.E./mean = 28.5 lb./ac.

Crop :- Paddy.

Ref :- W.B. 55(62).

Site :- State Agri. Farm, Hathwara (Purulia).

Type :- 'M'.

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

1. BASAL CONDITIONS.

(i) (a) Paddy after Paddy. (b) Paddy. (c) 40 mds. of F.Y.M. + 45 lb. of Super and A/S each. (ii) (a) Sandy, acidic. (b) Refer soil analysis, Hathwara. (iii) 14.6.1955/25.8.1955. (iv) (a) Ploughing by *desi* plough 5 times, puddling and hoeing. (b) Sowing in nursery bed by Local method and transplanting by Japanese method. (c) 20 srs./ac. (d) 12" × 12". (e) 6. (v) Nil. (vi) 498-2A (improved, late). (vii) Irrigated. (viii) Weeding. (ix) 28.34". (x) 2.11.1955.

2. TREATMENTS :

5 manural treatments : M_0 =No G.M., M_1 =G.M. with *kalai*, M_2 =G.M. with *moong*, M_3 =G.M. with *sanai* and M_4 =G.M. with *dhaincha*.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 44' × 25'. (b) 42.5' × 23.5'. (v) 9" × 9". (vi) Yes.

4. GENERAL :

(i) Growth satisfactory. (ii) Nil. (iii) Weight of straw and grain, no. of tillers, height at an interval of one month and also at harvest. (iv) (a) and (b) No. (c) N.A. (v) (a) and (b) No. (vi) Crop suffered due to heavy drought. (vii) Nil.

5. RESULTS :

(i) 1148 lb./ac. (ii) 255.8 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
Av. yield	962	1283	1079	1232	1183

S.E./mean = 132.9 lb./ac.

Crop :- Paddy.

Ref :- W.B. 55(63).

Site :- State Agri. Farm, Hathwara (Purulia).

Type :- 'M'.

Object :- To study the effect of legume crop in improving soil fertility and Super on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy after Paddy. (b) Paddy. (c) 100 mds. of F.Y.M. + 82 lb. of Super and A/S each. (ii) (a) Sandy, acidic. (b) Refer soil analysis, Hathwara. (iii) 14.6.1955/29.8.1955. (iv) (a) 5 ploughings by *desi* plough, puddling and hoeing. (b) and (c) Sowing in nursery bed by Local method and transplanting by Japanese method. (d) 12" × 12". (e) 6. (v) Nil. (vi) B.K. 36 (improved, late). (vii) Irrigated. (viii) weeding twice. (ix) 28.34". (x) 30.11.1955.

2. TREATMENTS :

4 manural treatments : M_0 =No G.M., M_1 =No G.M. + 40 lb./ac. of P_2O_5 as super., M_2 =G.M. with *sanai*, M_3 =G.M. with *sanai* + 40 lb./ac. of P_2O_5 as Super at the time of sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 57' × 19'. (b) 55½' × 17½'. (v) 9" × 9". (vi) Yes.

4. GENERAL :

(i) Growth satisfactory. (ii) Nil. (iii) Weight of straw and grain, no. of tillers and height. (iv) (a) and (b) No. (c) N.A. (v) (a) and (b) No. (vi) Heavy drought, G.M. added was not satisfactory. (vii) Nil.

5. RESULTS :

(i) 786 lb./ac. (ii) 160.9 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
Av. yield	756	773	685	929

S.E./mean = 71.9 lb./ac.

Crop :- Paddy.**Ref :- W. B. 55(60).****Site :- State Agri. Farm, Hathwara (Purulia):****Type :- 'M'.**

Object :-To study the effect of liming on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy after Paddy. (b) Paddy. (c) 50 mds. of F.Y.M. +55 lb. of Super and A/S each. (ii) (a) Sandy, acidic. (b) Refer soil analysis, Hathwara. (iii) 24.6.1955/26.8.1955. (iv) (a) Puddling and hoeing. Ploughing by *desi* plough. (b) and (c) In nursery bed, local method at seed rate 20 srs./ac. and transplanting by Japanese method. (d) 12"×12". (e) 6. (v) No. (vi) Kanke—II (Improved, medium). (vii) Irrigated. (viii) Weeding. (ix) 28.34" (x) 24.11.1955.

2. TREATMENTS :

6 manurial treatments : M_0 =Control, M_1 =800 lb./ac. of lime, M_2 =1600 lb./ac. of lime, M_3 =2400 lb./ac. of lime, M_4 =40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot. and M_5 = M_3 + M_4 .

The liming was done one month before transplanting. It was applied on the level i.e. on soil surface and then ploughed.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 57'×19'. (b) 55.5'×17.5'. (v) 9"×9". (vi) Yes.

4. GENERAL :

(i) Growth satisfactory for 1½ month but onwards suffered due to lack of irrigation. (ii) Nil. (iii) Weight of grain and straw, no. of tillers, height of the plants each at an interval of one month and also at harvest. (iv) (a) and (b) No. (c) N.A. (v) (a) and (b) No. (vi) Heavy drought and non-availability of suitable irrigational facilities. (vii) Nil.

5. RESULTS :

(i) 808 lb./ac. (ii) 268.5 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	549	789	678	609	1213	1008

S.E./mean = 120.1 lb./ac.

Crop :- Paddy.**Ref :- W.B. 54(59).****Site :- State Agri. Farm, Hathwara (Purulia).****Type :- 'M'.**

Object :-To study the effect of N, P and K on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 60 mds./ac. of F.Y.M. +30 lb./ac. of A/S. (ii) (a) Sandy, acidic. (b) Refer soil analysis, Hathwara. (iii) 5.6.1954/7.9.1954. (iv) (a) 5 ploughings by *desi* plough. (b) Transplanting. (c) 20 srs./ac. (d) 9"×9". (e) 4 to 5. (v) 40 mds./ac. of F.Y.M. to whole of the experimental area. (vi) B.K.—141 early (improved). (vii) Irrigated. (viii) Weeding. (ix) 18.16". (x) 28.11.1954.

2. TREATMENTS :

5 manurial treatments : M_0 =Control (no manure), M_1 =40 lb./ac. of N as A/S, M_2 =40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, M_3 =40 lb./ac. of N as A/S+40 lb./ac. of K_2O as Mur. Pot. and M_4 =40 lb./ac. of N as A/S+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) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 34'×32'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Weight of grain. (iv) (a) 1954—1955. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 1046 lb /ac. (ii) 87.6 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
Av. yield	710	1040	1132	1091	1256

S.E./mean = 43.8 lb./ac.

Crop :- Paddy.

Ref :- W.B. 55(61).

Site :- State Agri. Farm, Hathwara (Purulia).

Type :- 'M'.

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

1. BASAL CONDITIONS :

- (i) (a) Paddy after Paddy. (b) Paddy. (c) 49 mds. of F.Y.M. +47 lb. of Super and A/S each. (ii) (a) Sandy, acidic. (b) Refer soil analysis, Hathwara. (iii) 24.6.1955/28.8.1955. (iv) (a) 5 ploughings by *desi* plough. (b) and (c) In nursery bed, local method at seed at 20 srs./ac. and transplanting by Japanese method. (d) 12"×12". (e) 6. (v) Nil. (vi) *Kanke*—II (improved, medium). (vii) Unirrigated. (viii) 1 weeding. (ix) 28.34". (x) 24.11.1955.

2. TREATMENTS :

Same as in expt. no. 54(59) on page 81.

3. DESIGN :

- (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 57'×19'. (b) 55.5'×17.5'. (v) 9"×9". (vi) Yes.

4. GENERRL :

- (i) Crop suffered due to drought. (ii) Nil. (iii) Weight of grain and straw, no. of tillers and height each at an interval of one month and also at harvest. (iv) (a) 1954—1955. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) Heavy drought and non availability of suitable irrigational facilities caused the poor growth. After a week of transplanting, it was observed that except the control plot all other treatments showed marked difference. Leaving control plots, all others were erect and they were dark green. (vii) N.A.

5. RESULTS :

- (i) 887 lb /ac. (ii) 149.4 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
Av. yield	631	951	974	871	1009

S.E./mean = 74.7 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(45).

Site :- State Agri. Farm, Hathwara (Purulia).

Type :- 'M'.

Object :—To study the effect of N, P and K alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

- (i) (a) to (c) N.A. (ii) (a) Sandy clay loam and clay loam with concretion. (b) Refer soil analysis, Hathwara. (iii) Last week of July, 1958. (iv) (a) 3 to 4 ploughings and spading. (b) Transplanting. (c) 33.1 to 39.7 lb./ac. (d) 9" between plants. (e) 2 to 3. (v) 100 mds./ac. of F.Y.M. (vi) *Badkalamkati* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings and 2 thinnings. (ix) N.A. (x) 1st week of December, 1958.

2. TREATMENTS :

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

- (1) 2 levels of N as A/S : $N_0=0$ and $N_1=20$ lb./ac.
 (2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=20$ lb./ac.
 (3) 2 levels of K_2O as Mur. Pot. : $K_0=0$ and $K_1=20$ lb./ac.

3. DESIGN :

- (i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) $29' \times 30'$. (b) $27' \times 28'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

- (i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1957—1959. (b) Yes. (c) N.A. (v) (a) No. (b) Nil. (vi) N.A. (vii) Experiment conducted during the year 1957 failed.

5. RESULTS :

- (i) 2420 lb./ac. (ii) 731.3 lb./ac. (iii) Only main effect of N is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	Mean	K_0	K_1
N_0	2196	2043	2119	2180	2058
N_1	2526	2917	2722	2828	2615
Mean	2361	2480	2420	2504	2336
K_0	2470	2539			
K_1	2252	2421			

S.E. of any marginal mean = 182.8 lb./ac.
 S.E. of body of any table = 258.6 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 59(2).

Site :- State Agri. Farm, Hathwara (Puruila).

Type :- 'M'.

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

1. BASAL CONDITIONS :

- (i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Hathwara. (iii) 11.8.1959. (iv) (a) 3 to 4 ploughings and ladderings. (b) Line transplanting. (c) 12 to 15 srs./ac. (d) $9'' \times 9''$. (e) 2 to 3. (v) Nil. (vi) *Badkalamkati* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 36.7%. (x) 13.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(45) on page 82.

4. GENERAL :

- (i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) Chinsurah, Burdwan and Midnapore. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

- (i) 1202 lb./ac. (ii) 132.7 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	1056	1098	1077	1087	1067
N ₁	1274	1380	1327	1399	1255
Mean	1165	1239	1202	1443	1161
K ₀	1221	1265			
K ₁	1109	1213			

S.E. of any marginal mean = 33.2 lb./ac.
 S.E. of body of any table = 46.9 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(43).

Site :- State Agri. Farm, Kalimpong.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Maize—Paddy. (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Kalimpong. (iii) 15th July to 1st week of August, 1958. (iv) (a) 3 to 4 ploughings and ladderings. (b) Transplanting. (c) 33.1 lb./ac. (d) 1' apart. (e) 2 to 3. (v) 100 mds./ac. of F.Y.M. (vi) Local. (vii) Unirrigated. (viii) 2 weedings and thinning. (ix) N.A. (x) Last week of December, 1956.

2. TREATMENTS :

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

(1) 2 levels of N as A/S : N₁=20 and N₂=40 lb./ac.

(2) 2 levels of P₂O₅ as Super : P₀=0 and P₁=20 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 8'×7'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain. (iv) (a) No. (b) and (c) Nil. (v) (a) No (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2990 lb./ac. (ii) 217.8 lb./ac. (iii) Except P, all effects are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 3290 lb./ac.

	N ₁	N ₂	Mean
P ₀	3220	2466	2843
P ₁	2964	3012	2988
Mean	3092	2739	2916

S.E. of any marginal mean = 77.0 lb./ac.
 S.E. of body of table or control mean = 108.9 lb./ac.

Crop :- Paddy (*Aus*).

Ref :- W.B. 58(37).

Site :- State Agri. Farm, Malda.

Type :- 'M'.

Object :- To study the effect of different doses and sources of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Wheat-Paddy. (b) Wheat. (c) N.A. (ii) (a) Loam and silty clay loam. (b) Refer soil analysis, Malda. (iii) 22.5.1958. (iv) (a) 4 to 5 ploughings. (b) Line sowing (broadcast). (c) N.A. (d) 9' between lines. (e) N.A. (v) N.A. (vi) *Bharial* - (medium). (vii) Unirrigated. (viii) 2 to 3 weeding and thinning. (ix) N.A. (x) 30.9.1958.

2. TREATMENTS :

Main-plot treatments :

3 sources of N : $S_1=A/S$, $S_2=C/N$ and $S_3=A/C$.

Sub-plot treatments :

3 levels of N : $N_0=0$, $N_1=40$ and $N_2=60$ lb./ac.

Fertilizer applied after sowing and on 26.7.1958.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 25' x 20'. (b) 23' x 18'. (v) 1' x 1'. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1768 lb./ac. (ii) (a) 242.4 lb./ac. (b) 311.7 lb./ac. (iii) All the effects are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1100 lb./ac.

	S_1	S_2	S_3	Mean
N_1	2270	1310	2502	2027
N_2	2577	1271	2685	2178
Mean	2424	1290	2594	2103

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. S marginal means | = 80.8 lb./ac. |
| 2. N marginal means | = 103.9 lb./ac. |
| 3. N means at the same level of S | = 180.0 lb./ac. |
| 4. S means at the same level of N | = 168.8 lb./ac. |

Crop :- Paddy (*Aman*).

Ref :- W.B. 57(47).

Site :- State Agri. Farm, Maynaguri.

Type :- 'M'.

Object :- To study the effect of different doses and sources of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Maynaguri. (iii) 1st to 2nd week of August, 1957. (iv) (a) 5 to 6 ploughings and 2 laddering. (b) Transplanting. (c) Nil. (d) N.A. (e) 2 to 3. (v) 80 to 100 mds./ac. of F.Y.M. (vi) *Bhasamanik* (late). (vii) Unirrigated. (viii) 2 weeding and 2 thinning. (ix) N.A. (x) Last week of December, 1957.

2. TREATMENTS:

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

(1) 2 levels of N : $N_1=20$ and $N_2=40$ lb./ac.(2) 4 sources of N : $S_1=A/S$, $S_2=A/S/N$, $S_3=Urea$ and $S_4=Nitro-chalk$.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 39'×28'. (b) 37'×26'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954–1958. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) N.A. (vii) Experiment conducted during the years 1954 and 1955 failed.

5. RESULTS :

(i) 1411 lb./ac. (ii) 279.5 lb./ac. (iii) 'Control vs. other' effect is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 815 lb./ac.

	S ₁	S ₂	S ₃	S ₄	Mean
N ₁	1551	1426	1432	1339	1437
N ₂	1409	1607	1397	1726	1535
Mean	1480	1516	1414	1532	1486

S.E. of S marginal mean = 93.8 lb./ac.

S.E. of N marginal mean = 69.9 lb./ac.

S.E. of body of table or control mean = 139.8 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(44).

Site :- State Agri. Farm, Maynaguri.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Tista riverine. (b) Refer soil analysis, Maynaguri. (iii) Last week of July, 1958. (iv) (a) 4 to 5 ploughings. (b) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) N.A. (vi) *Bhasamanik*. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) Last week of December, 1958.

2. TREATMENTS :

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

(1) 2 doses of N: N₁=20 and N₂=40 lb./ac.

(2) 4 sources of N: S₁=A/S, S₂=A/S/N, S₃=Urea and S₄=C/A/N.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 39'×28'. (b) 37'×26'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954–1958. (b) Yes. (c) N.A. (v) (a) and (b) No. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2212 lb./ac. (ii) 268.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 1922 lb./ac.

	S ₁	S ₂	S ₃	S ₄	Mean
N ₁	2320	2206	2319	2272	2229
N ₂	2410	2129	2151	2179	2217
Mean	2365	2168	2235	2226	2223

S.E. of S marginal mean	= 94.8 lb./ac.
S.E. of N marginal mean	= 67.0 lb./ac.
S.E. of body of table or control mean	= 134.1 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(49).

Site :- State Agri. Farm, Maynaguri.

Type :- 'M'.

Object :—To study the effect of N and P applied alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Single cropping. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Maynaguri. (iii) 9 to 19.7.1954. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Iadrasail* (medium). (vii) Unirrigated. (viii) Weeding twice. (ix) 104.32". (x) 31.12.1954 to 3.1.1955.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of N as A/S : $N_0=0$, $N_1=15$, $N_2=30$, $N_3=45$ and $N_4=60$ lb./ac.

(2) 5 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$, $P_2=40$, $P_3=60$ and $P_4=80$ lb./ac.

Super applied on 8.7.1954 and A/S applied on 8.8.1954.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 5. (iv) (a) 32'×22'. (b) 30'×20'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1703 lb./ac. (ii) 269.6 lb./ac. (iii) P effect is significant and N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	N_4	Mean
P_0	1546	1658	1972	1710	1860	1749
P_1	1247	1710	1875	1561	2024	1683
P_2	1427	1860	1919	1725	1561	1698
P_3	1382	1785	1587	1587	1501	1568
P_4	1710	1718	1815	2002	1830	1815
Mean	1462	1746	1834	1717	1755	1703

S.E. of any marginal mean	= 53.9 lb./ac.
S.E. of body of table	= 120.6 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(3).

Site :- State Agri. Farm, Maynaguri.

Type :- 'M'.

Object :—To study the effect of N and P applied alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Single cropping. (b) *Dhaincha* sown on 9.5.1954 and turned down on 22.6.1955. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Maynaguri. (iii) 21 to 26.7.1955. (iv) (a) 3 to 4 ploughings and ladderings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Indrasail* (medium). (vii) Unirrigated. (viii) Weeding twice on 5.9.1958 and 27.9.1958. (ix) 132.65". (x) 4 to 7.1.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(49) on page 87.

Super applied on 23, 29.6.1955 and A/S applied on 2.9.1955.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—1955. (b) Yes. (c) N.A. (v) (a) Cooch Behar, and Burdwan. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1345 lb./ac. (ii) 329.6 lb./ac. (iii) Only P effect is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	1231	1255	1240	1408	1204	1268
P ₁	1225	1605	1195	1154	1344	1305
P ₂	1277	1475	1509	1546	1501	1462
P ₃	1546	1441	1136	1382	1385	1378
P ₄	1370	1191	1232	1475	1288	1311
Mean	1330	1394	1262	1393	1344	1345

S.E. of any marginal mean = 65.9 lb./ac.

S.E. of body of table = 147.4 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(73).

Site :- State Agri. Farm, Maynaguri.

Type :- 'M'.

Object :- To find out the optimum requirement of A/S and Super for Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Tista riverine. (b) Refer soil analysis, Maynaguri. (iii) 2nd week of July, 1955. (iv) (a) 1 to 4 ploughings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) and (vi) N.A. (vii) Unirrigated. (viii) 2 to 3 weeding and interculture. (ix) N.A. (x) Last week of December to 1st week of January, 1956.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of N as A/S : N₀=0, N₁=15, N₂=30, N₃=45 and N₄=60 lb./ac.

(2) 5 levels of P₂O₅ as Super : P₀=0, P₁=20, P₂=40, P₃=60 and P₄=80 lb./ac.

Super was ploughed in before transplanting and A/S was given as top dressing 4 weeks after transplantation.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 5. (iv) (a) 38'×22'. (b) 36'×20'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—contd. (b) Yes. (c) N.A. (v) (a) Cooch Behar, Burdwan, Chinsurah, Haringhata, Midnapur and Ma'da. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1117 lb./ac. (ii) 273.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	1013	1045	1033	1104	1003	1040
P ₁	1020	1338	996	961	1120	1087
P ₂	1064	1229	1257	1288	1251	1218
P ₃	1288	1201	946	1131	1154	1148
P ₄	1142	992	1027	1229	1073	1093
Mean	1105	1161	1052	1147	1120	1117

S.E. of any marginal mean

= 54.8 lb./ac.

S.E. of body of table

= 122.4 lb./ac.

Crop :- Paddy (*Aman*).**Ref :- W.B. 55(74).****Site :- State Agri. Farm, Midnapore.****Type :- 'M'.**

Object :— To find out the optimum requirement of A/S and Super for Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Pore laterite. (b) Refer soil analysis, Midnapore. (iii) Last week of July to 1st week of August, 1955. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) N.A. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) Nil. (x) Last week of December, 1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(73) conducted at Maynaguri on page 88.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—1956. (b) Yes. (c) N.A. (v) (a) Cooch Behar, Chinsurah, Haringhata, Malda, Maynaguri and Burdwan. (b) N.A. (vi) Nil. (vii) Experiment was not conducted during the year 1954.

5. RESULTS :

(i) 2223 lb./ac. (ii) 221.5 lb./ac. (iii) Only main effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	2070	2394	2344	2291	2000	2220
P ₁	2070	2224	2189	2168	2089	2150
P ₂	1986	2467	2189	2269	2235	2229
P ₃	2240	2279	2383	2452	2280	2327
P ₄	1997	2098	2320	2406	2126	2189
Mean	2073	2292	2285	2317	2148	2223

S.E. of any marginal mean

= 44.3 lb./ac.

S.E. of body of table

= 99.1 lb./ac.

Crop :- Paddy (*Aman*).**Ref :- W.B. 57(46).****Site :- State Agri. Farm, Midnapore.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam clay. (b) Refer soil analysis, Midnapore. (iii) 1st week of August, 1957. (iv) (a) 2 to 3 ploughings, 2 spadings, laddering and 2 harrowings. (b) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) 100 mds./ac. of F.Y.M. (vi) *Baldar* (late). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) Middle of December, 1957.

2. TREATMENTS :

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

(1) 2 levels of N as A/S : $N_0=0$ and $N_1=20$ lb./ac.

(2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=20$ lb./ac.

(3) 2 levels of K_2O as Mur. Pot. : $K_0=0$ and $K_1=20$ lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) $33' \times 27'$. (b) $31' \times 25'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1957—1960. (b) Yes. (c) N.A. (v) (a) Chinsurah, Burdwan, Cooch Behar and Hathwara. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 834 lb./ac. (ii) 127.2 lb./ac. (iii) Main effect of P is highly significant, while that of K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	Mean	K_0	K_1
N_0	698	921	810	730	890
N_1	839	879	859	823	895
Mean	768	900	834	776	892
K_0	677	876			
K_1	860	925			

S.E. of any marginal mean = 31.8 lb./ac.

S.E. of body of any table = 45.0 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(31).

Site :- State Agri. Farm, Midnapur.

Type :- 'M'.

Object :- To study the effect of different levels of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Laterite. (b) Refer soil analysis, Midnapore. (iii) 1st week of August, 1958. (iv) (a) 3 to 4 ploughings. (d) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) 100 mds./ac. of F.Y.M. (vi) *Baldar* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings and 2 thinings. (ix) N.A. (x) 1st to 2nd week of December, 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(46) on page 89.

5. RESULTS :

(i) (a) 1342 lb./ac. (ii) 307.5 lb./ac. (iii) Only main effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	1048	1081	1064	1005	1123
N ₁	1580	1658	1619	1478	1760
Mean	1314	1370	1342	1242	1442
K ₀	1179	1304			
K ₁	1448	1435			

S.E. of any marginal mean = 76.9 lb./ac.
 S.E. of body of any table = 108.7 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 59(7).

Site :- State Agri. Farm, Midnapore.

Type :- 'M'.

Object :- To study the effect of N, P and K applied alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Midnapore. (iii) 8.8.1959.
 (iv) (a) 4 to 6 ploughings and harrowings. (b) Line transplanting. (c) 12 to 15 srs./ac. (b) 9" × 9".
 (e) 3. (v) Nil. (vi) *Boder Aman* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x)
 3 to 6.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(46) on page 89.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) Chinsurah,
 Burdwan, Cooch Behar and Hathwara. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1868 lb./ac. (ii) 265.7 lb./ac. (iii) Only N effect is significant. (iv) Av. yield of grain in lb/ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	1622	1880	1751	1616	1886
N ₁	1998	1973	1986	1928	2044
Mean	1810	1927	1868	1772	1965
K ₀	1654	1890			
K ₁	1966	1964			

S.E. of any marginal mean = 66.4 lb./ac.
 S.E. of body of any table = 93.9 lb./ac.

Crop :- Paddy (*Kharif*).

Ref :- W.B. 58(29).

Site :- State Agri. Farm, Midnapore.

Type :- 'M'.

Object :- To study the effect of basic slag, Super and organic matter on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Sandy loam clay. (b) Refer soil analysis, Midnapore. (iii) Middle of August, 1958. (iv) (a) 3 to 4 ploughings and 2 harrowings. (b) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) Nil. (vi) *Balkulamkati* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings and 1 intercultural. (ix) 27.76%. (x) Last week of December, 1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 sources of 40 lb./ac. of P_2O_5 : S_0 =No P_2O_5 , S_1 =Basic slag and S_2 =Super.

(2) 4 types of basal dressing at 2½ tons/ac.: B_0 =No G.M., B_1 =Paddy straw, B_2 =Town compost and B_3 =Water hyacinths.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 38'×22'. (b) 36'×20'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1953—1953. (b) Yes. (c) N.A. (v) (a) No. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 691 lb./ac. (ii) 107.0 lb./ac. (iii) Main effect of B is highly significant and interaction $S \times B$ is significant. (iv) Av yield of grain in lb./ac.

	B_0	B_1	B_2	B_3	Mean
S_0	660	740	776	670	711
S_1	718	798	623	664	701
S_2	666	817	603	556	661
Mean	681	785	657	630	691
S.E. of B marginal mean					= 25.2 lb./ac.
S.E. of S marginal mean					= 21.8 lb./ac.
S.E. of body of table					= 43.7 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 59(6).

Site :- State Agri. Farm, Midnapore.

Type :- 'M'.

Object :- To study the effect of basic slag, Super and organic matter on the yield of Paddy.

1. BASAL CONDITIONS :

i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Midnapore. (iii) 11.6.1959. (iv) (a) 4 to 6 ploughings and harrowings. (b) Line transplanting. (c) 12 to 15 srs./ac. (d) 9'×9'. (e) 3. (v) Nil. (vi) *Balkulamkati*. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 25 to 28.11.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 53,29, on page 91.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) (a) Burdwan. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1535 lb./ac. (ii) 213.1 lb./ac. (iii) Only main effect of B is highly significant. (iv) Av. yield of grain in lb./ac.

	B_0	B_1	B_2	B_3	Mean
S_0	1094	1654	1574	1561	1471
S_1	1534	1630	1709	1501	1594
S_2	1405	1768	1474	1522	1542
Mean	1344	1684	1586	1528	1535

S.E. of B marginal mean	= 51.4 lb./ac.
S.E. of S marginal mean	= 44.5 lb./ac.
S.E. of body of table	= 89.0 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 54(38).

Site :- State Agri. Farm, Sriniketan.

Type :- 'M'.

Object :- To study the residual effect of applying N, P and F.Y.M. alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (b) Refer soil analysis, Sriniketan. (iii) 16.6.1954/22 to 25.7.1954. (iv) (a) 3 to 4 ploughings and harrowing. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Badkalamkati*—65 (early). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 33.04". (x) 14 to 19.11.1954.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=30$ and $N_2=60$ lb./ac.

(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.

Sub-plot treatments :

2 levels of F.Y.M. : $F_0=0$ and $F_1=100$ mds./ac.

No manure applied during the year.

3. DESIGN :

(i) Split-plot. (ii) (a) 9 main-plots/replication and 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 34'×19'. (b) 32'×17'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1948—1955. (b) Yes. (c) N.A. (v) (a) and (b) No. (vi) Nil. (vii) The drought conditions prevailed throughout the crop season and distribution of rain was uneven. Irrigation was done from time to time.

5. RESULTS :

(i) 751 lb./ac. (ii) (a) 375.1 lb./ac. (b) 160.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	709	993	760	821	752	889
N_1	623	823	811	752	760	745
N_2	597	784	657	679	647	711
Mean	643	867	743	751	720	782
F_0	613	853	693			
F_1	673	880	792			

S.E. of difference of two

1. N or P marginal means	= 108.3 lb./ac.
2. F marginal means	= 37.7 lb./ac.
3. F means at the same level of N or P	= 65.3 lb./ac.
4. N or P means at the same level of F	= 117.7 lb./ac.
S.E. of body of $N \times P$ table	= 132.6 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 55(24).

Site :- State Agri. Farm, Sriniketan.

Type :- 'M'.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Laterite. (b) Refer soil analysis, Sriniketan. (iii) 26.6.1955/27.7.1955 to 1.8.1955. (iv) (a) 3 to 4 ploughings and harrowings. (b) Transplanting. (c) N.A. (d) 9'×9'. (e) 2 to 3. (v) Nil. (vi) *Badkalamkati*—65 (early). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 33.41'. (x) 20 to 25.11.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(33) on page 93

5. RESULTS :

(i) 1206 lb./ac. (ii) (a) 289.6 lb./ac. (b) 161.6 lb./ac. (iii) F effect is highly significant and interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	Mean	F ₀	F ₁
N ₀	1103	1223	1410	1245	1124	1366
N ₁	1021	1214	1362	1199	1046	1353
N ₂	1326	1140	1055	1174	1076	1271
Mean	1150	1192	1276	1206	1082	1330
F ₀	1073	1008	1166			
F ₁	1228	1377	1385			

S.E. of difference of two

1. N or P marginal means	= 83.6 lb./ac.
2. F marginal means	= 38.1 lb./ac.
3. F means at the same level of N or P	= 66.0 lb./ac.
4. N or P means at the same level of F	= 95.6 lb./ac.
S.E. of body of N×P table	= 102.4 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 54(17).

Site :- State Agri. Farm, Suri.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S, B.M. and F.Y.M. applied alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Suri. (iii) August, 1954. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) N.A. (d) 9'×9'. (e) 2 to 3. (v) Nil. (vi) *Bhasamanik*, Chinsurah-3 (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 36.84'. (x) December, 1954.

2. TREATMENTS :

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

- (1) 3 levels of N as A/S : N₀=0, N₁=30 and N₂=60 lb./ac.
- (2) 3 levels of P₂O₅ as B.M. : P₀=0, P₁=20 and P₂=40 lb./ac.
- (3) 2 levels of F.Y.M. : F₀=0 and F₁=100 mds./ac.

B.M. and F.Y.M. were applied at the time of general preparation of land and A/S broadcasted 4 weeks after transplantation.

3. DESIGN :

(i) 3×3×2 partially confd. Confounding partially NP and NPF. (ii) (a) 3 blocks/replication ; 6 plots/block. (b) N.A. (iii) 4. (iv) (a) 19'×34'. (b) 17'×32'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. Plants in N_2 plots were lodged. (ii) Slight attack of *heleminthosporium*. (iii) Height of plants and no. of tillers/plant. Grain and straw yield. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) (a) Chinsurah and Berhampore. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2460 lb./ac. (ii) 370.4 lb./ac. (iii) F effect and interaction $F \times N$ are highly significant. N effect is significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	2340	2286	2211	2279	1796	2762
N_1	2417	2443	2824	2561	2227	2895
N_2	2504	2533	2582	2540	2420	2659
Mean	2420	2421	2539	2460	2148	2772
F_0	2047	2162	2236			
F_1	2794	2679	2843			

S.E. of N or P marginal mean	= 75.6 lb./ac.
S.E. of F marginal mean	= 61.8 lb./ac.
S.E. of body of $N \times P$ table	= 140.0 lb./ac.
S.E. of body of $N \times F$ or $P \times F$ table	= 106.9 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(110).

Site :- State Agri. Farm, Suri.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S, B.M. and F.Y.M. applied alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Suri. (iii) August, 1955. (iv) (a) Ploughing. (b) Transplanting. (c) N.A. (d) $9'' \times 9''$. (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) December, 1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(17) on page 94.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948—contd. (b) Yes. (c) Nil. (v) (a) Berhampore and Chinsurah. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2556 lb./ac. (ii) 373.3 lb./ac. (iii) Interaction NF alone is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	F_0	F_1
N_0	2366	2511	2644	2507	2265	2750
N_1	2775	2786	2455	2672	2589	2754
N_2	2469	2479	2521	2490	2567	2414
Mean	2537	2592	2540	2556	2474	2639
F_0	2521	2481	2419			
F_1	2553	2704	2661			

S.E. of N or P marginal mean	= 7 6.2 lb./ac.
S.E. of F marginal mean	= 62.2 lb./ac.
S.E. of body of N×F table	= 141.1 lb./ac.
S.E. of body of N×F or P×F table	= 107.8 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 56(50).

Site :- State Agri. Farm, Suri.

Type :- 'M'.

Object :- To study the effect of continuous application of N, P and lime applied alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Lateritic sandy clay. (b) Refer soil analysis, Suri. (iii) 1st week of July, 1956. (iv) (a) Ploughing and laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) 15th to last week of December, 1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(17) on page 94

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Berhampore. (b) N.A. (vi) Crop effected by flood and storm. (vii) Nil.

5. RESULTS :

(i) 2693 lb./ac. (ii) 267.1 lb./ac. (iii) F effect and interactions N×F and N×P×F are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	Mean	F ₀	F ₁
N ₀	2618	2678	2662	2653	2193	3112
N ₁	2536	2721	2726	2661	2515	2807
N ₂	2618	2792	2888	2766	2714	2818
Mean	2591	2730	2759	2693	2474	2912
F ₀	2364	2483	2575			
F ₁	2817	2978	2942			

S.E. of N or P marginal mean	= 54.5 lb./ac.
S.E. of F marginal mean	= 44.5 lb./ac.
S.E. of body of N×F or P×F table	= 77.1 lb./ac.
S.E. of body of N×P table	= 101.0 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 57(60).

Site :- State Agri. Farm, Suri.

Type :- 'M'.

Object :- To study the effect of continuous application of N, P and F.Y.M. applied alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) As per treatments. (ii) (a) Lateritic sandy loam. (b) Refer soil analysis, Suri. (iii) Middle of August, 1957. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weeding. (ix) N.A. (x) Last week of December, 1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(17) on page 94.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain and straw. (iv) 1948—contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Berhampore. (b) N.A. (vi) Nil. (vii) N.A.

5. RESULTS :

(i) 3019 lb./ac. (ii) 430.4 lb./ac. (iii) Main effect of F is highly significant and main effect of N is significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	Mean	F ₀	F ₁
N ₀	2728	2745	2915	2796	2570	3022
N ₁	3005	3175	3148	3109	2933	3285
N ₂	2962	3275	3218	3152	3103	3200
Mean	2898	3065	3094	3019	2869	3169
F ₀	2800	2917	2890			
F ₁	2997	3213	3297			

S.E. of N or P marginal mean	= 87.9 lb./ac.
S.E. of F marginal mean	= 71.7 lb./ac.
S.E. of body of N×P table	= 162.7 lb./ac.
S.E. of body of N×F or P×F table	= 124.2 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(52)..

Site :- State Agri. Farm, Suri.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S, B.M. and F.Y.M. alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Lateritic sandy loam. (b) Refer soil analysis, Suri. (iii) Last week of July to 1st week of August, 1958. (iv) (a) 2 to 3 ploughings. (b) Transplanted. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) N.A. (viii) 2 weeding. (ix) N.A. (x) Last week of December, 1958.

2. TREATMENTS :

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

(1) 3 levels of N : N₀=0, N₁=30 and N₂=60 lb./ac.

(2) 3 levels of P₂O₅ : P₀=0, P₁=20 and P₂=40 lb./ac.

(3) 2 levels of F.Y.M. : F₀=0 and F₁=100 mds./ac.

N as A/S and P₂O₅ as B.M. B.M. and F.Y.M. were applied at the time of general preparation of land and A/S applied 4 weeks after transplantation.

3. DESIGN :

(i) 3×3×2 fact. partially confd. 4 df. N×P and 4 df. N×P×F have been partially confd. (ii) (a) 6 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 34'×19'. (b) 32'×17'. (v) 1'×1' (vi) Yes.

4. GENERAL:

(i) Good. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Berhampore (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS:

(i) 2228 lb./ac. (ii) 140.7 lb./ac. (iii) All the effects are highly significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	Mean	F ₀	F ₁
N ₀	1756	1981	2342	2026	1781	2271
N ₁	2341	2376	2408	2375	2204	2546
N ₂	2287	2142	2418	2282	2196	2268
Mean	2128	2166	2389	2228	2094	2362
F ₀	1896	2076	2309			
F ₁	2360	2257	2469			

S.E. of N or P marginal mean	= 28.7 lb./ac.
S.E. of F marginal mean	= 23.4 lb./ac.
S.E. of body of N×P table	= 53.2 lb./ac.
S.E. of body of N×F or P×F table	= 40.6 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 59(57).

Site :- State Agri. Farm, Suri.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S, B.M. and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Lateritic sandy loam. (b) Refer soil analysis, Suri, (iii) 13.8.1959. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (CH—3 medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) 16.12.1959 and 17.12.1959.

2. TREATMENTS:

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

(1) 3 levels of N: N₀=0, N₁=30 and N₂=60 lb./ac.

(2) 3 levels of P₂O₅: P₀=0, P₁=20 and P₂=40 lb./ac.

(3) 2 levels of F.Y.M.: F₀=0 and F₁=100 mds./ac.

Date of manuring: B.M.—4.7.1959, F.Y.M.—9.7.1959 and A/S—8.9.1959. B.M. and F.Y.M. were applied at the time of general preparation of land and A/S was applied 4 weeks after transplantation.

3. DESIGN:

(i) 3×3×2 fact. partially confd. in randomised incomplete blocks. (ii) (a) 6 plots/block; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 19'×34'. (b) 17'×32'. (v) 1'×1'. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Slight attack of helminthosporium. Draining out water from the effected plots. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Berhampore. (b) N.A. (vi) Draught and occasional heavy rainfall followed by flood slightly effected the crop. (vii) Nil.

5. RESULTS:

(i) 2588 lb./ac. (ii) 261.0 lb./ac. (iii) Main effects of N and F are highly significant and interactions N×F and N×P×F are significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	Mean	F ₀	F ₁
N ₀	2335	2559	2733	2542	2302	2782
N ₁	2814	2775	2667	2752	2650	2854
N ₂	2472	2320	2615	2469	2385	2553
Mean	2540	2551	2672	2588	2446	2730
F ₀	2384	2370	2583			
F ₁	2696	2732	2761			

S.E. of N or P marginal mean	= 53.2 lb./ac.
S.E. of F marginal mean	= 43.5 lb./ac.
S.E. of body of N×F or P×F table	= 75.3 lb./ac.
S.E. of body of N×P table	= 98.6 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 54(18).

Site :- State Agri. Farm, Suri.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S, B.M. and lime applied alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam, red soil. (b) Refer soil analysis, Suri. (iii) August, 1954. (iv) (a) The field was ploughed 3 to 4 times before transplantation. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (CH 3). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) 36.84". (x) December, 1954.

2. TREATMENTS:

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

(1) 4 levels of N as A/S: N₀=0, N₁=30, N₂=60 and N₃=90 lb./ac.

(2) 3 levels of P₂O₅ as B.M.: P₀=0, P₁=20 and P₂=40 lb./ac.

(3) 3 levels of lime: L₀=0 L₁=4 and L₂=6 cwt./ac.

B.M. is added at the general preparation of land and A/S broadcasted 4 weeks after transplantation. Liming is done once in 4 years at least 6 weeks before transplantation.

3. DESIGN:

(i) 4×3×3 partially confd. confounding interactions P×L and N×P×L. (ii) (a) 3 blocks/replication; 12 plots/block. (b) N.A. (iii) 2. (iv) (a) 34'×19'. (b) 32'×17'. (v) 1'×1'. (vi) Yes.

4. GENERAL:

(i) Good. Plants receiving N₂ and N₃ doses were lodged. (ii) Slight attack of *helminthosporium*. (iii) Height of plants and no. of tillers per plant. Grain and straw yield. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Berhampore. (b) N.A. (vi) Nil. (vii) Some decrease in pH value was observed due to continuous application of A/S but supplementing B.M. and lime restored pH value to a certain extent.

5. RESULTS:

(i) 1661 lb./ac. (ii) 272.8 lb./ac. (iii) Only N and P effects are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	L ₀	L ₁	L ₂
P ₀	1499	1615	1416	1434	1491	1415	1566	1491
P ₁	1683	2036	1602	1602	1730	1841	1560	1790
P ₂	1742	1988	1594	1725	1762	1851	1893	1542
Mean	1641	1880	1537	1586	1661	1702	1673	1608
L ₀	1656	1886	1590	1677				
L ₁	1653	1971	1612	1457				
L ₂	1615	1783	1409	1625				

S.E. of N marginal mean	= 64.3 lb./ac.
S.E. of L or P marginal mean	= 55.7 lb./ac.
S.E. of body of L×P table	= 103.0 lb./ac.
S.E. of body of N×L or N×P table	= 111.4 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 55(111).

Site :- State Agri. Farm, Suri.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S, B.M. and lime applied alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Sandy loam, red soil. (b) Refer soil analysis, Suri. (iii) August, 1955. (iv) (a) N.A. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) December, 1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(N.A.) on page 95.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1948—contd. (b) Yes. (c) Nil. (v) (a) Berhampore and Chinsurah. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2174 lb./ac. (ii) 295.7 lb./ac. (iii) Only N effect is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	L ₀	L ₁	L ₂
P ₀	2025	2316	2151	2193	2171	2274	2125	2115
P ₁	2268	2374	2158	1959	2190	2135	2050	2385
P ₂	2336	2330	2158	1818	2161	2130	2220	2132
Mean	2210	2340	2156	1990	2174	2180	2132	2211
L ₀	2206	2453	2141	1918				
L ₁	2151	2385	2110	1880				
L ₂	2272	2182	2217	2172				

S.E. of N marginal mean	= 69.7 lb./ac.
S.E. of L or P marginal mean	= 60.4 lb./ac.
S.E. of body of L×P table	= 111.8 lb./ac.
S.E. of body of N×L or N×P table	= 120.7 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 56(51).****Site :- State Agri. Farm, Suri.****Type :- 'M'.**

Object :—To study the effect of continuous application of A/S, B.M. and lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Lateritic sandy clay. (b) Refer soil analysis, Suri. (iii) 1st August, 1956. (iv) (a) Ploughing and laddering. (b) Transplanted. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) December, 1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(18) on page 99.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Berhampore. (b) N.A. (vi) Crop suffered due to flood and storm. (vii) N.A.

5. RESULTS :

(i) 2133 lb./ac. (ii) 290.5 lb./ac. (iii) Only P effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	L ₀	L ₁	L ₂
P ₀	1978	1937	2037	1940	1973	2222	1820	1877
P ₁	2020	2177	2139	2273	2152	2142	2083	2232
P ₂	2078	2300	2393	2321	2273	2237	2253	2330
Mean	2025	2138	2190	2178	2133	2200	2052	2416
L ₀	2126	2091	2249	2334				
L ₁	1944	2218	2164	1882				
L ₂	2006	2105	2156	2317				

S.E. of N marginal mean = 68.5 lb./ac.
 S.E. of L or P marginal mean = 59.3 lb./ac.
 S.E. of body of N×P or N×L table = 118.6 lb./ac.
 S.E. of body of L×P table = 109.8 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 57(61).****Site :- State Agri. Farm, Suri.****Type :- 'M'**

Object :—To study the effect of continuous application of A/S, B.M. and lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Lateritic sandy loam. (b) Refer soil analysis, Suri. (iii) August, 1957. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (Chinsurah—3, medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) December, 1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(18) on page 99.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1948— contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Berhampore. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2482 lb./ac. (ii) 351.4 lb./ac. (iii) Main effect of P alone is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	L ₀	L ₁	L ₂
P ₀	1983	2260	2313	2290	2212	2298	2195	2143
P ₁	2413	2833	2647	2567	2615	2575	2712	2558
P ₂	2433	2667	2807	2567	2618	2378	2775	2702
Mean	2276	2587	2589	2475	2482	2417	2561	2468
L ₀	2163	2467	2560	2477				
L ₁	2413	2777	2673	2380				
L ₂	2253	2517	2533	2567				

S.E. of N marginal mean	= 82.8 lb./ac.
S.E. of P or L marginal mean	= 71.7 lb./ac.
S.E. of body of N×P or N×L table	= 143.5 lb./ac.
S.E. of body of P×L table	= 132.8 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 58(53).

Site :- State Agri. Farm, Suri.

Type :- 'M'.

Object :-To study the effect of continuous application of A/S, B.M. and lime alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Lateritic sandy loam. (b) Refer soil analysis, Suri. (iii) 1st week of August, 1958. (iv) (a) 3 to 4 ploughings. (b) Transplanted. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) N.A. (viii) 2 to 3 weedings. (ix) N.A. (x) Last week of December, 1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(18) on page 99.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) 1948—contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Berhampore. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1787 lb./ac. (ii) 220.5 lb./ac. (iii) Main effects of N and P are highly significant. Interaction N×L is significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	L ₀	L ₁	L ₂
P ₀	1310	1743	1740	1757	1638	1751	1572	1590
P ₁	1495	1893	1703	1993	1771	1745	1760	1808
P ₂	1663	2050	2144	1957	1954	2016	1837	2008
Mean	1489	1895	1862	1902	1787	1837	1723	1802
L ₀	1520	1927	1803	2097				
L ₁	1520	1896	1866	1610				
L ₂	1428	1863	1917	2000				

S.E. of N marginal mean	=	52.0 lb./ac.
S.E. of P or L marginal mean	=	45.0 lb./ac.
S.E. of body of N×P or N×L table	=	90.0 lb./ac.
S.E. of body of P×L table	=	83.3 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 59(58).

Site :- State Agri. Farm, Suri.

Type :- 'M'.

Object :- To study the effect of continuous application of A/S, B.M. and lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Lateretic sandy. (b) Refer soil analysis, Suri. (iii) 14.8.1959. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) 25 to 27.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(18) on page 99.

4. GENERAL :

(i) Normal. (ii) Slight attack of yellowing disease during early stage. (iii) Yield of grain and straw. (iv) (a) 1948— contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Berhampore. (b) N.A. (vi) Crop was slightly effected by drought and occasional heavy rainfall. (vii) Nil.

5. RESULTS :

(i) 1784 lb./ac. (ii) 430.0 lb./ac. (iii) Main effects of P and L alone are significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean	L ₀	L ₁	L ₂
P ₀	1627	1727	1456	1462	1568	1300	1715	1689
P ₁	2005	1806	1593	1909	1828	1802	1797	1885
P ₂	1936	2122	1806	1964	1957	2091	2101	1679
Mean	1856	1885	1618	1778	1784	1731	1871	1751
L ₀	1929	1795	1538	1662				
L ₁	1854	2212	1668	1751				
L ₂	1785	1648	1648	1922				

S.E. of N marginal mean	=	101.4 lb./ac.
S.E. of P or L marginal mean	=	87.8 lb./ac.
S.E. of body of N×P or N×L table	=	175.6 lb./ac.
S.E. of body of P×L table	=	162.5 lb./ac.

Crop :- Paddy.

Ref :- W.B. 57(MAE).

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

Type :- 'M'.

Object :- Type II—To study the effect of N, P, K and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./4th week of July, 1957. (iv) (a) 4 ploughings, cross ploughings and puddling. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10"×10". (e) N.A. (v) Nil. (vi) *Nagra* (120 to 150 days). (vii) Unirrigated. (viii) N.A. (ix) 32". (x) 1st and 2nd week of December, 1957.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

- (1) 3 levels of N as A/S : $N_0=0$, $N_1=30$ and $N_2=60$ lb./ac.
 (2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=30$ and $P_2=60$ lb./ac.
 (3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=30$ and $K_2=60$ lb./ac.
 (4) 2 levels of F.Y.M. : $F_0=0$ and $F_1=5000$ lb./ac.

3. DESIGN:

- (i) $3^3 \times 2$ fact. confd. (ii) (a) 9 plots/block and 6 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) $43' \times 22'$. (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

- (i) 2730 lb./ac. (ii) 358.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
F_0	2632	2747	2703	2714	2588	2780	2729	2763	2590	2694
F_1	2686	2771	2841	2858	2850	2591	2773	2733	2792	2766
Mean	2659	2759	2772	2786	2719	2686	2751	2748	2691	2730
K_0	2756	2696	2801	2652	2851	2751				
K_1	2556	2783	2905	2924	2609	2712				
K_2	2664	2799	2610	2781	2697	2595				
P_0	2718	2759	2776							
P_1	2637	1884	2723							
P_2	2622	2634	2817							

S.E. of N, P or K marginal mean	= 84.6 lb./ac.
S.E. of F marginal mean	= 69.1 lb./ac.
S.E. of body of $N \times F$, $P \times F$ or $K \times F$ table	= 119.6 lb./ac.
S.E. of body of $N \times P$, $N \times K$ or $P \times K$ table	= 146.5 lb./ac.

Crop :- Paddy.

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

Ref :- W.B. 58(MAE).

Type :- 'M'.

Object :— Type II—To study the effect of N, P, K and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

- (i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./1st to 3rd week of August, 1959. (iv) (a) 4 ploughings and 1 hoeing. (b) Transplanting. (c) 20 to 30 lb./ac. (d) $10'' \times 10''$. (e) N.A. (v) Nil. (vi) Nagra. (vii) Unirrigated. (viii) 1 weeding. (ix) $37''$. (x) 1st and 2nd week of December, 1958.

2. TREATMENTS :

Same as in expt. no. 57(MAE) type II on page 103.

3. DESIGN :

- (i) $3^3 \times 2$ fact. confd. (ii) (a) 9 plots/block and 6 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) $31.5'' \times 13.5''$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) N.A. (c) Nil. (v) (a) Mankhanda. (b) N.A. (vi) Attack of rats. (vii) Nil.

5. RESULTS :

(i) 2311 lb./ac. (ii) 399.0 lb./ac. (iii) Main effect of N is highly significant. Interaction $N \times K$ and $F \times P$ are significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	1909	2295	2747	2057	2478	2416	2598	2337	2016	2317
F ₁	2025	2263	2628	2430	2145	2339	2290	2348	2276	2305
Mean	1967	2279	2687	2244	2312	2377	2444	2343	2146	2311
K ₀	2241	2398	2693	2505	2429	2398				
K ₁	1859	2096	3074	2159	2369	2500				
K ₂	1802	2343	2293	2067	2137	2234				
F ₀	1935	2280	2516							
P ₁	1985	2232	2718							
P ₂	1981	2324	2826							

S.E. of N, P or K marginal mean = 94.0 lb./ac.
 S.E. of F marginal mean = 76.8 lb./ac.
 S.E. of body of $N \times F$, $P \times F$ or $K \times F$ table = 133.0 lb./ac.
 S.E. of body of $N \times P$, $N \times K$ or $P \times K$ table = 162.9 lb./ac.

Crop :- Paddy.

Ref :- W.B. 59(MAE).

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

Type :- 'M'.

Object :- Type II—To study the effect of N, P, K and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./July to August, 1959. (iv) (a) 4 ploughings and 1 hoeing. (b) Transplanted. (c) 20 to 30 lb./ac. (d) 10" × 12". (e) N.A. (v) Nil. (vi) *Nagra* (4 to 5 months). (vii) Unirrigated. (viii) 1 weeding. (ix) 58". (x) 2nd and 3rd week of December, 1958.

2. TREATMENTS :

Same as in expt. no. 57(MAE) type II on page 103.

3. DESIGN :

(i) 3³ × 2 fact. confd. (ii) (a) 9 plots/block and 6 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 34' × 16'. (b) 32' × 14'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) N.A. (c) Nil. (v) (a) Mankhanda (b) Nil. (vi) Crop flooded due to heavy rains. (vii) Nil.

5. RESULTS :

(i) 2316 lb./ac. (ii) 184.0 lb./ac. (iii) Main effect of N is highly significant. Interaction $N \times K$ is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	2098	2246	2370	2271	2255	2188	2230	2296	2188	2238
F ₁	2374	2246	2560	2397	2397	2388	2390	2444	2348	2394
Mean	2236	2246	2466	2334	2326	2288	2310	2370	2268	23 6
K ₀	2296	2222	2411	2419	2255	2256				
K ₁	2222	2205	2683	2337	2403	2370				
K ₂	2189	2312	2304	2246	2320	2238				
P ₀	2296	2148	2558							
P ₁	2255	2312	2411							
P ₂	2157	2278	2429							

S.E. of N, P or K marginal mean	= 43.4 lb./ac.
S.E. of F marginal mean	= 35.4 lb./ac.
S.E. of body of N×F, P×F or K×F table	= 61.3 lb./ac.
S.E. of body of N×P, N×K or P×K table	= 75.1 lb./ac.

Crop :- Paddy.

Ref :- W.B. 57(MAE).

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

Type :- 'M'.

Object :- Type IV—To study the direct and indirect methods of application of manures to Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Legume. (c) As per treatments. (ii) (a) Clayey. (b) N.A. (iii) N.A./4th week of July, 1957. (iv) (a) 4 ploughings, cross ploughings and puddling. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10'×10'. (e) N.A. (v) Nil. (vi) *Nagra* (120 to 150 days). (vii) Unirrigated. (viii) N.A. (ix) 32". (x) 1st and 2nd week of December, 1957.

2. TREATMENTS :

Main-plot treatments :

4 levels of P₂O₅ to previous legume crop : P₀=No legume and no P₂O₅, P₁=Legume only, P₂=40 lb./ac. to legume and P₃=80 lb./ac. to legume.

Sub-plot treatments :

3 levels of N as A/S : N₀=0, N₁=15 and N₂=30 lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication and 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 31 5'×13.5'. (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 2409 lb./ac. (ii) (a) 192.4 lb./ac. (b) 140.4 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	P ₃	Mean
N ₀	2116	2370	2403	2189	2270
N ₁	2450	2378	2501	2493	2455
N ₂	2511	2584	2419	2493	2502
Mean	2359	2444	2441	2392	2409

S.E. of difference of two

1. P marginal means = 90.7 lb./ac.
2. N marginal means = 57.3 lb./ac.
3. N means at the same level of P = 114.7 lb./ac.
4. P means at the same level of N = 92.2 lb./ac.

Crop :- Paddy.

Ref :- W.B. 58(MAE).

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

Type :- 'M'.

Object :- Type IV—To study the direct and indirect methods of application of manures to Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Legume. (c) As per treatments. (ii) (a) Clayey. (b) N.A. (iii) N.A./1st to 3rd week of August, 1958. (iv) (a) 4 ploughings and 1 hoeing. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10" x 12" (e) N.A. (v) Nil. (vi) *Nagra* (120 to 150 days). (vii) Unirrigated. (viii) 1 weeding. (ix) 37°. (x) 1st and 2nd week of December, 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(MAE) type IV on page 106.

5. RESULTS :

(i) 2220 lb./ac. (ii) (a) 445.5 lb./ac. (b) 223.7 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	P ₃	Mean
N ₀	1767	2027	1788	2163	1936
N ₁	2047	2279	2017	2324	2167
N ₂	2610	2511	2317	2791	2557
Mean	2141	2272	2041	2426	2220

S.E. of difference of two

1. P marginal means = 210.0 lb./ac.
2. N marginal means = 91.3 lb./ac.
3. N means at the same level of P = 182.7 lb./ac.
4. P means at the same level of N = 257.6 lb./ac.

Crop :- Paddy.

Ref :- W.B. 56 (MAE).

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

Type :- 'M'.

Object :- Type V—To study the effect of different sources and times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./12.8.1956. (iv) (a) N.A. (b) Transplanting. (c) 10 to 15 srs./ac. in nursery. (d) $10'' \times 10''$. (e) N.A. (v) Nil. (vi) *Thingasail*. (vii) Unirrigated. (viii) and (ix) N.A. (x) 23.10.1956.

2. TREATMENTS;

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

(1) 2 sources of N : S_1 =Urea and S_2 =A/S.

(2) 7 times of application of N : T_1 =Before planting, T_2 =At planting, T_3 =At tillering, T_4 = $\frac{1}{2}$ before planting and $\frac{1}{2}$ at planting, T_5 = $\frac{1}{2}$ at planting and $\frac{1}{2}$ at tillering, T_6 = $\frac{1}{2}$ before planting, $\frac{1}{2}$ at planting and $\frac{1}{2}$ a week before flowering and T_7 = $\frac{1}{2}$ at planting, $\frac{1}{2}$ at tillering and $\frac{1}{2}$ a week before flowering.

N applied at 30 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) $45' \times 12'$. (b) $43' \times 12'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Un form. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) N.A. (c) Nil. (v) (a) Mankhanda. (b) Nil. (vi) Flood occurred due to spate of *Banka* and *Damodar* rivers but no damage caused. Crop was damaged by wild animals and rats. (vii) Nil.

5. RESULTS :

(i) 2435 lb./ac. (ii) 385.0 lb./ac. (iii) 'Control vs. others' alone is significant. (iv) Av. yield of grain in lb./ac.

Control = 2032 lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
S_1	2253	2817	2461	2436	2509	2522	2306	2472
S_2	2172	2306	2331	2544	2734	2349	2748	2455
Mean	2212	2562	2396	2490	2622	2436	2527	2464

S.E. of S marginal mean = 84.0 lb./ac.

S.E. of T marginal mean = 157.2 lb./ac.

S.E. of body of table or control mean = 222.3 lb./ac.

Crop :- Paddy (*Kharif*).

Ref :- W.B. 57(MAE).

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

Type :- 'M'.

Object :- Type V—To study the effect of different sources and times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./4th week of July, 1957. (iv) (a) 4 ploughings, cross ploughings and puddling. (b) Transplanting. (c) 20 to 30 lb./ac. (d) $10'' \times 10''$. (e) N.A. (v) 20 lb./ac of P_2O_5 . (vi) *Nagra* (120 to 150 days). (vii) Unirrigated. (viii) N.A. (ix) 32". (x) 1st and 2nd week of December, 1957.

2. TREATMENTS :

Same as in exp. no. 56(MAE) type V on page 107.

3. DESIGN :

(i) R B D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) N.A. (b) $31'6'' \times 13'6''$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) N.A. (c) Nil. (v) to (vii) Nil

5. RESULTS :

(i) 2504 lb./ac. (ii) 218.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2318 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	2326	2600	2539	2396	2432	2529	2476	2471
S ₂	2423	2476	2631	2472	2446	2599	2867	2562
Mean	2374	2538	2595	2434	2439	2564	2672	2517

S.E. of S marginal mean = 47.6 lb./ac.

S.E. of T marginal mean = 89.1 lb./ac.

S.E. of body of table or control mean = 126.0 lb./ac.

Crop :- Paddy.

Ref :- W.B. 58(MAE).

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

Type :- 'M'.

Object :— Type V—To study the effect of different sources and times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./1st to 3rd week of August, 1958. (iv) (a) 4 ploughings and 1 hoeing. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10" × 10". (e) N.A. (v) Nil. (vi) *Nagra* (120 to 150 days). (vii) Unirrigated. (viii) 1 weeding. (ix) 37". (x) 1st and 2nd week of December, 1958.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type V on page 107.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/102.4 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) N.A. (c) Nil. (v) (a) Mankhanda. (b) Nil. (vi) Attack of rats. (vii) Nil.

5. RESULTS :

(i) 2153 lb./ac. (ii) 698.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2034 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	2246	2223	1786	2355	2168	2280	2191	2178
S ₂	2223	2065	1997	2328	1874	2191	2345	2146
Mean	2234	2144	1892	2342	2021	2235	2268	2162

S.E. of S marginal mean = 152.4 lb./ac.

S.E. of T marginal mean = 285.2 lb./ac.

S.E. of body of table or control mean = 403.3 lb./ac.

Crop :- Paddy.**Ref :- W.B. 59(MAE).****Site :- M.A.E. Farm, Burdwan.****Type :- 'M'.**

Object :— Type V—To study the effect of different sources and times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./July and August, 1959. (iv) (a) 4 ploughings and 1 hoeing. (b) Transplanted. (c) 20 to 30 lb./ac. (d) 10" × 12". (e) N.A. (v) 20 lb./ac. of P₂O₅ as Super. (vi) *Nagra* (4 to 5 months). (vii) Unirrigated. (viii) 1 weeding. (ix) 58". (x) 2nd and 3rd week of December, 1959.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type V on page 107.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) 33' × 15.5'. (b) 31' × 14.5'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) N.A. (c) Nil. (v) (a) Mankhanda. (b) Nil. (vi) In late September all the plots were flooded due to heavy rains and flood in the river *Banka*. There were constant heavy rains in the 1st fortnight of October, 1959. On 27th and 29th October there was cyclonic weather causing damage to the crop just after flowering. Fertilizer application before flowering was delayed since there was standing water. (vii) Nil.

5. RESULTS :

(i) 2298 lb./ac. (ii) 219.7 lb./ac. (iii) Main effect of T and 'control vs. others' are significant. (iv) Av. yield of grain in lb./ac.

Control = 1989 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	2543	2362	2238	2567	2320	2296	2255	2369
S ₂	2510	2526	2082	2082	2279	2460	1967	2272
Mean	2526	2444	2160	2324	2299	2378	2111	2320

S.E. of S marginal mean = 47.9 lb./ac.
 S.E. of T marginal mean = 89.7 lb./ac.
 S.E. of body of table or control mean = 126.8 lb./ac.

Crop :- Paddy.**Ref :- W B. 56(MAE).****Site :- M.A.E. Farm, Burdwan.****Type :- 'M'.**

Object :— Type VI—To determine the source and method of placement of P for Paddy.

1. BASAL CONDITIONS

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./21.8.1956. (iv) (a) N.A. (b) Transplanting. (c) 10 to 15 srs./ac. in nursery. (d) 10" × 10". (e) N.A. (v) Nil. (vi) *Nagra*. (vii) Unirrigated. (viii) and (ix) N.A. (x) 14.12.1956.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control in each block

(1) 3 sources of P₂O₅ : S₁=A P, S₂=Super and S₃=Dical. Phos.(2) 2 levels of P₂O₅ : P₁=20 and P₂=40 lb./ac.(3) 3 methods of application of P₂O₅ : M₁=Broadcast at puddling, M₂=Dipping the seedlings in mud-slush mixed with fertilizers before transplanting and M₃=Placed in the form of pellets near the roots of plants at planting.

3. DESIGN:

- (i) $3^2 \times 2 + 3$ fact. confd. (ii) (a) 3 blocks/replication ; 7 plots/block including one control plot. (b) N.A. (iii) 4. (iv) (a) $45' \times 12'$. (b) $43' \times 10'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL:

- (i) Uniform. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) N.A. (c) Nil. (v) (a) Mankhanda. (b) Nil. (vi) Minor damage caused by rats. (vii) $S \times M$ table is not adjusted for block effects.

5. RESULTS :

- (i) 2175 lb./ac. (ii) 255.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	S ₃	Mean	M ₁	M ₂	M ₃
P ₁	2167	2157	2130	2151	2100	2099	2254
P ₂	2247	2231	2120	2199	2196	2069	2331
Mean	2205	2194	2125	2175	2148	2084	2292
M ₁	2159	2204	2041				
M ₂	2147	2048	2058				
M ₃	2270	2330	2277				

S.E. of S or M marginal mean	= 52.2 lb./ac.
S.E. of P marginal mean	= 42.6 lb./ac.
S.E. of body of $S \times P$ or $M \times P$ table	= 73.8 lb./ac.
S.E. of body of $S \times M$ table	= 90.3 lb./ac.

Crop :- Paddy.

Ref :- W.B. 57(MAE).

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

Type :- 'M'.

Object :- Type VI—To determine the source and method of placement of P for Paddy.

1. BASAL CONDITIONS :

- (i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./4th week of July, 1957. (iv) (a) 4 ploughings, cross ploughings and puddling. (b) Transplanting. (c) 20 to 30 lb./ac. (d) $10'' \times 10''$. (e) N.A. (v) Nil. (vi) Nagra (120 to 150 days). (vii) Unirrigated. (viii) N.A. (ix) 32". (x) 1st and 2nd week of December, 1957.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type VI on page 110.

3. DESIGN :

- (i) $3^2 \times 2 + 3$ fact. confd. (ii) (a) 3 blocks/replication ; 7 plots/block including one control plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) $31.5' \times 13.5'$. (v) N.A. (vi) Yes.

4. GENERAL :

- (i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) N.A. (c) Nil. (v) (a) Mankhanda. (b) Nil. (vi) Slight attack of rats. (vii) Means in the body of $S \times M$ table are adjusted for block effects.

5. RESULTS :

- (i) 2327 lb./ac. (ii) 263.8 lb./ac. (iii) 'Control vs. others' alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 2098 lb./ac.

	S ₁	S ₂	S ₃	Mean	M ₁	M ₂	M ₃
P ₁	2287	2328	2463	2359	2432	2357	2288
P ₂	2337	2388	2389	2371	2310	2377	2428
Mean	2312	2358	2426	2365	2371	2367	2358
M ₁	2386	2366	2362				
M ₂	2337	2255	2510				
M ₃	2213	2452	2407				

S.E. of S or M marginal mean = 53.8 lb./ac.
 S.E. of P marginal mean = 44.0 lb./ac.
 S.E. of body of S × P or M × P table = 76.2 lb./ac.
 S.E. of body of M × S table = 99.7 lb./ac.

Crop :- Paddy.**Ref :- W.B. 58(MAE).****Site :- M.A.E. Farm, Burdwan.****Type :- 'M'.**

Object :- Type VI—To determine the source and method of placement of P for Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./1st to 3rd week of August, 1958. (iv) (a) 4 ploughings and 1 hoeing. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10" × 10". (e) N.A. (v) Nil. (vi) *Nagra* (120 to 150 days). (vii) Unirrigated. (viii) 1 weeding. (ix) 37". (x) 1st and 2nd week of December, 1958.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type VI on page 110.

3. DESIGN :

(i) 3² × 2 + 3 fact. confd. (ii) (a) 3 blocks/replication ; 7 plcts/block including one control plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/102.4 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) N.A. (c) Nil. (v) (a) Mankhanda. (b) Nil. (vi) Attack of rats. (vii) S × M table is not adjusted for block effects.

5. RESULTS :

(i) 1984 lb./ac. (ii) 191.2 lb./ac. (iii) 'Control vs. others' alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1712 lb./ac.

	S ₁	S ₂	S ₃	Mean	M ₁	M ₂	M ₃
P ₁	2050	2037	1951	2013	2003	2031	2004
P ₂	2068	2043	2023	2045	2071	2060	2004
Mean	2059	2040	1987	2029	2037	2046	2004
M ₁	2090	2001	2020				
M ₂	2063	2070	2004				
M ₃	2024	2049	1938				

S.E. of S or M marginal mean	= 39.0 lb./ac.
S.E. of P marginal mean	= 31.9 lb./ac.
S.E. of body of S×P or M×P table	= 55.2 lb./ac.
S.E. of body of S×M table	= 67.6 lb./ac.

Crop :- Paddy.

Ref :- W.B. 59(MAE).

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

Type :- 'M'.

Object :— Type VI—To determine the source and method of placement of P for Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./July—August., 1959. (iv) (a) 4 ploughings and 1 hoeing. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10"×12". (e) N.A. (v) Nil. (vi) *Nagra* (4 to 5 months). (vii) Unirrigated. (viii) 1 weeding. (ix) 58". (x) 2nd and 3rd week of December, 1959.

2. TREATMENTS :

All combinations of (1), (2) and (3) + a control

(1) 2 sources of P_2O_5 : $S_1=A/P$ and $S_2=Super$.

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

(3) 3 methods of application of P_2O_5 : $M_1=Broadcast$ at puddling, $M_2=Dipping$ seedlings in mud-slush mixed with fertilizers and $M_3=Placed$ as pellets near the roots of plants at planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 3. (iv) (a) 33'×16.5'. (b) 31'×14.5'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) N.A. (c) Nil. (v) (a) Mankhanda. (b) Nil. (vi) Crop flooded due to heavy rains. (vi) Nil.

5. RESULTS :

(i) 2200 lb./ac. (ii) 183.6 lb./ac. (iii) Interaction S×P alone is significant. (iv) Av. yield of grain in lb./ac.

Control = 2065 lb./ac.

	M_1	M_2	M_3	Mean	S_1	S_2
P_1	2246	2205	2238	2230	2255	2205
P_2	2074	2296	2205	2192	2057	2326
Mean	2160	2250	2222	2211	2156	2266
S_1	2155	2197	2115			
S_2	2165	2303	2330			

S.E. of S or P marginal mean	= 43.3 lb./ac.
S.E. of M marginal mean	= 53.0 lb./ac.
S.E. of body of S×M or P×M table	= 75.0 lb./ac.
S.E. of body of S×P table	= 61.2 lb./ac.

Crop :- Paddy.

Ref :- W.B. 56(MAE).

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

Type :- 'M'.

Object :— Type VI (TCM)—To study the direct, residual and cumulative effect of P on the yield of Paddy.

I. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./1.8.1956. (iv) (a) N.A. (b) Transplanting. (c) 10 to 15 srs./ac. in nursery. (d) $10'' \times 10''$. (e) N.A. (v) Nil. (vi) *Nagra*. (vii) Unirrigated. (viii) and (ix) N.A. (x) 5.12.1956.

2. TREATMENTS :

	1	2	3	4	5	6	7	8	9	10	11	12
1st year	o	c	c	c	c	c	c	P ₁	P ₂	P _½	P ₁	P ₂
2nd year	o	c	c	P ₁	P ₂	c	c	c	c	P _½	P ₁	P ₂
3rd year	o	c	c	c	c	P ₁	P ₂	c	c	P _½	P ₁	P ₂

Plots under treatments 1 do not receive any manure. Plots under treatments 2 to 12 receive a basal application. (c) of 20 lb./ac. of N as A/S. $p_{½} = 10$, $p_1 = 20$ and $p_2 = 40$ lb./ac. of P_2O_5 .

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) $45' \times 24'$. (b) $43' \times 22'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Uniform. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (1st year). (b) Yes. (c) Nil. (v) (a) Mankhanda. (b) Nil. (vi) Crop damaged by wild animals and rats. (vii) Nil.

5. RESULTS :

(i) 2463 lb./ac. (ii) 371.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Treatment	o	c	P _½	P ₁	P ₂
Av. yield	2282	2488	2604	2375	2497

S.E. of o or P_½ mean = 185.6 lb./ac. ; S.E. of P₁ or P₂ mean = 131.2 lb./ac.

S.E. of c mean = 75.8 lb./ac.

Crop :- Paddy.

Ref :- W.B. 57(MAE).

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

Type :- 'M'.

Object :- Type VI (TCM)—To study the direct, residual and cumulative effect of P on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) N.A./4th week of July, 1957. (iv) (a) 4 ploughings, cross ploughings and puddling. (b) Transplanting. (c) 20 to 30 lb./ac. (d) $10'' \times 10''$. (e) N.A. (v) Nil. (vi) *Nagra*. (vii) Unirrigated (viii) N.A. (ix) $32''$. (x) 1st and 2nd week of December, 1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(MAE) type VI (TCM) on page 113.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (2nd year). (b) Yes. (c) Nil. (v) (a) Mankhanda. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2474 lb./ac. (ii) 213.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	(2,3,6,7)	4	5	8	9	10	11	12
Av. yield	2303	2550	2342	2579	2526	2255	2439	2471	2576

S.E./mean except (2,3,6,7) = 106.5 lb./ac. and S.E. of (2,3,6,7) mean = 53.2 lb./ac.

Crop :- Paddy.**Ref :- W.B. 58(MAE).****Site :- M.A.E. Farm, Mankhanda.****Type :- 'M'.**

Object :— Type II—To study the effect of N, P, K and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./4th week of August, 1958. (iv) (a) 4 ploughings. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10"×12". (e) N.A. (v) Nil. (vi) *Kalan kathi* (120 to 150 days). (vii) Unirrigated. (viii) 1 weeding. (ix) 40". (x) 2nd week of December, 1958.

2. TREATMENTS :

Same as in expt. no. 57(MAE) type II conducted at Burdwan on page 103.

3. DESIGN :

(i) 3³×2 fact. confd. (ii) (a) 9 plots/block ; 6 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) N.A. (c) Nil. (v) (a) Burdwan. (b) Nil. (vi) Over flooding due to heavy rains. (vii) Nil.

5. RESULTS :

(i) 2316 lb./ac. (ii) 278.0 lb./ac. (iii) Main effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	1808	2506	2573	2061	2380	2446	2107	2500	2280	2296
F ₁	1755	2553	2699	2101	2300	2606	2367	2327	2313	2336
Mean	1782	2529	2636	2081	2340	2526	2237	2413	2297	2316
K ₀	1755	2423	2533	1885	2234	2593				
K ₁	1915	2692	2632	2254	2373	2612				
K ₂	1675	2473	2742	2104	2413	2373				
P ₀	1636	2204	2403							
P ₁	1715	2652	2652							
P ₂	1994	2732	2852							

S.E. of N, P or K marginal mean = 65.5 lb./ac.

S.E. of F marginal mean = 53.5 lb./ac.

S.E. of body of N×F, P×F or K×F table = 92.7 lb./ac.

S.E. of body of N×P, N×K or P×K table = 113.5 lb./ac.

Crop :- Paddy.**Ref :- W.B. 59(MAE).****Site :- M.A.E. Farm, Mankhanda.****Type :- 'M'.**

Object :—Type II—To study the effect of N, P, K and F.Y.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./2nd and 3rd week of August, 1959. (iv) (a) 3 ploughings. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10"×12". (e) N.A. (v) Nil. (vi) *Basmati* (4 to 4½ months). (vii) Unirrigated. (viii) Nil. (ix) 58". (x) November and December, 1959.

2. TREATMENTS :

Same as in expt. no. 57(MAE) type II conducted at Burdwan on page 103.

3. DESIGN :

(i) $3^3 \times 2$ fact. confd. (ii) (a) 9 plots/block ; 6 blocks/replication. (b) N.A. (iii) 1. (iv) (a) $30' \times 18'$. (b) $26' \times 16'$. (v) $2' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Normal. Crop lodged. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) N.A. (c) Nil. (v) (a) Burdwan. (b) N.A. (vi) Crop flooded due to heavy rains. (vii) Nil.

5. RESULTS :

(i) 1346 lb./ac. (ii) 137.9 lb./ac. (iii) Main effects of N, P and interaction $P \times K$ are highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	P ₀	P ₁	P ₂	K ₀	K ₁	K ₂	Mean
F ₀	790	1366	1572	996	1349	1384	1193	1284	1252	1243
F ₁	998	1564	1786	1264	1487	1595	1495	1443	1408	1449
Mean	894	1465	1679	1130	1418	1489	1344	1363	1330	1346
K ₀	1012	1391	1629	1037	1498	1497				
K ₁	848	1547	1695	1275	1283	1531				
K ₂	823	1456	1712	1078	1473	1439				
P ₀	790	1234	1367							
P ₁	913	1555	1786							
P ₂	979	1606	1883							

S.E. of N, P or K marginal mean = 32.5 lb./ac.
 S.E. of F marginal mean = 26.5 lb./ac.
 S.E. of body of $N \times F$, $P \times F$ or $K \times F$ table = 46.0 lb./ac.
 S.E. of body of $N \times P$, $N \times K$ or $P \times K$ table = 56.3 lb./ac.

Crop :- Paddy.

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

Ref :- W.B. 57(MAE).

Type :- 'M'.

Object :- Type IV—To study the direct and indirect methods of application of manures on Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Dhaincha* (G.M.). (c) As per treatments. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./August and September, 1957. (iv) (a) 4 ploughings. (b) Transplanting. (c) 20 to 30 lb./ac. (d) $10'' \times 12''$. (e) N.A. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) 1 weeding. (ix) 17". (x) November and December, 1957.

2. TREATMENTS :

Same as in expt. no. 57 (MAE) type IV conducted at Burdwan on page 106.
Dhaincha used as legume was ploughed in 2 months before planting.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/80 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) CuSO_4 was broadcast to check the weeds. (iii) Grain yield. (iv) (a) 1957—contd. (b) N.A. (c) Nil. (v) (a) Burdwan. (b) Nil. (vi) Crop suffered due to draught conditions. (vii) Nil.

5. RESULTS :

(i) 271 lb./ac. (ii) (a) 175.7 lb./ac. (b) 151.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	P ₃	Mean
N ₀	171	156	247	239	203
N ₁	264	263	304	362	298
N ₂	196	239	346	469	312
Mean	210	219	299	357	271

S.E. of difference of two

1. P marginal means = 82.8 lb./ac.
2. N marginal means = 43.8 lb./ac.
3. N means at the same level of P = 123.8 lb./ac.
4. P means at the same level of N = 130.7 lb./ac.

Crop :- Paddy.**Ref :- W.B. 58(MAE).****Site :- M.A.E. Farm, Mankhanda.****Type :- 'M'.**

Object :- Type IV—To study the direct and indirect methods of applications of manures to Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Legume. (c) As per treatments. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./4th week of August, 1958. (iv) (a) 4 ploughings. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10"×12". (e) N.A. (v) Nil. (vi) *Kalankathi* (120 to 150 days). (vii) Unirrigated. (viii) 1 weeding. (ix) 40". (x) 2nd week of December, 1958.

2. TREATMENTS :

Same as in expt. no. 57(MAE) type IV conducted at Burdwan on page 106.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 26'×14'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) N.A. (c) Nil. (v) (a) Burdwan. (b) Nil. (vi) Over flooding due to heavy rains. (vii) Nil.

5. RESULTS :

(i) 2463 lb./ac. (ii) (a) 185.5 lb./ac. (b) 438.3 lb./ac. (iii) Main effect of N is highly significant. Main effect of P is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	P ₃	Mean
N ₀	1875	1795	2154	2034	1964
N ₁	2593	2832	2474	2792	2673
N ₂	2433	2154	3270	3151	2752
Mean	2300	2260	2633	2659	2463

S.E. of difference of two

1. P marginal means = 87.4 lb./ac.
2. N marginal means = 126.5 lb./ac.
3. N means at the same level of P = 357.9 lb./ac.
4. P means at the same level of N = 305.0 lb./ac.

Crop :- Paddy (Kharif).**Ref :- W.B. 56(MAE).****Site :- M.A.E. Farm, Mankhanda.****Type :- 'M'.**

Object :—Type IV—To study the effect of different sources and times of application of N on Paddy.

1. BASAL CONDITIONS :(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./2 and 3.8.1956. (iv) (a) N.A. (b) Transplanting. (c) 8 to 10 srs./ac. (d) 10" to 12" between plants and rows. (e) N.A. (v) Nil. (vi) *Patina* (4 months). (vii) Unirrigated. (viii) and (ix) N.A. (x) 17.12.1956.**2. TREATMENTS :**Same as in expt. no. 56(MAE) type V conducted at Burdwan on page 107.
N applied at 40 lb./ac.**3. DESIGN :**

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) 35'×20'. (b) 33'×18'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. The entire crop lodged due to heavy rains and high velocity of winds. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) N.A. (c) Nil. (v) (a) Burdwan. (b) Nil. (vi) Crop damaged by cyclone. (vii) Nil.

5. RESULTS :

(i) 2014 lb./ac. (ii) 269.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2107 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	1703	1777	2181	1991	2156	1703	2090	1943
S ₂	2156	1942	1934	1991	2156	2304	2008	2070
Mean	1930	1859	2058	1991	2156	2003	2049	2007

S.E. of S marginal mean = 58.8 lb./ac.

S.E. of T marginal mean = 110.1 lb./ac.

S.E. of body of table or control mean = 155.7 lb./ac.

Crop :- Paddy.**Ref :- W.B. 57(MAE).****Site :- M.A.E. Farm, Mankhanda.****Type :- 'M'.**

Object :— Type V—To study the effect of different sources and times of application of N on Paddy.

1. BASAL CONDITIONS :(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./August and September, 1957. (iv) (a) 4 ploughings. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10"×12". (e) N.A. (v) 20 lb./ac. of P₂O₅. (vi) N.A. (vii) Unirrigated. (viii) 1 weeding. (ix) 17". (x) November and December, 1957.**2. TREATMENTS :**Same as in expt. no. 56(MAE) type V conducted at Burdwan on page 107.
N applied at 40 lb./ac.**3. DESIGN :**

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 34'×16'. (v) N.A. (vi) Yes.

4. GENERAL :(i) Poor. (ii) CuSO₄ broadcast to check the weeds. (iii) Grain yield. (iv) (a) 1956—contd. (b) N.A. (c) Nil. (v) (a) Burdwan. (b) Nil. (vi) Crop suffered due to draught conditions. (vii) Nil.

5. RESULTS :

(i) 522 lb./ac. (ii) 208.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 439 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	403	387	609	584	453	411	584	490
S ₂	617	667	617	428	436	535	667	567
Mean	510	527	613	506	444	473	626	528

S.E. of T marginal mean = 85.2 lb./ac.

S.E. of S marginal mean = 45.5 lb./ac.

S.E. of body of table or control mean = 120.4 lb./ac.

Crop :- Paddy.

Ref :- W.B. 58(MAE).

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

Type :- 'M'.

Object :- Type V—To study the effect of different sources and times of application of N on Paddy.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./4th week of August, 1958. (iv) (a) 4 ploughings. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10" × 12". (e) N.A. (v) Nil. (vi) *Kalankathi* (120 to 150 days). (vii) Unirrigated. (viii) 1 weeding. (ix) 40". (x) 2nd week of December, 1958.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type V conducted at Burdwan on page 107.
N applied at 40 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/120 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) N.A. (c) Nil. (v) (a) Burdwan. (b) Nil. (vi) Over flooding due to heavy rains. (vii) N.A.

5. RESULTS :

(i) 1868 lb./ac. (ii) 283.5 lb./ac. (iii) Main effect of S and 'control vs. others' are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1396 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	1675	1675	1875	1715	2034	1715	1675	1766
S ₂	2034	2393	1835	1915	2274	1875	1935	2037
Mean	1854	2034	1855	1815	2154	1795	1805	1902

S.E. of S marginal mean = 61.9 lb./ac.

S.E. of T marginal mean = 115.7 lb./ac.

S.E. of body of table or control mean = 163.7 lb./ac.

Crop :- Paddy.**Ref :- W.B. 59(MAE).****Site :- M.A.E. Farm, Mankhanda.****Type :- 'M'.**

Object :— Type V—To study the effect of different sources and times of application of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./2nd and 3rd week of August, 1959. (iv) (a) 3 ploughings. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10" × 12". (e) N.A. (v) 20 lb./ac. of P₂O₅ as Super. (vi) N.A. (vii) Unirrigated. (viii) Nil. (ix) 58". (x) November—December, 1959.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type V conducted at Burdwan on page 107.
N applied at 40 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) 30' × 18'. (b) 26' × 16'. (v) 2' × 1'. (vi) Yes.

4. GENERAL :

(i) Normal. Crop lodged. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) N.A. (c) Nil. (v) (a) Burdwan. (b) Nil. (vi) In September due to heavy rains and high tide in the river Hoogly the entire area was flooded but the crop was not submerged. (vii) Nil.

5. RESULTS :

(i) 917 lb./ac. (ii) 132.2 lb./ac. (iii) Main effects of T, S and 'control vs. others' are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 477 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	971	938	699	954	790	823	872	864
S ₂	1086	1119	691	1119	1070	1053	1094	1033
Mean	1028	1028	695	1036	930	938	983	948

S.E. of S marginal mean = 28.8 lb./ac.

S.E. of T marginal mean = 54.0 lb./ac.

S.E. of body of table or control mean = 76.3 lb./ac.

Crop :- Paddy.**Ref :- W.B. 56(MAE).****Site :- M.A.E. Farm, Mankhanda.****Type :- 'M'.**

Object :— Type VI—To determine the source and method of placement of P for Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./1 and 2.8.1956. (iv) (a) N.A. (b) Transplanting. (c) 8 to 10 srs./ac. (d) 10" to 12" between rows and plants. (e) N.A. (v) Nil. (vi) Patnai (4 months). (vii) Unirrigated. (viii) and (ix) N.A. (x) 17.12.1956.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type VI conducted at Burdwan on page 110.

3. DESIGN :

(i) 3² × 2 + 3 fact. confd. (ii) (a) 3 blocks/replication ; 7 plots/block including one control plot. (b) N.A. (iii) 4. (iv) (a) 35' × 20'. (b) 33' × 18'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Good. The entire crop lodged due to heavy rains and high velocity of wind. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) N.A. (v) (a) Burdwan. (b) Nil. (vi) Crop damaged due to cyclone. (vii) Means in S × M table are adjusted for block effects. Control plot was dropped from analysis.

5. RESULTS :

- (i) 2211 lb./ac. (ii) 168.2 lb./ac. (iii) Main effects of S, P, M and interaction $S \times M$ are highly significant.
 (iv) Av. yield of grain in lb./ac.

	S ₁	S ₂	S ₃	Mean	M ₁	M ₂	M ₃
P ₁	2252	2199	1860	2104	1920	2056	2336
P ₂	2432	2359	2164	2318	2220	2182	2551
Mean	2342	2279	2012	2211	2070	2119	2443
M ₁	2390	2106	1715				
M ₂	2305	2160	1893				
M ₃	2332	2571	2427				

S.E. of S or M marginal mean	= 34.3 lb./ac.
S.E. of P marginal mean	= 28.0 lb./ac.
S.E. of body of $S \times P$ or $M \times P$ table	= 48.6 lb./ac.
S.E. of body of $S \times M$ table	= 63.6 lb./ac.

Crop :- Paddy.

Ref :- W.B. 59(MAE).

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

Type :- 'M'.

Object :- Type VI—To determine the source and method of placement of P for Paddy.

1. BASAL CONDITIONS :

- (i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./2nd and 3rd week of August, 1959. (iv) (a) 3 ploughings. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10" × 12". (e) N.A. (v) Nil (vi) *Basmati* (4 to 4½ months). (vii) Unirrigated. (viii) Nil. (ix) 58". (x) November and December, 1959.

2. TREATMENTS :

Same as in expt. no. 59 (MAE) type VI conducted at Burdwan on page 113.

3. DESIGN :

- (i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 3. (iv) (a) 33' × 16.5'. (b) 29' × 14.5'. (v) 2' × 1'. (vi) Yes.

4. GENERAL :

- (i) Normal. Crop lodged. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) N.A. (v) (a) Burdwan. (b) N.A. (vi) Crop flooded due to heavy rains. (vii) There was water logging in the experimental area.

5. RESULTS :

- (i) 877 lb./ac. (ii) 128.0 lb./ac. (iii) 'Control vs. others' is highly significant. Main effects of S and P are significant. (iv) Av. yield of grain in lb./ac.

Control = 272 lb./ac.

	M ₁	M ₂	M ₃	Mean	S ₁	S ₂
P ₁	1037	839	1070	982	1037	927
P ₂	871	873	872	872	915	829
Mean	954	856	971	927	976	878
S ₁	1020	922	987			
S ₂	889	790	955			

S.E. of S or P marginal mean	= 30.2 lb./ac.
S.E. of M marginal mean	= 37.0 lb./ac.
S.E. of body of S × M or P × M table	= 52.3 lb./ac.
S.E. of body of S × P table	= 42.7 lb./ac.

Crop :- Paddy.

Ref :- W.B. 56(MAE).

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

Type :- 'M'.

Object :—Type VI (TCM)—To study the direct, residual and cumulative effect of P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./4.8.1956. (iv) (a) N.A. (b) Transplanting. (c) 8 to 10 srs./ac. (d) 10" × 12" between rows and plants. (e) N.A. (v) Nil. (vi) *Patnai* (4 months). (vii) Unirrigated. (viii) and (ix) N.A. (x) 23.12.1956.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type VI (TCM) conducted at Burdwan on page 113.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 35' × 20'. (b) 33' × 18'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Good. The entire crop was partially lodged due to heavy rains and high velocity of winds. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (1st year). (b) Yes. (c) Nil. (v) (a) Burdwan. (b) Nil. (vi) Crop damaged due to cyclone. (vii) Nil.

5. RESULTS :

(i) 1654 lb./ac. (ii) 244.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	o	c	p ₁	p ₁	p ₂
Av. yield	1449	1576	1852	1883	1665

S.E. for o or p₁ mean = 122.0 lb./ac., S.E. for p₁ or p₂ mean = 86.3 lb./ac.
S.E. for c mean = 49.8 lb./ac.

Crop :- Paddy.

Ref :- W.B. 57(MAE).

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

Type :- 'M'.

Object :—Type VI (TCM)—To study the direct, residual and cumulative effect of P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./August and September, 1957. (iv) (a) 4 ploughings. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10" to 12". (e) N.A. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) 1 weeding. (ix) 17". (x) November and December, 1957.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type VI (TCM) conducted at Burdwan on page 113.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 34' × 16'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) CuSO₄ broadcast to check the weeds. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) Burdwan. (b) N.A. (vi) Crop suffered due to draught conditions. (vii) Nil.

5. RESULTS :

(i) 837 lb./ac. (ii) 232.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	(2,3,6,7)	4	5	8	9	10	11	12
Av. yield	699	872	889	848	954	708	782	790	889

S.E. of mean except (2,3,6,7) = 134.2 lb./ac. and S.E. of (2,3,6,7) mean = 67.1 lb./ac.

Crop :- Paddy.

Ref :- W.B. 59(MAE).

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

Type :- 'M'.

Object :- Type VI (TCM)—To study the direct, residual and cumulative effect of P on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./2nd and 3rd week of August, 1959. (iv) (a) 3 ploughings. (b) Transplanting. (c) 20 to 30 lb./ac. (d) 10"×12". (e) N.A. (v) Nil. (vi) *Basmati* (4 to 4½ months). (vii) Unirrigated. (viii) Nil. (ix) 58". (x) November and December, 1959.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type VI (TCM) conducted at Burdwan on page 113.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 30'×18'. (b) 26'×18'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. Crop lodged. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—contd. (new series). (b) and (c) Yes. (v) (a) Burdwan. (b) N.A. (vi) Crop flooded due to heavy rains. (vii) Nil.

5. RESULTS :

(i) 986 lb./ac. (ii) 196.8 lb./ac. (iii) Treatment differences and 'control vs. others' are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	o	c	P ₁	P ₁	P ₂
Av. yield	691	889	1136	1136	1201

S.E. of o or P₁ mean = 98.4 lb./ac. ; S.E. of P₁ or P₂ mean = 69.6 lb./ac.

S.E. of c mean = 40.2 lb./ac.

Crop :- Paddy (Kharif).

Ref :- W.B. 54(TCM).

Centre :- Burdwan.

Type :- 'M'.

Object :- Type I (a)—To study the effect of P and different sources and levels of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Recent alluvium—clayey. (b) N.A. (iii) N.A./12.8.1954. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Kalma*. (vii) Irrigated. (viii) and (ix) N.A. (x) 16.12.1954.

2. TREATMENTS :

All combinations of (1), (2) and (3)+3 extra treatments

(1) 3 levels of N : N₀=0, N₁=20 and N₂=40 lb./ac.

(2) 3 sources of N : S₁=A/S, S₂=A/N and S₃=Urea.

(3) 3 levels of P₂O₅ as triple Super : P₀=0, P₁=20 and P₂=40 lb./ac.

Extra treatments : E₁=60 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super, E₂=40 lb./ac. of N as A/S+80 lb./ac. of P₂O₅ as Super and E₃=60 lb./ac. of N as A/S+80 lb./ac. of P₂O₅ as Super.

Fertilizers applied before puddling.

3. DESIGN :

(i) 3³ confd. with 3 extra plots/block. (ii) (a) 12 plots/block ; 3 blocks/replication. (b) N.A. (iii) 1: (iv) (a) 24' × 45'. (b) 22' × 43'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—1955. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3121 lb./ac. (ii) 216.6 lb./ac. (iii) Main effect of N is highly significant. Interactions N × S and P × S are significant. (iv) Av. yield of grain in lb./ac.

$E_1=3584$ lb./ac., $E_2=3513$ lb./ac. and $E_3=3619$ lb./ac.

	N ₀	N ₁	N ₂	Mean	S ₁	S ₂	S ₃
P ₀	2929	3213	3102	3081	3442	2992	2810
P ₁	2581	3047	3418	3015	2992	3055	2999
P ₂	2487	2850	3102	2813	2786	2534	3118
Mean	2666	3037	3207	2970	3073	2860	2976
S ₁	—	3371	3221				
S ₂	—	2882	2984				
S ₃	—	2858	3417				

S.E. of any marginal mean

= 72.2 lb./ac.

S.E. of body of any table or E mean

= 125.1 lb./ac.

Crop :- Paddy (*Kharif*).

Ref :- W.B. 55(TCM).

Centre :- Burdwan.

Type :- 'M'.

Object :- Type I (a)—To study the effect of P and different sources and levels of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Recent alluvium—clayey. (b) N.A. (iii) [N.A./31.7.1955. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Kalma*. (vii) Irrigated. (viii) and (ix) N.A. (x) 15.12.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(TCM) type I (a) on page 123.

5. RESULTS :

(i) 3013 lb./ac. (ii) 3333 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

$E_1=3589$ lb./ac., $E_2=3074$ lb./ac. and $E_3=2877$ lb./ac.

	N ₀	N ₁	N ₂	Mean	S ₁	S ₂	S ₃
P ₀	2754	2778	3129	2887	2673	3039	2952
P ₁	2841	2817	2956	2871	2719	2994	2900
P ₂	3037	3036	3268	3114	3194	2980	3167
Mean	2577	2877	3118	2957	2862	3004	3006
S ₁	—	3114	3142				
S ₂	—	2585	3263				
S ₃	—	2933	2948				

S.E. of any marginal mean = 111.1 lb./ac.
S.E. of body of any table or E mean = 192.4 lb./ac.

Crop :- Paddy (Kharif).
Centre :- Burdwan.

Ref :- W.B. 54(TCM).
Type :- 'M'.

Object :- Type II—To study the effect of different times of application of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Recent alluvium—clayey. (b) N.A. (iii) N.A./August, 1954. (v) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) 20 lb./ac. of P_2O_5 . (vi) *Jhingasail*. (vii) Irrigated. (viii) and (ix) N.A. (x) December, 1954.

2. TREATMENTS :

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

(1) 2 sources of 30 lb./ac. of N : $S_1=A/S$ and $S_2=Urea$.

(2) 7 times of application of N : $T_1=$ Before planting, $T_2=$ At planting, $T_3=$ At tillering, $T_4=$ Half before planting+half as tillering, $T_5=$ Half at planting+half at tillering, $T_6=$ $\frac{1}{2}$ before planting+ $\frac{1}{2}$ at tillering+ $\frac{1}{3}$ a week before flowering and $T_7=$ $\frac{1}{2}$ at planting+ $\frac{1}{2}$ at tillering+ $\frac{1}{3}$ a week before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) $19' \times 45'$. (b) $17' \times 43'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—1955. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3353 lb./ac. (ii) 326.5 lb./ac. (iii) 'Control vs. others' alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 2779 lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
S_1	3371	3330	3115	3381	3310	3381	3790	3383
S_2	3422	3381	3259	3402	3718	3371	3279	3405
Mean	3397	3356	3187	3392	3514	3376	3535	3394

S.E. of S marginal mean = 71.2 lb./ac.

S.E. of T marginal mean = 133.3 lb./ac.

S.E. of body of table or control mean = 188.5 lb./ac.

Crop :- Paddy (Kharif).
Centre :- Burdwan.

Ref :- W.B. 55(TCM).
Type :- 'M'.

Object :- Type II—To study the effect of different times of application of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Recent alluvium—clayey. (b) N.A. (iii) N.A./28.7.1955. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) 20 lb./ac. of P_2O_5 . (vi) *Jhingasail*. (vii) Irrigated. (viii) and (ix) N.A. (x) 10.12.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(TCM) type II above.

5. RESULTS :

(i) 3225 lb./ac. (ii) 168.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 3056 lb./ac.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	Mean
S ₁	3465	3151	3347	2952	3333	3305	3322	3268
S ₂	3161	3136	3197	3194	3087	3328	3340	3206
Mean	3313	3144	3272	3073	3210	3317	3331	3237

S.E. of S marginal mean = 36.7 lb./ac.

S.E. of T marginal mean = 68.7 lb./ac.

S.E. of body of table or control mean = 97.1 lb./ac.

Crop :- Paddy (Kharif).**Ref :- W.B. 54(TCM).****Centre :- Burdwan.****Type :- 'M'.**

Object :—Type III—To study the residual effect of minor elements and K applied to previous Paddy crop

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Recent alluvium—clayey. (b) N.A. (iii) N.A./8.8.1954. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (vi) Nil. (vii) *Jhingasail*. (viii) Irrigated. (viii) and (ix) N.A. (x) 13.12.1954.

2. TREATMENTS :

A set of 32 out of 256 treatment combinations formed of 8 factors each at two levels

(A) Magnesium as Mg SO₄ : a₀=0 and a₁=2 cwt./ac.(B) Iron as FeSO₄ : b₀=0 and b₁=100 cwt./ac.(C) Manganese as MnSO₄ : c₀=0 and c₁=20 cwt./ac.(D) Zinc as ZnSO₄ : d₀=0 and d₁=20 lb./ac.(E) Copper as C/S : e₀=0 and e₁=20 lb./ac.(F) Borax as granulated Borax : f₀=0 and f₁=10 lb./ac.(G) Molybdenum as Sod. Molybdate : g₀=0 and g₁=20 oz./ac.(H) Potash as Pot. Sul. : h₀=0 and h₁=20 lb./ac.

Treatments applied to previous paddy crop.

3. DESIGN :

(i) Fractional replicate (1/8th of 2⁸ Fact. set up). (ii) (a) 8 plots/block and 4 blocks. (b) N.A. (iii) —. (iv) (a) 24' × 45'. (b) 22' × 45'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain. (iv) (a) 1953—1954. (b) Yes. (residual effect studied in 1954). (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3238 lb./ac. (ii) 368.4 lb./ac. (iii) None of the effects is significant. (iv) Mean response of grain in lb./ac.

Factor	A	B	C	D	E	F	G	H
Mean response	—207.4	—151.0	—17.7	97.8	76.9	186.4	—56.4	77.1

S.E. of mean response = 130.2 lb./ac.

Crop :- Paddy (Kharif).**Ref :- W.B. 54(TCM).****Centre :- Burdwan.****Type :- 'M'.**

Object :—Type VI—To study the direct, residual and cumulative effects of phosphate application to Paddy.

1. BASAL CONDITIONS:(i) (a) to (c) N.A. (ii) (a) Recent alluvium—clayey. (b) N.A. (iii) N.A./1.8.1954. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Jhingasail*. (vii) Irrigated. (viii) and (ix) N.A. (x) 9 and 10.12.1954.**2. TREATMENTS:**

Treatment	1	2	3	4	5	6	7	8	9	10	11	12
First year	o	c	c	P ₁	P ₂	c	c	c	c	P _{1/2}	P ₁	P ₂
Second year	o	c	c	c	c	P ₁	P ₂	c	c	P _{1/2}	P ₁	P ₂
Third year	o	c	c	c	c	c	c	P ₁	P ₂	P _{1/2}	P ₁	P ₂

Treatments are three year rotations with 11 distinct treatments. Plots under treatment 1 do not receive any fertilizer. Other plots received a basal dose of 20 lb./ac. of N. Treatments 2 and 3 (viz. c) are identical and serve as control (2 plots/replication). Various symbols denote : P_{1/2}=10 lb./ac., P₁=20 lb./ac. and P₂=40 lb./ac. of P₂O₅.**3. DESIGN :**

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 24'×45'. (b) 22'×43'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—1955. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3298 lb./ac. (ii) 211.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	(2,3,8 and 9)	4	5	6	7	10	11	12
Av. yield	3315	3211	3582	3221	3274	3298	3138	3505	3393

S.E./mean (except 2, 3, 8 and 9) = 105.7 lb./ac.

S.E. of (2, 3, 8 and 9) mean = 52.9 lb./ac.

Crop :- Paddy (Kharif).**Ref :- W.B. 55(TCM).****Centre :- Burdwan.****Type :- 'M'.**

Object :—Type VI -To study the direct, residual and cumulative effects of phosphate application to Paddy.

1. BASAL CONDITIONS:(i) (a) to (c) N.A. (ii) (a) Recent alluvium—clayey. (b) N.A. (iii) N.A./26.7.1955. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Jhingasail*. (vii) Irrigated. (viii) and (ix) N.A. (x) 6.12.1955.**2. TREATMENTS to 4. GENERAL :**

Same as in expt. no. 54(TCM) type VI conducted at Burdwan above.

5. RESULTS :

(i) 2879 lb./ac. (ii) 186.0 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
Av. yield	2630	2803	3065	2929	2812	2896	2997	2847	2812	3161	2794

S.E./mean (except 2, 3) = 93.0 lb./ac.

S.E. of (2, 3) mean = 65.8 lb./ac.

Crop :- Paddy (Kharif).**Ref :- W.B. 54(TCM).****Centre :- Burdwan.****Type :- 'M'.****Object :-** Type XI—To study the effect of different levels of N, P and K on Paddy.**1. BASAL CONDITIONS :**(i) (a) to (c) N.A. (ii) (a) Recent alluvium—clayey. (b) N.A. (iii) N.A./12.8.1954. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Kalma*. (vii) Irrigated. (viii) and (ix) N.A. (x) 15.12.1954.**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 plots/block and 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) $24' \times 45'$. (b) $22' \times 43'$ (v) $1' \times 1'$. (vi) Yes.**4. GENERAL :**

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—1955. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2737 lb./ac. (ii) 452.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	2529	3119	3079	2942	2985	2921	2921
P_1	2399	2597	2897	2631	2684	2660	2550
P_2	2645	2344	2929	2639	2423	2786	2707
Mean	2558	2687	2968	2737	2697	2789	2726
K_0	2408	2550	3134				
K_1	2566	2850	2952				
K_2	2700	2660	2818				

S.E. of any marginal mean

= 150.8 lb./ac.

S.E. of body of any table

= 261.3 lb./ac.

Crop :- Paddy (Kharif).**Ref :- W.B. 55(TCM).****Centre :- Burdwan.****Type :- 'M'.****Object :-** Type XI—To study the effect of different levels of N, P and K on Paddy.**1. BASAL CONDITIONS :**(i) (a) to (c) N.A. (ii) (a) Recent alluvium—clayey. (b) N.A. (iii) N.A./2.8.1955. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Kalma*. (vii) Irrigated. (viii) and (ix) N.A. (x) 17.12.1955.**2. TREATMENTS to 4. GENERAL :**

Same as in expt. no. 54(TCM) type XI conducted at Burdwan above.

5. RESULTS :

(i) 2915 lb./ac. (ii) 186.7 lb./ac. (iii) Main effect of N alone is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean	K ₀	K ₁	K ₂
P ₀	2630	3138	2838	2869	2731	2913	2962
P ₁	2853	2932	2980	2922	2881	2806	3078
P ₂	2735	3098	3029	2954	2636	3252	2974
Mean	2739	3056	2949	2915	2749	2990	3005
K ₀	2474	2849	2924				
K ₁	2759	3292	2921				
K ₂	2985	3027	3001				

S.E. of any marginal mean = 62.2 lb./ac.

S.E. of body of any table = 107.8 lb./ac.

Crop :- Paddy (Kharif).

Ref :- W.B. 54(TCM).

Centre :- Mankhanda.

Type :- 'M'.

Object :- Type I(a)—To study the effect of P, and different sources and levels of N on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Deltaic and saline—clayey. (b) N.A. (iii) N.A./August, 1954. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Basmati*. (vii) Irrigated. (viii) and (ix) N.A. (x) December, 1954.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(TCM) type I(a) conducted at Burdwan on page 123.
Fertilizers top dressed 4 weeks after transplanting.

5. RESULTS :

(i) 2163 lb./ac. (ii) 321.1 lb./ac. (iii) Main effect of N is highly significant and E effect is significant. (iv) Av. yield of grain in lb./ac.

$E_1=3182$ lb./ac., $E_2=2343$ lb./ac. and $E_3=2616$ lb./ac.

	N ₀	N ₁	N ₂	Mean	S ₁	S ₂	S ₃
P ₀	1262	1946	2278	1829	1772	1811	1903
P ₁	1565	2244	2486	2098	2163	1860	2272
P ₂	1473	2227	2332	2011	1818	2185	2030
Mean	1433	2139	2365	1979	1918	1952	2068
S ₁	—	1974	2360				
S ₂	—	2098	2370				
S ₃	—	2345	2366				

S.E. of any marginal mean = 107.0 lb./ac.

S.E. of body of any table or E mean = 185.4 lb./ac.

Crop :- Paddy (Kharif).**Ref :- W.B. 55(TCM).****Centre :- Mankhanda.****Type :- 'M'.**

Object :— Type I(a)—To study the effect of P and different sources and levels of N on Paddy.

1. BASAL CONDITIONS :(i) (a) to (c) N.A. (ii) (a) Deltaic and saline—clayey. (b) N.A. (iii) N.A./12.8.1955. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Basmati*. (vii) Irrigated. (viii) and (ix) N.A. (x) 1 to 3.12.1955.**2. TREATMENTS to 4. GENERAL :**

Same as in expt. no. 54(TCM) type I(a) conducted at Burdwan on page 123.

Fertilizers top dressed 4 weeks after transplanting.

5. RESULTS :

(i) 1325 lb./ac. (ii) 205.8 lb./ac. (iii) Main effect of N and 'E vs. others' are highly significant. P effect is significant. (iv) Av. yield of grain in lb./ac.

$$E_1=1707 \text{ lb./ac.}, E_2=1350 \text{ lb./ac. and } E_3=1598 \text{ lb./ac.}$$

	N ₀	N ₁	N ₂	Mean	P ₀	P ₁	P ₂
S ₁	—	1221	1413	1317	1320	1264	1367
S ₂	—	1077	1480	1278	1071	1231	1533
S ₃	—	1158	1496	1327	1163	1273	1545
Mean	1133	1152	1463	—	1119	1224	1405
P ₀	987	1099	1271				
P ₁	1160	1004	1508				
P ₂	1251	1354	1610				

S.E. of N or P marginal mean = 68.6 lb./ac.

S.E. of S marginal mean = 84.0 lb./ac.

S.E. of body of N×P or S×N table or E mean = 118.8 lb./ac.

S.E. of body of S×P table = 145.5 lb./ac.

Crop :- Paddy (Kharif).**Ref :- W.B. 54(TCM).****Centre :- Mankhanda.****Type :- 'M'.**

Object :— Type III—To study the residual effect of minor elements and K applied to previous paddy on Paddy.

1. BASAL CONDITIONS :(i) (a) to (c) N.A. (ii) (a) Deltaic and saline—clayey. (b) N.A. (iii) N.A./August, 1954. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Malepati*. (vii) Irrigated. (viii) and (ix) N.A. (x) December, 1954.**2. TREATMENTS to 4. GENERAL :**

Same as in expt. no. 54(TCM) type III conducted at Burdwan on page 126.

5. RESULTS :

(i) 1636 lb./ac. (ii) 114.9 lb./ac. (iii) None of the effects is significant. (iv) Mean response of grain in lb./ac.

Factor	A	B	C	D	E	F	G	H
Mean response	27.71	61.22	-31.38	15.16	33.75	38.13	12.43	74.83

S.E./mean response = 40.7 lb./ac.

Crop :- Paddy (Kharif).**Ref :- W.B. 54(TCM).****Centre :- Mankhanda.****Type :- 'M'.**

Object :— Type VI—To study the direct, residual and cumulative effects of phosphate application to Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Deltaic and saline—clayey. (b) N.A. (iii) N.A./August, 1954. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Moul.* (vii) Irrigated. (viii) and (ix) N.A. (x) December, 1954.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(TCM) type VI conducted at Burdwan on page 127.

5. RESULTS :

(i) 1696 lb./ac. (ii) 244.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	(2, 3, 8 and 9)	4	5	6	7	10	11	12
Av. yield	1508	1717	1772	1764	1560	1594	1916	1714	1659

S.E./mean (except 2, 3, 8 and 9) = 122.3 lb./ac.

S.E./of (2, 3, 8 and 9) mean = 61.2 lb./ac.

Crop :- Paddy (Kharif).**Ref :- W.B. 55(TCM).****Centre :- Mankhanda.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Deltaic and saline—clayey. (b) N.A. (iii) N.A./August, 1955. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) 20 lb./ac. of P_2O_5 as triple Super. (vi) *Basmati*. (vii) Irrigated. (viii) and (ix) N.A. (x) December, 1955.

2. TREATMENTS :

All combinations of (1) and (2)+control (2 plots)

(1) 2 levels of N : $N_1=20$ and $N_2=40$ lb./ac.

(2) 3 sources of N : $S_1=A/S$, $S_2=A/S/N$ and $S_3=Nitro-chalk$.

N broadcast 4 weeks after transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) $45' \times 24'$. (b) $43' \times 22'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1216 lb./ac. (ii) 364.7 lb./ac. (iii) None of the effects is significant. (v) Av. yield of grain in lb./ac.

Control = 1118 lb./ac.

	S_1	S_2	S_3	Mean
N_1	1217	1137	1191	1182
N_2	1012	1421	1519	1317
Mean	1114	1279	1355	1249

S.E. of N marginal mean	= 105.3 lb./ac.
S.E. of S marginal or control mean	= 128.9 lb./ac.
S.E. of body of table	= 182.3 lb./ac.

Crop :- Paddy (Kharif).

Ref :- W.B. 54(TCM).

Centre :- Mankhanda.

Type :- 'M'.

Object :- Type XI—To study the effect of different levels of N, P and K on Paddy.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Deltaic and saline—clayey. (b) N.A. (iii) N.A./August, 1954. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Vasakalam*. (vii) Irrigated. (viii) and (ix) N.A. (x) December, 1954.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(TCM) type XI conducted at Burdwan on page 128.

5. RESULTS :

(i) 1983 lb./ac. (ii) 236.8 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean	K ₀	K ₁	K ₂
P ₀	1904	1988	2056	1983	1756	2055	2138
P ₁	1620	1709	2368	1899	1715	2046	1936
P ₂	1768	2037	2394	2066	2025	2224	1950
Mean	1764	1911	2273	1983	1832	2108	2008
K ₀	1623	1788	2084				
K ₁	1912	2059	2354				
K ₂	1757	1887	2380				

S E. of any marginal mean	= 78.9 lb./ac.
S.E. of body of any table	= 136.7 lb./ac.

Crop :- Paddy (Kharif).

Ref :- W.B. 55(TCM).

Centre :- Mankhanda.

Type :- 'M'.

Object :- Type XI—To study the effect of different levels of N, P and K on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Deltaic and saline—clayey. (b) N.A. (iii) N.A./10.8.1955. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) *Vasakalam*. (vii) Irrigated. (viii) and (ix) N.A. (x) 6.12.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(TCM) type XI conducted at Burdwan on page 128.

5. RESULTS:

(i) 1572 lb./ac. (ii) 360.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	1523	1081	1689	1431	1397	1413	1484
N ₁	1444	1717	1587	1583	1662	1555	1531
N ₂	1784	1792	1531	1702	1697	1863	1547
Mean	1584	1530	1602	1572	1585	1610	1521
K ₀	1421	1677	1658				
K ₁	1705	1444	1681				
K ₂	1626	1468	1468				

S.E. of any marginal mean = 120.3 lb./ac.

S.E. of body of any table = 208.4 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 59(SFT).

Centre :- Birbhum (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) [Laterite and red. (iii) to (v) N.A. (vi) July—August, 1959. (vii) to (ix) N.A. (x) December, 1959.

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 charged once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year 8 on a *khari* 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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

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

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of grain in lb./ac.	206	99	41	18.1	—16	33	—8	—123	17.3

Control yield = 1942 lb./ac. and no. of trials = 28.

Crop :- Paddy.**Ref :- W.B. 59(SFT).****Centre :- Burdwan (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) Old and new alluvial. (iii) to (v) N.A. (vi) *Aus* : May, 1959, *Aman* : July, 1959. (vii) to (ix) N.A. (x) *Aus* : September, 1959 and *Aman* : December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 133 conducted at Birbhum.

5. RESULTS :

Effect	<i>Aus</i> season								S.E.
	n	p	k	S.E.	np	nk	pk	npk	
Av. response of grain in lb./ac.	41	25	74	42.0	-49	-16	74	-91	40.3

Control yield = 2189 lb./ac. and no. of trials = 11.

Effect	<i>Aman</i> season								S.E.
	n	p	k	S.E.	np	nk	pk	npk	
Av. response of grain in lb./ac.	82	41	58	32.1	25	-8	-16	-58	23.0

Control yield = 2543 lb./ac. and no. of trials = 11.

Crop :- Paddy.**Ref :- W.B. 59(SFT).****Centre :- Hooghly (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) Alluvial. (iii) to (v) N.A. (vi) *Aus* : May, 1959 and *Aman* : July—August, 1959. (vii) to (ix) N.A. (x) *Aus* : September, 1959 and *Aman* : December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 133 conducted at Birbhum.

5. RESULTS :

Effect	<i>Aus</i> season								S.E.
	n	p	k	S.E.	np	nk	pk	npk	
Av. response of grain in lb./ac.	91	99	-16	36.2	-82	33	41	-82	28.0

Control yield = 2049 lb./ac. and no. of trials = 12.

Effect	<i>Aman</i> season								S.E.
	n	p	k	S.E.	np	nk	pk	npk	
Av. response of grain in lb./ac.	25	107	-8	18.9	-66	-8	74	-66	13.2

Control yield = 2164 lb./ac. and no. of trials = 9.

Crop :- Paddy (*Aman*).**Ref :- W.B. 59(SFT).****Centre :- Howrah (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) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) July—August, 1959. (vii) to (ix) N.A. (x) December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 133 conducted at Birbhum.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of grain in lb./ac.	49	8	107	14.8	0	-16	33	-91	14.8

Control yield = 1769 lb./ac. and no. of trials = 12.

Crop :- Paddy.

Ref :- W.B. 59(SFT).

Centre :- Mindnapore (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) Red soil and saline. (iii) to (v) N.A. (vi) *Aus* : May, 1959 and *Aman* : August, 1959. (vii) to (ix) N.A. (x) *Aus* : September, 1959 and *Aman* : December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 133 conducted at Birbhum.

5. RESULTS :

<i>Aus</i> season									
Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of grain in lb./ac.	247	165	230	32.9	-25	-49	33	197	33.7

Control yield = 1415 lb./ac. and no. of trials = 9.

<i>Aman</i> season									
Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of grain in lb./ac.	156	58	74	28.8	-25	0	49	-74	30.4

Control yield = 1351 lb./ac. and no. of trials = 14.

Crop :- Paddy.

Ref :- W.B. 59(SFT).

Centre :- Murshidabad (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) Alluvial. (iii) to (v) N.A. (vi) *Aus* : May, 1959 and *Aman* : July—August, 1959. (vii) to (ix) N.A. (x) *Aus* : September, 1959 and *Aman* : December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 133 conducted at Birbhum.

5. RESULTS :

<i>Aus</i> season									
Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of grain in lb./ac.	239	123	74	16.5	33	16	0	8	18.9

Control yield = 1358 lb./ac. and no. trials = 3.

Effect	Aman season								S.E.
	n	p	k	S.E.	np	nk	pk	npk	
Av. response of grain in lb./ac.	230	49	-33	20.6	-8	-33	16	-58	14.8

Control yield = 1432 lb./ac. and no. of trials = 19.

Crop :- Paddy.

Ref :- W.B. 59(SFT).

Centre :- Nadia (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) Alluvial. (iii) to (v) N.A. (vi) *Aus* : September, 1959 and *Aman* : December, 1959. (vii) to (ix) N.A. (x) *Aus* : September, 1959 and *Aman* : December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59 SFT) type A on page 133 conducted at Birbhum.

5. RESULTS :

Effect	Aus season								S.E.
	n	p	k	S.E.	np	nk	pk	npk	
Av. response of grain in lb./ac.	247	91	33	60.1	8	-49	16	-16	46.9

Control yield = 1835 lb./ac. and no. of trials = 10.

Effect	Aman season								S.E.
	n	p	k	S.E.	np	nk	pk	npk	
Av. response of grain in lb./ac.	214	115	41	41.1	-25	25	-8	16	44.4

Control yield = 1876 lb./ac. and no. of trials = 10.

Crop :- Paddy.

Ref :- W.B. 59(SFT).

Centre :- 24 Parganas (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) Alluvial. (iii) to (v) N.A. (vi) *Aus* : May, 1959 and *Aman* : July—August, 1959. (vii) to (ix) N.A. (x) *Aus* : September, 1959 and *Aman* : December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 133 conducted at Birbhum.

5. RESULTS :

Effect	Aus season								S.E.
	n	p	k	S.E.	np	nk	pk	npk	
Av. response of grain in lb./ac.	288	99	115	51.0	16	-41	99	33	41.1

Control yield = 1975 lb./ac. and no. of trials = 8.

Effect	Aman season								S.E.
	n	p	k	S.E.	np	nk	pk	npk	
Av. response of grain in lb./ac.	280	99	91	34.6	-16	-8	58	8	20.6

Control yield = 1884 lb./ac. and no. of trials = 8.

Crop :- Paddy (Aman).

Ref :- W.B. 59(SFT).

Centre :- Birbhum (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) Laterite and red. (iii) to (v) N.A. (vi) July, 1959. (vii) to (ix) N.A. (x) December, 1959.

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 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* 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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per treatments. (vi) and (vii) N.A.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of grain in lb./ac.	1736	2246	2534	2337	2584	2172	2312

G.M. = 2274 lb./ac., S.E./mean = 36.1 lb./ac. and no. of trials = 30.

Crop :- Paddy.

Ref :- W.B. 59(SFT).

Centre :- Burdwan.

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) to (v) N.A. (vi) *Aus* : May, 1959 and *Aman* : June—July, 1959. (vii) to (ix) N.A. (x) *Aus* : September, 1959 and *Aman* : December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B above conducted at Birbhum.

5. RESULTS :

Treatment	<i>Aus</i> season						
	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of grain in lb./ac.	1917	2181	2403	2263	2403	2246	2320

G.M. = 2248 lb./ac., S.E./mean = 49.5 lb./ac. and no. of trials = 11.

Aman season

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield of grain in lb./ac.	2477	2864	3053	2806	2987	2847	3045

G.M. = 2868 lb./ac., S.E./mean = 37.8 lb./ac. and no. of trials = 11.

Crop :- Paddy.

Ref :- W.B. 59(SFT).

Centre :- Hoogly (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) to (v) N.A. (vi) *Aus* : May, 1959 and *Aman* : June—July, 1959. (vii) to (ix) N.A. (x) *Aus* : September, 1959 and *Aman* : December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 137 conducted at B rbhum.

5. RESULTS :

Aus season

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield of grain in lb./ac.	1679	1934	1917	1983	2041	1909	1934

G.M. = 1914 lb./ac., S.E./mean = 54.1 lb./ac. and no. of trials = 9.

Aman season

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield of grain in lb./ac.	2057	2320	2230	2255	2238	2345	2230

G.M. = 2239 lb./ac.; S.E./mean = 93.7 lb./ac. and no. of trials = 7.

Crop :- Paddy (*Aman*).

Ref :- W.B. 59(SFT).

Centre :- Howrah (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) to (v) N.A. (vi) June—July, 1959. (vii) to (ix) N.A. (x) December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 137 conducted at Birbhum.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield of grain in lb./ac.	1218	1415	1563	1481	1670	1399	1555

G.M. = 1472 lb./ac.; S.E./mean = 34.9 lb./ac. and no. of trials = 12.

Crop :- Paddy.**Ref :- W.B. 59(SFT).****Centre :- Midnapore (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) Red. (iii) to (v) N.A. (vi) *Aus* : May 1959 and *Aman* : June—July 1959. (vii) to (ix) N.A. (x) *Aus* : September 1959 and *Aman* : December 1959.**2. TREATMENTS to 4. GENERAL :**

Same as in expt. no. 59(SFT) type B conducted at Burdwan on page 137.

5. RESULTS :

Treatment	<i>Aus</i> season						
	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of grain in lb./ac.	1399	1786	1893	1827	2016	1720	1744
G.M. = 1769 lb./ac., S.E./mean = 70.4 lb./ac. and no. of trials = 10.							

Treatment	<i>Aman</i> season						
	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of grain in lb./ac.	1333	1646	1835	1703	1843	1637	1736
G.M. = 1676 lb./ac., S.E./mean = 30.8 lb./ac. and no. of trials = 14.							

Crop :- Paddy.**Ref :- W.B. 59(SFT).****Centre :- Murshidabad (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) to (v) N.A. (vi) *Aus* : May 1959 and *Aman* : June—July 1959. (vii) to (ix) N.A. (x) *Aus* : September 1959 and *Aman* : December 1959.**2. TREATMENTS to 4. GENERAL :**

Same as in expt. no. 59(SFT) type B conducted at Birbhum on page 137.

5. RESULTS :

Treatment	<i>Aus</i> season						
	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of grain in lb./ac.	1415	1687	1934	1522	1670	1670	1843
G.M. = 1677 lb./ac., S.E./mean = 38.4 lb./ac. and no. of trials = 3.							

Treatment	<i>Aman</i> season						
	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of grain in lb./ac.	1226	1391	1621	1440	1596	1358	1481
G.M. = 1445 lb./ac., S.E./mean = 32.6 lb./ac. and no. of trials = 18.							

Crop :- Paddy.**Ref :- W.B. 59(SFT).****Centre :- Nadia (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) to (v) N.A. (vi) *Aus* : December 1959 and *Aman* : June—July 1959. (vii) to (ix) N.A. (x) *Aus* : September 1959 and *Aman* : December 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B conducted at Birbhum on page 137.

5. RESULTS :

Treatment	<i>Aus</i> season						
	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of grain in lb./ac.	2131	2304	2559	2370	2460	2320	2633

G.M. = 2397 lb./ac., S.E./mean = 101.8 lb./ac. and no. of trials = 10.

Treatment	<i>Aman</i> season						
	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of grain in lb./ac.	1802	2041	2123	2000	1967	1950	2238

G.M. = 2017 lb./ac., S.E./mean = 50.0 lb./ac. and no. of trials = 10.

Crop :- Paddy.

Ref :- W.B. 59(SFT).

Centre :- 24 Parganas (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) to (v) N.A. (vi) *Aus* : May 1959 and *Aman* : June—July 1959. (vii) to (ix) N.A. (x) *Aus* : September 1959 and *Aman* : December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B conducted at Birbhum on page 137.

5. RESULTS :

Treatment	<i>Aus</i> season						
	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of grain in lb./ac.	2263	2419	2444	2699	2444	2246	2271

G.M. = 2398 lb./ac., S.E./mean = 101.2 lb./ac. and no. of trials = 7.

Treatment	<i>Aman</i> season						
	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of grain in lb./ac.	1695	1876	2032	1868	1777	1851	1983

G.M. = 1869 lb./ac., S.E./mean = 30.8 lb./ac. and no. of trials = 10.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(25).

Centre :- Joypur (Bankura, c.f.).

Type :- 'M'.

Object :- To study the effect of application of N and P applied alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) N.I. (ii) Loamy sand. (iii) Nil. (iv) Local. (v) (a) 4 to 5 ploughings and laddering. (b) Transplanting. (c) Seed at 12 to 15 srs./ac. sown in the nursery. (d) 9"×9". (e) 2 to 3. (vi) Middle of June, 1st week of August, 1954. (vii) Unirrigated. (viii) and (ix) N.A. (x) Middle of December, 1954.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of N as A/S : $N_0=0$, $N_1=15$, $N_2=30$, $N_3=45$ and $N_4=60$ lb./ac.

(2) 5 levels of P_2O_5 as super : $P_0=0$, $P_1=20$, $P_2=40$, $P_3=60$ and $P_4=80$ lb./ac.

Super thrust in at the time of general preparation of land and A/S applied 4 weeks after transplantation.

3. DESIGN :

(i) Fact. in R.B.D. with 4 replications. (ii) 5 agricultural farms' and 7 cultivators' fields in the vicinity of farms. (iii) (a) $36' \times 18'$. (b) $34' \times 16'$. (iv) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1953-1955. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1833 lb./ac. (ii) 374.7 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	N_3	N_4	Mean
P_0	1493	1524	1784	1959	1936	1739
P_1	1477	1916	1565	1875	1896	1746
P_2	1547	1636	2190	2231	2104	1942
P_3	1273	2106	1760	1829	1831	1760
P_4	1670	1708	1967	2193	2352	1978
Mean	1492	1778	1853	2017	2024	1833

S.E. of any marginal mean = 83.8 lb./ac.

S.E. of body of table = 187.4 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B.54 (26).

Centre :- Mandhia (Bankura, c.f.).

Type :- 'M'.

Object :- To study the effect of application of N and P applied alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Fallow. (c) Nil. (ii) Loamy sand. (iii) Nil. (iv) *Bhasamanik* (improved, Ch. 3, medium). (v) (a) 4 to 5 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. sown in nursery. (d) $9'' \times 9''$. (e) 2 to 3. (vi) Middle of June/1st week of August, 1954. (vii) Unirrigated. (viii) and (ix) N.A. (x) Middle of December, 1954.

2. TREATMENTS :

Same as in expt. no. 54(25) on page 140.

3. DESIGN :

(i) Fact. in R.B.D. with 4 replications. (ii) 5 agricultural farms and 7 cultivators' fields in the vicinity of farms. (iii) (a) $22' \times 33'$. (b) $20' \times 31'$. (iv) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1953-1955. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1960 lb./ac. (ii) 207.3 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	1529	1904	2053	1980	2134	1920
P ₁	1779	1863	2007	2220	2071	1988
P ₂	1819	1813	2113	1994	2184	1985
P ₃	1560	1824	2129	2197	1971	1936
P ₄	1645	1938	2064	2244	1971	1972
Mean	1666	1868	2073	2127	2066	1960

S.E. of any marginal mean = 46.4 lb./ac.

S.E. of body of table = 103.6 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(23).

Centre :- Kanaimatsal (Burdwan, c.f.).

Type :- 'M'.

Object :- To study the effect of application of N and P applied alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) Nil. (iv) Local (*nagra*). (v) (a) 4 to 5 ploughings and laddering. (b) Transplanting. (c) Seed at 12 to 15 srs./ac. (d) 9"×9". (e) 2 to 3. (vi) 1st week of August, 1954. (vii) Unirrigated. (viii) N.A. (ix) 43.50". (x) 2nd week of December, 1954.

2. TREATMENTS :

Same as in expt. no. 54(25) on page 140.

3. DESIGN :

(i) Fact. in R.B.D. with 4 replications. (ii) 5 state agricultural farms and 7 cultivators' fields in the vicinity of each farm. (iii) (a) 36'×20'. (b) 34'×18'. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—1955. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2155 lb./ac. (ii) 308.9 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	1839	1916	2219	2334	2644	2150
P ₁	1262	1988	2182	2365	2383	2036
P ₂	1565	1952	2381	2503	2370	2154
P ₃	1413	1867	2311	2299	2644	2107
P ₄	1826	2059	2304	2331	2914	2287
Mean	1581	1956	2279	2366	2591	2155

S.E. of any marginal mean = 69.1 lb./ac.

S.E. of body of table = 154.4 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 55(21).****Centre :- Kanaimatsal (Burdwan, c.f.).****Type :- 'M'.**

Object :— To study the effect of application of N and P applied alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) N.A. (b) Fallow. (c) Nil. (ii) Sandy loam. (iii) Nil. (iv) Local (*ncgra*). (v) (a) 4 to 5 ploughings and laddering. (b) Transplanting. (c) Seed at 12 to 15 srs./ac. (d) 9"×9". (e) 2 to 3. (vi) 1.8.1955. (vii) Unirrigated. (viii) N.A. (ix) 50.77". (x) 12.12.1955.

2. TREATMENTS :

Same as in expt. no. 54(25) on page 140.

3. DESIGN :

(i) Fact. in R.B.D. with 4 replications. (ii) 5 state agricultural farms and 7 cultivator's fields in the vicinity of each farm. (iii) (a) 26'×20'. (b) 34'×18'. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—1955. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3133 lb./ac. (ii) 338.1 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb/ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	2910	3301	3529	3431	2841	3202
P ₁	2913	3314	3432	3202	2690	3110
P ₂	2997	3463	3340	3015	2787	3120
P ₃	2813	3417	3298	3211	2727	3093
P ₄	3120	3175	3307	3248	2853	3141
Mean	2951	3334	3381	3225	2780	3133

S.E. of any marginal mean = 75.6 lb./ac.

S.E. of body of table = 169.0 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 54(27).****Centre :- Jagyamaraynur (Cooch Behar, c.f.).****Type :- 'M'.**

Object :— To study the effect of application of N and P applied alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Silty loam. (iii) Nil. (iv) Local. (v) (a) 4 to 5 ploughings and laddering. (b) Transplanting. (c) Seed at 12 to 15 srs./ac. (sown in the nursery). (d) 9"×9". (e) 2 to 3. (vi) Middle of June /1st week of August, 1954. (vii) Unirrigated. (viii) and (ix) N.A. (x) Middle of December, 1954.

2. TREATMENTS :

Same as in expt. no. 54(25) on page 140.

3. DESIGN :

(i) Fact. in R.B.D. with 4 replications. (ii) 5 state agricultural farms and 7 cultivators' fields generally in the vicinity of each farm. (iii) (a) 38'×22'. (b) 36'×20'. (iv) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 2317 lb./ac. (ii) 465.9 lb./ac. (iii) N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	2084	2617	2163	2303	2350	2303
P ₁	2075	2559	2194	2634	2536	2400
P ₂	1804	1929	2158	2361	2668	2184
P ₃	1960	2350	1898	2433	2979	2324
P ₄	2232	2303	2511	2528	2303	2375
Mean	2031	2352	2185	2452	2567	2317

S.E. of any marginal mean = 104.2 lb./ac.
S.E. of body of the table = 233.0 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(24).

Centre :- Bulbul Chandi (Malda, c.f.).

Type :- 'M'.

Object :- To study the effect of application of N and P applied alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Loam. (iii) Nil. (iv) Local. (v) (a) 4 to 5 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. sown in the nursery. (d) 9"×9". (e) 2 to 3. (vi) Middle of June/1st week of August, 1954. (vii) Unirrigated. (viii) and (ix) N.A. (x) Middle of December, 1954.

2. TREATMENTS :

Same as in expt. no. 54(25) on page 140.

3. DESIGN :

(i) Fact. in R.B.D. with 4 replications. (ii) 5 experimental farms and 7 cultivators' fields generally in the vicinity of the farms. (iii) (a) 38'×22'. (b) 36'×20'. (iv) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1118 lb./ac. (ii) 237.2 lb./ac. (iii) N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	762	996	1230	1074	917	996
P ₁	840	1034	1268	1299	1054	1099
P ₂	980	1043	1100	1416	1331	1174
P ₃	925	1200	1376	1159	1385	1209
P ₄	747	1004	1144	1400	1268	1113
Mean	851	1055	1224	1270	1191	1118

S.E. of any marginal mean = 53.0 lb./ac.
S.E. of body of the table = 118.6 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 54(28).****Centre :- Lakshya (Midnapore, c.f).****Type :- 'M'.**

Object :- To study the response due to the application of N and P applied alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Loamy sand. (iii) Nil. (iv) Local. (v) (a) 4 to 5 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. sown in nursery. (d) 9"×9". (e) 2 to 3. (vi) Middle of June/1st week of August, 1954. (vii) Unirrigated. (viii) and (ix) N.A. (x) Middle of December, 1954.

2. TREATMENTS :

Same as in expt. no. 54(25) on page 140.

3. DESIGN :

(i) Fact. in R.B.D. with 4 replications. (ii) 5 agricultural farms and 7 cultivators field generally in the vicinity of farms. (iii) (a) 38'×22'. (b) 36'×20'. (iv) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 1206 lb./ac. (ii) 225.1 lb./ac. (iii) N and P effects are highly significant and interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	444	903	1159	824	1004	803
P ₁	724	903	1093	1556	1443	1144
P ₂	879	1096	1431	1751	1669	1365
P ₃	809	1128	1183	1676	1929	1345
P ₄	712	1186	1350	1785	1836	1374
Mean	714	979	1243	1518	1576	1206

S.E. of any marginal mean = 50.3 lb./ac.

S.E. of body of table = 112.6 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 54(29).****Centre :- Hatgobindapur (Nadia, c.f).****Type :- 'M'.**

Object :- To study the response due to N and P applied alone and in combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Loam. (iii) Nil. (iv) Local. (v) (a) 4 to 5 ploughings and laddering. (b) Transplanting. (c) 12 to 15 srs./ac. sown in the nursery. (d) 9"×9". (e) 2 to 3. (vi) Middle of June/1st week of August, 1954. (vii) Unirrigated. (viii) and (ix) N.A. (x) Middle of December, 1954.

2. TREATMENTS :

Same as in expt. no. 54(25) on page 140.

3. DESIGN :

(i) Fact. in R.B.D. with 4 replications. (ii) 5 agricultural farms and 7 fields in the vicinity of farms. (iii) (a) 38'×20'. (b) 36'×18'. (iv) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 2589 lb./ac. (ii) 279.0 lb./ac. (iii) P effect is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	N ₄	Mean
P ₀	2324	2743	2875	2672	2666	2656
P ₁	2714	2501	2867	2584	2523	2638
P ₂	2458	2290	2538	2718	2484	2498
P ₃	2327	2573	2564	2370	2495	2466
P ₄	2584	2493	2753	2787	2815	2686
Mean	2481	2520	2719	2626	2597	2589

S.E. of any marginal mean = 62.4 lb./ac.
S.E. of body of table = 139.5 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 54(30).

Centre :- Dighirpar (24-Parganas, c.f.).

Type :- 'M'.

Object :—To study the effect of gypsum on Paddy growing in salt affected soils.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Saline soil. (iii) Nil. (iv) Local. (v) (a) 4 to 5 ploughings and ladderings. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (vi) Middle of June/Last week of July. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) Middle of December, 1954.

2. TREATMENTS :

4 levels of gypsum : G₀=0, G₁=0.5, G₂=1.0 and G₃=2.0 tons/ac.
Gypsum was applied by broadcast method in 3rd week of July.

3. DESIGN :

(i) R.B.D. with 4 replications. (ii) N.A. (iii) (a) 33'×21'. (b) 31'×19'. (iv) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) No. of tillers and their height. Grain and straw yield. (iv) (a) 1954—1955. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1212 lb./ac. (ii) 416.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G ₀	G ₁	G ₂	G ₃
Av. yield	1333	1191	1270	1055

S.E./mean = 208.2 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 55(22).

Centre :- Dighirpar (24-Parganas, c.f.).

Type :- 'M'.

Object :—To study the effect of gypsum on Paddy growing in salt affected soil.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Saline soil. (iii) Nil. (iv) Local. (v) (a) 4 to 5 ploughings and laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (vi) Middle of June/Last week of July 1955. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) Middle of December 1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(30) on page 146.

5. RESULTS :

(i) 2822 lb./ac. (ii) 169.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G ₀	G ₁	G ₂	G ₃
Av. yield	2771	2837	2684	2998

S.E./mean = 84.7 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 56(10).

Centre :- Dighirpar (24-Parganas, c.f.).

Type :- 'M'.

Object :—To study the effect of gypsum on Paddy growing in salt affected soil.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) F.Y.M. details N.A. (ii) Silty loam. (iii) 30 lb./ac. of N as A/S applied after 4 weeks of transplantation. (iv) Local. (v) (a) 1 weeding in the month of September. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2. (vi) Last week of July 1956. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) Middle of December 1956.

2. TREATMENTS :

4 levels of gypsum : G₀=0, G₁=½, G₂=1 and G₃=2 tons/ac.

Doses of gypsum broadcast during 3rd week of July.

3. DESIGN :

(i) R.B.D. with 4 replications. (ii) N.A. (iii) (a) 36'×20'. (b) 34'×18'. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of tillers, height of tillers, depth of water standing in field and soil sample analysis. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :**Grain yield**

(i) 2656 lb./ac. (ii) 229.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G ₀	G ₁	G ₂	G ₃
Av. yield	2663	2695	2731	2530

S.E./mean = 114.8 lb./ac.

Straw yield

(i) 4700 lb./ac. (ii) 433.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G ₀	G ₁	G ₂	G ₃
Av. yield	4704	4649	4686	4759

S.E./mean = 216.7 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 57(10).****Centre :- Dighirpar (24-Parganas, c.f.).****Type :- 'M'.**

Object :—To study the effect of gypsum on Paddy growing in salt affected soil.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) Nil. (ii) Saline soil. (iii) Nil. (iv) Local. (v) (a) 4 to 5 ploughings and laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (vi) Middle of June/Last week of July 1957. (vii) Unirrigated (viii) Nil. (ix) N.A. (x) Middle of December, 1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(10) on page 147.

Due to drought after transplantation, some plants were watered from the ditch nearby.

5. RESULTS :

(i) 1936 lb./ac. (ii) 345.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G ₀	G ₁	G ₂	G ₃
Av. yield	1967	2023	1850	1903

S.E./mean = 173.0 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 58(6).****Centre :- Dighirpar (24-Parganas, c.f.).****Type :- 'M'.**

Object :—To study the effect of gypsum on Paddy growing in salt affected soil.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) Nil. (ii) Silty soil. (iii) 30 lb./ac. of N as A/S applied 4 weeks after transplantation. (iv) Local. (v) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (vi) End of July 1958. (vii) Unirrigated. (viii) Nil. (ix) 50". (x) Middle of December, 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(10) on page 147.

5. RESULTS :

(i) 1519 lb./ac. (ii) 210.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G ₀	G ₁	G ₂	G ₃
Av. yield	1538	1794	1336	1409

S.E./mean = 105.3 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 55(23).****Centre :- Dighirpar (24-Parganas, c.f.).****Type :- 'M'.**

Object :—To study the response of bulky organic manures and an equivalent amount of A/S on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Fallow. (c) Nil. (ii) Heterogenous tracts. (iii) N.A. (iv) Local (improved). (v) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3 seedlings (about 30 days old). (vi) August 1955. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) December, 1955.

2. TREATMENTS:

4 manurial treatments : M_1 =No manure (control), M_2 =30 lb./ac. of N as A/S, M_3 =30 lb./ac. of N as T.C. and M_4 =15 lb./ac. of N as A/S+15 lb./ac. of N as T.C.

T.C. in M_3 and M_4 and $\frac{1}{2}$ of A/S in M_2 were applied at the time of puddling. The remainder $\frac{1}{2}$ of A/S in M_2 and M_4 were applied 4 weeks after transplantation.

3. DESIGN:

(i) 23 fields scattered in 9 different districts of West Bengal where T.C. was available. (ii) Single replication/village. (iii) (a) Varying sizes of plot. (b) N.A. (iv) Yes.

4. GENERAL:

(i) Delay in the onset of monsoon in certain areas obviously delayed transplanting slightly beyond usual times. Temporary drought prevailed in the middle of growing season. (ii) Slightly affected by rice bug and helminthosporium. (iii) Grain and straw yield. (iv) (a) 1955—1956. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 2358 lb./ac. (ii) 256.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4
Av. yield	1860	2460	2534	2576

S.E./mean = 53.5 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(7).

Site :- State Agri. Farm, Chinsurah.

Type :- 'MV'.

Object :- To find out the most resistant variety of Paddy towards N under Chinsurah soil.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) N.A. (b) Refer soil analysis, Chinsurah. (iii) 6.8.1958. (iv) and (v) N.A. (vi) As per treatments. (vii) to (ix) N.A. (x) 12, 14 to 16.12.1958.

2. TREATMENTS:

Main-plot treatments:

3 doses of N as A/S: $N_0=0$, $N_1=30$ and $N_2=60$ lb./ac.

Sub-plot treatments:

8 varieties: V_1 =*Raghusail*, V_2 =*Patnai*-298, V_3 =*Bhisamanik*, V_4 =*Latisail*, V_5 =*Kailma*-222, V_6 =*Jhingasail*, V_7 =*Kalamkati*-147 and V_8 =*Nagra* 41/14.

3. DESIGN:

(i) Split-plot. (ii) (a) 3 main-plots/block ; 8 sub-plot/main-plot. (b) N.A. (iii) 5. (iv) (a) 38' x 22'. (b) 56' x 20'. (v) 1' x 1'. (vi) Yes.

4. GENERAL:

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1958—N.A. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 1303 lb./ac. (ii) (a) 2183.4 lb./ac. (b) 516.7 lb./ac. (iii) Main effect of V and interaction $N \times V$ are highly significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
N_0	1414	1295	1352	1206	1014	920	1174	1091	1183
N_1	1621	1408	1710	1421	1231	1305	1394	1335	1428
N_2	1413	1142	1551	1499	1326	981	1298	1169	1297
Mean	1483	1283	1538	1375	1190	1069	1289	1198	1303

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. N marginal means | = 488.2 lb./ac. |
| 2. V marginal means | = 188.7 lb./ac. |
| 3. V means at the same level of N | = 326.8 lb./ac. |
| 4. N means at the same level of V | = 576.0 lb./ac. |

Crop :- Paddy (*Aman*).

Ref :- W.B. 59(47)

Site :- State Agri. Farm, Chinsurah.

Type :- 'MV'.

Object :—To find out the most resistant variety of Paddy towards N under Chinsurah soil.

1. BASAL CONDITIONS :

- (i) (a) to (c) N.A. (ii) (a) Gangetic alluvium, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 25.7.1959. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) Nil. (d) 9"×9". (e) 2. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) 1 weeding. (ix) 55 2". (x) 4, 13, 15, 16 and 19.12.1959.

2. TREATMENTS :

Main-plot treatments :

3 doses of N as A/S : $N_0=0$, $N_1=30$ and $N_2=60$ lb./ac.

Sub-plot treatments :

8 varieties : $V_1=Kalma-222$, $V_2=Patnai-13$, $V_3=Bhasamanik$, $V_4=Nagrasail$, $V_5=Rupsail$, $V_6=Indrasail$, $V_7=Raghusail$ and $V_8=Sitasail-499$.

3. DESIGN :

- (i) Split-plot. (ii) (a) 3 main-plots/block ; 8 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) 38'×22'. (b) 36'×20'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

- (i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) and (b) N A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 2030 lb./ac. (ii) (a) 373.5 lb./ac. (b) 214.9 lb./ac. (iii) Main effects of N and V are highly significant and interaction $N \times V$ is significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
N_0	2035	2245	2168	2165	2001	1932	2398	1890	2104
N_1	2074	2241	2474	2290	2133	2010	2457	1924	2200
N_2	1765	1844	2067	1940	1425	1807	1958	1492	1787
Mcan	1958	2110	2236	2132	1853	1916	2271	1769	2030

S.E. of differences of two

- | | |
|-----------------------------------|------------------|
| 1. N marginal means | = 83.5 lb./ac. |
| 2. V marginal means | = 78.5 lb./ac. |
| 3. V means at the same level of N | = 135.9 lb./ac. |
| 4. N means at the same level of V | = 152.21 lb./ac. |

Crop :- Paddy (*Kharif*).

Ref :- W.B. 54(TCM).

Centre :- Burdwan (c.f.).

Type :- 'MV'.

Object :—Type VIII—To study the effect of different levels of N and P on different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Recent alluvium—clayey. (b) N.A. (iii) N.A./6.8.1954. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) and (ix) N.A. (x) 12.12.1954.

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 varieties : $V_1=Kalma$, $V_2=Nagra$ and $V_3=Jhingasail$.

Fertilizers applied before transplanting.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) $24' \times 45'$. (b) $22' \times 43'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—1965. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3364 lb./ac. (ii) 401.7 lb./ac. (iii) Only main effect of N is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	V_1	V_2	V_3
P_0	2645	3434	4073	3384	3410	3482	3260
P_1	2885	3655	3829	3456	3059	4089	3220
P_2	3087	3513	3157	3252	3245	3449	3063
Mean	2872	3534	3686	3364	3238	3673	3180
V_1	2885	3363	3466				
V_2	3205	3860	3955				
V_3	2526	3379	3636				

S.E. of any marginal mean = 133.9 lb./ac.

S.E. of body of any table = 231.9 lb./ac.

Crop :- Paddy (Kharif).

Ref :- W.B. 55(TCM).

Centre :- Burdwan.

Type :- 'MV'.

Object :—Type VIII—To study the effect of different levels of N and P on different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Recent alluvium—clayey. (b) N.A. (iii) N.A./30.7.1955. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) and (ix) N.A. (x) 13.12.1955.

2. TREATMENTS to 4 GENERAL :

Same as in expt. no. 54 (T.C.M.) type VIII conducted at Burdwan on page 150.

5. RESULTS :

(i) 3061 lb./ac. (ii) 303.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean	V ₁	V ₂	V ₃
P ₀	2847	3240	2960	3016	2865	3547	2636
P ₁	3138	2909	3296	3114	3051	3138	3153
P ₂	3402	2896	2861	3053	2869	3232	3059
Mean	3129	3015	3039	3061	2928	3306	2949
V ₁	2988	2873	2924				
V ₂	3439	3240	3236				
V ₃	2960	2932	2956				

S.E. of any marginal mean = 101.2 lb./ac.
 S.E. of body of any table = 175.3 lb./ac.

Crop :- Paddy (Kharif).

Ref :- W.B. 55(TCM).

Centre :- Mankhanda.

Type :- 'MV'.

Object :- Type VIII—To study the effect of different levels of N and P on different varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Deltaic and saline—clayey. (b) N.A. (iii) N.A./8 and 9.8.1955. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) and (ix) N.A. (x) 27.11.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(TCM) type VIII conducted at Burduwan on page 150.
 The varieties are : V₁=Chamalmani, V₂=Jhingasail and V₃=Moul.

5. RESULTS :

(i) 1937 lb./ac. (ii) 367.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	Mean	V ₁	V ₂	V ₃
N ₀	1835	1725	1792	1784	1741	1871	1740
N ₁	1581	2305	2092	1992	1910	2360	1707
N ₂	2439	1626	2037	2034	2029	1918	2155
Mean	1952	1885	1974	1937	1893	2050	1867
V ₁	2036	1922	1721				
V ₂	2005	1894	2250				
V ₃	1813	1839	1950				

S.E. of any marginal mean = 122.5 lb./ac.
 S.E. of body of any table = 212.1 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 56(13).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :- To find out the optimum spacing for Paddy.

1. BASAL CONDITIONS:

(i) (a) Leguminous crop—Paddy. (b) Gram-Lentil. (c) 150 mds./ac. of cowdung. (ii) (a) Loam. (b) Refer soil analysis, Berhampore. (iii) 7.6.1956. (iv) (a) 4 ploughings and laddering. (b) As per treatments. (c) N.A. (d) As per treatments. (e) N.A. (v) 150 mds./ac. of cowdung, 1 md. 35 srs./ac. of Supe +1 md. 8 srs./ac. of A/S applied in two doses. $\frac{1}{2}$ at the time of sowing and other $\frac{1}{2}$, 4 weeks after sowing. (vi) *Dharial*. (vii) Unirrigated. (viii) Weeding, hoeing and mulching thrice each and thinning once. (ix) 33.84". (x) 15 to 22.9.1959.

2. TREATMENTS:

6 spacings : $S_1=12'' \times 3''$ (single line), $S_2=9'' \times 3''$ (single line), S_3 =Broadcast, $S_4=18'' \times 3'' \times 3''$ (double line), $S_5=12'' \times 3'' \times 3''$ (double line) and $S_6=15'' \times 3'' \times 3''$ (double line).

3. DESIGN:

R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) and (b) $42' \times 24'$. (v) Nil. (vi) Yes.

4. GENERAL:

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

5. RESULTS:

(i) 988 lb./ac. (ii) 191.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_1	S_2	S_3	S_4	S_5	S_6
Av. yield	1189	1133	1055	852	844	852

S.E./mean = 78.3 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 57(11).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :- To find out the optimum spacing for Paddy.

1. BASAL CONDITIONS:

(i) (a) Leguminous crop—Paddy. (b) Gram—Lentil. (c) Cowdung at 150 mds./ac. (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 15.6.1957. (iv) (a) 4 ploughings and laddering. (b) As per treatments. (c) N.A. (d) As per treatments. (e) N.A. (v) 150 mds./ac. of cowdung, 1 md. 35 srs./ac. of Super by broadcast+1 md. 8 srs./ac. of A/S applied in two doses. $\frac{1}{2}$ at the time of sowing and other half four weeks after sowing. (vi) *Dular*. (vii) Unirrigated. (viii) Weeding, hoeing and mulching thrice each and thinning once. (ix) 47.4". (x) 4 to 7.10.1957.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 56(13) on page 152.

5. RESULTS:

(i) 859 lb./ac. (ii) 146.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_1	S_2	S_3	S_4	S_5	S_6
Av. yield	1004	924	853	815	905	654

S.E./mean = 60.0 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(52).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

Object :- To study the effect of different spacings on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pulse. (c) Nil. (ii) (a) Alluvial clay soil. (b) Refer soil analysis, Chinsurah. (i.i) 18.8.1954. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in lines. (c) 15 srs./ac. (d) As per treatments. (e) 2. (v) 20 lb./ac. of N as A/S and T.C. and 20 lb./ac. of P_2O_5 as Super. (vi) *Bhasamanik*. (medium). (vii) Nil. (viii) 2 weedings. (ix) 39.76%. (x) 2.2.1955.

2. TREATMENTS :

10 spacings : $S_1=6'' \times 6''$, $S_2=6'' \times 9''$, $S_3=6'' \times 12''$, $S_4=6'' \times 15''$, $S_5=9'' \times 9''$, $S_6=9'' \times 12''$, $S_7=9'' \times 15''$, $S_8=12'' \times 12''$, $S_9=12'' \times 15''$ and $S_{10}=15'' \times 15''$.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) $15' \times 15'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of helminthosporium in the nursery and at early stages of growth but did not prevail. (iii) Grain and straw yield (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 830 lb./ac. (ii) 114.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_1	S_2	S_3	S_4	S_5	S_6	S_7	S_8	S_9	S_{10}
Av. yield	1216	992	944	741	892	771	703	802	678	551

S.E./mean = 57.1 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(50).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 8.6.1954/18.8.1954. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted. (c) N.A. (d) As per treatments. (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (v.i) Unirrigated. (vii) 1 weeding. (ix) 49.84%. (x) 9.12.1954.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(52) on page 153.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—1957. (b) Yes. (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 763 lb./ac. (ii) 87.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_1	S_2	S_3	S_4	S_5	S_6	S_7	S_8	S_9	S_{10}
Av. yield	1125	904	895	634	807	693	666	735	630	493

S.E./mean = 43.6 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(23).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay (sweet alluvial). (b) Refer soil analysis, Chinsurah. (iii) 14.6.1955/11.8.1955. (iv) (a) 3 to 4 ploughings and harrowing. (b) Transplanting. (c) 15 srs./ac. sown in nursery bed. (d) As per treatments. (e) 1. (v) 20 lb./ac. of N as A/S and 20 lb./ac. of P_2O_5 as Super. $\frac{1}{2}$ of N and full of phosphate broadcast at the time of puddling, $\frac{1}{4}$ of N applied 1 month after transplanting and remaining $\frac{1}{4}$ dose 15 days before flowering. (vi) *Bhasamanik* (Chinsurah 3, medium). (vii) Unirrigated. (viii) 2 weedings. (ix) 45.04". (x) 23.12.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(52) on page 153.

4. GENERAL :

(i) Good. (ii) Negligible. (iii) Grain and straw yield. (iv) (a) 1954–1957. (b) Yes. (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 1932 lb./ac. (ii) 268.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈	S ₉	S ₁₀
Av. yield	2218	2054	1985	1794	1855	1540	2124	1700	2006	2045

S.E./mean = 134.4 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 56(19).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay (sweet alluvial). (b) Refer soil analysis, Chinsurah. (iii) 15.6.1956/21.7.1956. (iv) (a) 3 to 4 ploughings and harrowing. (b) Transplanting. (c) Seed sown in nursery at 15 srs./ac. (d) As per treatments. (e) 1. (v) 30 lb./ac. of N as A/S and T.C. and 30 lb./ac. of P_2O_5 as Super. $\frac{1}{2}$ of N and full of phosphate broadcast at the time of puddling, $\frac{1}{4}$ of N applied 4 weeks after transplanting and remaining $\frac{1}{4}$ dose 15 days before flowering. (vi) *Bhasamanik* (Chinsurah 3, medium). (vii) Irrigated. (viii) 2 weedings. (ix) 61.68". (x) 15.12.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(52) on page 153.

4. GENERAL :

(i) Fair. (ii) Negligible attack of stem borer. (iii) Grain and straw yield. (iv) (a) 1954–1957. (b) Yes. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 1949 lb./ac. (ii) 161.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈	S ₉	S ₁₀
Av. yield	2069	2015	1866	1951	2051	1882	2157	1978	1712	1809

S.E./mean = 80.9 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 57(16).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay (sweet alluvial). (b) Refer soil analysis, Chinsurah. (iii) 6.6.1957/25.7.1957. (iv) (a) 3 to 4 ploughings and harrowing. (b) Transplanting. (c) Seed sown in nursery bed at 15 srs./ac. (d) As per treatments. (e) 1. (v) 30 lb./ac. of N as A.S and T.C. and 30 lb./ac. of P_2O_5 as Super. $\frac{1}{2}$ of N and full of P_2O_5 are broadcast at the time of puddling, $\frac{1}{2}$ of N broadcast 4 weeks after transplanting and remaining $\frac{1}{2}$ of N broadcast 15 days before flowering. (vi) *Bhasamanik* (Chinsurah 3, medium). (vii) Irrigated. (viii) 2 weedings. (ix) 47.94" (x) 10.12.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54.52) on page 153.

4. GENERAL :

(i) Fair. (ii) Negligible attack of stem borer. (iii) Grain and straw yield. (iv) (a) 1954—1957. (b) Yes. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2629 lb./ac. (ii) 265.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈	S ₉	S ₁₀
Av. yield	2796	2414	2916	2595	2620	2880	2504	2692	2383	2493

S.E./mean = 132.7 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(23).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

Object :—To study the effect of antilodging operation on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Gangetic alluvium soil. (b) Refer soil analysis, Chinsurah. (iii) 17.8.1958. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in lines. (c) 50 lb./ac. (d) 9"×9". (e) 2. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 8.12.1958.

2. TREATMENTS :

3 antilodging operations : T₀=Control, T₁=Clipping and T₂=Tieing.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 38'×22'. (b) 36'×20'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair (ii) Nil. (iii) Yield of paddy grain and straw. (iv) (a) 1955—1958. (b) Yes. (c) Nil. (v) a) Burdwan. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1786 lb./ac. (ii) 122.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T ₀	T ₁	T ₂
Av. yield	1662	1747	1950

S.E./mean = 61.3 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 57(69).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

Object :—To study the effect of intercultural operation with or without field weeder on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Ganga low land clay. (b) Refer soil analysis, Chinsurah. (iii) 29.7.1957. (iv) (a) 3 ploughings and 3 ladderings. (b) Transplanting. (c) 12 to 15 kg./ac. (d) 10"×10". (e) 2. (v) 30 lb./ac. of A/S, 30 lb./ac. of Super and 30 lb./ac. of Mur. Pot. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) As per treatments. (ix) N.A. (x) 14.12.1957.

2. TREATMENTS :

4 cultural treatments : T_0 =No weeding (control), T_1 =Weeding on both sides (Jap. weeder), T_2 =Weeding one side (Jap. weeding) and T_3 =Hand weeding.
1st weeding one month after transplantation on 28.8.1957.

3. DESIGN :

(i) R.B.D. (ii) (a) N.A. (b) N.A. (iii) 4. (iv) (a) 27' 6"×24' 6". (b) 26'×23'. (v) N.A. (vi) Yes.

4. GENERAL

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) No. (b) Nil. (vi) N.A. (vii) Experiment conducted during 1956 was with one replication and hence not included in the compendium.

5. RESULTS :

(i) 3055 lb./ac. (ii) 115.8 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	3037	2980	3153	3050

S.E./mean = 57.9 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 58(58).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

Object :— To study the effect of intercultural operation with or without weeder on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Ganga low land clay. (b) Refer soil analysis, Chinsurah. (iii) 24.6.1958/13.8.1958. (iv) (a) 4 to 5 ploughings. (b) Transplanting. (c) 13 kg./ac. (d) 9"×10". (e) 2. (v) 30 lb./ac. of A/S as Super and Mur. Pot., $\frac{1}{2}$ of the dose applied during puddling, $\frac{1}{4}$ th of the remaining applied 1 month after transplanting and the rest applied 15 days before flowering. (vi) *Bhasamanik* (medium). (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) 31.12.1958.

2. TREATMENTS :

4 cultural treatments : T_0 =No weeding (control), T_1 =Weeding deeper by Japanese paddy weeder, T_2 =Weeding superficial by Japanese paddy weeder, and T_3 =Hand weeding (no weeder).

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 20'×22'. (b) 18'×20'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Yield of grain. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) No. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2259 lb./ac. (ii) 482.8 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	2424	2119	26	1966

S.E./mean = 241.4 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 58(60).****Site :- State Agri. Farm, Chinsurah.****Type :- 'CV'.**

Object :- To study the effect of mixed cropping under transplanted condition on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Ganga low land clay. (b) Refer soil analysis, Chinsurah. (iii) As per treatments. (iv) (a) 3 to 4 ploughings and 3 ladderings. (b) Transplanted. (c) 12 to 15 kg./ac. (d) As per treatments. (e) 2 to 3. (v) 40 lb./ac. of A/S and 40 lb./ac. of Super. (vi) *Dular* (early) and *Bhasamanik* (medium). (vii) Irrigated. (viii) As per treatments. (ix) N.A. (x) 4.10.1958 to 16.10.1958 for paddy *aus* and 28.12.1958 for paddy *aman*.

2. TREATMENTS :

5 cultural treatments: C_1 =Transplanting of V_1 on 23.7.1958 with $10'' \times 9''$ spacing, C_2 =Transplanting of V_2 on 7.8.1958 with $10'' \times 9''$ spacing, C_3 =Interplanting of V_1 and V_2 in alternate rows on 23.7.1958, C_4 =Interplanting of V_1 and V_2 in alternate rows on 7.8.1958 and 23.7.1958 respectively and C_5 =Interplanting of V_1 and V_2 in alternate rows on 23.7.1958 and 7.8.1958 respectively.

V_1 =*Dular* (*aus* paddy) and V_2 =*Bhasamanik* (*aman* paddy).

Spacing adopted in C_1 to C_2 is $7\frac{1}{2}'' \times 6''$.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) $32' \times 14'$. (b) $30' \times 12'$. (v) $1' \times 1'$. (vi) Yes

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain. (iv) (a) 1958—1959. (b) Yes. (c) N.A. (v) (a) No. (b) Nil. (vi) N.A. (vii) Crop failed in 1959 due to flood and storm.

5. RESULTS :

(i) 1495 lb./ac. (ii) 2049 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	C_1	C_2	C_3	C_4	C_5
Av. yield	1066	1471	1543	1613	1781

S.E./mean = 102.5 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 54(39).****Site :- State Agri. Farm, Chinsurah.****Type :- 'CV'.**

Object :- To find out the optimum late transplanting period for late varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy-Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (i.) 1, 10, 20, 30.7.1954 and 9.8.1954. (iv) (a) 3 to 4 ploughings and ladderings. (b) Transplanting. (c) 15 to 30 srs./ac. (d) $6'' \times 6''$. (e) 3. (v) 30 lb./ac. of N as A/S and T.C. 30 lb./ac. of P_2O_5 as Super. $\frac{1}{2}$ of N + full of P_2O_5 applied at the time and puddling of other $\frac{1}{2}$ of N broadcast 4 weeks after transplanting. (vi) As per treatments (late varieties). (vii) Unirrigated. (viii) 1 weeding. (ix) 0.20". (x) 4.2.1955.

2. TREATMENTS :

Main-plot treatments :

5 transplanting dates: D_1 =10.8.1954, D_2 =20.8.1954, D_3 =30.8.1954, D_4 =9.9.1954 and D_5 =19.9.1954.

Sub-plot treatments :

3 varieties: V_1 =*Kumargore*, V_2 =*Achra* and V_3 =*Tilakkachari*.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication and 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) $19' \times 10'$. (b) $18' \times 9'$. (v) $6'' \times 6''$. (vi) Yes.

4. RESULTS :

(i) Good. (ii) Negligible. (iii) Grain and straw yield. (iv) (a) 1953—1957 (modified on this farm). (b) Yes. (c) No. (v) (a) and (b) No. (vi) Nil. (vii) Experiment conducted during the year 1956 spoiled by floods.

5. RESULTS :

(i) 1562 lb./ac. (ii) (a) 403.2 lb./ac. (b) 403.2 lb./ac. (iii) D effect is highly significant. (iv) Av. yield of grain in lb./ac.

	D ₁	D ₂	D ₃	D ₄	D ₅	Mean
V ₁	1613	1765	1571	1344	890	1437
V ₂	1579	1916	2034	1669	1058	1651
V ₃	1907	1680	1680	1546	1176	1598
Mean	1700	1787	1762	1520	1041	1562

S.E. of the difference of two

1. D marginal means = 164.5 lb./ac.
2. V marginal means = 127.5 lb./ac.
3. V means at the same level of D = 285.1 lb./ac.
4. D means at the same level of V = 285.1 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(25).

Site :- State Agri. Farm, Chinsurah.

Type :- 'CV'.

Object :—To find out the optimum late transplanting period for the late varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 1, 10, 20, 30.7.1955 and 9.8.1955. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) Seed at 15 to 20 srs./ac. (d) 6"×6". (e) 3 seedlings. (v) 30 lb./ac. of N as A/S and T.C. 30 lb./ac. of P₂O₅ as Super, ½ of N and full P₂O₅ was applied at the time of puddling and other ½ of N broadcast 4 weeks after transplantations. (vi) As per treatments (late). (vii) Unirrigated. (viii) Weeding once (ix) 45.04". (x) 2.1.1956.

2. TREATMENTS :

Main-plot treatments :

5 transplanting dates : D₁=10.8.1955, D₂=20.8.1955, D₃=30.8.1955, D₄=9.9.1955 and D₅=19.9.1955.

Sub-plot treatments :

3 varieties : V₁=*K:margone*, V₂=*Achra 108/1* and V₃=*Tikkachri*.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(39) on page 158.

5. RESULTS :

(i) 4121 lb./ac. (ii) (a) 602.3 lb./ac. (b) 465.1 lb./ac. (iii) D effect is highly significant, V effect is significant. (iv) Av. yield of grain in lb./ac.

	D ₁	D ₂	D ₃	D ₄	D ₅	Mean
V ₁	5159	4815	4288	4134	3445	4364
V ₂	4546	4352	4084	3563	3462	4001
V ₃	4697	4688	3571	3596	3437	3998
Mean	4801	4618	3974	3764	3448	4121

S.E. of difference of two

1. D marginal means = 245.9 lb./ac.
2. V marginal means = 147.1 lb./ac.
3. V means at the same level of D = 328.9 lb./ac.
4. D means at the same level of V = 364.1 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 57(12).****Site :- State Agri. Farm, Chinsurah.****Type :- 'CV'.**

Object :—To find out the optimum date of transplanting for late varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 1, 10, 20, 30 7.1957 and 9.8.1957. (iv) (a) 3 to 4 ploughings and laddering. (b) Transplanting. (c) Seed at 15 to 20 srs./ac. (d) 6" × 6". (e) 2 to 3. (v) 30 lb./ac. of N as A/S and T.C. 30 lb./ac. of P₂O₅ as Super, $\frac{1}{2}$ of N and full of P₂O₅ are applied at the time of puddling and other $\frac{1}{2}$ of N broadcast 4 weeks after transplanting. (vi) As per treatments (late varieties). (vii) Unirrigated. (viii) 1 weeding. (ix) 47.54'. (x) 1st week of January, 1958.

2. TREATMENTS :**Main-plot treatments :**5 transplanting dates : D₁=10.8.1957, D₂=20.8.1957, D₃=30.8.1957, D₄=9.9.1957 and D₅=19.9.1957.**Sub-plot treatments :**3 varieties : V₁=Kumargone, V₂=Achra 108/1 and V₃=Tilakachry.**3. DESIGN and 4. GENERAL :**

Same as in expt. no. 54(39) on page 153.

5. RESULTS :

(i) 1014 lb./ac. (ii) (a) 256.0 lb./ac. (b) 254.9 lb./ac. (iii) Only D effect is highly significant. (iv) Av. yield of grain in lb./ac.

	D ₁	D ₂	D ₃	D ₄	D ₅	Mean
V ₁	941	1487	706	1151	614	980
V ₂	1067	1478	790	1008	571	983
V ₃	1168	1420	1058	1226	530	1080
Mean	1059	1462	851	1128	572'	1014

S.E. of difference of two

1. D marginal means = 104.5 lb./ac.
2. V marginal means = 80.6 lb./ac.
3. V means at the same level of D = 180.2 lb./ac.
4. D means at the same level of V = 180.5 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 57(50).****Site :- State Agri. Farm, Chinsurah.****Type :- 'CM'.**

Object :—To study the effect of different sources of N and crop rotation on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) *Khesari*—Paddy—*Khesari*. (b) *Khesari*. (c) N.A. (ii) (a) Ganga low land clay. (b) Refer soil analysis, Chinsurah. (iii) 20 to 26.7.1957. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) N.A. (vi) *Bhasamanik*. (vii) Unirrigated. (viii) 2 to 3 weeding and thinning. (ix) N.A. (x) Last week of December 1957.

2. TREATMENTS :**Main-plot treatments :**2 rotations : R₁=Paddy followed by *khesari* and R₂=Paddy alone.**Sub-plot treatments :**3 sources of 30 lb./ac. of N : S₀=Control (no manure), S₁=A/S and S₂=A/C.**3. DESIGN :**

(i) Split-plot. (ii) (a) 2 main-plots/block and 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 34' × 19', (b) 32' × 17'. (v) 1' × 1'. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) N.A. (iii) Yield of grain. (iv) (a) 1957—contd. (b) Yes. (c) N.A. (v) (a) Nalhati, Majhian and Kalyani. (b) N.A. (vi) Nil. (vii) The experiment was conducted at Chinsurah instead of Kalyani.

5. RESULTS:

(i) 3130 lb./ac. (ii) (a) 461.2 lb./ac. (b) 420.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	Mean
R ₁	3027	3180	3070	3092
R ₂	2956	3145	3404	3168
Mean	2992	3162	3237	3130

S.E. of difference of two

1. R marginal means = 188.3 lb./ac.
2. S marginal means = 210.2 lb./ac.
3. S means at the same level of R = 297.3 lb./ac.
4. R means at the same level of S = 307.5 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 58(16).

Site :- State Agri. Farm, Chinsurah.

Type :- 'CM'.

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

1. BASAL CONDITIONS:

(i) (a) Paddy—Khesari. (b) Khesari. (c) Nil. (ii) (a) Gangetic alluvium soil. (b) Refer soil analysis, Chinsurah. (iii) 19.7.1958. (iv) (a) 2 ploughings and 1 puddling. (b) Transplanted in rows. (c) 25 srs./ac. (d) 9"×9". (e) 2. (v) Nil. (vi) Bhasamanik (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 4.12.1958.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 57(50) on page 160.

4. GENERAL:

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) (a) Nalhati. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:

(i) 2380 lb./ac. (ii) (a) 282.4 lb./ac. (b) 158.8 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	Mean
R ₁	2151	2656	2598	2468
R ₂	2197	2387	2291	2292
Mean	2174	2522	2444	2380

S.E. of difference of two

1. R marginal means = 115.3 lb./ac.
2. S marginal means = 79.4 lb./ac.
3. S means at the same level of R = 112.3 lb./ac.
4. R means at the same level of S = 147.3 lb./ac.

Crop :- Paddy.**Ref :- W.B. 59(45).****Site :- State Agri. Farm, Chinsurah.****Type :- 'CM'.**

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

1. BASAL CONDITIONS :

(i) (a) Paddy—*Khesari*. (b) *Khesari*. (c) Nil. (ii) (a) Gangetic alluvium, neutral clay. (b) Refer soil analysis, Chinsurah. (iii) 11.7.1959. (iv) (a) 6 ploughings and 4 ladderings. (b) Line transplantation. (c) 5 srs./ac. (d) 9'×9'. (e) 3. (v) Nil. (vi) *Bhasamanik* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 3.12.1959.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 57(50) on page 160.

A/S top dressed on 11.8.1959.

4. GENERAL :

(i) Fair growth. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1957—contd. (b) Yes. (c) N.A. (v) (a) Nalhati and Majhian. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2740 lb./ac. (ii) (a) 259.4 lb./ac. (b) 120.6 lb./ac. (iii) Only S effect is highly significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	Mean
R ₁	2636	2814	2847	2766
R ₂	2452	2909	2781	2714
Mean	2544	2862	2814	2740

S.E. of difference of two

1. R marginal means = 105.9 lb./ac.
2. S marginal means = 60.3 lb./ac.
3. S means at the same level of R = 85.2 lb./ac.
4. R means at the same level of S = 126.7 lb./ac.

Crop :- Paddy (Aus).**Ref :- W.B. 55(2).****Site :- State Agri. Farm, Cooch Behar.****Type :- 'CM'.**

Object :—To find out the optimum seed rate and fertilizer for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Pulses. (b) Pulses. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 28.4.1955. (iv) (a) 5 to 6 ploughings and harrowings. (b) Broadcast. (c) As per treatments. (d) and (e) N.A. (v) Nil. (vi) *Dharia* (early). (vii) Unirrigated. (viii) 1 weeding. (ix) 107.80'. (x) 16 7.1955.

2. TREATMENTS:

All combinations of (1) and (2)

(1) 3 doses of fertilizers : M₁=30 lb./ac. of N+30 lb./ac. of P₂O₅, M₂=45 lb./ac. of N+45 lb./ac. of P₂O₅ and M₃=60 lb./ac. of N+60 lb./ac. of P₂O₅.

(2) 3 seed rates : R₁=30, R₂=45 and R₃=60 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 29'×15'. (b) 27'×13'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1954—1956. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 863 lb./ac. (ii) 183.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	Mean
M ₁	882	726	949	852
M ₂	1061	877	733	890
M ₃	845	953	746	848
Mean	929	852	809	863

S.E. of any marginal mean = 52.9 lb./ac.
S.E. of body of table = 91.5 lb./ac.

Crop :- Paddy (Aus).

Ref :- W.B. 56(11).

Site :- State Agri. Farm, Cooch Behar.

Type :- 'CM'.

Object :—To find out the optimum seed rate and fertilizers for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Pulses. (b) Pulses. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 25.4.1956. (iv) (a) 5 to 6 ploughings and harrowing. (b) Broadcast. (c) As per treatments. (d) and (e) N.A. (v) Nil. (vi) *Dharial* (early). (vii) Unirrigated. (viii) Weeding on 1.6.1956. (ix) 103.18%. (x) 24.7.1956 to 26.7.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(2) on page 162.

5. RESULTS :

(i) 1475 lb./ac. (ii) 194.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	Mean
M ₁	1412	1436	1308	1386
M ₂	1476	1580	1372	1476
M ₃	1548	1541	1596	1562
Mean	1479	1519	1426	1475

S.E. of any marginal mean = 56.2 lb./ac.
S.E. of body of table = 97.3 lb./ac.

Crop :- Paddy (Aus).

Ref :- W.B. 57(3).

Site :- State Agri. Farm, Cooch Behar.

Type :- 'CM'.

Object :—To find out the optimum requirement of seed rate and fertilizer for Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Pulses. (b) Pulses. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 3.5.1957. (iv) (a) 5 to 6 ploughings and harrowings. (b) Broadcast. (c) As per treatments. (d) and (e) N.A. (v) Cowdung at 50 mds./ac. at 1.25 mds./ac. of A/S top dressed on 28.6.1957 and Super on 3.5.1957. (vi) *Dharial*. (vii) Unirrigated. (viii) 1 weeding on 9 and 11.6.1957. (ix) N.A. (x) 12 and 13.8.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(2) on page 162.

Fertilizers were broadcast.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1954—1957. (b) Yes. (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 842 lb./ac. (ii) 166.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	Mean
M ₁	906	934	806	882
M ₂	1006	815	690	837
M ₃	925	655	838	806
Mean	946	801	778	842

S.E. of any marginal mean = 48.1 lb./ac.

S.E. of body of table = 83.3 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 57(51).

Site :- State Seed Multiplication Farm, Majhian.

Type :- 'CM'.

Object :- To study the effect of different sources of N and crop rotations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) *Khesari*—Paddy. (b) *Khesari*. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Majhian. (iii) Middle of August, 1957. (iv) (a) 3 to 4 ploughings and spading. (b) Transplanting. (c) and (d) N.A. (e) 2 to 3. (v) and (vi) N.A. (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) 1st week of December, 1957.

2. TREATMENTS :

Same as in expt. no. 57(50) on page 160.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 36' × 20'. (b) 34' × 18'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1957—contd. (b) Yes. (c) N.A. (v) (a) Chinsurah and Nalhati. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2636 lb./ac. (ii) (a) 574.1 lb./ac. (b) 675.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	Mean
R ₁	2453	2258	2675	2462
R ₂	2446	2499	3487	2811
Mean	2450	2378	3081	2636

S.E. of difference of two

1. R marginal means = 234.4 lb./ac.
 2. S marginal means = 337.6 lb./ac.
 3. S means at the same level of R = 477.4 lb./ac.
 4. R means at the same level of S = 454.0 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 58(46).****Site :- State Seed Multiplication Farm, Majhian.****Type :- 'CM'.**

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

1. BASAL CONDITIONS :

(i) (a) *Khesari*—Paddy. (b) *Khesari*. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Majhian. (iii) 10.8.1958. (iv) (a) 2 to 3 ploughings and laddering. (b) Transplanting. (b) 33 lb./ac. (d) 1' between rows. (e) 2 to 3. (v) N.A. (vi) *Nagra* (early). (vii) Unirrigated. (viii) 2 to 3 weedings and thinning. (ix) N.A. (x) 14.12.1958.

2. TREATMENTS :

Same as in expt. no. 57(50) on page 160.

Fertilizer applied on 10.9.1958.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block and 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 24'×30'. (b) 22'×28'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1957—1959. (b) Yes (c) N.A. (v) (a) Chinsurah and Nalhati. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2892 lb./ac. (ii) (a) 622.5 lb./ac. (b) 193.4 lb./ac. (iii) Only S effect is highly significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	Mean
R ₁	2338	3166	2900	2801
R ₂	2516	3397	3036	2983
Mean	2427	3282	2968	2892

S.E. of difference of two

1. R marginal means = 254.1 lb./ac.
2. S marginal means = 96.7 lb./ac.
3. S means at the same level of R = 136.7 lb./ac.
4. R means at the same level of S = 277.6 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 59(1).****Site :- State Seed Multiplication Farm, Majhian.****Type :- 'CM'.**

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

1. BASAL CONDITIONS :

(i) (a) Paddy—*Khesari*. (b) *Khesari*. (c) Nil. (ii) (a) Ganga riverine. (b) N.A. (iii) 28.7.1959. (iv) (a) 3 to 4 ploughings and laddering. (b) Line method of transplanting. (c) 5 to 12 srs./ac. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Nagra* (medium). (vii) Unirrigated. (viii) Weeding 2 times. (ix) N.A. (x) 11.12.1959 and 12.12.1959.

2. TREATMENTS :

Same as in expt. no. 57(50) on page 160.

Fertilizer applied of 29.8.1959.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block and 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 24'×30'. (b) 22'×28'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) (a) Chinsurah and Nalhati. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2386 lb./ac. (ii) (a) 273.0 lb./ac. (b) 322.5 lb./ac. (iii) R effect is significant while S effect is highly significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	Mean
R ₁	1732	2296	2291	2106
R ₂	2325	2746	2925	2665
Mean	2028	2521	2608	2386

S.E. of difference of two

1. R marginal means = 111.4 lb./ac.
2. S marginal means = 161.3 lb./ac.
3. S means at the same level of R = 228.0 lb./ac.
4. R means at the same level of S = 217.0 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 58(47).

Site :- State Agri. Farm, Nalhati.

Type :- 'CM'.

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

1. BASAL CONDITIONS :

(i) (a) *Khesari*—Paddy. (b) *Khesari*. (c) N.A. (ii) (a) Sandy clay loam. (b) Refer soil analysis, Nalhati. (iii) N.A. (iv) (a) 3 to 4 ploughings. (b) Transplanting. (c) 15 kg./ac. (d) 8"×9". (e) 2 to 3. (v) 100 mds./ac. of cowdung. (vi) *Patnai* (medium). (vii) Unirrigated. (viii) 2 weedings and 2 thinnings. (ix) and (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(50) on page 160.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1956—1959. (b) Yes. (c) N.A. (v) (a) Majhian. (b) N.A. (vi) N.A. (vi) Nil.

5. RESULTS :

(i) 1880 lb./ac. (ii) (a) 411.8 lb./ac. (b) 532.0 lb./ac. (iii) Only S effect is significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	Mean
R ₁	1295	2219	2048	1854
R ₂	1425	2100	2190	1905
Mean	1360	2160	2119	1880

S.E. of difference of two

1. R marginal means = 168.1 lb./ac.
2. S marginal means = 266.0 lb./ac.
3. S means at the same level of R = 376.2 lb./ac.
4. R means at the same level of S = 350.8 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 59(14).****Site :- State Seed Multiplication Farm, Nalhati.****Type :- 'CM'.**

Object :- To study the effect of different sources of N and crop rotations on the yield of Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) *Khesari*—Paddy. (b) *Khesari*. (c) As per treatments. (ii) (a) Lateritic soil. (b) Refer soil analysis, Nalhati. (iii) 6.8.1959. (iv) (a) 4 to 6 ploughings and 4 ladderings. (b) Line transplanting. (c) 12 srs./ac. (d) 9"×9". (e) 2. (v) Nil. (vi) *Patnai* (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 6.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(50) on page 160.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) Majhian. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2179 lb./ac. (ii) (a) 415.4 lb./ac. (b) 306.6 lb./ac. (iii) S effect alone is highly significant. (iv) Av. yield of grain in lb./ac.

	S ₀	S ₁	S ₂	Mean
R ₁	1856	2133	2378	2122
R ₂	1776	2502	2428	2235
Mean	1816	2318	2403	2179

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. R marginal means | = 169.6 lb./ac. |
| 2. S marginal means | = 153.3 lb./ac. |
| 3. S means at the same level of R | = 216.8 lb./ac. |
| 4. R means at the same level of S | = 245.1 lb./ac. |

Crop :- Paddy.**Ref :- W.B. 56(MAE).****Site :- M.A.E. Farm, Burdwan.****Type :- 'CM'.**

Object :- Type VII—To study the effect of cultural and manurial treatments on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) As per treatments. (iv) (a) N.A. (b) Transplanting. (c) 10 to 15 srs./ac. in nursery. (d) As per treatments. (e) N.A. (v) Nil. (vi) *Nagra*. (vii) Unirrigated. (viii) and (ix) N.A. (x) 4.1.1957.

2. TREATMENTS :**Main-plot treatments :**

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

- (1) 3 dates of sowing : D₁=17.7.1956, D₂=2.8.1956 and D₃=15.8.1956.
 (2) 3 spacings : S₁=6"×6", S₂=8"×8" and S₃=10"×10".
 (3) 3 seed rates : R₁=2, R₂=4 and R₃=6 plants/hole.

Sub-plot treatments :

All combinations of (1) and (2)

- (1) 2 levels of N as A/S : N₀=0 and N₁=40 lb./ac.
 (2) 2 levels of P₂O₅ as Super : P₀=0 and P₁=40 lb./ac.

3. DESIGN :

(i) Split-plot confd. (ii) (a) 3 blocks/replication ; 9 main-plots/block and 4 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) 16.5'×35'. (b) 14.5'×33'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Uniform. (ii) Crop damaged by wild animals and rats. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) Mankhanda. (b) N.I. (vi) and (vii) Nil.

5. RESULTS:

(i) 2389 lb./ac. (ii) (a) 421.1 lb./ac. (b) 205.5 lb./ac. (iii) Main effects of N, P and interactions N×P and D×N are highly significant. Interaction S×N×P is significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	2368	2307	2345	2351	2327	2342	2144	2536	2326	2354	2340
D ₂	2356	2381	2496	2367	2407	2459	2241	2581	2368	2454	2411
D ₃	2515	2380	2353	2474	2272	2502	2140	2691	2435	2397	2416
Mean	2413	2356	2398	2397	2335	2434	2175	2603	2376	2402	2389
P ₀	2262	2208	2658	2266	2168	2694	1947	2805			
P ₁	2564	2504	2138	2528	2502	2175	2403	2401			
N ₀	2186	2121	2218	2130	2139	2256					
N ₁	2640	2591	2578	2664	2531	2613					
S ₁	2443	2430	2318								
S ₂	2389	2244	2372								
S ₃	2406	2393	2503								

S.E. of difference of two

1. D, S or R marginal means = 70.2 lb./ac.
2. N or P marginal means = 28.0 lb./ac.
3. N or P means at the same level of D, S or R = 48.4 lb./ac.
4. D, S or R means at the same level of N or P = 78.1 lb./ac.
- S.E. of body of D×S, D×R or S×R table = 86.0 lb./ac.
- S.E. of body of N×P table = 28.0 lb./ac.

Crop :- Paddy.

Ref :- W.B. 57(MAE).

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

Type :- 'CM'.

Object :- Type VII—To study the effect of cultural and manurial treatments on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) As per treatments. (iv) (a) 4 ploughings, cross ploughings and puddling. (b) Transplanted. (c) 20 to 30 lb./ac. (d) and (e) As per treatments. (v) Nil. (vi) Nagra (120 to 150 days). (vii) Irrigated. (viii) N.A. (ix) 32". (x) 1st and 2nd week of December, 1957.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type VII on page 167.

Dates of sowing are : D₁=18.7.1957, D₂=4.8.1957 and D₃=18.8.1957.

3. DESIGN :

(i) Split-plot confd. (ii) (a) 3 blocks/replication ; 9 main-plots/block and 4 sub-plots/main-plot. (b) N.A. (iii) I. (iv) (a) N.A. (b) 39.5'×10.5'. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) Mankhanda. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:

(i) 2455 lb./ac. (ii) (a) 517.3 lb./ac. (b) 266.6 lb./ac. (iii) Main effect of N is highly significant and main effect of S and interaction $D \times N$ are significant. (iv) Av. yield of grain in lb./ac

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	2695	2773	2452	2032	2940	2947	2656	2624	2612	2668	2640
D ₂	2489	2469	2419	2320	2673	2383	2410	2508	2411	2507	2459
D ₃	2321	2082	2395	2297	2376	2126	2086	2446	2195	2337	2266
Mean	2502	2441	2432	2216	2663	2485	2384	2526	2406	2504	2455
P ₀	2418	2400	2400	2191	2646	2381	2305	2507			
P ₁	2586	2482	2444	2241	2680	2590	2463	2545			
N ₀	2402	2427	2323	2153	2645	2354					
N ₁	2602	2455	2521	2279	2682	2616					
S ₁	2176	2327	2146								
S ₂	2728	2595	2666								
S ₃	2602	2400	2454								

S.E. of difference of two

1. D, S or R marginal means = 121.9 lb./ac.
 2. N or P marginal means = 51.3 lb./ac.
 3. N or P means at the same level of D, S or R = 88.9 lb./ac.
 4. D, S or R means at the same level of N or P = 137.2 lb./ac.
- S.E. of body of $D \times S$, $D \times R$ or $S \times R$ table = 149.3 lb./ac.
 S.E. of body of $N \times P$ table = 51.3 lb./ac.

Crop :- Paddy.

Ref :- W.B. 59(MAE).

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

Type :- 'CM'.

Object :- Type VII—To study the effect of cultural and manurial treatments on Paddy.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) As per treatments. (iv) (a) 4 ploughings and 1 hoeing. (b) Transplanted. (c) 20 to 30 lb./ac. (d) and (e) As per treatments. (v) 5000 lb./ac. of F.Y.M. to all plots except control plots. (vi) *Nagra* (4 to 5 months). (vii) Unirrigated. (viii) 1 weeding. (ix) 58". (x) 2nd and 3rd week of December, 1959.

2. TREATMENTS:

Same as in expt. no. 56(MAE) type VII on page 167.

Dates of sowing are: D₁=17.7.1959, D₂=2 to 4.8.1959 and D₃=16 and 17.8.1959.

3. DESIGN:

(i) Split-plot. (ii) (a) 3 blocks/replication; 9 main-plots/block and 4 sub-plots/main-plot. (b) N.A. (iii) 1. (iv) (a) 42' × 13'. (b) 40' × 11'. (v) 1' × 1'. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) Mankhanda. (b) N.A. (vi) Crop flooded due to heavy rains. (vii) Nil.

5. RESULTS :

(i) 2170 lb./ac. (ii) (a) 234.0 lb./ac. (b) 238.2 lb./ac. (iii) Interaction $D \times N$ is highly significant. Main effect of D is significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	2304	2213	2304	2156	2427	2239	2222	2326	2230	2318	2274
D ₂	2139	2082	2238	2172	2181	2106	2024	2282	2213	2093	2153
D ₃	2172	2082	1991	2049	2074	2123	2213	1951	2098	2066	2082
Mean	2205	2126	2178	2126	2227	2156	2153	2186	2180	2159	2170
P ₀	2238	2106	2196	2148	2230	2162	2205	2155			
P ₁	2172	2146	2160	2104	2224	2150	2101	2217			
N ₀	2189	2131	2139	2131	2148	2180					
N ₁	2221	2121	2217	2121	2306	2132					
S ₁	2172	2156	2050								
S ₂	2288	2172	2221								
S ₃	2155	2050	2263								

S.E. of difference of two

1. D, S or R marginal means = 55.2 lb./ac.
2. N or P marginal means = 45.8 lb./ac.
3. N or P means at the same level of D, S or R = 79.4 lb./ac.
4. D, S or R means at the same level of N or P = 78.7 lb./ac.
- S.E. of body of $D \times S$, $D \times R$ or $S \times R$ table = 67.6 lb./ac.
- S.E. of body of $N \times P$ table = 45.8 lb./ac.

Crop :- Paddy.

Ref :- W.B. 56(MAE).

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

Type :- 'CM'.

Object :- Type VII—To study the effect of cultural and manurial treatments on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) As per treatments. (iv) (a) N.A. (b) Transplanting. (c) 8 to 10 srs./ac. (d) and (e) As per treatments. (v) Nil. (vi) *Khakhiria* (4 months). (vii) Unirrigated. (viii) and (ix) N.A. (x) 25.12.1956.

2. TREATMENTS :

Same as in expt. no. 56(MAE) type VII conducted at Burdwan on page 167.
Dates of sowing are : D₁=1.8.1956, D₂=7.8.1956 and D₃=15.8.1956.

3. DESIGN :

(i) Split-plot confd. (ii) (a) 3 blocks/replication ; 9 main-plots/block and 4 sub-plots/main-plot. (b) N.A. (iii) 1. (iv) (a) 33'×23'. (b) 31'×21'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. The entire crop lodged due to heavy rains and high velocity of wind. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) No. (v) (a) Burdwan. (b) Nil. (vi) Crop damaged due to cyclone. (vii) Nil.

5. RESULTS :

(i) 2222 lb./ac. (ii) (a) 200.1 lb./ac. (b) 175.4 lb./ac. (iii) Main effects of R and N are highly significant. Interaction $S \times P$ is significant. (iv) Av. yield of grain in lb./ac.

	R ₁	R ₂	R ₃	S ₁	S ₂	S ₃	N ₀	N ₁	P ₀	P ₁	Mean
D ₁	2131	2329	2288	2172	2263	2312	2041	2457	2255	2243	2249
D ₂	2082	2271	2288	2205	2238	2199	2057	2371	2181	2247	2214
D ₃	2041	2312	2255	2181	2148	2280	2090	2316	2082	2324	2203
Mean	2085	2304	2277	2186	2216	2264	2063	2381	2173	2271	2222
P ₀	2032	2296	2191	2131	2271	2117	2000	2346			
P ₁	2138	2312	2363	2241	2161	2411	2126	2416			
N ₀	1925	2115	2149	2008	2032	2149					
N ₁	2245	2493	2405	2364	2400	2379					
S ₁	2049	2296	2213								
S ₂	2107	2263	2278								
S ₃	2099	2553	2340								

S.E. of difference of two

1. D, S or R marginal means = 47.2 lb./ac.
2. N or P marginal means = 33.9 lb./ac.
3. N or P means at the same level of D, S or R = 58.8 lb./ac.
4. D, S or R means at the same level of N or P = 62.9 lb./ac.
- S.E. of body of D×S, D×R or S×R table = 81.7 lb./ac.
- S.E. of body of N×P table = 33.9 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 54(41).

Site :- State Agri. Farm, Chinsurah.

Type :- 'D'.

Object :- To study the effect of different insecticides against Paddy stem borer.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Chinsurah. (iii) 16.6.1954/30.7.1954. (iv) (a) 3 to 4 ploughings and harrowing. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) *Bhasamanik* (Ch 3, medium). (vii) Irrigated. (viii) 2 weedings and hoeing. (ix) N.A. (x) 20.11.1954.

2. TREATMENTS :

9 insecticidal treatments: D₀=Control, D₁=DDT (5% dust), D₂=BHC (5% dust), D₃=DDT (5% wettable) spray with 0.1% concentration, D₄=BHC (50% wettable spray) with 0.1% concentration, D₅=Folidol E-605 (5% dust), D₆=Folidol E-605 spray with 0.4% concentration, D₇=Toxaphane (5% dust) and D₈=Toxaphane (25%) spray with 0.1% concentration.

There were 4 applications of each treatment at an interval of 15 days beginning from 15.8.1954.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 12. (2 trials of 6 replications each at 2 different sites at the same farm). (iv) (a) and (b) 16.5'×8.25'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of stem borer, control measures as per treatments. (iii) Percentage of stem borer damaged tillers/plot were taken at the time of harvest. (iv) (a) 1953—1954. (b) $\frac{1}{2}$ Yes. (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 0.87 %. (ii) 0.50 %. (iii) 'Control vs. others' effect is highly significant. (iv) Mean percentage of stem borer damaged tillers.

Treatment	D ₀	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	D ₇	D ₈
Mean %	4.32	0.45	0.45	0.51	0.39	0.33	0.48	0.42	0.53

S.E./mean = 0.14 %.

Crop :- Paddy (Aman).

Ref :- W.B. 55(1).

Site :- State Agri. Farm, Gosaba.

Type :- 'D'.

Object :—To study the effect of different insecticides against *S. incertalas* on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Gosaba. (iii) 21.6.1955/8.8.1955. (iv) (a) 3 to 4 ploughings and ladderings. (b) Transplanting. (c) N.A. (d) 9'×9'. (e) 1. (v) 40 lb./ac. of N and 40 lb./ac. of P₂O₅. (vi) *Rizghusail*. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 15.11.1955.

2. TREATMENTS :

7 insecticidal treatments : D₀=Control (2 plots/block), D₁=Parathion 1.0%, D₂=Parathion 0.5%, D₃=Parathion 0.25%, D₄=Endrin—5 c.c. per gallon of water, D₅=Endrin—7 c.c. per gallon of water and D₆=Endrin—10 c.c. per gallon of water.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 33'×33'. (b) 27'×27'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Damaged by *S. incertalas* and stink bug. (iii) Percentage of damage done by *S. incertalas*. Average earheads/plants ; total no. of earheads/plot ; number of damaged earheads and grain yield/plot. (iv) (a) and (b) No. (c) N.A. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2718 lb./ac. (ii) 478.0 lb./ac. (iii) 'Control vs. treated' effect is significant. (iv) Av. yield of grain in lb./ac.

Treatment	D ₀	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆
Av. yield	2373	2743	3046	3004	2792	2534	2775

S.E./mean for control = 169.0 lb./ac.

S.E./mean for others = 239.0 lb./ac.

Crop :- Wheat (Rabi).

Ref :- W.B. 56(30).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :—To study the effect of A/S and A/C in different doses on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 3rd week of November, 1956. (iv) (a) 4 to 5 puddlings, 2 puddlings and planking. (b) and (c) N.A. (d) (d) 9'×9'. (e) 3. (v) N.A. (vi) N.P.—710. (vii) Unirrigated. (viii) 2 weedings and 3 intercultures. (ix) 2.61". (x) Last week of March, 1957.

2. TREATMENTS :

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

(1) 2 sources of N : S₁=A/S and S₂=A/C.

(2) 2 levels of N : N₁=40 and N₂=60 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 34'×25'. (b) 32'×24'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Pest attack ; Control measure—N.A. (iii) Yield of grain. (iv) (a) 1956—contd. (b) Yes. (c) N.A. (v) (a) Krishnagar. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2404 lb./ac. (ii) 137.8 lb./ac. (iii) Main effect of N and 'control vs. others' are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1418 lb./ac.

	S ₁	S ₂	Mean
N ₁	2547	2496	2521
N ₂	2813	2745	2779
Mean	2680	2620	2650

S.E. of any marginal mean = 43.6 lb./ac.

S.E. of body of table or control mean = 61.6 lb./ac.

Crop :- Wheat (Rabi).

Ref :- W.B. 57(36).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :—To study the effect of A/S and A/C in different doses on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 15 to 28.11.1957. (iv) (a) 3 to 4 ploughings and puddling (b) and (c) N.A. (d) 9"×9". (e) 2 to 3. (v) Nil. (vi) N.P.—710. (vii) Unirrigated. (viii) 2 intercultures and 2 to 3 weedings. (ix) 3.23". (x) Last week of March to 1st week of April, 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(30) on page 172.

5. RESULTS :

(i) 1609 lb./ac. (ii) 236.1 lb./ac. (iii) 'Control vs. others' effect is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 905 lb./ac.

	S ₁	S ₂	Mean
N ₁	1711	1855	1783
N ₂	1934	1638	1786
Mean	1822	1746	1784

S.E. of any marginal mean = 74.7 lb./ac.

S.E. of body of table or control mean = 105.6 lb./ac.

Crop :- Wheat (Rabi).

Ref :- W.B. 58(35).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 7 to 15.11.1953. (iv) (a) 4 to 5 ploughings and 2 harrowings. (b) Line sowing. (c) 66 to 77 lb./ac. (d) 9" between rows (e) N.A. (v) 100 mds./ac. of cowdung. (vi) N.P.—710. (vii) Unirrigated. (viii) 1 to 2 weedings and 2 hoeings. (ix) N.A. (x) Last week of April, 1959.

2. TREATMENTS :

5 sources of 40 lb./ac. of N : S_0 =No application of N, S_1 =A/S, S_2 =Urea, S_3 =A/C and S_4 =C/N.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 34' × 26'. (b) 32' × 24'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1955—60 (modified in the year 1953 only). (b) Yes. (c) N.A. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 1659 lb./ac. (ii) 210.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	1085	1727	1878	1762	1843

S.E./mean = 93.9 lb./ac.

Crop :- Wheat (Rabi).

Ref :- W.B. 59(28).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :— To study the effects of A/S and A/C on Wheat.

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 9.11.1959. (iv) (a) 2 ploughings and ladderings. (b) Line sowing by seed drill. (c) 30 srs./ac. (d) 9" between rows. (e) N.A. (v) Nil. (vi) N.P.—710. (vii) Unirrigated. (viii) 1 weeding. (ix) 0.03". (x) 19.3.1960 to 21.3.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no 56.30 on page 172.

5. RESULTS :

(i) 1400 lb./ac. (ii) 216.4 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1295 lb./ac.

	S_1	S_2	Mean
N_1	1284	1319	1301
N_2	1718	1386	1552
Mean	1501	1352	1426

S.E. of any marginal mean = 68.4 lb./ac.

S.E. of body of table or control mean = 96.8 lb./ac.

Crop :- Wheat (Rabi).**Ref :- W.B. 59(33).****Site :- State Agri. Farm, Burdwan.****Type :- 'M'.**

Object :- To study the effects of N, P and K on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 14.11.1959. (iv) (a) 6 ploughings and 4 ladderings. (b) Line sowing by seed drill. (c) N.A. (d) 9" between lines. (e) N.A. (v) Nil. (vi) N.P.—798. (vii) Irrigated. (viii) 1 weeding. (ix) Nil. (x) 16.3.1960 to 19.3.1960.

2. TREATMENTS :

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

(1) 3 levels of N : $N_0=0$, $N_1=40$ and $N_2=60$ 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. P_2O_5 applied on 14.11.1959 ; N and K_2O applied on 22.12.1959.**3. DESIGN :**(i) Fact. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 2. (iv) (a) $33' \times 33'$. (b) $31' \times 31'$. (v) $1' \times 1'$. (vi) Yes.**4. GENERAL :**

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1959—contd. (b) Yes. (c) Nil. (v) (a) Malda and Kalyani. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 846 lb./ac. (ii) 232.6 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	N_0	N_1	N_2
K_0	868	893	862	875	421	1018	1185
K_1	800	814	890	835	406	927	1171
K_2	812	758	913	828	451	987	1045
Mean	827	822	888	846	426	977	1134
N_0	443	457	379				
N_1	930	981	1020				
N_2	1107	1028	1267				

S.E. of any marginal mean

= 54.8 lb./ac.

S.E. of body of any table

= 95.0 lb./ac.

Crop :- Wheat.**Ref :- W.B. 57(5).****Site :- State Agri. Farm, Cooch Behar.****Type :- 'M'.**

Object :- To study the effects of A/S and A/C on Wheat.

1. BASAL CONDITIONS :

(i) (a) Wheat—Jute. (b) Jute. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 14.11.1957. (iv) (a) 6 ploughings and laddering. (b) Broadcast. (c) 1 md./ac. (d) and (e) N.A. (v) 100 mds./ac. of cowdung. (vi) N.P.—710 (medium). (vii) Irrigated. (viii) 1 hand weeding. (ix) N.A. (x) 9.4.1958.

2. TREATMENTS :

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

(1) 2 sources of N : $S_1=A/S$ and $S_2=A/C$.(2) 2 levels of N : $N_1=40$ and $N_2=60$ lb./ac.

Fertilizers were broadcast on 17.12.1957.

3. DESIGN :

(i) L. sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 34'×26'. (b) 32'×24'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 2016 lb./ac. (ii) 204.2 lb./ac. (iii) Main effect of N is significant and 'control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1669 lb./ac.

	S ₁	S ₂	Mean
N ₁	2252	2165	2208
N ₂	1908	2089	1998
Mean	2080	2127	2103

S.E. of any marginal mean = 64.6 lb./ac.

S.E. of body of table or control mean = 91.3 lb./ac.

Crop :- Wheat.

Ref :- W.B. 58(10).

Site :- State Agri. Farm, Cooch Behar.

Type :- 'M'.

Object :- To study the effects of A/S and A/C on Wheat.

1. BASAL CONDITIONS :

(i) (a) Wheat—Jute. (b) Jute. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 18.11.1958. (iv) (a) 6 ploughings and ladderings. (b) Broadcast. (c) 1 md./ac. (d) and (e) N.A. (v) Cowdung at 100 mds./ac. broadcast on 12.11.1958. (vi) N.P.—710 (medium). (vii) Irrigated. (viii) 1 weeding. (ix) 9.85%. (x) 22 and 23.4.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(5) on page 175.

5. RESULTS :

(i) 1639 lb./ac. (ii) 113.0 lb./ac. (iii) Main effects of N and S and 'control vs. others' are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1291 lb./ac.

	S ₁	S ₂	Mean
N ₁	1596	1718	1657
N ₂	1815	2026	1920
Mean	1705	1872	1788

S.E. of any marginal mean = 35.7 lb./ac.

S.E. of body of table or control mean = 50.5 lb./ac.

Crop :- Wheat (Rabi).**Ref :- W.B. 59(20).****Site :- State Agri. Farm, Cooch Behar.****Type :- 'M'.**

Object :—To study the effects of A/S and A/C on Wheat.

1. BASAL CONDITIONS :

(i) (a) Jute—Wheat. (b) Jute. (c) N.A. (ii) (a) Silty and fine sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 18.11.1959. (iv) (a) 4 to 6 ploughings and harrowings. (b) Broadcast. (c) 1 md./ac. (d) and (e) N.A. (v) Nil. (vi) N.P.—710 (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 4.4.1960 and 5.4.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(5) on page 175.

Fertilizers applied on 15.11.1959 and top dressing done on 20.12.1959.

5. RESULTS :

(i) 1810 lb./ac. (ii) 95.5 lb./ac. (iii) Main effect of N and 'control vs. others' are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1479 lb./ac.

	S ₁	S ₂	Mean
N ₁	1759	1779	1769
N ₂	2001	2033	2017
Mean	1880	1906	1893

S.E. of any marginal mean = 30.2 lb./ac.

S.E. of body of table or control mean = 42.7 lb./ac.

Crop :- Wheat (Rabi).**Ref :- W.B. 58(8).****Site :- State Seed Multiplication Farm, Fulia.****Type :- 'M'.**

Object :—To study the effects of A/S and A/C on Wheat.

1. BASAL CONDITIONS :

(i) (a) Jute—Wheat. (b) Jute. (c) As per treatments. (ii) (a) Fine sandy loam. (b) Refer soil analysis, Fulia. (iii) N.A. (iv) (a) 4 to 6 ploughings and ladderings. (b) Broadcast. (c) to (e) N.A. (v) Nil. (vi) N.P.—710 (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(5) on page 175.

5. RESULTS :

(i) 1887 lb./ac. (ii) 218.6 lb./ac. (iii) Main effect of S is significant and 'control vs. others' is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1463 lb./ac.

	S ₁	S ₂	Mean
N ₁	1826	1997	1911
N ₂	1894	2257	2075
Mean	1860	2127	1993

S.E. of any marginal mean = 69.1 lb./ac.

S.E. of body of table or control mean = 97.8 lb./ac.

Crop :- Wheat.**Ref :- W.B. 55(66).****Site :- Govt. Farm, Hathwara.****Type :- 'M'.**

Object :— To test the effect of using kharif G.M. as mulches on the yield of Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 30 mds./ac. of F.Y.M. (ii) (a) Sandy. (b) Refer soil analysis, Hathwara. (iii) 4.11.1955. (iv) (a) 2 ploughings by *desi* plough. (b) Sowing behind the plough. (c) 40 srs./ac. (d) Row to row 1'. (e) N.A. (v) 40 lb./ac. of N as A/S and 40 lb./ac. P_2O_5 as Super. (vi) N.P.—52 (improved late). (vii) Irrigated. (viii) 1 weeding. (ix) 3.59". (x) 8.3.1956 and 9.3.1956.

2. TREATMENTS :

4 G.M. treatments: G_0 =No G.M., G_1 =Sowing *sanai* in 1st week of July and turning it in the middle of August, G_2 =Same as G_1 but cutting and spreading as mulch in the middle of August and G_3 =Same as in G_1 but turning it in the last week of September.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 57'×19'. (b) 55.5'×17.5'. (v) 9'×9'. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Attack of termites, the plot were dusted with geuserol 405 against termites. (iii) No. of tillers and height at the time of harvest and yield of grain and straw. (iv) (a) 1955—N.A. (b) N.A. (c) Nil. (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 220 lb./ac. (ii) 64.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb /ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	228	197	228	228

S.E./mean = 28.6 lb./ac.

Crop :- Wheat (Rabi).**Ref :- W.B. 56(33).****Site :- State Agri. Farm, Kalyani.****Type :- 'M'.**

Object :— To study the effect of A/S and C/N on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) and (b) N.A. (c) Nil. (ii) (a) and (b) N.A. (iii) Middle of November, 1956. (iv) (a) 4 to 5 ploughings and laddering. (b) Broadcast. (c) 82 lb/ac. (d) 9" between plant. (e) N.A. (v) 80 to 100 mds./ac. of cowdung. (vi) N.P.—710 (late). (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) Last week of March, 1957.

2. TREATMENTS :

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

(1) 2 sources of N : S_1 =A/S and S_2 =C/N.

(2) 2 levels of N : N_1 =40 and N_2 =60 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 34'×26'. (b) 32'×24'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain. (iv) (a) 1956—1958. (b) Yes. (c) N.A. (v) (a) Malda. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1054 lb./ac. (ii) 192.5 lb./ac. (iii) 'Control vs. others' alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 716 lb./ac.

	S ₁	S ₂	Mean
N ₁	1089	1050	1069
N ₂	1231	1184	1207
Mean	1160	1117	1138

S.E. of any marginal mean = 60.9 lb./ac.

S.E. of body of table or control mean = 86.1 lb./ac.

Crop :- Wheat (Rabi).**Ref :- W.B. 57(44).****Site :- State Agri. Farm, Kalyani.****Type :- 'M'.**

Object :—To study the effect of A/S and C/N on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kalyani. (iii) 1st to 2nd week of November, 1957. (iv) (a) 2 to 3 ploughings and 2 harrowings. (b) Line sowing. (c) 66 to 77 lb./ac. (d) 9" between rows. (e) N.A. (v) 150 mds./ac. of cowdung. (vi) N.P.—710 (late). (vii) Irrigated. (viii) 2 to 3 weedings and 2 hoeings. (ix) N.A. (x) Last week of March to 1st week of April, 1958.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 56(33) on page 178.

5. RESULTS :

(i) 1279 lb./ac. (ii) 107.3 lb./ac. (iii) Main effect of N and 'Control vs. others' are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 783 lb./ac.

	S ₁	S ₂	Mean
N ₁	1358	1270	1314
N ₂	1493	1492	1492
Mean	1425	1381	1403

S.E. of any marginal mean = 33.9 lb./ac.

S.E. of body of table or control mean = 48.0 lb./ac.

Crop :- Wheat (Rabi).**Ref :- W.B. 58(27).****Site :- State Agri. Farm, Kalyani.****Type :- 'M'.**

Object :— To study the effect of A/S and C/N on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kalyani. (iii) 10.11.1958. (iv) (a) 3 to 4 ploughings and 2 harrowings. (b) Line sowing. (c) 66 to 77 lb./ac. (d) 9" between lines. (e) N.A. (v) 150 mds./ac. of F.Y.M. (vi) N.P.—710. (vii) Irrigated. (viii) 2 weedings and 2 hoeings. (ix) N.A. (x) 20.3.1959 to 23.3.1959.

2. TREATMENTS :

Same as in expt. no 56(33) on page 178.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 40'×27'. (b) 38'×25'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

Same as in expt. no. 56(33) on page 178.

5. RESULTS :

(i) 1947 lb./ac. (ii) 205.6 lb./ac. (iii) Main effect of S_1 and 'control vs. others' are significant. (iv) Av. yield of grain in lb./ac.

Control = 1714 lb./ac.

	S_1	S_2	Mean
N_1	2150	1898	2024
N_2	2105	1869	1987
Mean	2127	1883	2005

S.E. of any marginal mean = 65.0 lb./ac.

S.E. of body of table or control mean = 91.9 lb./ac.

Crop :- Wheat (Rabi).

Ref :- W.B. 59(13).

Site :- State Seed Multiplication Farm, Kalyani.

Type :- 'M'.

Object :- To study the effect of N, P and K on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Jute—Wheat. (b) Jute. (c) Nil. (ii) (a) and (b) N.A. (iii) 21 and 22.11.1959. (iv) (a) 4 to 6 ploughings and ladderings. (b) Broadcasting. (c) N.A. (d) and (e) Nil. (v) Nil. (vi) N.P.—710 (medium). (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 28.3.1960.

2. TREATMENTS :

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

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=60$ lb./ac.

(2) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

(3) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.

Super and Mur. Pot. applied as basal dressing on 20 and 21.11.1959 and A/S as top dressing on 30.12.1959.

3. DESIGN :

(i) 3^3 confd. (NPK² and NPK are confd.). (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 36'×30'. (b) 34'×28'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) and (b) No. (c) Nil. (v) (a) Burdwan and Malda. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1704 lb./ac. (ii) 86.9 lb./ac. (iii) Main effects of N, K and interaction $N \times P$, $N \times K$, are highly significant. and P effect is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean	K ₀	K ₁	K ₂
P ₀	1269	1766	1940	1658	1483	1738	1753
P ₁	1408	1988	1839	1745	1538	1812	1885
P ₂	1444	1786	1890	1707	1616	1717	1788
Mean	1374	1847	1890	1704	1546	1756	1809
K ₀	1341	1556	1740				
K ₁	1496	1835	1935				
K ₂	1283	2149	1994				

S.E. of any marginal mean = 20.5 lb./ac.
 S.E. of body of any table = 35.5 lb./ac.

Crop :- Wheat (Rabi).

Ref :- W.B. 56(31).

Site :- State Agri. Farm, Krishnagar.

Type :- 'M'.

Object :- To study the effect of A/S and A/C at different levels on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Jute—Wheat. (b) Jute. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) Last week of November, 1956.
 (iv) (a) 3 to 4 ploughings and puddlings. (b) Planting. (c) N.A. (d) 9"×9". (e) 2 to 3. (v) and (vi) N.A. (vii) Unirrigated. (viii) 4 to 5 weedings. (ix) 6.29". (x) 3rd week of March, 1957.

2. TREATMENTS :

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

(1) 2 sources of N : S₁=A/S and S₂=A/C.

(2) 2 levels of N : N₁=40 and N₂=60 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 34'×26'. (b) 32'×24'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1956—N.A. (b) and (c) N.A. (v) (a) Burdwan. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1830 lb./ac. (ii) 457.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 1388 lb./ac.

	S ₁	S ₂	Mean
N ₁	1826	1773	1799
N ₂	2123	2042	2082
Mean	1974	1907	1940

S.E. of any marginal mean = 144.7 lb./ac.
 S.E. of body of table or control mean = 204.5 lb./ac.

Crop :- Wheat (Rabi).
Site :- State Agri. Farm, Malda.

Ref :- W.B. 58(38).
Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam and silty clay loam. (b) Refer soil analysis, Malda. (iii) 3.11.1958. (iv) (a) 3 to 4 ploughings and harrowing. (b) Line sowing. (c) 66 to 77 lb./ac. (d) 9" between rows (e) N.A. (v) 100 to 150 mds./ac. of cowdung. (vi) N.P.—710. (vii) Unirrigated. (viii) 2 to 3 weedings and 2 hoeings. (ix) N.A. (x) 27 to 30.3.1959.

2. TREATMENTS :

Main-plot treatments :

3 sources of N : $S_1=A/S$, $S_2=C/N$ and $S_3=A/C$.

Sub-plot treatments :

3 levels of N : $N_0=0$, $N_1=40$ and $N_2=60$ lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 25' × 20'. (b) 23' × 18'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1958. (b) No. (c) Nil. (v) (a) No. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1586 lb./ac. (ii) (a) 324.7 lb./ac. (b) 487.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	S_1	S_2	S_3	Mean
N_0	—	—	—	1409
N_1	1764	1338	1891	1664
N_2	1846	1706	1503	1685
Mean	1805	1522	1697	—

S.E. of difference of two

1. S marginal means	= 93.7 lb./ac.
2. N marginal means	= 162.3 lb./ac.
3. N means at the same level of S	= 281.2 lb./ac.
4. S means at the same level of N	= 253.8 lb./ac.

Crop :- Wheat (Rabi).
Site :- State Agri. Farm, Malda.

Ref :- W.B. 59(16).
Type :- 'M'.

Object :—To study the effect of Nitrogenous fertilizers on the yield of Wheat.

1. BASAL CONDITIONS

(i) (a) Paddy-Wheat. (b) Paddy. (c) As per treatments. (ii) (a) Ganga riverine. (b) Refer soil analysis, Malda. (iii) 20.11.1959. (iv) (a) 6 ploughings and 4 ladderings. (b) Line sowing by seed drill. (c) N.A. (d) 9" × 9". (e) N.A. (v) Nil. (vi) N.P.—710. (vii) Irrigated. (viii) 1 weeding. (ix) 4.45". (x) 9.4 1960 and 11.4.1960.

2. TREATMENTS :

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

(1) 5 sources of N : $S_1=A/S$, $S_2=C/N$, $S_3=A/C$, $S_4=A/S/N$ and $S_5=Urea$.

(2) 2 levels of N : $N_1=40$ and $N_2=60$ lb./ac.

Manures top dressed on 22.12.1959.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 30'×20'. (b) 28'×18'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1959—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1436.6 lb./ac. (ii) 185.4 lb./ac. (iii) Main effect of N and 'control vs. others' are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 699 lb./ac.

	S ₁	S ₂	S ₃	S ₄	S ₅	Mean
N ₁	1399	1558	1227	1461	1307	1390
N ₂	1592	1712	1635	1649	1562	1630
Mean	1495	1635	1431	1555	1434	1510

S.E. of S marginal mean = 65.5 lb./ac.

S.E. of N marginal mean = 41.4 lb./ac.

S.E. of body of table or control mean = 92.7 lb./ac.

Crop :- Wheat (Rabi).

Ref :- W.B. 59(17).

Site :- State Agri. Farm, Malda.

Type :- 'M'.

Object :- To study the effects of N, P and K on the yield of Wheat.

1. BASAL CONDITIONS:

(i) (a) to (c) Nil. (ii) (a) Gangetic alluvium, neutral clay. (b) Refer soil analysis, Malda. (iii) 25.11.1959. (iv) (a) 6 ploughings and 4 ladderings. (b) Line sowing by seed drill. (c) N.A. (d) Spacing between lines 9". (e) N.A. (v) Nil. (vi) N.P.—799. (vii) Irrigated. (viii) 1 weeding. (ix) 4.5". (x) 6 to 8.4.1960.

2. TREATMENTS :

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

(1) 3 levels of N : N₀=0, N₁=40 and N₂=60 lb./ac.

(2) 3 levels of P : P₀=0, P₁=20 and P₂=40 lb./ac.

(3) 3 levels of K : K₀=0, K₁=20 and K₂=40 lb./ac.

P₂O₅ applied on 24.11.1959 and N, K₂O applied on 6.1.1960.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 2. (iv) (a) 30'×36'. (b) 28'×34'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1959—contd. (b) Yes. (c) Nil. (v) (a) Burdwan and Kalyani. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1109 lb./ac. (ii) 172.2 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	Mean	N ₀	N ₁	N ₂
K ₀	981	1166	1220	1122	831	1258	1278
K ₁	1050	1239	1149	1146	883	1214	1342
K ₂	1058	1000	1121	1060	834	1089	1256
Mean	1030	1135	1163	1109	849	1187	1292
N ₀	746	924	877				
N ₁	1112	1198	1251				
N ₂	1232	1283	1362				

S.E. of any marginal mean

= 40.6 lb./ac.

S.E. of body of any table

= 70.3 lb./ac.

Crop :- Wheat (Rabi).**Ref :- W.B. 57(48).****Site :- State Agri. Farm, Malda.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat. (b) Paddy. (c) N.A. (ii) (a) Loam and sandy loam. (b) Refer soil analysis, Malda. (iii) 22.11.1957. (iv) (a) 4 to 5 ploughings and 2 ladderings. (b) Line sowing. (c) 66 to 77 lb./ac. (d) 9" between lines. (e) N.A. (v) N.A. (vi) N.P.—710. (vii) Unirrigated. (viii) 2 to 3 weedings and thinning. (ix) N.A. (x) 8.4.1958 to 10.4.1958.

2. TREATMENTS :

All combinations of (1), (2)+a control (3 plots).

(1) 2 levels of N : N₁=40 and N₂=60 lb./ac.(2) 3 sources of N : S₁=A/S, S₂=C/N and S₃=A/C.**3. DESIGN :**

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 25'×20'. (b) 23'×18'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1955—1958 (failed in 1956). (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1674 lb./ac. (ii) 188.3 lb./ac. (iii) 'Control vs. rest' alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 1385 lb./ac.

	S ₁	S ₂	S ₃	Mean
N ₁	1804	1727	1774	1768
N ₂	1729	1883	1995	1869
Mean	1766	1805	1884	1818

S.E. of N marginal mean or control mean

= 44.4 lb./ac.

S.E. of S marginal mean

= 54.4 lb./ac.

S.E. of the body of the table

= 76.9 lb./ac.

Crop :- Wheat (Rabi).**Ref :- W.B. 59(SFT).****Centre :- Birbhum (c.f.).****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Laterite and red. (iii) Nil. (iv) and (v) N.A. (vi) November, 1959. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1960.

2. 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. Pot.nk =20 lb./ac. of N as A/S+20 lb./ac. of K_2O as Mur. Pot.pk =20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. 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 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 *kharif* cereal, 8 on *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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per treatments. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of grain in lb./ac.	247	91	16	50.2	0	-8	25	16	39.5

Control yield = 848 lb./ac. and no. of trials = 16.

Crop :- Wheat (Rabi).**Ref :- W.B. 58(SFT).****Centre :- Murshidabad (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Wheat 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) and (v) N.A. (vi) November, 1958. (vii) Unirrigated. (viii) and (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) above conducted at Birhum

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of grain in lb./ac.	107	74	49	55.1	41	16	74	-33	42.8

No. of trials = 5.

Crop :- Wheat (Rabi).**Ref :- W.B. 59(SFT).****Centre :- Murshidabad (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Wheat 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) and (v) N.A. (vi) November, 1959. (vii) As per treatments. (viii) and (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) on page 185 conducted in Birbhum.

5. RESULTS :

Effect	Irrigated								S.E.
	n	p	k	S.E.	np	nk	pk	npk	
Av. response of grain in lb./ac.	280	49	33	14.0	0	16	41	25	16.5

Control yield = 848 lb./ac. and no. of trials = 6.

Effect	Unirrigated								S.E.
	n	p	k	S.E.	np	nk	pk	npk	
Av. response of grain in lb./ac.	239	123	—8	33.7	16	—74	82	—16	25.5

Control yield = 1036 lb./ac. and no. of trials = 8.

Crop :- Wheat (Rabi).**Ref :- W.B. 59(SFT).****Centre :- Nadia (c.f.).****Type :- M'.**

Object :—Type A—To study the response of Wheat 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) and (v) N.A. (vi) November, 1959. (vii) Unirrigated. (viii) and (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) on page 185 conducted in Birbhum.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of grain in lb./ac.	49	16	16	5.8	8	8	8	0	6.6

Control yield = 379 lb./ac. and no. of trials = 12.

Crop :- Wheat (Rabi).**Ref :- W.B. 59(SFT).****Centre :- 24-Parganas (c.f.).****Type :- 'M'.**

Object :—Type A—To study the response of Wheat 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) and (v) N.A. (vi) November, 1955. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) on page 185 conducted in Birbhum.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	n _p k	S.E.
Av. response of grain in lb./ac.	255	49	33	14.8	0	0	25	—8	11.5

Control yield = 642 lb./ac. and no. of trials = 7.

Crop :- Wheat (Rabi).

Ref :- W.B. 59(SFT).

Centre :- Birbhum (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) Laterite and red. (iii) Nil. (iv) and (v) N.A. (vi) November, 1959. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1960.

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.
- n₁''' = 20 lb./ac. of N as C/A/N.
- n₂''' = 40 lb./ac. of N as C/A/N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zone and one field assistant 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 *kharif* cereal, 8 on *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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per treatments. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield of grain in lb./ac.	823	1004	1078	987	1127	938	1020

G.M. = 997 lb./ac. ; S.E./mean = 19.78 lb./ac. and no. of trials = 13.

Crop :- Wheat (Rabi).

Ref :- W.B. 58(SFT).

Centre :- Murshidabad (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) and (v) N.A. (vi) November. (vii) Unirrigated. (viii) and (ix) N.A. (x) April, 1959.

2. TREATMENTS :

0 = Control (no manure).
 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.
 n_1''' = 20 lb./ac. of N as C/A/N.
 n_2''' = 40 lb./ac. of N as C/A/N.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59(SFT) on page 187 conducted at Birbhum.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield of grain in lb./ac.	1257	1358	1580	1415	1514	1399	1481

G.M. = 1431 lb./ac.; S.E./mean = 12.80 lb./ac. and no. of trials = 3.

Crop :- Wheat (Rabi).

Ref :- W.B. 59(SFT).

Centre :- Murshidabad (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) and (v) N.A. (vi) November, 1959. (vii) As per treatments. (viii) and (ix) N.A. (x) April, 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) on page 187 conducted at Birbhum.

5. RESULTS :

Treatment	Irrigated						
	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield of grain in lb./ac.	897	1275	1531	1045	1349	955	1119

G.M. = 1167 lb./ac.; S.E./mean = 29.7 lb./ac. and no. of trials = 7.

Treatment	Unirrigated						
	0	n_1	n_2	n_1'	n_2'	n_1''	n_2''
Av. yield of grain in lb./ac.	1051	1168	1300	1136	1152	1119	1201

G.M. = 1162 lb./ac.; S.E./mean = 47.1 lb./ac. and no. of trials = 7.

Crop :- Wheat (Rabi).**Ref :- W.B. 59(SFT).****Centre :- Nadia (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) and (v) N.A. (vi) November, 1959. (vii) Unirrigated. (viii) to (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) on page 187 conducted at Birbhum.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield of grain in lb./ac.	387	436	494	420	461	461	477

G.M. = 448 lb./ac. ; S.E./mean = 12.2 lb./ac. and no. of trials = 12.

Crop :- Wheat (Rabi).**Ref :- W.B. 59(SFT).****Centre :- 24-Parganas (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) and (v) N.A. (vi) November, 1959. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) on page 187 conducted at Birbhum.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield of grain in lb./ac.	675	839	930	815	913	815	922

G.M. = 844 lb./ac. ; S.E./mean = 23.9 lb./ac. and no. of trials = 7.

Crop :- Wheat (Rabi).**Ref :- W.B. 56(47).****Site :- State Agri. Farm, Kalimpong.****Type :- 'CV'.**

Object :- To find out the best date of sowing of different varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) Ploughing and spading. (b) Line sowing. (c) 20 srs./ac. (d) 1' × 3". (e) N.A. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) Weeding and thinning. (ix) N.A. (x) 8.3.1957 to 8.5.1957.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties : V₁=N.P.—781 and V₂=N.P.—809.(2) 10 dates of sowing : D₁=20.9.1956, D₂=5.10.1956, D₃=20.10.1956, D₄=4.11.1956, D₅=19.11.1956, D₆=3.12.1956, D₇=18.12.1956, D₈=2.1.1957, D₉=17.1.1957 and D₁₀=4.2.1957.**3. DESIGN :**

(i) Fact. in R.B.D. (ii) (a) 20. (b) N.A. (iii) 2. (iv) (a) 6' × 6'. (b) 4' × 5½'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) to (vi) N.A. (vii) Yield in the treatments D_9 and D_{10} with V_1 and V_2 were very low, hence rejected for analysis.

5. RESULTS :

(i) 2488 lb./ac. (ii) 746.2 lb./ac. (iii) Main effect of D alone is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	Mean
V_1	3655	3115	2509	1941	3276	2926	2538	2462	2803
V_2	3324	3693	1259	2348	2386	2613	748	1013	2173
Mean	3489	3404	1884	2144	2831	2769	1643	1737	2488

S.E. of V marginal mean = 186.5 lb./ac.
 S.E. of D marginal mean = 373.1 lb./ac.
 S.E. of body of table = 527.6 lb./ac.

Crop :- Wheat (*Rabi*).

Ref :- W.B. 54(65).

Site :- State Agri. Res. Instt., Tollygunj.

Type :- 'CV'.

Object :- To find out the best method of sowing for Wheat.

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Tollygunj. (iii) 26.11.1954. (iv) (a) Ploughing and laddering. (b) to (d) As per treatments. (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Thinning and weeding. (ix) N.A. (x) 15 to 24.3.1955.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties of wheat : V_1 =Gangajali and V_2 =N.P.—499.

(2) 2 methods of sowing : M_1 =Broadcasting at 1 mj./ac. and M_2 =Line sowing by seed drill at 20 srs./ac. with 1'×3" spacing.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) 70'×29'. (iii) 4. (iv) (a) 29'×16'. (b) 27'×14'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1953—1957. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1449 lb./ac. (ii) 295.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	Mean
V_1	1396	1467	1431
V_2	1302	1632	1467
Mean	1349	1549	1449

S.E. of any marginal mean = 104.3 lb./ac.
 S.E. of body of table = 147.5 lb./ac.

Crop :- Wheat (*Rabi*).

Ref :- W.B. 55(87).

Site :- State Agri. Res. Instt., Tollygunj.

Type :- 'CV'.

Object :- To find out the best method of sowing for Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Tollygunj. (iii) 10.11.1955. (iv) (a) Ploughing and laddering. (b) to (d) As per treatments. (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 4 weedings and thinning. (ix) N.A. (x) 6 to 20.3.1955.

2. TREATMENTS :

Same as in expt. no. 54(65) on page 190.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) 32' × 26'. (iii) 4. (iv) (a) 26' × 13'. (b) 24' × 11'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Yield of grain. (iv) (a) 1953—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 795 lb./ac. (ii) 155.1 lb./ac. (iii) Main effect of V and interaction M × V are significant. (iv) Av. yield of grain in lb./ac.

	M ₁	M ₂	Mean
V ₁	820	578	699
V ₂	789	995	892
Mean	804	786	795

S.E. of any marginal mean = 54.8 lb./ac.

S.E. of body of table = 77.5 lb./ac.

Crop :- Wheat (*Rabi*).

Ref :- W.B. 55(58).

Site :- State Agri. Res. Instt., Tollygunj.

Type :- 'CV'.

Object :- To find out the best date of sowing for Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Tollygunj. (iii) As per treatments. (iv) (a) Ploughing and laddering. (b) Line sowing. (c) 20 srs./ac. (d) 1' × 3'. (e) N.A. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) Weeding and thinning. (ix) N.A. (x) 6.3.1956 to 20.4.1956.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties of wheat : V₁ = Gangajali and V₂ = W-245.

(2) 11 dates of sowing : D₁ = 8.10.1955, D₂ = 18.10.1955, D₃ = 28.10.1955, D₄ = 8.11.1955, D₅ = 18.11.1955, D₆ = 28.11.1955, D₇ = 7.12.1955, D₈ = 17.12.1955, D₉ = 27.12.1955, D₁₀ = 6.10.1956 and D₁₁ = 16.1.1956.

3. DESIGN :

(i) R.B.D. (ii) (a) 22. (b) 110' × 32'. (iii) 2. (iv) (a) 15' × 10'. (b) 13' × 8'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Effected by helminthosporium and stem borer. Control measure—N.A. (iii) Yield of grain. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 578 lb./ac. (ii) 318.8 lb./ac. (iii) Main effects of V and D are significant. (iv) Av. yield of grain in lb./ac.

	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	D ₇	D ₈	D ₉	D ₁₀	D ₁₁	Mean
V ₁	513	862	297	241	590	831	849	431	202	159	172	468
V ₂	689	724	1241	1034	698	1133	564	711	323	271	190	689
Mean	671	793	769	638	644	982	706	571	262	215	181	578

S.E. of V marginal mean = 68.0 lb./ac.
 S.E. of D marginal mean = 159.4 lb./ac.
 S.E. of body of table = 225.4 lb./ac.

Crop :- Wheat (Rabi).

Ref :- W.B. 56(46).

Site :- State Agri. Res. Instt., Tollygunj.

Type :- 'CV'.

Object :-To find out the best date of sowing of different varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Tollygunj. (iii) As per treatments. (iv) (a) Ploughing and spading. (b) Line sowing by drill. (c) 20 srs./ac. (d) 1' × 3'. (e) N.A. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Weeding and thinning. (ix) N.A. (x) 15.3.1957 to 16.4.1957.

2. TREATMENTS :

All combination of (1) and (2)

(1) 2 varieties of wheat : V₁=Gangajali and V₂=N.P.—799.

(2) 6 dates of sowing : D₁=21.11.1956, D₂=1.12.1956, D₃=11.12.1956, D₄=21.12.1956, D₅=31.12.1956 and D₆=10.1.1957.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 2. (iv) (a) 10' × 18'. (b) 8' × 16'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain. (iv) (a) 1953—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 670 lb./ac. (ii) 245.0 lb./ac. (iii) Main effects of V and D are highly significant. (iv) Av. yield of grain in lb./ac.

	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	Mean
V ₁	784	567	455	238	161	137	390
V ₂	1288	1309	1155	875	676	392	949
Mean	1036	938	805	556	418	264	670

S.E. of V marginal mean = 70.7 lb./ac.
 S.E. of D marginal mean = 122.5 lb./ac.
 S.E. of body of table = 173.2 lb./ac.

Crop :- Barley (Rabi).

Ref :- W.B. 57(38).

Site :- State Agri. Farm, Malda.

Type :- 'M'.

Object :-To study the effect of boron over a basal dressing of N and P on the yield of Barley.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Malda. (iii) 18.12.1957. (iv) (a) 2 to 3 ploughings. (b) Line sowing. (c) to (e) N.A. (v) 30 lb./ac. of N as A'S and 25 lb./ac. of P_2O_5 as Super. (vi) Local. (vii) Unirrigated. (viii) Thinning and weeding. (ix) 4.45". (x) 9.4.1958.

2. TREATMENTS :

5 levels of boron : $B_0=0$, $B_1=5$, $B_2=10$, $B_3=20$ and $B_4=30$ lb./ac.
Boron applied on 17.1.1958.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) $20' \times 16'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1445 lb./ac. (ii) 334.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	B_0	B_1	B_2	B_3	B_4
Av. yield	1478	1330	1264	1531	1622

S.E./mean = 167.4 lb./ac.

Crop :- Potato.

Ref :- W.B. 58(3).

Site :- State Agri. Farm, Berhampore.

Type :- 'M'.

Object :- To find out the optimum phosphate requirement for Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (ii) Potato. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Berhampore. (iii) N.A. (iv) (a) 4 ploughings and ladderings. (b) and (c) N.A. (d) $2' \times 9'$. (e) N.A. (v) 80 lb./ac. of N+80 lb./ac. of K_2O . (vi) Darjeeling red round (medium). (vii) Irrigated. (viii) 2 earthings and 4 weedings. (ix) and (x) N.A.

2. TREATMENTS :

5 levels of P_2O_5 : $P_0=0$, $P_1=40$, $P_2=80$, $P_3=120$ and $P_4=160$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) $30' \times 22'$. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 7.80 tons./ac. (ii) 0.62 tons./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in tons./ac.

Treatment	P_0	P_1	P_2	P_3	P_4
Av. yield	7.05	7.46	7.57	7.79	9.11

S.E./mean = 0.31 tons./ac.

Crop :- Paddy.

Ref :- W.B. 59(11).

Site :- State Agri. Farm, Berhampore.

Type :- 'M'.

Object :- To find out the optimum phosphate requirement for Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Berhampore. (iii) N.A. (iv) (a) 4 ploughings and ladderings. (b) to (e) N.A. (v) 80 lb./ac. of N+80 lb./ac. of K_2O . (vi) Darjeeling red round (medium). (vii) Unirrigated. (viii) 2 earthings and 4 weedings. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(3) on page 193.

5. RESULTS :

(i) 11.39 tons./ac. (ii) 1.19 tons./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in tons./ac.

Treatment	P_0	P_1	P_2	P_3	P_4
Av. yield	11.49	11.52	11.00	11.68	11.28

S.E./mean = 0.60 tons./ac.

Crop :- Potato.

Ref :- W.B. 56(18).

Site :- State Agri. Farm, Bhanjang.

Type :- 'M'.

Object :— To find out the most suitable dose of fertilizers for increasing the yield of Potato in the hills.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cabbage. (c) 100 mds./ac. of cowdung+80 lb./ac. of N+160 lb./ac. of P_2O_5 +80 lb./ac. of K_2O . (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 8.1.1956. (iv) (a) to (c) N.A. (d) 2'×9". (e) N.A. (v) Nil. (vi) Darjeeling red round (early). (vii) Unirrigated. (viii) 2 earthings and 4 weedings. (ix) 54.73%. (x) 24.7.1956.

2. TREATMENTS :

4 manurial treatments : M_0 =Control, M_1 =40 lb./ac. of N+80 lb./ac. of P_2O_5 +20 lb./ac. of K_2O , M_2 =60 lb./ac. of N+120 lb./ac. of P_2O_5 +30 lb./ac. of K_2O , M_3 =80 lb./ac. of N+160 lb./ac. of P_2O_5 +40 lb./ac. of K_2O and M_4 =20 lb./ac. of N+40 lb./ac. of P_2O_5 +60 lb./ac. of K_2O .

N, P_2O_5 and K_2O applied as A/S, Super and Mur. Pot. respectively.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 30'×22'. (b) 27.75'×16'. (v) 1½'×3'. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) About 60% plants affected with blight disease. Five sprayings were given with 4 lb. Perenox and 2 lb. of 50% water dispensible DDT per 100 gallons of water. (iii) Yield of tuber. (iv) (a) 1955—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1.20 tons/ac. (ii) 0.37 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	0.43	1.26	1.37	1.76	1.17

S.E./mean = 0.15 tons/ac.

Crop :- Potato.

Ref :- W.B. 57(1).

Site :- State Agri. Farm, Bhanjang.

Type :- 'M'.

Object :— To find out the effect of application of lime on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Potato. (c) N.A. (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 30.11.1957. (iv) (a) to (c) N.A. (d) 2' x 9". (e) N.A. (v) N.A. (vi) Darjeeling red round (medium). (vii) Unirrigated. (viii) 2 earthings and 4 weedings. (ix) 98.40%. (x) 7.10.1958.

2. TREATMENTS :

5 levels of lime : $L_0=0$, $L_1=5$, $L_2=10$, $L_3=15$ and $L_4=20$ mds./ac.
Lime applied as broadcast on 30.11.1957.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 30' x 22'. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Moderate. (ii) N.A. (iii) Yield of tuber. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2.10 tons/ac. (ii) 0.20 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in tons/ac.

Treatment	L_0	L_1	L_2	L_3	L_4
Av. yield	1.69	2.45	2.05	2.02	2.31

S.E./mean = 0.10 tons/ac.

Crop :- Potato.

Ref :- W.B. 58(4).

Site :- State Agri. Farm, Bhanjang.

Type :- 'M'.

Object :— To find out the optimum requirement of potash level for Potato.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Potato. (c) N.A. (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 3.1.1958. (iv) (a) to (c) N.A. (d) 2' x 9". (e) N.A. (v) 80 lb./ac. of N as A/S+80 lb./ac. of P_2O_5 as Super. (vi) Up-to-date. (vii) Unirrigated. (viii) 2 earthings and 4 weedings. (ix) 84.20%. (x) 4.9.1958.

2. TREATMENTS :

5 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=20$, $K_2=40$, $K_3=80$ and $K_4=100$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 30' x 22'. (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Medium to fair. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1.92 tons/ac. (ii) 0.22 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in tons/ac.

Treatment	K_0	K_1	K_2	K_3	K_4
Av. yield	1.92	1.94	1.87	1.81	2.08

S.E./mean = 0.11 tons/ac.

Crop :- Potato.

Ref :- W.B. 59(9).

Site :- State Agri. Farm, Bhanjang.

Type :- 'M'.

Object :— To find out the optimum requirement of potash for the Potato crop in hills.

1. BASAL CODITIONS :

(i) (a) Nil. (b) Potato. (c) Nil. (ii) (a) Borwn forest soil. (b) Refer soil analysis, Bhanjang. (iii) N.A. (iv) (a) 4 ploughings and ladderings. (b) and (c) N.A. (d) 9" × 2'. (e) N.A. (v) 80 lb./ac. of N+160 lb./ac. of P₂O₅. (vi) *Ackersegen* (medium). (vii) Unirrigated. (viii) 2 earthings and 4 weedings. (ix) 83 10". (x) N.A.

2. TREATMENTS :

5 levels of K₂O : K₀=0, K₁=20, K₂=40, K₃=80 and K₄=160 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 5. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/80 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2.08 tons/ac. (ii) 1.12 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in tons/ac.

Treatment	K ₀	K ₁	K ₂	K ₃	K ₄
Av. yield	2.60	2.45	2.24	1.35	1.76

S.E./mean = 0.65 tons/ac.

Crop :- Potato.

Site :- State Agri. Farm, Bhanjang.

Ref :- W.B. 59(8).

Type :- 'M'.

Object :—To find our the possibilities of G.M. on the potato crop in the hills with a view to increase the production.

1. BASAL CONDITIONS :

(i) a) Nil. (b) Potato. (c) Nil. (ii) (a) Hill and forest soil. (b) Refer soil analysis, Bhanjang. (iii) N.A. (iv) (a) 4 ploughings and ladderings. (b) and (c) N.A. (d) 9" × 2'. (e) N.A. (v) Nil. (vi) *Darjeeling* red round (medium). (viii) 2 earthings and 4 weedings. (ix) 83.10". (x) N.A.

2. TREATMENTS :

7 manurial treatments : M₀=Control (30 mds./ac. of mustard oil cake), M₁=G.M. (normal), M₂=G.M. with 4 weeks old plants, M₃=G.M. with 6 weeks old plants, M₄=M₂+40 lb./ac. of N+80 lb./ac. P₂O₅+80 lb./ac. of K₂O, M₅=M₃+40 lb./ac. of N+80 lb./ac. of P₂O₅+80 lb./ac. of K₂O and M₆=100 mds./ac. of F.Y.M.+80 lb./ac. of N+80 lb./ac. of P₂O₅+80 lb./ac. of K₂O.

Lupin was used as G.M. crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1959—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 0.59 tons/ac. (ii) 0.50 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in tons/ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆
Av. yield	0.62	0.59	0.55	0.40	0.77	0.68	0.55

S.E./mean = 0.25 tons/ac.

Crop :- Potato.**Ref :- W.B. 54(46).****Site :- Seed Multiplication Farm, Burdwan.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) 100 mds./ac. of compost. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A. (iv) (a) 2 tractor ploughings followed by harrowing and 1 country ploughing followed by laddering. (b) to (e) N.A. (v) Nil. (vi) Medium. (vii) Irrigated. (viii) 2 earthings followed by top dressing. (ix) and (x) N.A.

2. TREATMENTS :

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

- (1) 2 levels of N : $N_0=0$ and $N_1=40$ lb./ac.
 (2) 2 levels of P_2O_5 : $P_0=0$ and $P_1=40$ lb./ac.
 (3) 2 levels of K_2O : $K_0=0$ and $K_1=40$ lb./ac.

3. DESIGN :

(i) 2^3 balanced partial confd. (ii) (a) 4 plots/block and 2 blocks/replication. (b) N.A. (iii) 4. (iv) (a) $42' \times 22'$. (b) $39' \times 19'$. (v) $1\frac{1}{2}' \times 1\frac{1}{2}'$. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of tuber. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3.96 tons/ac. (ii) 0.09 tons/ac. (iii) Main effects of N, K and interactions $N \times K$ and $P \times K$ are highly significant. Interaction $N \times P \times K$ is significant. (iv) Av. yield of tuber in tons/ac.

	P_0	P_1	Mean	K_0	K_1
N_0	3.50	3.56	3.53	3.38	3.68
N_1	4.39	4.38	4.38	4.13	4.64
Mean	3.94	3.97	3.96	3.75	4.16
K_0	3.66	3.85			
K_1	4.22	4.10			

S.E. of any marginal mean = 0.02 tons./ac.

S.E. of body of any table = 0.03 tons./ac.

Crop :- Potato.**Ref :- W.B. 56(3).****Site :- Seed Multiplication Farm, Burdwan.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jute. (c) 15 mds./ac. of T.C. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 16 and 17.11.1956. (iv) (a) 1 ploughing and laddering. (b) and (c) N.A. (d) $2' \times 9'$. (e) N.A. (v) Nil. (vi) R.K.M. (medium). (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 8 to 10.3.1957.

2. TREATMENTS :

Same as in expt. no. 54(46) above.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) $40' \times 27'$. (b) $37' \times 24'$. (v) $1\frac{1}{2}' \times 1\frac{1}{2}'$. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attacked with late blight. (iii) Tuber yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4.92 tons/ac. (ii) 0.61 tons/ac. (iii) Main effects of N and K are highly significant. (iv) Av. yield of tuber in tons/ac.

	P ₀	P ₁	Mean	K ₀	K ₁
N ₀	4.17	4.44	4.30	3.92	4.69
N ₁	5.36	5.70	5.53	5.18	5.88
Mean	4.76	5.07	4.92	4.55	5.28
K ₀	4.24	4.86			
K ₁	5.29	5.28			

S.E. of any marginal mean

= 0.15 tons./ac.

S.E. of body of any table

= 0.22 tons./ac.

Crop :- Potato (Rabi).

Ref :- W.B. 57(43).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :—To study the effect of N, P and K alone and in combination on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 2nd week of October, 1957. (iv) (a) 5 to 6 ploughings. (b) Planting. (c) 15 to 18 mds./ac. (d) 2' x 9'. (e) 1. (v) 100 mds./ac. of cowdung. (vi) Red round (early). (vii) Unirrigated. (viii) 3 weedings and earthings. (ix) N.A. (x) Last week of March, 1958.

2. TREATMENTS :

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

(1) 3 levels of N as A/S : N₁=40, N₂=80 and N₃=120 lb./ac.

(2) 3 levels of P₂O₅ as Super : P₁=40, P₂=80 and P₃=120 lb./ac.

(3) 3 levels of K₂O as Mur. Pot. : K₁=40, K₂=80 and K₃=120 lb./ac.

3. DESIGN :

(i) 3³ confd. Confounding NPK effect. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 34' x 26'. (b) 32' x 24'. (v) 1' x 1'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Yield of tuber. (iv) (a) 1956—1960. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3.14 tons/ac. (ii) 0.71 tons/ac. (iii) Main effect of P alone is significant. (iv) Av. yield of grain in tons/ac.

	P ₁	P ₂	P ₃	Mean	K ₁	K ₂	K ₃
N ₁	2.85	2.78	3.44	3.02	3.01	3.20	2.86
N ₂	3.16	3.33	2.95	3.15	2.98	2.93	3.54
N ₃	2.73	2.85	4.14	3.24	3.05	3.03	3.64
Mean	2.91	2.99	3.51	3.14	3.01	3.05	3.35
K ₁	3.09	2.86	3.08				
K ₂	2.79	2.87	3.48				
K ₃	2.86	3.23	3.96				

S.E. of any marginal mean = 0.17 tons/ac.
 S.E. of body of table = 0.29 tons/ac.

Crop :- Potato (Rabi).

Ref :- W.B. 58(42).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 29 and 30.11.1958. (iv) (a) 8 to 10 ploughings and 2 spacings. (b) Planting. (c) 15 to 17 mds./ac. (d) 2'×9". (e) 1. (v) 100 to 120 mds./ac. of cowdung. (vi) N.A. (vii) Irrigated. (viii) 2 weedings and earthing. (ix) N.A. (x) 11 to 13.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(43) on page 198.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of tuber. (iv) (a) 1956—1960. (b) Yes. (c) N.A. (v) (a) Kalyani, Malda and Fulia. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 2.86 tons/ac. (ii) 1.13 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of tuber in tons/ac.

	P ₁	P ₂	P ₃	Mean	K ₁	K ₂	K ₃
N ₁	2.54	2.64	2.94	2.71	2.75	2.46	3.02
N ₂	2.82	3.21	2.93	2.99	2.91	2.69	3.36
N ₃	2.72	2.89	3.07	2.89	2.49	2.78	3.39
Mean	2.69	2.91	2.98	2.86	2.68	2.64	3.26
K ₁	2.56	3.03	2.46				
K ₂	2.55	2.63	2.75				
K ₃	2.97	3.07	3.74				

S.E. of any marginal mean = 0.27 tons/ac.
 S.E. of body of table = 0.46 tons/ac.

Crop :- Potato.

Ref :- W.B. 59(34).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 23 and 24.11.1959. (iv) (a) 2 ploughings and ladderings. (b) N.A. (c) 15 to 18 mds./ac. (d) 6"×2½'. (e) N.A. (v) Nil. (vi) R.K.M. (vii) Irrigated. (viii) 2 earthings. (ix) 0.03". (x) 5 to 14.3.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(43) on page 198.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of tubers. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) Kalyani. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1.88 tons/ac. (ii) 0.27 tons/ac. (iii) Main effect of N and interaction $N \times P$ are highly significant. Main effect of P is significant. (iv) Av. yield of tuber in tons/ac.

	P ₁	P ₂	P ₃	Mean	K ₁	K ₂	K ₃
N ₁	1.78	1.69	1.40	1.62	1.51	1.72	1.64
N ₂	1.64	1.86	2.02	1.84	1.72	2.06	1.73
N ₃	2.04	2.54	1.93	2.17	2.25	2.16	2.10
Mean	1.82	2.03	1.78	1.88	1.83	1.98	1.82
K ₁	1.72	1.96	1.80				
K ₂	1.90	2.08	1.96				
K ₃	1.85	2.04	1.58				

S.E. of any marginal mean = 0.06 tons/ac.
S.E. of body of any table = 0.11 tons/ac.

Crop :- Potato (Rabi).

Ref :- W.B. 57(26).

Site :- State Agri. Farm, Fulia.

Type :- 'M',

Object :- To study the effect of N, P and K alone and in combination on the yield of Potato

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Fulia. (iii) 1st week of November, 1957. (iv) (a) 5 to 6 ploughings and 2 harrowings. (b) Sprouts placed in furrows 2" deep. (c) 15 to 18 mds./ac. (d) 2' x 9". (e) 1. (v) 100 mds./ac. of cowdung. (vi) Royal kidney (medium). (vii) Unirrigated. (viii) 3 earthings and 2 to 3 weedings. (ix) N.A. (x) 3rd week of March, 1958.

2. TREATMENTS :

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

(1) 3 levels of N as A/S : N₀=0, N₁=80 and N₂=160 lb./ac.

(2) 3 levels of P₂O₅ as Super : P₀=0, P₁=40 and P₂=80 lb./ac.

(3) 3 levels of K₂O as Mur. Pot. : K₀=0, K₁=40 and K₂=80 lb./ac.

3. DESIGN :

(i) 3³ partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 30' x 22'. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of tuber. (iv) (a) 1957—contd. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 6.15 tons/ac. (ii) 1.12 tons/ac. (iii) Main effects of N and P are highly significant. (iv) Av. yield of tuber in tons/ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	2.99	4.78	6.43	4.73	4.59	4.80	4.81
N ₁	5.14	7.17	7.92	6.74	5.24	7.57	7.42
N ₂	5.48	7.85	7.61	6.98	6.94	6.91	7.09
Mean	4.54	6.60	7.32	6.15	5.59	6.43	6.44
K ₀	3.92	6.14	6.70				
K ₁	5.13	7.18	6.98				
K ₂	4.57	6.48	8.28				

S.E. of any marginal mean = 0.26 tons/ac.

S.E. of body of any table = 0.46 tons/ac.

Crop :- Potato (Rabi).

Ref :- W.B. 58(9).

Site :- State Agri. Farm, Fulia.

Type :- 'M'.

Object :- To study the effect of N, P and K alone and in combination on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) Nil. (ii) (a) Fine sandy loam. (b) Refer soil analysis, Fulia. (iii) Last week of November, 1958. (iv) (a) 1 ploughing and 4 harrowings accompanied by laddering. (b) Planted in rows. (c) 18 mds./ac. (d) 2' x 9". (e) 1. (v) 100 mds./ac. of cowdung about a month before planting. (vi) Royal kidney (medium). (vii) Unirrigated. (viii) 2 earthings and 2 weedings. (ix) N.A. (x) Last week of March, 1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(26) on page 200.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1957—contd; (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 5.90 tons/ac. (ii) 0.94 tons/ac. (iii) Main effect of N is highly significant and interaction N x K is significant. (iv) Av. yield of tuber in tons/ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	4.57	5.00	5.14	4.90	4.63	5.61	4.47
N ₁	5.94	6.43	6.37	6.25	6.03	6.65	6.06
N ₂	6.50	6.12	6.99	6.54	6.25	5.95	7.42
Mean	5.67	5.85	6.17	5.90	5.64	6.07	5.98
K ₀	5.89	5.32	5.70				
K ₁	5.40	6.39	6.42				
K ₂	5.72	5.84	6.39				

S.E. of any marginal mean = 0.22 tons/ac.

S.E. of body of any table = 0.38 tons/ac.

Crop :- Potato.**Ref :- W.B. 59(4).****Site :- State Agri. Farm, Fulia.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) Nil. (ii) (a) Fine sandy loam. (b) Refer soil analysis, Fulia. (iii) N.A. (iv) (a) 4 ploughings and ladderings. (b) and (c) N.A. (d) 9'×2'. (e) N.A. (v) Nil. (vi) Darjeeling Red round (medium). (vii) Unirrigated. (viii) 2 earthings and 4 weedings. (ix) and (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(26) on page 200.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1957—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4.30 tons/ac. (ii) 0.45 tons/ac. (iii) Main effect of N and interaction $N \times P \times K$ are highly significant. Interaction $N \times P$ is significant. (iv) Av. yield of tuber in tons/ac.

	P ₀	P ₁	P ₂	Mean	K ₀	K ₁	K ₂
N ₀	3.02	3.01	4.29	3.44	3.09	3.27	3.97
N ₁	4.89	5.39	5.13	5.14	4.69	5.99	4.73
N ₂	4.63	4.71	3.60	4.31	4.22	4.19	4.53
Mean	4.18	4.37	4.34	4.30	4.00	4.48	4.41
K ₀	3.99	3.89	4.11				
K ₁	4.32	4.42	4.70				
K ₂	4.22	4.80	4.20				

S.E. of any marginal mean = 0.11 tons/ac.
S.E. of body of any table = 0.18 tons/ac.

Crop :- Potato (Rabi).**Ref :- W.B. 56(34).****Site :- State Agri. Farm, Kalyani.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam and sandy loam. (b) Refer soil analysis, Kalyani. (iii) 1st week of October, 1956. (iv) (a) 6 to 8 ploughings. (b) Planting. (c) 15 mds./ac. (d) 2'×9". (e) 1. (v) 100 to 120 mds./ac. of cowdung. (vi) R.—29 (late). (vii) Irrigated. (viii) 4 weedings and interculture. (ix) N.A. (x) Last week of Feb., 1957.

2. TREATMENTS :

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

(1) 2 sources of N : S₁ = A/S and S₂ = C/N.(2) 2 levels of N : N₁ = 40 and N₂ = 80 lb./ac.**3. DESIGN :**

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 34'×26'. (b) 32'×24'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1956—N.A. (b) Yes. (c) N.A. (v) (a) Malda. (d) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2.75 tons/ac. (ii) 0.41 tons/ac. (iii) Only 'control vs. others' is highly significant. (iv) Av. yield of tuber in tons/ac.

Control = 1.97 tons/ac.

	S ₁	S ₂	Mean
N ₁	2.93	2.80	2.86
N ₂	3.11	2.95	3.03
Mean	3.02	2.88	2.95

S.E. of any marginal mean = 0.13 tons/ac.

S.E. of body of table or control mean = 0.18 tons/ac.

Crop :- Potato (Rabi).

Ref :- W.B. 57(52).

Site :- State Agri. Farm, Kalyani.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam and sandy loam. (b) Refer soil analysis, Kalyani. (iii) 1st week of November, 1957. (iv) (a) 7 to 8 ploughings and spadings. (b) Planting. (c) 15 to 18 mds./ac. (d) 2' × 9". (e) 1. (v) 100 mds./ac. of cowdung and 40 lb./ac. of each of N, P and K. (vi) N.A. (vii) Irrigated. (viii) 2 weedings, 3 thinnings and 3 earthings. (ix) N.A. (x) Last week of February, 1958.

2. TREATMENTS :

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

(1) 3 levels of N as A/S : N₁=40, N₂=80 and N₃=120 lb./ac.

(2) 3 levels of P as Super : P₁=40, P₂=80 and P₃=120 lb./ac.

(3) 3 levels of K₂O as Mur. Pot. K₁=40, K₂=80 and K₃=120 lb./ac.

3. DESIGN :

(i) 3³ confd. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 34' × 26'. (b) 32' × 24'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of tuber. (iv) (a) 1957—contd. (b) Yes. (c) N.A. (v) (a) Malda, Fulia and Burdwan. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4.87 tons/ac. (ii) 0.48 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of tuber in tons/ac.

	K ₁	K ₂	K ₃	Mean	P ₁	P ₂	P ₃
N ₁	4.62	4.50	4.44	4.52	4.18	4.39	4.98
N ₂	4.95	5.16	4.58	4.90	4.81	4.72	5.16
N ₃	5.19	5.43	5.00	5.21	5.07	5.50	5.05
Mean	4.92	5.03	4.67	4.87	4.69	4.87	5.06
P ₁	4.43	5.12	4.51				
P ₂	4.98	4.84	4.79				
P ₃	5.35	5.12	4.72				

S.E. of any marginal mean = 0.16 tons/ac.
S.E. of body of any table = 0.28 tons/ac.

Crop :- Potato (Rabi).

Ref :- W.B. 58(48).

Site :- State Agri. Farm, Kalyani.

Type :- 'M'.

Object :- To study the effect of N, P and K alone and in combination on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam and sandy loam. (b) Refer soil analysis, Kalyani. (iii) 21 and 22.11.1958. (iv) (a) 6 to 7 ploughings. (b) Planting. (c) 15 mds./ac (d) 2'×9". (e) 1. (v) N.A. (vi) Royal kidney (medium). (vii) Irrigated. (viii) 3 weeding and 3 earthings. (ix) N.A. (x) 5 and 6.3.1959.

2. TREATMENTS :

Same as in expt. no. 57(52) on page 203.

3. DESIGN :

(i) 3³ confd. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 32'×28'. (b) 30'×26'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of tuber. (iv) (a) 1957—1959. (b) Yes. (c) N.A. (v) (a) Malda Fulia and Burdwan. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 6.47 tons/ac. (ii) 0.73 tons/ac. (iii) Interactions NP²K and NPK² are highly significant. Main effect of P is significant. (iv) Av. yield of tuber in tons/ac.

	P ₁	P ₂	P ₃	Mean	K ₁	K ₂	K ₃
N ₁	6.26	5.63	7.04	6.31	5.83	6.72	6.39
N ₂	6.84	6.67	6.52	6.68	6.89	6.16	6.98
N ₃	5.92	6.34	6.99	6.42	6.34	6.28	6.63
Mean	6.34	6.21	6.85	6.47	6.35	6.39	6.67
K ₁	5.91	5.90	7.25				
K ₂	6.70	6.18	6.28				
K ₃	6.41	6.56	7.03				

S.E. of any marginal mean = 0.17 tons/ac.
S.E. of body of any table = 0.30 tons/ac.

Crop :- Potato.

Ref :- W.B. 58(2).

Site :- Jute Seed Multiplication Farm, Krishnagar.

Type :- 'M'.

Object :- To find out whether G.M. is better than the normal cultivators practices for the cultivation of Potato and also to find out the optimum time for planting under G.M. crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) Nil. (ii) (a) Alluvial. (b) Refer soil analysis, Krishnagar. (iii) N.A. (iv) (a) 4 ploughings and ladderings. (b) and (c) N.A. (d) 9'×2'. (e) N.A. (v) Nil. (vi) Darjeeling red round (medium). (vii) Irrigated. (viii) 2 earthings and 4 weeding. (ix) and (x) N.A.

2. TREATMENTS :

7 manurial treatments : M_0 =Control (30 mds./ac. of mustard oil cake), M_1 =G.M. (normal), M_2 =G.M. with 4 weeks old, M_3 =G.M. with 6 weeks old, M_4 =G.M. with 4 weeks old+4 lb./ac. of N+80 lb./ac. of P_2O_5 +80 lb./ac. of K_2O , M_5 =G.M. with 6 weeks old+40 lb./ac. of N+80 lb./ac. of P_2O_5 +80 lb./ac. of K_2O and M_6 =100 mds./ac. of cowdung+80 lb./ac. of N+80 lb./ac. of P_2O_5 +80 lb./ac. of K_2O .

Dhaincha was used as G.M. crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) (a) Malda. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3.20 tons/ac. (ii) 0.60 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of tuber in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	2.83	2.87	2.68	3.27	4.11	3.56	3.05

S.E./mean = 0.30 tons/ac.

Crop :- Potato.

Ref :- W.B. 59(3).

Site :- Jute Seed Multiplication Farm, Krishnagar.

Type :- 'M'.

Object :—To find out whether G.M. is better than the normal cultivation practices for cultivation of Potato and to find out the optimum time for ploughing under G.M. crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha*. (c) Nil. (ii) (a) Loamy soil. (b) Refer soil analysis, Krishnagar. (iii) N.A. (iv) (a) 4 ploughings and ladderings. (b) to (e) N.A. (v) Nil. (vi) Darjeeling red round. (vii) Unirrigated. (viii) 2 earthings and 4 weedings. (ix) and (x) N.A.

2. TREATMENTS :

Same as in expt. no. 58(2) on page 204.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 30'×22'. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) (a) Malda. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 6.09 tons/ac. (ii) 0.50 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	7.13	5.29	4.19	5.55	7.13	7.24	6.10

S.E./mean = 0.45 tons/ac.

Crop :- Potato.**Ref:- W.B. 55(8).****Site :- State Agri Farm, Malda.****Type :- 'M'.**

Object :—To find out the most suitable manurial dose for Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 30 mds /ac. of compost + 20 lb./ac. of N as A/S + 20 lb /ac. of P_2O_5 as Super. (ii) (a) Ganga riverine. (b) Refer soil analysis, Malda. (iii) 11 and 12.11.1955. (iv) (a) N.A. (b) Planted in rows. (c) N.A. (d) 2' × 9". (e) N.A. (v) Nil. (vi) Up-to-date (late). (vii) Irrigated. (viii) 2 earthings and 3 weedings. (ix) N.A. (x) 11 and 12.3.1956.

2. TREATMENTS :

14 manurial treatments : M_0 = Control, M_1 = 80 lb./ac. of N, M_2 = 100 lb./ac. of N, M_3 = M_1 + 40 lb./ac. of P_2O_5 , M_4 = M_1 + 60 lb./ac. of P_2O_5 , M_5 = M_2 + 50 lb /ac. of P_2O_5 , M_6 = M_2 + 200 lb./ac. of P_2O_5 , M_7 = M_3 + 40 lb./ac. of K_2O , M_8 = M_1 + 80 lb./ac. of P_2O_5 + 80 lb./ac. of K_2O , M_9 = M_1 + 160 lb./ac. of P_2O_5 + 40 lb /ac. of K_2O , M_{10} = M_1 + 160 lb./ac. of P_2O_5 + 80 lb./ac. of K_2O , M_{11} = M_5 + 50 lb./ac. of K_2O , M_{12} = M_6 + 50 lb /ac. of K_2O and M_{13} = M_6 + 100 lb./ac. of K_2O .

N, P_2O_5 and K_2O were applied in the form of A/S, Super and Mur. Pot. respectively.

3. DESIGN :

(i) R.B D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 30' × 22'. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) The crop was very slightly infected with bacterial wilt. (iii) Yield of tuber. (iv) (a) 1955—1957. (b) Yes. (c) N.I. (v) to (vii) Nil.

5. RESULTS :

(i) 7.61 tons./ac. (ii) 1.40 tons./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in tons./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	4.03	7.93	7.23	7.63	6.45	8.47	6.25
Treatment	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}	M_{13}
Av. yield	6.29	8.63	8.81	8.60	7.41	9.47	9.40

S.E./mean = 0.70 tons/ac.

Crop :- Potato.**Ref :- W.B. 56(16).****Site :- State Agri. Farm, Malda.****Type :- 'M'.**

Object :—To find out the suitable dose of N, P and K for Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jute. (c) 2 tons./ac. of cowdung + 20 lb./ac. of N as A/S. (ii) (a) Ganga riverine. (b) Refer soil analysis, Malda. (iii) 1.12.1956. (iv) (a) 3 to 4 ploughings. (b) Planted in rows. (c) N.A. (d) 2' × 9". (e) I. (v) Nil. (vi) Up-to-date (late). (vii) Irrigated. (viii) 2 earthings and 2 weedings. (ix) 4.23". (x) 18.3.1957.

2. TREATMENTS :

Same as in expt. no. 55 8) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 33' × 22'. (b) 27'9" × 16'. (v) 1½' × 3'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) About 10% plants affected by blight. Three sprayings with 4 lb Perenox per 100 gallons of water along with 2 lbs of 50% water dispensible DDT to pests and insects. (iii) Yield of tuber. (iv) (a) 1955—1957. (b) Yes (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 4.55 tons/ac. (ii) 0.96 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in tons/ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆
Av. yield	1.78	4.06	3.51	4.86	4.02	4.89	3.29
Treatment	M ₇	M ₈	M ₉	M ₁₀	M ₁₁	M ₁₂	M ₁₃
Av. yield	4.87	6.21	4.35	5.86	5.27	5.34	5.40

S.E./mean = 0.48 tons/ac.

Crop :- Potato (Rabi).

Ref :- W.B. 57(27).

Site :- State Agri. Farm, Malda.

Type :- 'M'.

Object :—To find out the most suitable dose of N, P and K for Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jute. (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Malda. (iii) Last week of October to middle of November, 1957. (iv) (a) 6 ploughings and harrowing. (b) Planting. (c) 15 to 18 mds./ac. (d) 2' × 9". (e) 1. (v) 150 mds./ac. of cowdung. (vi) Royal kidney (late). (vii) Irrigated. (viii) 4 weedings and 2 earthings. (ix) 0.68". (x) Last week of February to middle of March, 1958.

2. TREATMENTS :

Same as in expt. no. 55(8) on page 206.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 30' × 22'. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1955—1957. (b) Yes. (c) N.A. (v) (a) and (b) Nil. (vi) Crop effected due to drought. (vii) Nil.

5. RESULTS :

(i) 4.27 tons./ac. (ii) 0.69 tons./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in tons /ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆
Av. yield	2.13	3.74	3.51	4.17	3.61	4.17	3.64
Treatment	M ₇	M ₈	M ₉	M ₁₀	M ₁₁	M ₁₂	M ₁₃
Av. yield	4.83	4.69	5.46	5.75	4.67	4.47	4.93

S.E./mean = 0.40 tons./ac.

Crop :- Potato (Rabi).

Ref :- W.B. 56(32).

Site :- State Agri. Farm, Malda.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Loam and silty clay loam. (b) Refer soil analysis, Malda. (iii) Last week of October to 1st week of November, 1956. (iv) (a) 6 to 7 ploughings and spading. (b) Planting. (c) 15 to 17 mds./ac. (d) 2' × 6". (e) 1. (v) 100 mds./ac. of cowdung. (vi) R—9 (late). (vii) Irrigated. (viii) 2 to 3 weedings. (ix) 6.94". (x) 18 to 21.3.1957.

2. TREATMENTS :

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

(1) 2 sources of N : $S_1 = A/S$ and $S_2 = C/N$.

(2) 2 levels of N : $N_1 = 40$ and $N_2 = 80$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) $40' \times 18'$. (b) $38' \times 16'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of tuber. (iv) (ε) to (c) N.A. (v) (a) Kalyani. (b) N.A. (vi) a and (vii) Nil.

5. RESULTS :

(i) 3.04 tons/ac. (ii) 0.71 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of tuber in tons/ac.

Control = 3.14 tons/ac.

	S_1	S_2	Mean
N_1	3.09	3.11	3.10
N_2	2.95	2.90	2.92
Mean	3.02	3.00	3.01

S.E. of any marginal mean = 0.22 tons/ac.

S.E. of body of table or control mean = 0.32 tons/ac.

Crop :- Potato.

Ref :- W.B. 58(1).

Site :- State Agri. Farm, Malda.

Type :- 'M'.

Object :—To find out whether G.M. is better than the normal cultivator's practices for the cultivation of Potato and also to find out the optimum time for ploughing under G.M. crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) Nil. (ii) (a) Ganga riveria. (b) Refer soil analysis, Malda. (iii) N.A. (iv) (a) 4 ploughings and ladderings. (b) and (c) N.A. (d) $9'' \times 2'$. (e) N.A. (v) Nil. (vi) Darjeeling red round (medium). (vii) Irrigated. (viii) 2 earthings and 4 weedings. (ix) 84.20". (x) N.A.

2. TREATMENTS :

7 manurial treatments : M_0 = Control (30 mds./ac. of mustard oil cake), M_1 = G.M. (normal), M_2 = G.M. with 4 weeks old, M_3 = G.M. with 6 weeks old, M_4 = G.M. with 4 weeks old + 40 lb./ac. of N + 80 lb./ac. of P + 80 lb./ac. of K, M_5 = G.M. with 6 weeks old + 40 lb./ac. of N + 80 lb./ac. of P + 80 lb./ac. of K and M_6 = 100 mds./ac. of cowdung + 80 lb./ac. of N + 80 lb./ac. of P + 80 lb./ac. of K.

Dhaincha was used as the G.M. crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) (a) Krishnagar. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3.94 tons/ac. (ii) 0.93 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of tuber in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	4.41	3.49	3.45	2.83	5.40	4.00	3.97

S.E./mean = 0.49 tons/ac.

Crop :- Potato.**Ref :- W.B. 59(18).****Site :- State Agri. Farm, Malda.****Type :- 'M'.**

Object :—To find out whether G.M. is better than the normal cultivation practices for cultivation of Potato and to find out the optimum time for ploughing under G.M. crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha*. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Malda. (iii) N.A. (iv) (a) 4 ploughings and laddering. (b) to (e) N.A. (v) Nil. (vi) Darjeeling red round. (vii) Unirrigated. (viii) 2 earthings and 4 weedings. (ix) 4.45". (x) N.A.

2. TREATMENTS :

Same as in expt. no. 58(1) on page 208.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 30' × 22'. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) (a) Krishnagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 5.85 tons./ac. (ii) 1.37 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of tuber in tons/ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆
Av. yield	6.47	4.45	4.04	6.03	5.84	7.09	7.02

S.E./mean = 0.68 tons/ac.

Crop :- Potato.**Ref :- W.B. 55(65).****Site :- State Agri. Farm, Hathwara, Purulia.****Type :- 'M'.**

Object :—To test the effect of K on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy—Potato. (b) Paddy. (c) 89 $\frac{7}{8}$ mds./ac. of F.Y.M.+100 lb./ac. of A/S+108 lb./ac. of Super. (ii) (a) Sandy. (b) Refer soil analysis, Purulia. (iii) 21.11.1955. (iv) (a) 5 ploughings by *desi* plough. (b) N.A. (c) 6 $\frac{3}{4}$ mds./ac. (d) 3' × 9". (e) N.A. (v) Nil. (vi) Darjeeling improved (late). (vii) Irrigated. (viii) Hoeing and earthing. (ix) 3.59". (x) 2.3.1956.

2. TREATMENTS :

5 manurial treatments : M₀=Control, M₁=80 lb./ac. of N as A/S, M₂=M₁+80 lb./ac. of P₂O₅ as Super, M₃=M₁+80 lb./ac. of K₂O as Mur. Pot. and M₄=M₁+80 lb./ac. of P₂O₅ as Super+80 lb./ac. of K₂O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 52' × 14'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of aphids ; spraying with perenox, soda and for the late blight, roseign. (iii) Yield of tuber, average height, no. of affected plants, no. of dead plants, no. of total plants and no. of tubers above 1" diameter. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 2.49 tons/ac. (ii) 0.35 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in tons/ac.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄
Av. yield	1.11	2.62	2.67	2.77	3.26

S.E./mean = 0.17 tons/ac.

Crop :- Potato.**Ref :- W.B. 59(SFT).****Centre :- Birbhum (c.f.).****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Laterite and red. (iii) to (x) N.A.

2. TREATMENTS :

0 = Control (no manure).

n = 50 lb./ac. of N as A/S.

p = 25 lb./ac. of P_2O_5 as Super.np = 50 lb./ac. of N as A/S+25 lb./ac. of P_2O_5 as Super.k = 50 lb./ac. of K_2O as Mur. Pot.nk = 50 lb./ac. of N as A/S+50 lb./ac. of K_2O as Mur. Pot.pk = 25 lb./ac. of P_2O_5 as Super+50 lb./ac. of K_2O as Mur. Pot.npk = 50 lb./ac. of N as A/S+25 lb./ac. of P_2O_5 as Super+50 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 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 *kharif* cereal, 8 on *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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Tuber yield. (iv) (a) 1958—cond. (b) No. (c) Nil. (v) As per treatments. (vi) and (vii) N.A.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of potato in tons/ac.	0.37	0.06	-0.61	0.006	0.56	0.24	0.46	0.47	0.004

Control yield = 3.52 tons/ac. and no. of trials = 6.

Crop :- Potato.**Ref :- W.B. 58(SFT).****Centre :- Burdwan (c.f.).****Type :- 'M'.**

Object:— Type A—To study the response of Potato 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) above conducted in Birbhum.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of potato in tons/ac.	0.24	0.35	0.30	0.116	-0.20	-0.04	0.04	0.30	0.162

No. of trials = 5.

Crop :- Potato.**Ref :- W.B. 59(SFT).****Centre :- Howrah (c.f.).****Type :- 'M'**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) on page 210 conducted in Birbhum.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of potato in tons/ac.	0.60	1.40	0.15	0.002	1.16	0.06	0.04	0.05	0.003

Control yield = 1.56 tons/ac. and no. of trials = 6.

Crop :- Potato.**Ref :- W.B. 59(SFT).****Centre :- Midnapore (c.f.).****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and saline. (iii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) on page 210 conducted at Birbhum.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of potato in tons/ac.	0.74	0.50	0.53	0.004	0.12	0.08	0.03	0.06	0.003

Control yield = 3.66 tons/ac. and no. of trials = 9.

Crop :- Potato.**Ref :- W.B. 59(SFT).****Centre :- Murshidabad (c.f.).****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A., (ii) Alluvial. (iii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) on page 210 conducted at Birbhum.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of potato in tons/ac.	0.51	0.14	0.20	0.006	0.06	0.00	0.03	0.18	0.004

Control yield = 2.89 tons/ac. and no. of trials = 7.

Crop :- Potato.**Ref :- W.B. 58(SFT).****Centre :- 24-Parganas.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Alluvial. (iii) to (x) N.A.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 59(SFT) on page 210 conducted at Birbhum.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of potato in tons/ac.	1.11	0.58	0.47	0.195	0.09	-0.09	-0.09	0.21	0.120

Number of trials = 7.

Crop :- Potato.**Ref :- W.B. 59(SFT).****Centre :- 24-Parganas (c.f.).****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) to (c) N.A. (ii) Alluvial. (iii) to (x) N.A.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 59(SFT) on page 210 conducted at Birbhum.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of potato in tons/ac.	0.89	-0.04	0.37	0.007	-0.04	-0.18	-0.16	-0.16	0.008

Control yield = 2.47 tons/ac. and no. of trials = 4.

Crop :- Potato.**Ref :- W.B. 59(SFT).****Centre :- Birbhum (c.f.).****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Laterite. (iii) to (x) N.A.

2. TREATMENTS :

0 = Control (no manure).

n₁ = 50 lb./ac. of N as A/S.n₂ = 100 lb./ac. of N as A/S.n₁' = 50 lb./ac. of N as Urea.n₂' = 100 lb./ac. of N as Urea.n₁''' = 50 lb./ac. of N as C/A/N.n₂''' = 100 lb./ac. of N as C/A/N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogenous zones and one field assistant 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 *kharif* cereal, 8 on *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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Tuber yield. (iv) (a) 1958—contd. (b) N.A. (c) Nil. (v) As per treatments. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of potato in tons/ac.	3.02	3.90	3.96	4.74	4.26	3.60	3.68

G.M. = 3.88 tons/ac ; S.E./mean = 0.011 tons/ac. and no. of trials = 6.

Crop :- Potato.

Ref :- W.B. 59(SFT).

Centre :- Howrah (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) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 212 conducted at Birbhum.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of potato in tons/ac.	2.12	2.74	2.92	2.31	2.65	2.85	2.66

G.M. = 2.61 tons/ac. ; S.E./mean = 0.072 tons/ac. and no. of trials = 14.

Crop :- Potato.

Ref :- W.B. 59(SFT).

Centre :- Midnapore (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) Red. (iii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 212 conducted at Birbhum.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of potato in tons/ac.	3.28	4.21	4.44	4.10	4.36	4.04	4.32

G.M. = 4.11 tons/ac. ; S.E./mean = 0.143 tons/ac. and no. of trials = 9.

Crop :- Potato.**Ref :- W.B. 59(SFT).****Centre :- Murshidabad (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) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 212 conducted at Birbhum.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield of potato in tons/ac.	2.82	2.64	3.12	2.56	2.61	2.45	2.35

G.M. = 2.65 tons/ac. ; S.E./mean = 0.091 tons/ac. and no. of trials = 5.

Crop :- Potato.**Ref :- W.B. 59(SFT).****Centre :- 24-Parganas (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) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 212 conducted in Birbhum.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield of potato in tons/ac.	2.70	3.44	3.96	3.42	3.48	3.42	3.57

G.M. = 3.43 tons/ac ; S.E./mean = 0.170 tons/ac. and no. of trials = 5.

Crop :- Potato.**Ref :- W.B. 56(11).****Site :- State Agri. Farm, Berhampore.****Type :- 'C'.**

Object :—To study the effect of different sizes on the yield of tuber.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (*Sunnhemp*). (c) 30 lb./ac. of P₂O₅ as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Berhampore. (iii) 30.10.1956. (iv) (a) 1 ploughing with tractor followed by 4 times harrowing and ladderir.g. (b) Planted in rows. (c) 18 mds./ac. (d) 1/2' x 9". (e) N.A. (v) 100 mds./ac. of cowdung applied a month before planting. 80 lb./ac. of N+160 lb./ac. of P₂O₅+80 lb./ac. of K₂O. 1/3 of the fertilizers are applied in trenches at the time of planting and other 1/3 after about a month at the time of 1st earthing. (vi) *Rungbuil*—9. (vii) Irrigated. (viii) 2 earthings and 1 weeding. (ix) 3.42". (x) 24.2.1957.

2. TREATMENTS :3 sizes of tuber for planting : S₁=Whole tuber, S₂=Whole tuber cut into 2 pieces and S₃=Whole tuber cut into 4 pieces.**3. DESIGN :**

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 30' x 20'. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) (a) 3 sprayings with 4 lbs. of perenox and 2 lbs. of 50% water dispensible DDT per 100 gallons of water were given to control blight disease. (iii) Yield of tuber. (iv) (a) 1956—1957. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 10.85 tons/ac. (ii) 1.08 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in tons/ac.

Treatment	S ₁	S ₂	S ₃
Av. yield	11.40	10.94	10.22

S.E./mean = 0.54 tons/ac.

Crop :- Potato (*Rabi*).

Ref :- W.B. 57(28).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To study the effect of different sizes on the yield of tuber.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Berhampore. (iii) Last week of October, 1957. (iv) (a) 4 ploughings and harrowing. (b) Planting. (c) 15 to 18 mds./ac. (d) 2'×9". (e) 1. (v) 100 mds./ac. of cowdung. (vi) *Rungbull*—9 (medium). (vii) Unirrigated. (viii) 2 weedings and 2 earthings. (ix) N.A. (x) 1st week of February, 1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(11) on page 214.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Yield of tuber. (iv) (a) 1956—1957. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) Slight drought. (vii) Nil.

5. RESULTS :

(i) 5.74 tons/ac. (ii) 0.60 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in tons/ac.

Treatment	S ₁	S ₂	S ₃
Av. yield	6.06	5.86	5.30

S.E./mean = 0.30 tons/ac.

Crop :- Potato.

Ref :- W.B. 56(14).

Site :- State Agri. Farm, Bhanjang.

Type :- 'C'.

Object :—To find out the most suitable method of planting Potato in hilly tract.

1. BASAL CONDITIONS :

(i) (a) Potato—Potato. (b) Potato. (c) 100 mds./ac. of cowdung+80 lb./ac. of N as A/S+160 lb./ac. of P₂O₅ as Super+80 lb./ac. of K₂O as Mur. Pot. (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 7.1.1956. (iv) (a) 3 to 4 ploughings. (b) to (d) N.A. (e) 1. (v) 100 mds./ac. of cowdung applied a month before planting. 80 lb./ac. of N+160 lb./ac. of P₂O₅+80 lb./ac. of K₂O. Half of the fertilizer applied in trenches at the time of planting and other half 2 months later at the time of first earthing. (vi) Darjeeling red round (early). (vii) Unirrigated. (viii) 2 earthings and 4 weedings. (ix) 54.73". (x) 20.7.1956.

2. TREATMENTS :

4 methods of planting : M₁=Ridge and furrow method, M₂=2 rows in 1 ridge, M₃=Dibbled in the ridge and M₄=Flat bed.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 30'×22'. (b) 27'×16'. (v) 3'×3'. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) About 50% of plants were affected by blight disease, 5 sprayings were given with 4 lbs. perenox and 2 lbs. of 50% water dispensible DDT per 100 gallons of water. (iii) Yield of tuber. (iv) (a) 1956—N.A. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2.67 tons/ac. (ii) 0.29 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in tons/ac.

Treatment	M ₁	M ₂	M ₃	M ₄
Av. yield	3.05	2.92	2.76	1.95

S.E./mean = 0.12 tons/ac.

Crop :- Potato.

Ref :- W.B. 57(2).

Site :- State Agri. Farm, Bhanjang.

Type :- 'C'.

Object :—To study the effect of different methods of planting P otato.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Potato. (c) N.A. (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 11.12.1957. (iv) (a) to (c) N.A. (d) 2'×9". (e) 1. (v) N.A. (vi) Darjeeling red round (medium). (vii) Unirrigated. (viii) 2 earthings and 4 weedings. (ix) 98.40" (x) 3.11.1958.

2. TREATMENTS :

4 methods of planting : M₁=Ridge and furrows method (single row), M₂=Planting in flat bed (single row), M₃=2 rows in 1 ridge and M₄=3 rows in 1 ridge (3' to 4" high).

3. DESIGN :

(i) R B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 30'×22'. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Very good. (ii) Nil. (iii) Yield of tuber. (iv) (a) N.A. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3.30 tons/ac. (ii) 0.27 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in tons/ac.

Treatment	M ₁	M ₂	M ₃	M ₄
Av. yield	3.64	2.42	3.55	3.59

S.E./mean = 0.12 tons/ac.

Crop :- Potato.

Ref :- W.B. 56(12).

Site :- Jute Seed Multiplication Farm, Krishnagar.

Type :- 'C'.

Object :— To find out the suitable depth for planting Potato tubers.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 2 tons/ac. of cowdung+30 lb./ac. of N as A/S. (ii) (a) Ganga riverine. (b) Refer soil analysis, Krishnagar. (iii) 14.11.1956. (iv) (a) 1 ploughing with tractor followed by harrowing and laddering 4 times. (b) Planted in rows. (c) 18 mds./ac. (d) 2'×9". (e) N.A. (v) 100 mds./ac. of cowdung applied a month before planting. 80 lb./ac. of N+160 lb./ac. of P₂O₅+80 lb./ac. of K₂O. Half of the fertilizers were applied in trenches at the time of planting and other half after about a month later at the time of 1st earthing. (vi) Royal kidney. (vii) Irrigated. (viii) 2 earthings and 2 weedings. (ix) 3.21". (x) 13.3.1957.

2. TREATMENTS :

All combinations of (1) and (2)

- (1) 3 depths of planting tubers : $D_1=2''$, $D_2=4''$ and $D_3=6''$.
 (2) 2 heights for raising soil cover : $H_0=0$ and $H_1=2''$.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) $30' \times 22'$. (b) $27.75' \times 1.6'$. (v) $1\frac{1}{2}' \times 3'$. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) About 2.5% of plants were affected by blight disease. Three sprayings with 4 lbs. of perenox and 2 lbs. of 50% water dispensible DDT per 100 gallons of water. (iii) Yield of tuber. (iv) (a) 1956—1957 (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 8.25 tons/ac. (ii) 1.18 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of grain in tons/ac.

	D ₁	D ₂	D ₃	Mean
H ₀	7.87	7.92	7.37	7.72
H ₁	8.33	8.99	9.04	8.79
Mean	8.10	8.46	8.20	8.25

S.E. of H marginal means = 0.34 tons/ac.

S.E. of D marginal means = 0.42 tons/ac.

S.E. of body of table = 0.59 tons/ac.

Crop :- Potato (Rabi).

Ref :- W.B. 57(29).

Site :- Jute Seed Multiplication Farm, Krishnagar.

Type :- 'C'.

Object :— To find out the suitable depth for planting Potato tubers.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) Last week of October, to middle of November, 1957. (iv) (a) and (b) N.A. (c) 15 to 18 mds./ac. (d) $2' \times 9''$. (e) 1. (v) 150 mds./ac. of cowdung. (vi) Royal kidney (medium). (vii) Irrigated. (viii) 3 weedings and 3 earthings. (ix) Nil. (x) Last week of February to middle of March, 1958.

2. TREATMENTS :

Same as in expt. no. 56(12) on page 216.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) $30' \times 22'$. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Yield of tuber. (iv) (a) 1956—1957. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 9.24 tons/ac. (ii) 1.27 tons/ac. (iii) Main effect of D alone is significant. (iv) Av. yield of tuber in tons/ac.

	D ₁	D ₂	D ₃	Mean
H ₀	8.25	9.98	8.90	9.04
H ₁	10.08	10.42	7.80	9.43
Mean	9.16	10.20	8.35	9.24

S.E. of H marginal mean	= 0.37 tons/ac.
S.E. of D marginal mean	= 0.45 tons/ac.
S.E. of body of table	= 0.64 tons/ac.

Crop :- Potato.

Ref :- W.B. 54(1).

Site :- State Agri. Farm, Bhanjang.

Type :- 'CM'.

Object :— To study the effect of spacing and seed size at different manurial levels on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) No. (b) Potato. (c) 100 mds./ac. of cowdung and 80 lb./ac. of N in the form of A/S, 160 lb./ac. of P_2O_5 in the form of Super and 80 lb./ac. of K_2O in the form of Mur. Pot. (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 15 to 17.1.1954. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) 100 mds./ac. of cowdung at the time of preparation of land (vi) Darjeeling red round (early). (vii) Unirrigated. (viii) 5 weedings and 2 earthings. Roging of virus infected plants was done twice. (ix) 123.5". (x) 14 and 16.9.1954.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

(1) 3 inter-row distances : $R_1=18"$, $R_2=24"$ and $R_3=30"$.

(2) 9 inter-tuber distances : $P_1=6\frac{3}{4}"$, $P_2=13\frac{1}{4}"$, $P_3=20"$, $P_4=5"$, $P_5=10"$, $P_6=15"$, $P_7=4"$, $P_8=8"$ and $P_9=12"$.

(3) 3 tuber sizes : $T_1=\frac{7}{8}"$, $T_2=1"$ and $T_3=1\frac{1}{2}"$.

(4) 3 manuria. treatments : $M_1=40$ lb./ac. of N+80 lb./ac. of P_2O_5 +40 lb./ac. of K_2O , $M_2=60$ lb./ac. of N+120 lb./ac. of P_2O_5 +60 lb./ac. of K_2O and $M_3=80$ lb./ac. of N+160 lb./ac. of P_2O_5 +80 lb./ac. of K_2O .

N, P_2O_5 and K_2O were applied in the form of A/S, Super and Mur. Pot respectively.

3. DESIGN :

(i) 9×3^3 confd. (ii) (a) 9 plots/blocks and 9 blocks/replication. (b) N.A. (iii) $\frac{1}{2}$. (iv) (a) $30' \times 10'$. (b) $1/145.2$ ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) The crop was found to be infected by blight disease and viruses. The crop was sprayed five times with a mixture of 4 lbs. of perenox and 2 lbs. of 50% water dispesnible DDT in 100 gallons of water. (iii) Tuber yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) (a) Burdwan and Krishnagar. (b) Nil. (vi) Nil. (vii) Two way tables are not available in the records.

5. RESULTS :

(i) 3.59 tons/ac. (ii) 1.98 tons/ac. (iii) Main effect of T alone is highly significant. (iv) Av. yield of tuber in tons/ac.

Treatment	R_1	R_2	R_3	T_1	T_2	T_3	M_1	M_2	M_3
Av. yield	3.60	3.61	3.56	2.39	3.74	4.64	3.85	3.36	3.55
Treatment	P_1	P_2	P_3	P_4	P_5	P_6	P_7	P_8	P_9
Av. yield	4.34	3.56	2.85	4.09	3.09	3.67	4.58	3.16	2.93

S.E. of R, T or M marginal mean = 0.38 tons/ac.

S.E. of P marginal mean = 0.66 tons/ac.

Crop :- Potato.

Ref :- W.B. 55(7).

Site :- State Agri. Farm, Bhanjang.

Type :- 'CM'.

Object :— To study the effect of spacing and seed size at different manurial levels on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) No. (b) Potato. (c) 100 mds./ac. of cowdung and 80 lb./ac. of N in the form of A/S, 160 lb./ac. of P_2O_5 in the form of Super and 80 lb./ac. of K_2O in the form of Mur. Pot. (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 17 and 18.1.1955. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) 100 mds./ac. cowdung at the time of preparation of land. (vi) Darjeeling red round (early). (vii) Unirrigated. (viii) 5 weedings and 2 earthings. Roguing of virus infected plants was done twice. (ix) 114.3". (x) 24 and 26.9.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(1) on page 218.

5. RESULTS :

(i) 3.17 tons/ac. (ii) 0.43 tcns/ac. (iii) Main effects of P, T and M are highly significant. (iv) Av. yield of tuber in tons/ac.

Treatment	R ₁	R ₂	R ₃	T ₁	T ₂	T ₃	M ₁	M ₂	M ₃
Av. yield	3.24	3.17	3.10	2.68	3.28	3.54	2.82	3.30	3.38
Treatment	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	P ₇	P ₈	P ₉
Av. yield	3.62	3.16	2.93	3.76	3.05	2.70	3.29	3.45	2.56

S.E. of R, T or M marginal mean = 0.08 tons/ac.
S.E. of P marginal mean = 0.14 tons/ac.

Crop :- Potato (Rabi).

Ref :- W.B. 57(30).

Site :- State Agri. Farm, Bhanjang.

Type :- 'CM'.

Object :—To study the effect of spacing and seed size at different manurial levels on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loamy. (b) Refer soil analysis, Bhanjang. (iii) 1st week of December, 1957. (iv) (a) 6 to 8 ploughings and harrowing. (b) N.A. (c) 15 mds./ac. (d) As per treatments. (e) 2. (v) 100 mds. ac. of cowdung. (vi) Darjeeling (red-round early). (vii) Unirrigated. (viii) 3 weedings and 2 earthings. (ix) 34.76". (x) Last week of August, 1958.

2. TREATMENTS :

Same as in expt. no. 54(1) on page 218.

3. DESIGN :

(i) 9×3^3 confd. (ii) (a) 9 plots/block : 9 blocks/replication. (b) N.A. (iii) $\frac{1}{2}$. (iv) (a) N.A. (b) $30' \times 20'$, (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of tuber. (iv) (a) 1954—contd. (b) Yes. (c) N.A. (v) (a) Burdwan and Krishnagar. (b) Nil. (vi) Nil. (vii) Confounded effects and other two way tables are not available.

5. RESULTS :

(i) 5.19 tons/ac. (ii) 0.35 tons/ac. (iii) Main effects of M and T are highly significant and main effect of R is significant, (iv) Av yield of tuber in tons/ac.

	M ₁	M ₂	M ₃	Mean	R ₁	R ₂	R ₃
T ₁	4.45	4.87	4.87	4.73	4.48	4.72	4.99
T ₂	5.03	5.35	5.20	5.19	4.85	5.90	4.83
T ₃	4.75	5.90	6.28	5.64	5.46	5.71	5.76
Mean	4.74	5.37	5.45	5.19	4.93	5.44	5.19
R ₁	4.20	5.23	5.37				
R ₂	5.10	5.74	5.48				
R ₃	4.93	5.15	5.50				

S.E. of any marginal mean	= 0.07 tons/ac.
S.E. of body of any table	= 0.12 tons/ac.

Crop :- Potato.

Ref :- W.B. 54(2).

Site :- State Agri. Farm, Burdwan.

Type :- 'CM'.

Object :—To study the effect of spacing and seed size at different manurial levels on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) No. (b) Jute. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 6 and 7.11.1954. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) 100 mds./ac. of cowdung. (vi) Darjeeling red round (early). (vii) Irrigated. (viii) 4 weedings and 2 earthings. (ix) 1.18". (x) 10 and 11.3.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(1) on page 218.

N was applied in the form of A/S, P₂O₅ in the form of Super, K₂O in the form of Mur. Pot. $\frac{2}{3}$ of fertilizer mixture applied at the time of planting in trenches and $\frac{1}{3}$ at the time of first earthing up.

4. GENERAL :

(i) Good. (ii) The crop was infected by mosaic. Sprayed four times during the season with a mixture of 3 lb. of perenox and 2 lbs. of 50% water soluble DDT in 100 gallons water. (iii) Yield of tubers. (iv) (a) 1953—1955. (b) Yes. (c) Nil. (v) (a) Krishnagar and Bhanjang. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 6.16 tons/ac. (ii) 0.81 tons/ac. (iii) Main effects of T, M and P are significant. (iv) Av. yield of tuber in tons/ac.

Treatment	R ₁	R ₂	R ₃	T ₁	T ₂	T ₃	M ₁	M ₂	M ₃
Av. yield	6.34	6.12	6.02	5.76	6.34	6.39	5.87	6.10	6.52
Treatment	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	P ₇	P ₈	P ₉
Av. yield	6.41	6.38	6.24	6.95	5.77	5.65	6.50	5.85	5.70

S.E. of R, T or M marginal mean	= 0.16 tons/ac.
S.E. of P marginal mean	= 0.27 tons/ac.

Crop :- Potato.

Ref :- W.B. 55(6).

Site :- State Agri. Farm, Burdwan.

Type :- 'CM'.

Object :—To study the effect of spacing and seed size at different manurial levels on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) No. (b) Jute. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 27 and 28.11.1955. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) 100 mds./ac. of cowdung. (vi) Darjeeling red round (early). (vii) Irrigated. (viii) 3 weedings and 2 earthings. (ix) N.A. (x) 20 and 21.3.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(1) on page 218.

4. GENERAL :

(i) Fair. (ii) The crop was slightly infected with virus, sprayed three times during the season with a mixture of 3 lbs. of perenox and 2 lbs. of 50% water soluble DDT in 100 gallons of water. (iii) Yield of tuber. (iv) (a) 1953—1955. (b) Yes. (c) Nil. (v) (a) Krishnagar and Bhanjang. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 4.95 tons/ac. (ii) 0.36 tons/ac. (iii) Main effects of M and P are significant. Interaction M×T is highly significant. (iv) Av. yield of tuber in tons/ac.

Treatment	R ₁	R ₂	R ₃	T ₁	T ₂	T ₃	M ₁	M ₂	M ₃
Av. yield	4.98	4.92	4.94	5.00	4.87	4.98	4.90	4.85	5.10

Treatment	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	P ₇	P ₈	P ₉
Av. yield	4.81	5.07	5.08	4.85	4.80	5.06	5.38	4.60	4.88

S.E. of R, T or M marginal mean = 0.07 tons/ac.

S.E. of P marginal mean = 0.12 tons/ac.

Crop :- Potato.

Ref :- W.B. 54(3).

Site :- Jute Seed Multiplication Farm, Krishnagar.

Type :- 'CM'.

Object :—To study the effect of spacing and seed size at different manurial levels on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) No. (b) Jute followed by *kalai*. (c) N.A. (ii) (a) New alluvium. (b) Refer soil analysis, Krishnagar. (iii) 1 and 2.12.1954. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) 100 mds./ac. of cowdung at the time of preparation of land. (vi) Royal kidney (medium). (vii) Irrigated. (viii) 3 weedings and 2 earthings. (ix) N.A. (x) 24 to 26.3.1954.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(1) on page 218.

4. GENERAL :

(i) Fair. (ii) The crop was sprayed three times during the season with a mixture of 3 lbs. of penenox dan 2 lbs. of 50% water soluble DDT in 100 gallons of water. (iii) Yield of tubers. (iv) (a) 1954—1955. (b) Yes. (c) Nil. (v) (a) Burdwan and Bhanjang. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 6.12 tons/ac. (ii) 4.04 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of tuber in tons/ac.

Treatment	R ₁	R ₂	R ₃	T ₁	T ₂	T ₃	M ₁	M ₂	M ₃
Av. yield	6.31	6.06	5.99	5.70	6.10	6.57	5.71	6.07	6.58

Treatment	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	P ₇	P ₈	P ₉
Av. yield	7.41	5.91	5.60	6.99	6.26	4.95	6.83	6.22	4.90

S.E. of R, T or M marginal mean = 0.78 tons/ac.

S.E. of P-marginal mean = 1.35 tons/ac.

Crop :- Potato.

Ref :- W.B. 55(7).

Site :- Jute Seed Multiplication Farm, Krishnagar.

Type :- 'CM'.

Object :—To study the effect of spacing and seed size at different manurial levels on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy followed by *kalai*. (c) 40 mds./ac. of compost+20 lb/ac. of N as A/S+20 lb./ac. of P₂O₅ as Super. (ii) (a) New alluvium. (b) Refer soil analysis, Krishnagar. (iii) 28 and 29.11.1955. (iv) (a) to (c) N.A. (d) As per treatments. (e) N.A. (v) 100 mds./ac. of cowdung at the time of preparation of land. (vi) Royal kidney (medium). (vii) Irrigated. (viii) 3 weedings and 2 earthings. (ix) N.A. (x) 24 and 25.3.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(1) on page 218.

4. GENERAL :

(i) Fair. (ii) The crop was sprayed twice during the season with a mixture of 3 lbs. of perenox and 2 lbs. of 50% water soluble DDT in 100 gallons of water. (iii) Yield of tuber. (iv) (a) 1954 -1955. (b) Yes. (c) Nil. (v) (a) Burdwan and Bhanjang. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 4.73 tons/ac. (ii) 1.64 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of tuber in tons/ac.

Treatment	R ₁	R ₂	R ₃	T ₁	T ₂	T ₃	M ₁	M ₂	M ₃
Av. yield	4.63	4.68	4.88	4.57	4.83	4.79	4.62	4.95	4.63

Treatment	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	P ₇	P ₈	P ₉
Av. yield	4.21	4.43	5.25	5.23	3.89	4.92	5.13	4.43	5.08

S.E. of R, T or M marginal mean = 0.32 tons/ac.

S.E. of P marginal mean = 0.55 tons/ac.

Crop :- Potato.

Ref :- W.B. 59(12).

Site :- State Agri. Farm, Kalyani.

Type :- 'IM'.

Object :-To study the effect of different doses of irrigations in combination with different doses of N on the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) Nil. (ii) Loam and sandy loam. (b) Refer soil analysis, Kalyani. (iii) N.A. (iv) (a) 4 ploughings and ladderings. (b) and (c) N.A. (d) 9" x 2'. (e) N.A. (v) Nil. (vi) Darjeeling red round (medium). (vii) Irrigated. (viii) 2 earthings and 4 weedings. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 times of irrigation at 2" depth : T₁=4, T₂=8 and T₃=12 times.

(2) 2 manurial treatments : M₁=80 lb./ac. of N+160 lb./ac. of P₂O₅+80 lb./ac. of K₂O and M₂=160 lb./ac. of N+160 lb./ac. of P₂O₅+80 lb./ac. of K₂O.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 40'6" x 45'6". (b) 1/27.82 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1959 -contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 6.38 tons/ac. (ii) 1.18 tons/ac. (iii) Main effect of T alone is highly significant. (iv) Av. yield of tuber in tons/ac.

	T ₁	T ₂	T ₃	Mean
M ₁	6.92	6.72	4.83	6.16
M ₂	7.96	6.20	5.66	6.61
Mean	7.44	6.46	5.24	6.38

S.E. of M marginal mean = 0.34 tons/ac.

S.E. of T marginal mean = 0.42 tons/ac.

S.E. of body of table = 0.59 tons/ac.

Crop :- Potato (Rabi).**Ref :- W.B. 55(71).****Site :- State Agri. Farm, Bhanjang.****Type :- 'D'.**

Object :—To study whether application of artificial hormones to soil can increase the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) 100 mds./ac. of cowdung + 80 lb./ac. of N as A/S + 160 lb./ac. of P_2O_5 as Super + 80 lb./ac. of K_2O as Mur. Pot. (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 10.1.1955. (iv) (a) N.A. (b) Planted in rows at a depth of 2" to 3" below the soil. (c) 15 to 18 mds./ac. (d) 2' x 9". (e) 1. (v) 100 mds./ac. of cowdung at the time of land preparation. 40 lb./ac. of N as A/S + 160 lb./ac. of P_2O_5 as Super + 80 lb./ac. of K_2O as Mur. Pot. applied in trench at the time of planting and 40 lb./ac. of N at the time of earthing up. (vi) Darjeeling red round (early). (vii) Unirrigated. (viii) 4 weedings and 2 earthings. (ix) 114.3". (x) 16.9.1955.

2. TREATMENTS :

3 artificial hormones : H_0 = Control, H_1 = Hortomone A [sprouted tuber were soaked in solution of hortomone A of strength $2\frac{1}{2}$ c.c. in 1 pint of water and H_2 = Serndex A [A second dose of hormone was applied at the base of the plant when just coming out of the soil.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 30' x 22'. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) The crop was found to be infected with blight disease and increase with slight extent. A mixture of 4 lbs. of perenox and 2 lbs. of 50% water soluble DDT in 100 gallons of water sprayed 4 times. (iii) Yield of tuber. (iv) (a) 1954—1957. (b) Yes. (c) N.A. (v) (a) Midnapore. (b) N.A. (vi) Hail storm in the month of April, 1955. (vii) The crop was damaged due to hail storm.

5. RESULTS :

(i) 0.71 tons/ac. (ii) 0.08 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in tons/ac.

Treatment	H_0	H_1	H_2
Av. yield	0.55	0.81	0.78

S.E/mean = 0.04 tons/ac.

Crop :- Potato.**Ref :- W.B. 56(17).****Site :- State Agri. Farm, Bhanjang.****Type :- 'D'.**

Object :—To find out whether yield of Potato can be increased by application of artificial hormones.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) 100 mds./ac. of cowdung + 80 lb./ac. of N + 160 lb./ac. of P_2O_5 + 80 lb./ac. of K_2O . (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 3.1.1956. (iv) (a) N.A. (b) Planted in rows. (c) N.A. (d) 2' x 9". (e) N.A. (v) 100 mds./ac. of cowdung applied a month before planting. 80 lb./ac. of N + 160 lb./ac. of P_2O_5 + 80 lb./ac. of K_2O . Half of the fertilizer was applied at the time of planting and other half at the time of ploughing (in trenches). (vi) Darjeeling red round (early). (vii) Unirrigated. (viii) 2 earthings and 4 weedings. (ix) 54.73". (x) 18.7.1956.

2. TREATMENTS :

Same as in expt. no. 55(71) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 30' x 22'. (b) 27.75' x 16'. (v) 1 $\frac{1}{8}$ ' x 3'. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Infected with blight disease. 5 sprayings with 4 lbs. perenox and 2 lbs. of 50% water soluble DDT per 100 gallons of water. (iii) Yield of tuber. (iv) (a) 1954—1957. (b) Yes. (c) Nil. (v) (a) Midnapore. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1.37 tons/ac. (ii) 0.46 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in tons/ac.

Treatment	H ₀	H ₁	H ₂
Av. yield	1.22	1.36	1.53

S.E./mean = 0.23 tons/ac.

Crop :- Potato (Rabi).

Ref :- W.B. 57(32).

Site :- State Agri. Farm, Bhanjang.

Type :- 'D'.

Object :—To study whether application of artificial hormone to soil can increase the yield of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 1st week of January, 1957. (iv) (a) and (b) N.A. (c) 15 to 18 mds./ac. (d) 2'×9". (e) 1. (v) 100 mds./ac. of cowdung. (vi) Red round (early). (vii) Unirrigated. (viii) 3 weedings and 3 earthings. (ix) N.A. (x) Last week of July, 1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(71) on page 223.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Yield of tuber. (iv) (a) 1954—1957. (b) Yes. (c) Nil. (v) (a) Midnapore. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4.04 tons/ac. (ii) 0.69 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in tons/ac.

Treatment	H ₀	H ₁	H ₂
Av. yield	3.44	4.05	4.64

S.E./mean = 0.34 tons/ac.

Crop :- Potato.

Ref :- W.B. 54(6).

Site :- State Agri. Farm, Bhanjang.

Type :- 'D'.

Object :—To find out the most effective fungicide, its dosage and interval of spraying for the control of blight disease of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) 100 mds./ac. of cowdung+80 lb./ac. of N as A/S+160 lb./ac. of P₂O₅ as Super+80 lb./ac. of K₂O as Mur. Pot. (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 9 to 11.1.1955. (iv) (a) to (c) N.A. (d) 2'×9". (e) N.A. (v) 100 mds./ac. of cowdung at the time of land preparation. 40 lb./ac. of N as A/S+160 lb./ac. of P₂O₅ as Super+80 lb./ac. of K₂O as Mur. Pot. in trenches at the time of planting and 40 lb./ac. of N at the time of first earthing up. (vi) Darjeeling red round (early). (vii) Unirrigated. (viii) 4 weedings and 2 earthings. Roguing of virus effected plants was done twice. (ix) 123 5". (x) 12 to 14.9.1955.

2. TREATMENTS :

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

(1) 5 fungicides : F₁=Perenox, F₂=Dithane Z—78, F₃=Copper sandoz, F₄=Coppesan and F₅=Blitox.

(2) 5 concentrations of fungicides : C₁=1.25, C₂=2.5, C₃=3, C₄=4 and C₅=5 lb./100 gallons of water.

The above 26 treatment combinations were applied at 4 different intervals viz. : I₁=6, I₂=8, I₃=10 and I₄=14 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 26 for each I. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/450 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) The crop was infected with blight diseases and virus. (iii) Tuber yield. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) and (vi) Nil. (vii) Other two way tables : N.A.

5. RESULTS :

(i) 3.20 tons/ac. (ii) 0.69 tons/ac. (iii) Main effects of C, I and interaction I×F are highly significant. (iv) Av. yield of tuber in tons/ac.

Control = 2.22 tons/ac.

	C ₁	C ₂	C ₃	C ₄	C ₅	Mean
F ₁	2.66	2.81	3.06	3.24	3.65	3.08
F ₂	2.56	2.96	3.05	2.83	3.48	3.05
F ₃	2.48	2.91	2.95	3.16	3.72	3.04
F ₄	2.92	3.26	3.27	3.65	4.32	3.48
F ₅	2.74	3.29	3.10	3.60	4.85	3.52
Mean	2.67	3.05	3.09	3.30	4.08	3.24

S.E. of C or F marginal mean = 0.09 tons/ac.

S.E. of body of table or control mean = 0.20 tons/ac.

Crop :- Potato.

Ref :- W.B. 55(10).

Site :- State Agri. Farm, Bhanjang.

Type :- 'D'.

Object :—To find out the most effective fungicide, its dosages and interval of spraying for the control of blight disease of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) 100 mds./ac. of cowdung+80 lb./ac. of N in the form of A/S+160 lb./ac. of P₂O₅ in the form of Super+80 lb./ac. of K₂O in the form of Mur. Pot. (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 13 to 15.1.1954. (iv) (a) to (c) N.A. (d) 2'×9". (e) N.A. (v) 100 mds./ac. of cowdung at the time of land preparation. 40 lb./ac. of N as A/S+160 lb./ac. of P₂O₅ as Super+80 lb./ac. of K₂O as Mur. Pot. in trenches at the time of planting and 40 lb./a.. of N at the time of first earthing up. (vi) Darjeeling red round (early). (vii) Unirrigated. (viii) 4 weedings and 2 earthings. Roguing of virus infected plants was done twice. (ix) 114.3". (x) 10 to 13 9.1954.

2. TREATMENTS :

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

(1) 5 fungicides : F₁=Perenox, F₂=Dithane—78, F₃=Coppesan, F₄=Copper sandoz and F₅=Craigs fungicide (658).

(2) 5 concentrations of fungicide : C₁=1.25, C₂=2.5, C₃=3, C₄=4 and C₅=5 lb./100 gallons of water. The above 26 treatment combinations applied at 4 different intervals viz : I₁=6, I₂=8, I₃=10 and I₄=14 days.

3. DESIGN :

Same as in expt. no. 54(6) on page 224.

4. GENERAL :

(i) Fair. (ii) The crop was infected with blight disease and viruses. (iii) Yield of tuber. (iv) (a) 1954—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2.67 tons/ac. (ii) 0.41 tons/ac. (iii) Main effects of F, C, I and interactions F×C, F×I and F×C×I are highly significant. (iv) Av. yield of tuber in tons/ac.

Control = 0.88 tons/ac.

	C ₁	C ₂	C ₃	C ₄	C ₅	Mean	I ₁	I ₂	I ₃	I ₄
F ₁	2.58	3.02	3.19	3.36	4.16	3.26	3.28	3.43	3.06	3.29
F ₂	2.36	2.67	2.88	3.15	3.19	2.85	2.60	3.12	2.91	2.75
F ₃	1.89	2.39	2.74	3.26	3.90	2.84	3.20	2.61	3.34	2.21
F ₄	1.81	2.40	2.70	3.28	3.70	2.78	3.18	2.98	2.71	2.25
F ₅	1.15	1.63	1.85	2.50	2.84	1.99	2.50	2.17	1.85	1.46
Mean	1.96	2.42	2.67	3.11	3.56	2.74	2.95	2.86	2.77	2.39
I ₁	2.04	2.88	2.91	3.15	3.78					
I ₂	2.28	2.42	2.77	3.17	3.67					
I ₃	1.99	2.45	2.73	3.12	3.56					
I ₄	1.53	1.95	2.28	3.00	3.21					

S.E. of I marginal mean = 0.05 tons/ac.
 S.E. of F or C marginal mean = 0.05 tons/ac.
 S.E. of body of I×F or I×C table = 0.11 tons/ac.
 S.E. of body of F×C table or control mean = 0.12 tons/ac.

Crop :- Potato (Rabi).

Ref :- W.B. 57(31).

Site :- State Agri. Farm, Bhanjang.

Type :- 'D'.

Object :- To find out the most effective fungicide, its dosages and interval of spraying for the control of blight disease of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Brown forest soil. (b) Refer soil analysis, Bhanjang. (iii) 1st week of January, 1957. (iv) (a) 5 to 8 of ploughings and harrowing. (b) Sprouts placed in furrows 2" deep. (c) 15 to 18 mds./ac. (d) Inter row 2' and from plant to plant 9". (e) 1 tuber/hole. (v) 100 mds./ac. of cowdung. (vi) Darjeeling red round (early). (vii) Unirrigated. (viii) 5 weedings and 2 earthings. (ix) 56.17". (x) Last week of July to middle of August, 1957.

2. TREATMENTS :

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

(1) 6 fungicides : F₁=Perenox, F₂=Dithane, F₃=Coppesan, F₄=Copper sandoz, F₅=Cupravite and F₆=Shell copper.

(2) 5 concentrations of fungicide : C₁=1.25, C₂=2.5, C₃=3, C₄=4 and C₅=5 lb./100 gallons of water.

The above 31 treatment combinations applied at 4 different intervals viz : I₁=6, I₂=8, I₃=10 and I₄=14 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 31 for each I. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/194 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Plants infected with blight disease. Spraying done as per treatments. (iii) Yield of tuber. (iv) (a) 1954—1957. (b) Yes. (c) Nil. (v) and (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1.03 tons/ac. (ii) 0.55 tons/ac. (iii) Main effects of I, F, C, interations I×F, I×F×C and 'control vs. others' are highly significant. (iv) Av. yield of tubers in tons/ac.

Control = 0.69 tons/ac.

	C ₁	C ₂	C ₃	C ₄	C ₅	Mean	I ₁	I ₂	I ₃	I ₄
F ₁	0.73	0.94	1.10	1.18	1.32	1.05	1.12	1.20	1.00	0.89
F ₂	0.81	0.91	1.00	0.99	1.28	1.00	1.07	1.34	0.72	0.87
F ₃	0.91	0.98	1.10	1.32	1.28	1.10	1.17	1.25	0.98	1.01
F ₄	0.81	0.95	0.96	1.08	1.26	1.01	1.14	1.00	1.07	0.84
F ₅	0.83	0.98	0.97	1.18	1.58	1.11	1.29	1.27	0.92	0.94
F ₆	0.59	0.68	0.94	1.09	1.18	0.90	1.00	0.81	0.92	0.87
Mean	0.78	0.91	1.01	1.13	1.32	1.03	1.13	1.14	0.93	0.90
I ₁	0.88	0.96	1.16	1.23	1.43					
I ₂	0.89	0.99	1.09	1.26	1.49					
I ₃	0.69	0.87	0.90	1.00	1.20					
I ₄	0.65	0.80	0.89	1.02	1.15					

S.E. of I marginal mean	= 0.06 tons/ac.
S.E. of C marginal mean	= 0.06 tons/ac.
S.E. of F marginal mean	= 0.07 tons/ac.
S.E. of body of I×C table	= 0.13 tons/ac.
S.E. of body of I×F table	= 0.14 tons/ac.
S.E. of body of C×F table	= 0.16 tons/ac.
S.E. of control mean	= 0.16 tons/ac.

Crop :- Potato.

Ref :- W.B. 55(4).

Site :- State Agri. Farm, Midnapore.**Type :- 'D'.**

Object :- To find out whether yield of Potato can be increased by the application of artificial hormones.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 mds./ac. of T.C. as basic dose, 20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super. (ii) (a) Lateritic soil. (b) Refer soil analysis, Midnapore. (iii) 19.11.1955. (iv) (a) N.A. (b) Planted in rows. (c) N.A. (d) 2'×9". (e) N.A. (v) 100 mds./ac. of cowdung at the time of land preparation, 40 lb./ac. of N as A/S, 160 lb./ac. of P₂O₅ as Super and 80 lb./ac. of K₂O as Mur. Pot. applied in trenches at the time of planting and 40 lb./ac. of N as A/S applied at the time of first earthing up. (vi) Darjeeling red round (early). (vii) Irrigated. (viii) 3 weedings. (ix) N.A. (x) 17 and 18.3.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(71) on page 223.

4. GENERAL :

(i) Fair. (ii) The crop was infected with mosaic virus to some extent. The crop was sprayed 2 times with a mixture of 4 lbs. of perenox and 2 lbs. of 50% water soluble DDT in 100 gallons of water. (iii) Tuber yield. (iv) (a) 1953—1955. (b) Yes. (c) Nil. (v) (a) Bhanjang. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 5.89 tons/ac. (ii) 0.61 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in tons/ac.

Treatment	H ₀	H ₁	H ₂
Av. yield	5.70	6.05	5.92

S.E./mean = 0.30 tons/ac.

Crop :- Potato.**Ref :- W.B. 56(20).****Site :- State Agri. Farm, Rangbull.****Type :- 'D'.**

Object :—To find out the most suitable fungicides, its concentration and interval of spraying for the control of blight disease of Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) 100 mds./ac. of cowdung + 80 lb./ac. of N+160 lb./ac. of P_2O_5 and 80 lb./ac. of K_2O . (ii) (a) Brown forest soil. (b) Refer soil analysis, Rangbull. (iii) 3.1.1956. (iv) (a) N.A. (b) Whole tubers planted at a depth of 2" to 3". (c) N.A. (d) 2' x 9". (e) N.A. (v) 100 mds/ac. of cowdung and 80 lb./ac. of N, 160 lb./ac. of P_2O_5 and 80 lb./ac. of K_2O . Cowdung applied about a month previous to planting. Half of balance first applied in trenches at the time of planting and the other half about two months later at the time of first earthing up. (vi) Darjeeling red round (medium). (vii) Unirrigated. (viii) 2 earthings and 4 weedings. (ix) 54.73". (x) 17.7.1956.

2. TREATMENTS :

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

(1) 6 fungicides : F_1 =Perenox, F_2 =D.thalre Z-73, F_3 =Coppesan, F_4 =Copper, sandoz, F_5 =Craigs fungicide-658 and F_6 =Shell copper.

(2) 5 concentrations : C_1 =1.25, C_2 =2.5, C_3 =3, C_4 =4 and C_5 =5 lb./100 gallons of water.

The above 31 treatment combinations applied at 4 different intervals : I_1 =6, I_2 =8, I_3 =10 and I_4 =14 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 31 for each I. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/193.6 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) About 40% of plants were infected with blight disease. (iii) Yield of tuber. (iv) (a) 1956—N.A. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1.48 tons/ac. (ii) 0.09 tons/ac. (iii) Main effects of F, C, I and interactions $F \times I$ and 'control vs. others' are highly significant. (iv) Av. yield of tuber in tons/ac.

Control = 0.85 tons/ac.

	C_1	C_2	C_3	C_4	C_5	Mean	I_1	I_2	I_3	I_4
F_1	1.56	1.43	1.71	1.72	1.84	1.65	1.87	1.73	1.54	1.46
F_2	1.62	1.54	1.47	1.53	1.76	1.58	1.96	1.75	1.39	1.22
F_3	1.18	1.21	1.31	1.49	1.42	1.32	1.23	1.66	1.16	1.23
F_4	1.20	1.27	1.57	1.73	1.77	1.53	1.55	1.82	1.18	1.57
F_5	1.38	1.61	1.44	1.50	1.52	1.49	1.53	1.51	1.64	1.28
F_6	1.19	1.43	1.45	1.45	1.65	1.43	1.64	1.53	1.22	1.33
Mean	1.36	1.42	1.49	1.57	1.66	1.50	1.63	1.67	1.36	1.35
I_1	1.39	1.53	1.60	1.74	1.89					
I_2	1.55	1.65	1.64	1.77	1.72					
I_3	1.40	1.20	1.29	1.35	1.54					
I_4	1.10	1.30	1.43	1.42	1.49					

S.E. of I marginal mean	= 0.01 tons/ac.
S.E. of C marginal mean	= 0.01 tons/ac.
S.E. of F marginal mean	= 0.01 tons/ac.
S.E. of body of $I \times C$ table	= 0.02 tons/ac.
S.E. of body of $I \times F$ table	= 0.02 tons/ac.
S.E. of body of $C \times F$ table	= 0.03 tons/ac.
S.E. of control mean	= 0.03 tons/ac.

Crop :- Brinjal (Rabi).**Ref :- W.B. 57(57).****Site :- State Agri. Farm, Krishnagar.****Type :- 'CV'.**

Object :—To find out the best time for planting of different varieties of Brinjal.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam and sandy loam. (b) Refer soil analysis, Krishnagar. (iii) As per treatments. (iv) (a) Ploughing and spading. (b) planting. (c) to (e) N.A. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) N.A. (ix) 53.00". (x) 82 to 88, 93, 79 and 68 days respectively after transplanting.

2. TREATMENTS :**Main-plot treatments :**4 dates of planting : $D_1=30.9.1957$, $D_2=15.10.1957$, $D_3=30.10.1957$ and $D_4=15.11.1957$.**Sub-plot treatments :**2 varieties : $V_1=SNO-47C$ and $V_2=SNO-28$.**3. DESIGN :**

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of brinjal per plant. (iv) (a) 1955—1957. (b) Yes. (c) N.A. (v) (a) No. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2.0 lb./plant. (ii) (a) 0.48 lb./plant. (b) 0.12 lb./plant. (iii) Main effects of D, V and interaction $V \times D$ are highly significant. (iv) Av. yield of brinjal in lb./plant.

	D_1	D_2	D_3	D_4	Mean
V_1	3.4	2.8	1.3	0.7	2.1
V_2	3.0	3.0	1.1	0.6	1.9
Mean	3.2	2.9	1.2	0.7	2.0

S.E. of difference of two

- | | |
|-----------------------------------|-------------------|
| 1. D marginal means | = 0.20 lb./plant. |
| 2. V marginal means | = 0.03 lb./plant. |
| 3. V means at the same level of D | = 0.07 lb./plant. |
| 4. D means at the same level of V | = 0.20 lb./plant. |

Crop :- Cauliflower (Rabi).**Ref :- W.B. 59(55).****Site :- State Agri. Farm, Krishnagar.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Loam and clay loam. (b) Refer soil analysis, Krishnagar. (iii) Middle of October, 1959. (iv) (a) Ploughing, spading etc. (b) Planting. (c) N.A. (d) $2' \times 2'$. (e) N.A. (v) 100 mds./ac. of compost. (vi) *Dania* (Kalimpong). (vii) Unirrigated. (viii) Interculture and weeding. (ix) 68.28". (x) 1st week of January, 1960.

2. TREATMENTS :

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

(1) 3 levels of N : $N_0=0$, $N_1=60$ and $N_2=120$ lb./ac.

(2) 3 levels of P_2O_5 : $P_0=0$, $P_1=60$ and $P_2=120$ lb./ac.

(3) 3 levels of K_2O : $K_0=0$, $K_1=60$ and $K_2=120$ lb./ac.

The whole mixture of Potash and Super was added during land preparation. $\frac{1}{3}$ of N was applied during transplanting. $\frac{1}{3}$ applied after 20 days of transplantation and the rest of N after 40 days of transplantation.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) $18' \times 14'$. (b) $16' \times 12'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of edible heads of cauliflower. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 17543 lb./ac. (ii) 3337 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of edible heads in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	3917	4888	5876	4894	4509	5514	4658
N_1	21906	21025	22210	21714	21075	21757	22309
N_2	26480	25650	25937	26022	25682	25097	27287
Mean	17434	17188	18008	17543	17089	17456	18085
K_0	17516	16715	17035				
K_1	16253	17816	18301				
K_2	18533	17034	18688				

S.E. of any marginal mean = 556 lb./ac.

S.E. of body of any table = 963 lb./ac.

Crop :- Cauliflower (Rabi).

Ref :- W.B. 55(83).

Site :- State Agri. Farm, Kalimpong.

Type :- 'CV'.

Object :-To find out the best time for planting different varieties of Cauliflower.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kalimpong. (iii) As per treatments. (iv) (a) Spading and land preparation. (b) Planting. (c) and (d) N.A. (e) 1. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Earthing-up and interculture. (ix) 94.88%. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

4 dates of planting : $D_1=20.9.1955$, $D_2=5.10.1955$, $D_3=20.10.1955$ and $D_4=4.11.1955$.

Sub-plot treatments :

2 varieties : $V_1=$ Snow ball and $V_2=$ Dania.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield per plant. (iv) (a) 1955—1957. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1.78 lb./plant. (ii) (a) 0.32 lb./plant. (b) 0.22 lb./plant. (iii) All effects are highly significant. (iv) Av. yield of cauliflower in lb./plant.

	D ₁	D ₂	D ₃	D ₄	Mean
V ₁	1.50	2.31	2.35	1.90	2.01
V ₂	1.41	1.92	2.09	0.79	1.55
Mean	1.46	2.12	2.22	1.34	1.78

S.E. of difference of two

1. D marginal means = 0.13 lb./plant.
2. V marginal means = 0.06 lb./plant.
3. V means at the same level of D = 0.13 lb./plant.
4. D means at the same level of V = 0.16 lb./plant.

Crop :- Cauliflower (Rabi).

Ref :- W.B. 56(42).

Site :- State Agri. Farm, Kalimpong.

Type :- 'CV'.

Object :- To find out the best time for planting of different varieties of Cauliflower.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kalimpong. (iii) As per treatments. (iv) (a) Spading and land preparation. (b) Planting. (c) and (d) N.A. (e) 1. (v) N.A. (vi) As per treatments. (vii) Unirrigated. (viii) Thinning and earthing up. (ix) 94.06" (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(83) on page 230.

5. RESULTS :

(i) 1.56 lb./plant. (ii) (a) 0.39 lb./plant. (b) 0.33 lb./plant. (iii) D effect alone is significant. (iv) Av. yield of cauliflower in lb./plant.

	D ₁	D ₂	D ₃	D ₄	Mean
V ₁	1.37	1.70	1.78	1.45	1.58
V ₂	1.39	1.71	1.80	1.28	1.54
Mean	1.38	1.71	1.79	1.36	1.56

S.E. of difference of two

1. D marginal means = 0.16 lb./plant.
2. V marginal means = 0.10 lb./plant.
3. V means at the same level of D = 0.19 lb./plant.
4. D means at the same level of V = 0.21 lb./plant.

Crop :- Cauliflower (Rabi).

Ref :- W.B. 57(58).

Site :- State Agri. Farm, Kalimpong.

Type :- 'CV'.

Object :- To find out the best time of planting the different varieties of Cauliflower.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kalimpong. (iii) As per treatments. (iv) (a) Planting and spading. (b) Planting. (c) to (e) N.A. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Thinning and interculture. (ix) 70.49%. (x) 63, 65, 66 and 73 days for V_1 and 63, 65, 73 and 73 days for V_2 after plantation.

2. TREATMENTS :

Main-plot treatments :

4 dates of planting : $D_1=25.9.1957$, $D_2=10.10.1957$, $D_3=25.10.1957$ and $D_4=10.11.1957$.

Sub-plot treatments :

2 varieties : $V_1=Snow\ ball$ and $V_2=Dania$.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 55(83) on page 230.

5. RESULTS :

(i) 1.94 lb./plant. (ii) (a) 0.41 lb./plant. (b) 0.28 lb./plant. (iii) D effect is significant. V effect is highly significant. (iv) Av. yield of cauliflower in lb./plant.

	D_1	D_2	D_3	D_4	Mean
V_1	1.81	2.29	2.27	2.17	2.14
V_2	1.52	1.68	2.11	1.65	1.74
Mean	1.67	1.98	2.19	1.91	1.94

S.E. of difference of two

1. D marginal means = 0.17 lb./plant.
2. V marginal means = 0.08 lb./plant.
3. V means at the same level of D = 0.16 lb./plant.
4. D means at the same level of V = 0.20 lb./plant.

Crop :- Cauliflower (*Rabi*).

Ref :- W.B. 57(59),

Site :- State Agri. Farm, Krishnagar.

Type :- 'CV'.

Object :- To find out the best time of planting of different varieties of Cauliflower.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam and sandy loam. (b) Refer soil analysis, Krishnagar. (iii) As per treatments. (iv) (a) Ploughing and spading. (b) Planting. (c) to (e) Nil. (v) N.A. (vi) As per treatments. (vii) Unirrigated. (viii) Thinning etc. (ix) 53.00%. (x) Last week of January, 1958.

2. TREATMENTS :

Main-plot treatments :

3 dates of planting : $D_1=19.10.1957$, $D_2=3.11.1957$ and $D_3=18.11.1957$.

Sub-plot treatments :

2 varieties : $V_1=Dania$ and $V_2=Snow\ ball$.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication and 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of heads of cauliflower. (iv) (a) 1955—1957. (b) Yes. (c) N.A. (v) (a) Kalimpong. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 0.57 lb./plant. (ii) (a) 0.88 lb./plant. (b) 0.33 lb./plant. (iii) None of the effects is significant. (iv) Av. yield of cauliflower in lb./plant.

	D ₁	D ₂	D ₃	Mean
V ₁	0.50	0.69	0.42	0.54
V ₂	0.63	0.67	0.47	0.59
Mean	0.56	0.68	0.45	0.57

S.E. of difference of two

1. D marginal means = 0.36 lb./plant.
2. V marginal means = 0.11 lb./plant.
3. V means at the same level of D = 0.19 lb./plant.
4. D means at the same level of V = 0.38 lb./plant.

Crop :- Bhindi (Rabi).

Ref :- W.B. 55(84).

Site :- State Agri. Farm, Krishnagar.

Type :- 'CV'.

Object :— To find out the best time for planting of different varieties of Bhindi.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam and sandy loam. (b) Refer soil analysis, Krishnagar. (iii) As per treatments. (iv) (a) Ploughing and spading. (b) Planting. (c) and (d) N.A. (e) 1. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Earthing and interculture. (ix) 49.76%. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

4 dates of planting : D₁=15.3.1955, D₂=15.4.1955, D₃=15.5.1955 and D₄=15.6.1955.

Sub-plot treatments :

3 varieties : V₁=Best II, V₂=Vendi pocho and V₃=Green long.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication and 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) and (v) N.A. (vi) Yes.

4. GENERAL .

(i) Good. (ii) N.A. (iii) Yield of bhindi per plant. (iv) (a) 1955—1957. (b) Yes. (c) N.A. (v) (a) No. (b) Nil. (vi) Nil. (vii) Data for 1956 and 1957 are N.A.

5. RESULTS :

(i) 2.81 lb./plot. (ii) (a) 1.55 lb./plot. (b) 0.88 lb./plot. (iii) All effects are highly significant. (iv) Av. yield of bhindi in lb./plot (5 plants).

	D ₁	D ₂	D ₃	D ₄	Mean
V ₁	3.07	8.58	1.70	0.58	3.48
V ₂	2.45	8.88	1.29	0.56	3.30
V ₃	1.85	2.70	1.46	1.56	1.64
Mean	2.46	6.72	1.48	0.57	2.81

S.E. of difference of two

1. D marginal means = 0.52 lb./plot.
2. V marginal means = 0.25 lb./plot.
3. V means at the same level of D = 0.51 lb./plot.
4. D means at the same level of V = 0.66 lb./plot.

Crop :- Tomato (Rabi).**Ref :- W.B. 56(40).****Site :- State Agri. Farm, Kalimpong.****Type :- 'CV'.****Object :-** To find out the best time for planting of different varieties of Tomato.**1. BASAL CONDITIONS :**

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kalimpong. (iii) As per treatments. (iv) (a) Ploughing and spading etc. (b) Planting. (c) and (d) N.A. (e) 1. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Weeding and interculture. (ix) 94.06%. (x) N.A.

2. TREATMENTS :**Main-plot treatments :**3 dates of planting : $D_1=19.9.1956$, $D_2=4.10.1956$ and $D_3=19.10.1956$.**Sub-plot treatments :**2 varieties : $V_1=Perfection$ and $V_2=Sions$.**3. DESIGN :**

(i) Split-plot. (ii) (a) 3 main-plots/replication and 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield per plant of tomato. (iv) (a) 1956—1957. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3.42 lb./plant. (ii) (a) 0.67 lb./plant. (b) 0.40 lb./plant. (iii) D effect alone is highly significant. (iv) Av. yield of tomato in lb./plant.

	D_1	D_2	D_3	Mean
V_1	4.81	3.03	2.62	3.49
V_2	4.12	3.15	2.77	3.35
Mean	4.47	3.09	2.70	3.42

S.E. of difference of two

1. D marginal means = 0.27 lb./plant.
2. V marginal means = 0.13 lb./plant.
3. V means at the same level of D = 0.32 lb./plant.
4. D means at the same level of V = 0.23 lb./plant.

Crop :- Tomato (Rabi).**Ref :- W.B. 57(55).****Site :- State Agri. Farm, Kalimpong.****Type :- 'CV'.****Object :-** To find out the best time for planting different varieties of Tomato.**1. BASAL CONDITIONS :**

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kalimpong. (iii) As per treatments. (iv) (a) Ploughing and spading. (b) Planting. (c) to (e) N.A. (v) N.A. (vi) As per treatments. (vii) Unirrigated. (viii) N.A. (ix) 70.49%. (x) N.A.

2. TREATMENTS :**Main-plot treatments :**4 dates of planting : $D_1=19.9.1957$, $D_2=4.10.1957$, $D_3=19.10.1957$ and $D_4=4.11.1957$.**Sub-plot treatments :**2 varieties : $V_1=Perfection$ and $V_2=Sions$.**3. DESIGN :**

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Infestation of early blight. (iii) Yield of tomato. (iv) (a) 1955—1957. (b) Yes. (c) **N.A.**
(v) (a) Krishnagar. (b) N.A. (v) and (vii) Nil.

5. RESULTS :

(i) 2.69 lb./plant. (ii) (a) 0.81 lb./plant. (b) 0.53 lb./plant. (iii) Main effect of D and interaction **V×D** are highly significant. (iv) Av. yield of tomato in lb./plant.

	D ₁	D ₂	D ₃	D ₄	Mean
V ₁	2.69	4.23	2.07	1.26	2.56
V ₂	3.47	3.18	3.22	1.37	2.81
Mean	3.08	3.71	2.64	1.32	2.69

S.E. of difference of two

1. D marginal means = 0.33 lb./plant.
2. V marginal means = 0.15 lb./plant.
3. V means at the same level of D = 0.31 lb./plant.
4. D means at the same level of V = 0.40 lb./plant.

Crop :- Tomato.

Ref :- W.B. 54(40).

Site :- State Agri. Farm, Krishnagar.

Type :- 'CV'.

Object :- To study the effect of spacing on different varieties of Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Bottle gold. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) 1.10.1954/19 and 20.10.1954. (iv) (a) Thorough ploughing. (b) Sown in nursery. (c) 5 oz./ac. (d) As per treatments. (e) 1. (v) 20 C.L./ac. of F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) 3 to 4 weedings. (ix) 15.40". (x) 28.12.1954 to 15.4.1955.

2. TREATMENTS :

Main-plot treatments :

3 varieties : V₁=S—20, V₂=Bonni best and V₃=Morglobe.

Sub-plot treatments :

3 spacings : S₁=3'×3', S₂=3'×4' and S₃=4'×4'.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) 52'×12'. (b) 45'×6', 44'×6' and 44'×4'. (v) 1 guard row around each plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of tomato. (iv) (a) 1954—1956. (b) Yes. (c) Nil. (v) (a) and (b) **Na.** (vi) and (vii) Nil.

5. RESULTS :

(i) 11.01 tons/ac. (ii) (a) 2.91 tons/ac. (b) 1.41 tons/ac. (iii) V effect is significant. S effect is highly significant. (iv) Av. yield of tomato in tons/ac.

	V ₁	V ₂	V ₃	Mean
S ₁	8.62	8.90	11.60	9.71
S ₂	9.52	8.90	12.02	10.15
S ₃	11.35	12.33	15.84	13.17
Mean	9.83	10.04	13.15	11.01

S.E. of difference of two

1. V marginal means	= 1.06 tons/ac.
2. S marginal means	= 0.51 tons/ac.
3. S means at the same level of V	= 0.89 tons/ac.
4. V means at the same level of S	= 1.29 tons/ac.

Crop :- Tomato.**Ref :- W.B. 55(26).****Site :- State Agri. Farm, Krishnagar.****Type :- 'CV'.**

Object :—To study the effect of spacing on the growth of different varieties of Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pumpkin. (c) $\frac{1}{2}$ m.J./ac. of F.Y.M. in each pit. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) 1.9.1955/28.9.1955. (iv) (a) Thorough ploughing. (b) Sown in nursery bed. (c) 5 oz./ac. (d) As per treatments. (e) 1. (v) A/S at 3 mds. 22 srs./ac.+Mur. Pot. at 1 md. 35 srs./ac.+Super at 5 mds. 30 srs./ac. applied at the time of preparation of land. (vi) As per treatments. (vii) Irrigated. (viii) 6 weedings and mulchings. (ix) 10.51". (x) 8.12.1955 to 11.2.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(40) on page 235.

4. GENERAL :

(i) A few virus affected plants were removed and fresh seedlings transplanted. (ii) Nil. (iii) Yield of Tomato. (iv) (a) 1954—1956. (b) Yes. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 12.94 tons/ac. (ii) (a) 3.59 tons/ac. (b) 1.76 tons/ac. (iii) Interaction V×S is highly significant. (iv) Av. yield of tomato in tons/ac.

	V ₁	V ₂	V ₃	Mean
S ₁	10.99	15.18	11.76	12.64
S ₂	11.04	11.42	15.31	12.59
S ₃	10.52	15.40	14.86	13.59
Mean	10.85	14.00	13.98	12.94

S.E. of difference of two

1. V marginal means	= 1.31 tons/ac.
2. S marginal means	= 0.64 tons/ac.
3. S means at the same level of V	= 1.11 tons/ac.
4. V means at the same level of S	= 1.60 tons/ac.

Crop :- Tomato.**Ref :- W.B. 56(21).****Site :- State Agri. Farm, Krishnagar.****Type :- 'CV'.**

Object :—To study the effect of spacings on the growth of different varieties of Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *B'indi*. (c) Compost at 3 tons/ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) Middle of August 1st week of September, 1956. (iv) (a) Thorough ploughing. (b) Sown in nursery bed. (c) 5 oz./ac. (d) As per treatments. (e) 1. (v) Super at 8.4 mds./ac. ploughed in at the time of general preparation of land (vi) As per treatments. (vii) Irrigated. (viii) 1 weeding. (ix) 37.36". (x) December, 1956 to February, 1957.

2. TREATMENTS :

Main-plot treatments :

4 varieties : $V_1 = S-20$, $V_2 = \text{Bonney best}$, $V_3 = \text{Marglobe}$ and $V_4 = \text{Hybrid-4}$.

Sub-plot treatments :

3 spacings : $S_1 = 3' \times 3'$, $S_2 = 3' \times 4'$ and $S_3 = 4' \times 4'$.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) $43' \times 12'$. (b) $36' \times 6'$. (v) 1 guard row around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of tomato. (iv) (a) 1954-1956. (b) Yes. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 21.20 tons/ac. (ii) (a) 6.59 tons/ac. (b) 3.53 tons/ac. (iii) S effect is significant. Interaction $V \times S$ is highly significant. (iv) Av. yield of tomato in tons/ac.

	V_1	V_2	V_3	V_4	Mean
S_1	23.91	21.05	19.66	23.02	21.91
S_2	20.62	15.88	17.97	22.17	19.16
S_3	18.84	16.45	26.31	28.56	22.54
Mean	21.12	17.79	21.31	24.58	21.20

S.E. of difference of two

- | | |
|-----------------------------------|-----------------|
| 1. V marginal means | = 2.41 tons/ac. |
| 2. S marginal means | = 1.12 tons/ac. |
| 3. S means at the same level of V | = 2.23 tons/ac. |
| 4. V means at the same level of S | = 3.02 tons/ac. |

Crop :- Onion (Rabi).

Ref :- W.B. 56(41).

Site :- State Agri. Farm, Kalimpong.

Type :- 'CV'.

Object :- To find out the best time for planting of different varieties of Onion.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kalimpong. (iii) As per treatments. (iv) (a) Ploughing and spading. (b) Planting. (c) to (e) N.A. (v) N.A. (vi) As per treatments. (vii) Un-irrigated. (viii) Earthing up and other intercultures. (ix) 54.06%. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

4 dates of planting : $D_1 = 15.10.1956$, $D_2 = 30.10.1956$, $D_3 = 30.11.1956$ and $D_4 = 20.12.1956$.

Sub-plot treatments :

2 varieties : $V_1 = \text{Poona red}$ and $V_2 = \text{Red Patna}$.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) and (v) N.A. (vi) Yes

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of bulbs per plant. (iv) (a) 1956 only. (b) Yes. (c) N.A. (v) (a) Krishnagar. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 0.21 lb./plant. (ii) (a) 0.07 lb./plant. (b) 0.05 lb./plant. (iii) D effect alone is highly significant. (iv) Av. yield of onion in lb./plant.

	D ₁	D ₂	D ₃	D ₄	Mean
V ₁	0.46	0.20	0.11	0.09	0.22
V ₂	0.44	0.19	0.10	0.09	0.20
Mean	0.45	0.20	0.11	0.09	0.21

S.E. of difference of two

1. D marginal means = 0.04 lb./plant.
2. V marginal means = 0.02 lb./plant.
3. V means at the same level of D = 0.04 lb./plant.
4. D means at the same level of V = 0.05 lb./plant.

Crop :- Cabbage (Rabi).

Ref :- W.B. 56(43).

Site :- State Agri. Farm, Kalimpong.

Type :- 'CV'.

Object :- To find out the best time for planting of different varieties of Cabbage.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Study book (b) Refer soil analysis, Kalimpong. (iii) As per treatments. (iv) (a) Spading and ploughing. (b) Planting (c) and (d) N.A. (e) 1. (v) N.A. (vi) As per treatments. (vii) Unirrigated. (viii) Weeding and earthing (ix) 94.05%. (x) N.A.

2. TREATMENTS :

Main-plot treatments :

4 dates of planting : D₁ = 2.10.1956, D₂ = 22.10.1956, D₃ = 12.11.1956 and D₄ = 2.12.1956.

Sub-plot treatments :

2 varieties : V₁ = Eclipse Drumhead and V₂ = English ball.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of cabbage per plant. (iv) (a) 1956-1957. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 4.18 lb./plant. (ii) (a) 2.49 lb./plant. (b) 0.63 lb./plant. (iii) D effect alone is significant. (iv) Av. yield of cabbage in lb./plant.

	D ₁	D ₂	D ₃	D ₄	Mean
V ₁	5.26	4.36	3.89	3.26	4.19
V ₂	4.62	4.48	4.45	3.14	4.17
Mean	4.94	4.42	4.17	3.20	4.18

S.E. of difference of two

1. D marginal means = 1.02 lb./plant.
2. V marginal means = 0.18 lb./plant.
3. V means at the same level of D = 0.36 lb./plant.
4. D means at the same level of V = 1.05 lb./plant.

Crop :- Cabbage (Rabi).**Ref :- W.B. 57(56).****Site :- State Agri. Farm, Kalimpong.****Type :- 'CV'.**

Object :—To find out the best time for planting of different varieties of Cabbage.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kalimpong. (iii) As per treatments. (iv) (a) Ploughing and spading. (b) Planting. (c) to (e) N.A. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Earthing and weeding. (ix) 70.49%. (x) 77, 100, 92, 81 and 102 days for V_1 and 74, 97, 85, 81 and 89 days for V_2 after transplanting.

2. TREATMENTS :**Main-plot treatments :**5 dates of planting : $D_1=17.9.1957$, $D_2=2.10.1957$, $D_3=22.10.1957$, $D_4=12.11.1957$ and $D_5=2.12.1957$.**Sub-plot treatments :**2 varieties of cabbage : $V_1=E$. Drum head and $V_2=English$ ball.**3. DESIGN :**

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of cabbage per plant. (iv) (a) 1956—1957. (b) Yes. (c) N.A. (v) (a) Krishnagar. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 6.09 lb./plant. (ii) (a) 0.67 lb./plant. (b) 0.86 lb./plant. (iii) Main effects of D and V are highly significant. (iv) Av. yield of cabbage in lb./plant.

	D_1	D_2	D_3	D_4	D_5	Mean
V_1	5.38	8.58	7.33	5.29	3.28	5.97
V_2	5.35	7.62	8.02	5.94	4.06	6.20
Mean	5.36	8.10	7.68	5.62	3.67	6.09

S.E. of difference of two

1. D marginal means = 0.27 lb./plant.
2. V marginal means = 0.22 lb./plant.
3. V means at the same level of D = 0.50 lb./plant.
4. D means at the same level of V = 0.44 lb./plant.

Crop :- Cabbage (Rabi).**Ref :- W.B. 57(70).****Site :- State Agri. Farm, Krishnagar.****Type :- 'CV'.**

Object :—To find out the best time of planting of different varieties of Cabbage.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam and sandy loam. (b) Refer soil analysis, Krishnagar. (iii) As per treatments. (iv) (a) Spading and ploughing. (b) Planting. (c) and (d) N.A. (e) i. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) 2 earthings. (ix) 53.00%. (x) 104, 91, 90 and 77 days for V_1 and 97, 96, 95 and 80 days for V_2 after planting.

2. TREATMENTS :**Main-plot treatments :**5 dates of planting : $D_1=10.10.1957$, $D_2=25.10.1957$, $D_3=9.11.1957$ and $D_4=24.11.1957$.**Sub-plot treatments :**2 varieties : $V_1=English$ ball and $V_2=Eclipse$ Drum head.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of edible head per plant. (iv) (a) 1955—1957. (b) Yes. (c) N.A. (v) (a) Kalimpong. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2.23 lb./plant. (ii) (a) 0.14 lb./plant. (b) 0.08 lb./plant. (iii) All effects are highly significant. (iv) Av. yield of cabbage in lb./plant.

	D ₁	D ₂	D ₃	D ₄	Mean
V ₁	2.60	2.55	2.45	1.12	2.18
V ₂	2.40	2.37	2.85	1.50	2.28
Mean	2.50	2.46	2.65	1.31	2.23

S.E. of difference of two

1. D marginal means = 0.06 lb./plant.
2. V marginal means = 0.02 lb./plant.
3. V means at the same level of D = 0.05 lb./plant.
4. D means at the same level of V = 0.06 lb./plant.

Crop :- Pea (Rabi).

Ref :- W.B. 55(85).

Site :- State Agri. Farm, Klimpong.

Type :- 'CV'.

Object :—To find out the best time for planting of different varieties of Pea.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kalimpong. (iii) As per treatments. (iv) (a) Spading and land preparation. (b) Planting. (c) and (d) N.A. (e) 1. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) Interculturing and thinning. (ix) 94 88". (x) N.A.

2. TREATMENTS :

Main-plot treatments :

3 dates of planting : D₁=21.9.1955, D₂=6.10.1955 and D₃=22.10.1955.

Sub-plot treatments :

3 varieties V₁=Early giant, V₂=American wonder and V₃=Alderman.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) and (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of pod per plant. (iv) (a) 1955—1957. (b) Yes. (c) N.A. (v) (a) No. (b) Nil. (vi) N.A. (vii) Data for 1956 and 1957 N.A.

5. RESULTS :

(i) 1.12 lb./plant. (ii) (a) 0.36 lb./plant. (b) 0.29 lb./plant. (iii) None of the effects is significant. (iv) Av. yield of pod in lb./plant.

	V ₁	V ₂	V ₃	Mean
D ₁	0.99	1.13	1.29	1.14
D ₂	1.21	1.12	1.32	1.22
D ₃	0.87	0.96	1.14	0.99
Mean	1.02	1.07	1.25	1.12

S.E. of difference of two

- | | |
|-----------------------------------|-------------------|
| 1. D marginal means | = 0.15 lb./plant. |
| 2. V marginal means | = 0.12 lb./plant. |
| 3. V means at the same level of D | = 0.20 lb./plant. |
| 4. D means at the same level of V | = 0.22 lb./plant. |

Crop :- Arhar (Kharif).**Ref :- W.B. 54(68).****Site :- State Agri. Farm, Berhampore.****Type :- 'C'.**

Object :—To find out the optimum spacing for Arhar.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Berhampore. (iii) 1st week of June, 1954. (iv) (a) 2 to 3 ploughings and laddering. (b) Dibbling. (c) N.A. (d) As per treatments. (e) N.A. (v) 140 to 150 mds./ac. of F.Y.M. (vi) B—7 (medium). (vii) Unirrigated. (viii) Weeding and thinning. (ix) and (x) N.A.

2. TREATMENTS :

7 spacings between plants : S_0 = Broadcast (control), $S_1 = 2' \times 2'$, $S_2 = 2' \times 3'$, $S_3 = 2' \times 4'$, $S_4 = 3' \times 3'$, $S_5 = 3' \times 4'$ and $S_6 = 4' \times 4'$.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) $28' \times 16'$. (b) $24' \times 12'$. (v) $2' \times 2'$. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain. (iv) (a) 1952—1956. (b) No. (c) Nil. (v) (a) No. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2251 lb./ac. (ii) 462.5 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain, in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4	S_5	S_6
Av. yield	1561	2577	2529	2543	2387	2335	1828

S.E./mean = 231.2 lb./ac.

Crop :- Arhar (Kharif).**Ref :- W.B. 55(93).****Site :- State Agri. Farm, Berhampore.****Type :- 'C'.**

Object :—To find out the optimum spacing for Arhar.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Berhampore. (iii) June, 1955. (iv) (a) 2 to 3 ploughings and laddering. (b) Dibbling. (c) N.A. (d) As per treatments. (e) 1. (v) 150 mds./ac. of F.Y.M. (vi) B—7 (medium). (vii) N.A. (viii) 1 to 2 weedings and 1 thinning. (ix) N.A. (x) 1st week of March, 1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(68) above.

4. GENERAL :

(i) Poor. (ii) Crop suffered from the attack of insects, measures taken—N.A. (iii) Nil. (iv) (a) 1952—1956. (b) No. (c) Nil. (v) (a) No. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1145 lb./ac. (ii) 307.8 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	S ₄	S ₅	S ₆
Av yield	1235	1367	1041	1265	983	1080	1045

S.E./mean = 153.9 lb./ac.

Crop :- Arhar (*Kharif*).

Ref :- W.B. 56(52).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To find out the optimum spacing for Arhar.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Berhampore. (iii) Middle of June, 1956. (iv) (a) Ploughing and laddering. (b) Dibbling. (c) N.A. (d) As per treatments. (e) 1. (v) 150 mds./ac. of F.Y.M. (vi) B—7 (medium). (vii) Unirrigated. (viii) 2 weedings, thinning and earthing up. (ix) N.A. (x) 1st week of March, 1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(68) on page 241.

4. GENERAL :

(i) Poor. (ii) Attack of wilt caused uneven plant populations ; measures taken—N.A. (iii) Yield of grain. (iv) (a) 1952—1956. (b) No. (c) Nil. (v) (a) No. (b) Nil. (vi) Crop suffered due to heavy rain. (vii) Nil.

5. RESULTS :

(i) 779 lb./ac. (ii) 192.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆
Av. yield	924	1196	831	705	710	647	438

S.E./mean = 96.3 lb./ac.

Crop :- Arhar (*Kharif*).

Ref :- W.B. 54(69).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To study the optimum time of sowing for Arhar crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Berhampore. (iii) As per treatments. (iv) (a) 3 to 4 ploughings and laddering. (b) Dibbling. (c) and (d) N.A. (e) 1. (v) 150 mds./ac. of F.Y.M. (vi) B—7 (medium). (vii) N.A. (viii) Weeding and earthing. (ix) and (x) N.A.

2. TREATMENTS :

4 dates of sowing : D₁=10th May, D₂=25th May, D₃=9th June and D₄=24th June.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 16'×10'. (b) 12'×6'. (v) 2'×2'. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1951—1955. (b) No. (c) Nil. (v) (a) and (b) No. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2669 lb./ac. (ii) 385.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	D ₁	D ₂	D ₃	D ₄
Av. yield	3773	3190	2143	1570

S.E./mean = 157.2 lb./ac.

Crop :- Arhar (*Kharif*).

Ref :- W.B. 55(94).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To study the optimum time of sowing for Arhar.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Ganga riverine clay loam. (b) Refer soil analysis, Berhampore. (iii) As per treatments. (iv) (a) 2 to 3 ploughings and spading. (b) Dibbling. (c) to (e) N.A. (v) 100 to 120 mds./ac. of F.Y.M. (vi) B—7 (medium). (vii) N.A. (viii) Weeding and earthing. (ix) N.A. (x) Last week of February to 1st week of March, 1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(69) on page 242.

4. GENERAL :

(i) Poor. (ii) Crop suffered badly by attack of insects, control measures—N.A. (iii) Yield of grain. (iv) (a) 1951—1955. (b) No. (c) Nil. (v) (a) No. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1103 lb./ac. (ii) 616.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	D ₁	D ₂	D ₃	D ₄
Av. yield	1661	1207	959	583

S E./mean = 251.8 lb./ac.

Crop :- Khesari (Pulse) (*Rabi*).

Ref :- W.B. 59(15).

Site :- State Seed Multiplication Farm, Nalhati.

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) Paddy—*Khesari*. (b) Paddy. (c) As per treatments. (ii) (a) Lateritic soil. (b) N.A. (iii) 4.11.1959. (iv) (a) 4 to 6 ploughings and ladderings. (b) Broadcast. (c) to (e) N.A. (v) Nil. (vi) *Khesari* (pulse). (vii) Unirrigated. (viii) 2 weedings. (ix) 0.55". (x) 12.3.1960.

2. TREATMENTS :

3 sources of 30 lb./ac. of N : S₀=Control, S₁=A/S and S₂=A/C.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 34'×19'. (b) 32'×17'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of *khesari* grain. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) Majhian. (b) Nil. (vi) N.A. (vii) Expt. failed from 1956 to 1958.

5. RESULTS :

(i) 379 lb./ac. (ii) 32.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	S ₀	S ₁	S ₂
Av. yield	427	387	329
S.E./mean = 16.5 lb./ac.			

Crop :- Khesari (Rabi).
Centre :- Howrah (c.f.).

Ref :- W.B. 59(SFT).
Type :- 'M'.

Object :- Type C—To compare the responses of leguminous crops to alternative levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) November, 1959. (vii) to (ix) N.A. (x) March and April, 1960.

2. TREATMENTS :

3 levels of P₂O₅ as Super : P₀=0, P₁=30 and P₂=60 lb /ac.

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 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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) N.A.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	568	741	782

G.M. = 697 lb./ac., S.E./mean = 36.7 lb./ac. and no. of trials = 3.

Crop :- Khesari (Rabi).
Centre :- Midnapore (c.f.).

Ref :- W.B. 59(SFT).
Type :- 'M'.

Object :- Type C—To compare the responses of leguminous crops to alternative levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and saline. (iii) to (v) N.A. (vi) November, 1959. (vii) to (ix) N.A. (x) March and April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C above conducted at Howrah.

5. RESULTS :

Treatm ent	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	913	1029	1103

G.M. = 1015 lb./ac., S.E./mean = 5.8 lb./ac. and no. of trials = 2.

Crop :- Khesari (Rabi).**Ref :- W.B. 59(SFT).****Centre :- 24-Parganas (c.f.).****Type :- 'M'.**

Object :- Type C—To compare the responses of leguminous crops to different levels of Phosphate.

1. BASAL CONDITIONS to 4: GENERAL :

Same as in expt: no. 59(SFT) type C on page 244 conducted at Howrah.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	716	757	765

G.M. = 746 lb./ac., S.E./mean = 8.1 lb./ac. and no. of trials = 3.

Crop :- Gram (Rabi).**Ref :- W.B. 57(66).****Site :- State Agri. Farm, Tollygunj.****Type :- 'C'.**

Object :- To find out the suitable date of sowing for Gram.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Tollygunj. (iii) As per treatments. (iv) (a) Ploughing and laddering. (b) Dibbling. (c) N.A. (d) 12" x 9". (e) 1. (v) N.A. (vi) T-87 (U.P.). (vii) Unirrigated. (viii) 2 to 3 weedings. (ix) N.A. (x) 8 to 31.3.1958.

2. TREATMENTS :6 dates of sowing : D₁=28.10.1957, D₂=12.11.1957, D₃=27.11.1957, D₄=12.12.1957, D₅=27.12.1957 and D₆=11.1.1958.**3. DESIGN :**

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 18' x 20'. (b) 16.5' x 18'. (v) 0.75' x 1'. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 708 lb./ac. (ii) 269.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆
Av. yield	797	976	933	622	584	335

S.E./mean = 135.0 lb./ac.

Crop :- Bengal Gram.**Ref :- W.B. 59(SFT).****Centre :- Birbhum (c.f.).****Type :- 'M'.**

Object :- Type C—To compare the responses of leguminous crops to different levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Laterite. (iii) to (v) N.A. (vi) November, 1959. (vii) to (ix) N.A. (x) April, 1960.

2. TREATMENTS :3 levels of P₂O₅ as Super : P₀=0, P₁=30 and P₂=60 lb./ac.

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 *khari* 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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per treatments. (vi) and (vii) N.A.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	658	823	922

G.M. = 801 lb./ac., S.E./mean = 30.8 lb./ac. and no. of trials = 7.

Crop :- Bengal Gram (*Rabi*).

Ref :- W.B. 58(SFT).

Centre :- Burdwan (c.f.).

Type :- 'M'.

Object :— Type C—To compare the responses of leguminous crops to different levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Other alluvial. (iii) to (v) N.A. (vi) November, 1958. (vii) to (ix) N.A. (x) April, 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 245 conducted at Birbhum.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	749	864	889

G.M. = 834 lb./ac., S.E./mean = 49.5 lb./ac. and no. of trials = 11.

Crop :- Bengal Gram (*Rabi*).

Ref :- W.B. 58(SFT).

Centre :- Midnapore (c.f.).

Type :- 'M'.

Object :— Type C—To compare the responses of leguminous crops to different levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) to (v) N.A. (vi) November, 1958. (vii) to (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 245 conducted at Birbhum.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	1646	2296	2296

G.M. = 2079 lb./ac., S.E./mean = 41.9 lb./ac. and no. of trials = 5.

Crop :- Bengal gram (Rabi).**Ref :- W.B. 59(SFT).****Centre :- Midnapore (c.f.).****Type :- 'M'.**

Object :- Type C—To compare the responses of leguminous crops to different levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and saline. (iii) to (v) N.A. (vi) November, 1959. (vii) to (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 245 conducted at Birbhum.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	1004	1349	1514

G.M. = 1289 lb./ac., S.E./mean = 15.7 lb./ac. and no. of trials = 4.

Crop :- Bengal gram (Rabi).**Ref :- W.B. 58(SFT).****Centre :- Midnapore (c.f.).****Type :- 'M'.**

Object :- Type C—To compare the responses of leguminous crops to different levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) November, 1958. (vii) to (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 245 conducted at Birbhum.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	839	963	1070

G.M. = 957 lb./ac., S.E./mean = 22.1 lb./ac. and no. of trials = 5.

Crop :- Bengal gram (Rabi).**Ref :- W.B. 59(SFT).****Centre :- Murshidabad (c.f.).****Type :- 'M'.**

Object :- Type C—To compare the responses of leguminous crops to different levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) November, 1959. (vii) to (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 245 conducted at Birbhum.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	765	773	839

G.M. = 792 lb./ac.; S.E./mean = 20.4 lb./ac. and no. of trials = 10.

Crop :- Bengal gram (Rabi).**Ref :- W.B. 58(SFT).****Centre :- Nadia (c.f.).****Type :- 'M'.**

Object :—Type C - To compare the responses of leguminous crops to different levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) November, 1958. (vii) to (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 245 conducted at Birbhum.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	798	946	922

G.M. = 889 lb./ac. ; S.E./mean = 50.6 lb./ac. and no. of trials = 6.

Crop :- Bengal gram (Rabi).**Ref :- W.B. 59(SFT).****Centre :- Nadia (c.f.).****Type :- 'M'.**

Object :—Type C—To compare the responses of leguminous crop to different levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) November, 1959. (vii) to (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 245 conducted at Birbhum.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	872	955	831

G.M. = 886 lb./ac. ; S.E./mean = 69.8 lb./ac. and no. of trials = 15.

Crop :- Bengal gram (Rabi).**Ref :- W.B. 59(SFT).****Centre :- 24-Parganas (c.f.).****Type :- 'M'.**

Object :—Type C—To compare the responses of leguminous crops to different levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) November, 1959. (vii) to (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 245 conducted at Birbhum.

5. RESULTS :

Treatment	0	P ₁	P ₂
Av. yield of grain in lb./ac.	477	477	502

G.M. = 485 lb./ac. ; S.E./mean = 21.5 lb./ac. and no. of trials = 2.

Crop :- Green gram (*Kharif*).

Ref :- W.B. 58(SFT).

Centre :- Midnapore (c.f.).

Type :- 'M'.

Object :-Type C—To compare the responses of leguminous crops to alternative levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and laterite. (iii) to (v) N.A. (vi) July, 1958. (vii) to (ix) N.A. (x) October, 1958.

2. TREATMENTS :

3 levels of P_2O_5 as Super : $P_0=0$, $P_1=30$ and $P_2=60$ lb./ac.

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 *kharij* 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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per treatments. (vi) and (vii) N.A.

5. RESULTS :

Treatment	P_0	P_1	P_2
Av. yield of grain in lb./ac.	905	1448	1728

G.M. = 1360 lb./ac. ; S.E./mean = 186.2 lb./ac. and no. of trials = 5.

Crop :- Green gram (*Kharif*).

Ref :- W.B. 59(SFT).

Centre :- 24-Parganas (c.f.).

Type :- 'M'.

Object :-Type C—To compare the responses of leguminous crops to alternative levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) June, 1959. (vii) to (ix) N.A. (x) October, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type C above conducted at Midnapore.

5. RESULTS :

Treatment	P_0	P_1	P_2
Av. yield of grain in lb./ac.	601	625	667

G.M. = 631 lb./ac. ; S.E./mean = 8.1 lb./ac. and no. of trials = 6.

Crop :- Lentil.

Ref :- W.B. 58(SFT).

Centre :- Burdwan (c.f.).

Type :- 'M'.

Object :- Type C—To compare the responses of leguminous crops to alternative levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Old and new. (iii) to (v) N.A. (vi) October to November, 1958. (vii) to (ix) N.A. (x) March, 1959.

2. TREATMENTS :

3 levels of P_2O_5 as Super : $P_0=0$, $P_1=30$ and $P_2=60$ lb./ac.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogenous zones and one field assistant 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 *khari* cereal, 8 on *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) N.A. (b) 1,80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per treatments. (vi) and (vii) N.A.

5. RESULTS :

Treatment	P_0	P_1	P_2
Av. yield of grain in lb./ac.	346	444	461

G.M. = 417 lb./ac., S.E./mean = 30.8 lb./ac. and no. of trials = 4.

Crop :- Lentil (*Rabi*).

Ref :- W.B. 59(SFT).

Centre :- Howrah (c.f.).

Type :- 'M'.

Object :— Type C—To compare the responses of leguminous crops to alternative levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) October to November, 1959. (vii) to (ix) N.A. (x) March, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type C on page 249 conducted at Burdwan.

5. RESULTS :

Treatment	P_0	P_1	P_2
Av. yield of grain in lb./ac.	757	1004	1119

G.M. = 960 lb./ac. ; S.E./mean = 63.4 lb./ac. and no. of trials = 2.

Crop :- Lentil.

Ref :- W.B. 59(SFT).

Centre :- Midnapore (c.f.).

Type :- 'M'.

Object :— Type C—To compare the responses of leguminous crops to alternative levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and saline. (iii) to (v) N.A. (vi) October to November, 1959. (vii) to (ix) N.A. (x) March, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type C on page 249 conducted at Burdwan.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	461	584	642

G.M. = 562 lb./ac., S.E./mean = 5.2 lb./ac. and no. of trials = 2.

Crop :- Lentil (Rabi).

Ref :- W.B. 58(SFT).

Centre :- 24-Parganas (c.f.).

Type :- 'M'.

Object :— Type C—To compare the responses of leguminous crops to alternative levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) October to November, 1958. (vii) to (ix) N.A. (x) March, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type C on page 249 conducted at Burdwan.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	403	453	502

G.M. = 453 lb./ac., S.E./mean = 9.9 lb./ac. and no. of trials = 6.

Crop :- Lentil (Rabi).

Ref :- W.B. 59(SFT).

Centre :- 24-Parganas (c.f.).

Type :- 'M'.

Object :— Type C—To compare the responses of leguminous crops to alternative levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) October to November, 1959. (vii) to (ix) N.A. (x) March, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type C on page 249 conducted at Burdwan.

5. RESULTS :

Treatment	P ₀	P ₁	P ₂
Av. yield of grain in lb./ac.	296	337	354

G.M. = 319 lb./ac.; S.E./mean = 12.2 lb./ac. and no. of trials = 5.

Crop :- Sugarcane.

Ref :- W.B. 56(44).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :— To study the effect of N and P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) N.A. (iv) (a) Ploughing and spading. (b) Planting in trenches. (c) 60 mds./ac. (d) 3' between rows. (e) N.A. (v) N.A. (vi) CO—527 (medium). (vii) Irrigated. (viii) 3 to 4 weedings. (ix) 70°. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N : $N_0=0$, $N_1=100$, $N_2=150$ and $N_3=200$ lb./ac.

(2) 4 levels of P : $P_0=0$, $P_1=100$, $P_2=150$ and $P_3=200$ lb./ac.

Full dose of P_2O_5 and $\frac{1}{2}$ of N was applied before planting as basal dressing. $\frac{1}{2}$ of N was applied as top dressing 2 months and 3 months after 1st dressing.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 48'×24'. (b) 42'×21'. (v) 3'×1.5'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of sugarcane. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Crop suffered due to heavy rain in September, 1956. (vii) Plot wise yield data is N.A.

5. RESULTS :

(i) 31.84 tons/ac. (ii) and (iii) N.A. (iv) Av. yield of sugarcane in tons/ac.

	P_0	P_1	P_2	P_3	Mean
N_0	13.06	16.15	16.51	18.32	16.01
N_1	35.37	36.28	32.46	36.37	35.12
N_2	33.38	35.99	38.19	36.82	36.09
N_3	38.28	40.63	39.55	42.08	40.13
Mean	30.02	32.26	31.68	33.40	31.84

S.E.'s—N.A.

Crop :- Sugarcane.

Ref :- W.B. 57(54).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :- To study the effect of N and P and their combinations on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane. (b) Paddy. (b) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 27 to 30.3.1957. (iv) (a) Ploughing and laddering. (b) Trench method (cutting placed horizontally in trenches 8 to 10" deep). (c) 60 mds./ac. (d) 3' between rows. (e) $\frac{1}{2}$ N.A. (v) Nil. (vi) CO—527 (medium). (vii) Unirrigated. (viii) Weeding, top-dressing and earthing up. (ix) 42.1". (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(44) on page 251.

5. RESULTS :

(i) 40.37 tons/ac. (ii) 3.10 tons/ac. (iii) Only main effect of N is highly significant. (iv) Av. yield of sugarcane in tons/ac.

	P_0	P_1	P_2	P_3	Mean
N_0	32.9	34.7	36.1	32.3	34.0
N_1	44.5	41.7	41.1	41.8	42.3
N_2	40.8	44.6	42.6	44.0	43.0
N_3	41.8	41.7	40.0	45.4	42.2
Mean	40.0	40.7	40.0	40.9	40.4

S.E. of any marginal mean = 0.78 tons/ac.

S.E. of body of table = 1.55 tons/ac.

Crop :- Sugarcane.**Ref :- W.B. 58(49).****Site :- State Agri. Farm, Burdwan.****Type :- 'M'.**

Object :— To find out the optimum dose of N and P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Fallow. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 5 to 12.4 1958. (iv) (a) Ploughing and spading. (b) Cuttings placed horizontally in trenches 10" deep. (c) N.A. (d) 3' between rows. (e) Nil. (v) N.A. (vi) CO—527. (vii) Irrigated. (viii) 3 to 4 weedings. (ix) 56.38". (x) N.A.

2. TREATMENTS :

Same as in expt. no. 56(44) on page 251.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 36'×34'. (b) 30'×32'. (v) 3'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of sugarcane. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Crop suffered due to heavy rains during the last part of the month of April. (vii) Nil.

5. RESULTS :

(i) 16.6 tons/ac. (ii) 6.4 tons/ac. (iii) Only main effect of N is highly significant. (iv) Av. yield of sugarcane in tons/ac.

	P ₀	P ₁	P ₂	P ₃	Mean
N ₀	7.9	6.0	9.2	12.7	8.9
N ₁	17.9	19.0	16.3	17.3	17.6
N ₂	19.9	22.4	15.7	15.1	18.3
N ₃	22.2	24.2	23.7	17.0	21.8
Mean	17.0	17.9	16.2	15.5	16.6

S.E. of any marginal mean = 1.60 tons/ac.

S.E. of body of table = 3.20 tons/ac.

Crop :- Sugarcane.**Ref :- W.B. 57(42).****Site :- State Agri. Farm, Burdwan.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) January, 1957. (iv) (a) N.A. (b) Cuttings placed horizontally in trenches 10" deep. (c) N.A. (d) 3' to 4' between rows. (e) N.A. (v) N.A. (vi) CO—527. (vii) Unirrigated. (viii) 3 weedings and earthings. (ix) N.A. (x) January and February, 1958.

2. TREATMENTS :**Main-plot treatments :**3 sources of N : S₁=C/N, S₂=A/S and S₃=A/C.**Sub-plot treatments :**3 levels of N : N₀=0, N₁=60 and N₂=120 lb./ac.**3. DESIGN :**

(i) Split-plot. (ii) (a) 3 main-plots/replication and 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 34'×26'. (b) 32'×24'. (v) 1.0'×1.0'. (vi) Yes.

4. GENERAL :

Satisfactory. (ii) N.A. (iii) Sugarcane yield. (iv) (a) 1957—1959. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 28.1 tons/ac. (ii) (a) 4.6 tons/ac. (b) 5.4 tons/ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of sugarcane in tons/ac.

	S ₁	S ₂	S ₃	Mean
N ₀	—	—	—	23.5
N ₁	30.6	26.2	30.7	29.2
N ₂	28.9	30.2	35.6	31.6
Mean	29.8	28.2	33.2	—

S.E. of difference of two

1. S marginal means = 1.53 tons/ac.
2. N marginal means = 1.80 tons/ac.
3. N means at the same level of S = 3.12 tons/ac.
4. S means at the same level of N = 2.98 tons/ac.

Crop :- Sugarcane.

Ref :- W.B. 58(41).

Site :- State Agri. Farm, Burdwan.

Type :- 'M'.

Object :—To find out the effect of different sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Fallow—Sugarcane. (b) Sugarcane. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Burdwan. (iii) 1 to 3.4.1958. (iv) (a) 4 to 5 ploughings, spadings and land preparation. (b) Cuttings placed horizontally in tranches 10" deep. (c) N.A. (d) 4' between rows. (e) N.A. (v) N.A. (vi) CO—527 (medium). (vii) Irrigated. (viii) 3 weedings and earthings. (ix) N.A. (x) 30.3.1959 to 15.4.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(42) on page 253.

5. RESULTS :

(i) 24.5 tons/ac. (ii) (a) 3.27 tons/ac. (b) 3.33 tons/ac. (iii) Main effect of N is highly significant and interaction N×S is significant. (iv) Av. yield of sugarcane in tons/ac.

	S ₁	S ₂	S ₃	Mean
N ₀	—	—	—	20.0
N ₁	25.5	24.5	24.3	24.8
N ₂	29.6	32.0	24.6	28.7
Mean	27.6	28.2	24.4	—

S.E. of difference of two

1. S marginal means = 1.09 tons/ac.
2. N marginal means = 1.11 tons/ac.
3. N means at the same level of S = 1.92 tons/ac.
4. S means at the same level of N = 1.91 tons/ac.

Crop :- Sugarcane.**Ref :- W.B. 59(25).****Site :- State Agri. Farm, Burdwan.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Burdwan. (iii) 1.3.1959 to 2.3.1959. (iv) (a) 2 ploughings and ladderings. (b) Line sowing. (c) 3'×6". (d) and (e) N.A. (v) Nil. (vi) CO—527. (vii) Irrigated. (viii) Nil. (ix) 6.5". (x) 1.12 1959 to 27.12.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(42) on page 253.

5. RESULTS :

(i) 18.75 tons/ac. (ii) (a) 3.00 tons/ac. (b) 3.10 tons/ac. (iii) Main effect of S is significant. Main effect of N is highly significant. (iv) Av. yield of sugarcane in tons/ac.

	S ₁	S ₂	S ₃	Mean
N ₀	—	—	—	14.86
N ₁	19.34	22.72	17.13	19.73
N ₂	21.05	24.14	19.80	21.66
Mean	20.20	23.43	18.47	—

S.E. of difference of two

1. S marginal means = 1.00 tons/ac.
2. N marginal means = 1.03 tons/ac.
3. N means at the same level of S = 1.79 tons/ac.
4. S means at the same level of N = 1.77 tons/ac.

Crop :- Sugarcane.**Ref :- W.B. 59(10).****Site :- State Agri. Farm, Berhampore.****Type :- 'M'.**

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

BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loamy soil. (b) Refer soil analysis, Berhampore. (iii) 10 to 15.5.1959. (iv) (a) 2 ploughings and ladderings. (b) Line sowing. (c) N.A. (d) 3'×6". (e) N.A. (v) Nil. (vi) CO—527. (vii) Irrigated. (viii) Nil. (ix) 57.6". (x) N.A.

2. TREATMENTS :**Main-plot treatments :**3 sources of N : S₁=C/N, S₂=A/S and S₃=A/C.**Sub-plot treatments :**3 levels of N : N₀=0, N₁=60 and N₂=120 lb./ac.**3. DESIGN :**

(i) Split-plot. (ii) (a) 3 main-plots/replication and 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 32'×28.5'. (b) 30'×26.5'. (v) 1.0'×1.0'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of sugarcane. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) (a) Burdwan. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.00 tons/ac. (ii) (a) 3.10 tons/ac. (b) 2.32 tons/ac. (iii) Main effects of N and interaction S×N are highly significant. (iv) Av. yield of sugarcane in tons/ac.

	S ₁	S ₂	S ₃	Mean
N ₀	—	—	—	12.69
N ₁	12.33	17.74	17.28	15.78
N ₂	17.69	16.30	15.56	16.52
Mean	15.01	17.02	16.42	—

S.E. of difference of two

1. S marginal means = 1.03 tons/ac.
2. N marginal means = 0.77 tons/ac.
3. N means at the same level of S = 1.34 tons/ac.
4. S means at the same level of N = 1.51 tons/ac.

Crop :- Sugarcane.

Ref :- W.B. 59(SFT).

Centre :- Birbhum (c.f.).

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Laterite and red. (iii) to (x) N.A.

2. TREATMENTS :

- 0 = Control (no manure)
 n = 60 lb./ac. of N as A/S.
 p = 40 lb./ac. of P₂O₅ as Super.
 np = 60 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super.
 k = 40 lb./ac. of K₂O as Mur. Pot.
 nk = 60 lb./ac. of N as A/S+40 lb./ac. of K₂O as Mur. Pot.
 pk = 40 lb./ac. of P₂O₅ as Super+40 lb./ac. of K₂O as Mur. Pot.
 npk = 60 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super+40 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 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 *khari* cereal, 8 on *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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per treatments. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of sugarcane in tons/ac.	3.40	1.65	-0.47	0.889	0.38	-0.20	0.90	0.34	0.511

Control yield = 24.78 tons./ac. and no. of trials = 4.

Crop :- Sugarcane.**Ref :- W.B. 59(SFT).****Centre :- Howrah (c.f.).****Type :- 'M'.**

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

1. BASAL CONDITIONS :(i) (a) to (c) N.A. (ii) Alluvial. **N.****2. TREATMENTS to 4. GENERAL :**

Same as in expt. no. 59(SFT) type A on page 256 conducted at Birbhum.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of sugarcane in tons/ac.	5.06	2.44	4.17	1.095	0.89	1.36	0.77	-0.50	0.819

Control mean = 34.72 tons/ac. and no. of trials = 3.

Crop :- Sugarcane.**Ref :- W.B. 59(SFT).****Centre :- Midnapore (c.f.).****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red and saline. (iii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 256 conducted at Birbhum.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of sugarcane in tons/ac.	2.45	4.84	3.68	0.287	2.08	1.90	-2.20	-2.63	0.287

Control mean = 26.57 tons/ac. and no. of trials = 3.

Crop :- Jute (Kharif).**Ref :- W.B. 59(19).****Site :- State Agri. Farm, Cooch Behar.****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) Jute—Wheat. (b) Wheat. (c) As per treatments. (ii) (a) Silty and fine sandy loam. (b) Refer soil analysis, Cooch Behar. (iii) 28.4.1959. (iv) (a) 4 to 6 ploughings and ladderings. (b) Broadcast. (c) 10 lb./ac. (d) 4"×4". (e) 1. (v) Nil. (vi) D—154. (vii) Unirrigated. (viii) 2 weedings and thinnings. (ix) N.A. (x) 25.9.1959.

2. TREATMENTS :

All combinations of (1) and (2)+one control

(1) 2 levels of N : N₁=40 and N₂=60-lb./ac.(2) 2 sources of N : S₁=A/S and S₂=A/C.**3. DESIGN :**

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 34'×26'. (b) 32'×24'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of jute fibre (dry) and sticks. (iv) (a) 1957—contd. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2017 lb./ac. (ii) 123.0 lb./ac. (iii) 'Control vs. others' alone is highly significant. (iv) Av. yield of fibre in lb./ac.

Control = 1736 lb./ac.

	S ₁	S ₂	Mean
N ₁	2001	2092	2046
N ₂	2074	2185	2129
Mean	2037	2138	2087

S.E. of any marginal mean = 38.9 lb./ac.

S.E. of body of table = 55.0 lb./ac.

Crop :- Jute (Kharif).

Ref :- W.B. 59(5).

Site :- State Seed Multiplication Farm, Fulia.

Type :- 'M'.

Object :-To study the effect of N through different sources on the yield of Jute.

1. BASAL CONDITIONS :

(i) (a) Wheat—Jute. (b) Wheat. (c) As per treatments. (ii) (a) Fine sandy loam. (b) Refer soil analysis, Fulia. (iii) 10.6.1959. (iv) (a) 4 ploughings and ladderings. (b) Broadcasting. (c) 5 lb./ac. (d) 4'×4'. (e) 1. (v) Nil. (vi) D—154 (medium). (vii) Unirrigated. (viii) 2 weedings and thinnings. (ix) 30.2'. (x) 26.9.1959.

2. TREATMENTS :

All combinations of (1) and (2) + one control

(1) 2 levels of N : N₁=40 and N₂=60 lb./ac.

(2) 2 sources of N : S₁=A/S and S₂=A/C.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 34'×26'. (b) 32'×24'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of dry fibre and sticks. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) (a) Cooch Behar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1766 lb./ac. (ii) 98.3 lb./ac. (iii) Main effect of N and 'control vs. others' are highly significant. (iv) Av. yield of fibre in lb./ac.

Control = 1540 lb./ac.

	S ₁	S ₂	Mean
N ₁	1698	1809	1753
N ₂	1844	1937	1890
Mean	1771	1873	1822

S.E. of any marginal mean = 31.1 lb./ac.

S.E. of body of table = 44.0 lb./ac.

Crop :- Jute.**Ref :- W.B. 57(53).****Site :- State Seed Multiplication Farm, Krishnagar. Type :- 'M'.**

Object :—To study the effects of A/S and A/C on the yield of Jute.

1. BASAL CONDITIONS :

- (i) (a) Wheat—Jute. (b) Wheat. (c) N.A. (ii) (a) Loam and clay loam. (b) Refer soil analysis, Krishnagar. (iii) N.A. (iv) (a) 5 to 6 ploughings and spadings. (b) Broadcast. (c) to (e) N.A. (v) 100 mds./ac. of cowdung. (vi) Local (*capsularis*). (vii) Unirrigated. (viii) 4 to 5 weedings and 2 thinnings. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2) + one control

(1) 2 levels of N : $N_1=40$ and $N_2=60$ lb./ac.(2) 2 sources of N : $S_1=A/S$ and $S_2=A/C$.**3. DESIGN :**

- (i) Fact. in R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) $34' \times 26'$. (b) $32' \times 24'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

- (i) Normal. (ii) N.A. (iii) Yield of fibre. (iv) (a) and (b) No. (c) Nil. (v) (a) Fulia and Cooch Behar. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

- (i) 1785 lb./ac. (ii) 463.2 lb./ac. (iii) 'Control vs others' alone is highly significant. (iv) Av. yield of fibre in lb./ac.

Control = 1155 lb./ac.

	S_1	S_2	Mean
N_1	1832	1773	1802
N_2	2123	2042	2082
Mean	1977	1907	1942

S.E. of any marginal mean = 146.4 lb./ac.

S.E. of body of table = 207.1 lb./ac.

Crop :- Jute.**Ref :- W.B. 59(SFT).****Centre :- Howrah (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) to (v) N.A. (vi) April to June, 1959. (vii) to (ix) N.A. (x) September to October, 1959.

2. TREATMENTS :

0 = Control (no manure).

 n_1 = 40 lb./ac. of N as A/S. n_2 = 80 lb./ac. of N as A/S. n_1' = 40 lb./ac. of N as Urea. n_2' = 80 lb./ac. of N as Urea. n_1''' = 40 lb./ac. of N as C/A/N. n_2''' = 80 lb./ac. of N as C/A/N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zone and one field assistant 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 *kharif* cereal, 8 on *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) N.A. (b) 1/80 ac. (iv) Yes..

4. GENERAL :

(i) Good. (ii) N.A. (iii) Jute yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per treatments. (vi) and (vii) N.A.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of jute in lb./ac.	946	1588	1588	1424	1613	1465	1465
G.M. = 1441 lb./ac., S.E./mean = 46.5 lb./ac. and no. of trials = 2.							

Crop :- Jute.

Ref :- W.B. 59(SFT).

Centre :- Midnapore (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) Red. (iii) to (v) N.A. (vi) April to June, 1959. (vii) to (ix) N.A. (x) September to October, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 259 conducted at Howrah.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of jute in lb./ac.	2427	2880	3045	3168	3291	3045	3415
G.M. = 3039 lb./ac., S.E./mean = 112.9 lb./ac. and no. of trials = 2.							

Crop :- Jute.

Ref :- W.B. 59(SFT).

Centre :- Murshidabad (c.f.).

Type :- 'M'.

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

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 259 conducted at Howrah.

5. RESULTS :

Treatment	0	n_1	n_2	n_1'	n_2'	n_1'''	n_2'''
Av. yield of jute in lb./ac.	15445	17765	19592	17708	19296	17288	19395
G.M. = 18070 lb./ac., S.E./mean = 263.0 lb./ac. and no. of trials = 4.							

Crop :- Jute.**Ref :- W.B. 59(SFT).****Centre :- Nadia (c.f.).****Type :- 'M'.**

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

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 259 conducted at Howrah.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield of jute in lb./ac.	12318	17527	17239	15725	17560	15577	16531

G.M. = 16068 lb./ac., S.E./mean = 444.5 lb./ac. and no. of trials = 9.

Crop :- Jute.**Ref :- W.B. 59(SFT).****Centre :- 24 Parganas (c.f.).****Type :- 'M'.**

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

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 259 conducted at Howrah.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield of jute in lb./ac.	18004	22044	22768	20464	21419	19749	21073

G.M. = 20789 lb./ac., S.E./mean = 470.7 lb./ac. and no. of trials = 10.

Crop :- Jute.**Ref :- W.B. 59(SFT).****Centre :- Midnapore (c.f.).****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red saline. (iii) to (v) N.A. (vi) April—June, 1959. (vii) to (ix) N.A. (x) September and October, 1959.

2. TREATMENTS :

0 = Control (no manure).

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

p = 20 lb./ac. of P₂O₅ as Super.

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

k = 20 lb./ac. of K₂O as Mur. Pot.

nk = 40 lb./ac. of N as A/S + 20 lb./ac. of K₂O as Mur. Pot.

pk = 20 lb./ac. of P₂O₅ as Super + 40 lb./ac. of K₂O as Mur. Pot.

npk = 40 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 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 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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Good (ii) N.A. (iii) Fibre yield. (iv) (a) 1959—contd. (d) No. (c) N.A. (v) As per design. (vi) and (vii) N.A.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of jute in lb./ac.	667	625	—99	17.3	—107	74	—8	—346	14.0

Control yield = 9019 lb./ac. and no. of trials = 4.

Crop :- Jute.

Ref :- W.B. 59(SFT).

Centre :- Murshidabad (c.f.).

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) April—June, 1959. (vii) to (ix) N.A. (x) September and October, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 261 conducted at Midnapore.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of jute in lb./ac.	1292	658	0	9.1	—58	107	—222	—469	7.4

Control yield = 17231 lb./ac. and no of trials = 4.

Crop :- Jute.

Ref - W.B. 59(SFT).

Centre :- Nadia (c.f.).

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) April—June, 1959. (vii) to (ix) N.A. (x) September and October, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 261 conducted at Midnapore.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of jute in lb./ac.	2139	757	1103	40.3	41	—831	—354	1152	40.3

Control yield = 14063 lb./ac. and no. of trials = 5.

Crop :- Jute.**Ref :- W.B. 59(SFT).****Centre :- 24-Parganas (c.f.).****Type :- 'M'.**

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) April—June, 1959. (vii) to (ix) N.A. (x) September and October, 1959.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 59(SFT) type A on page 261 conducted at Midnapore.

5. RESULTS :

Effect	n	p	k	S.E.	np	pk	pk	npk	S.E.
Av. response of jute in lb./ac.	4542	1777	1045	54.3	1234	—58	1531	848	50.2

Control yield = 19847 lb./ac. and no. of trials = 6.

Crop :- Jute (Kharif).**Ref :- W.B. 54(19).****Centre :- Burdwan (district, c.f.).****Type :- 'M'.**

Object :— To study the effect of different doses of fertilizers on the yield of Jute in different soil regions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) Light and medium texture soil (alluvial). (iii) Nil. (iv) Local (capsularis). (v) (a) 3 to 4 ploughings. (b) Broadcast. (c) 30 lb./ac. (d) and (e) N.A. (vi) April—June, 1954. (vii) Unirrigated. (viii) N.A. (ix) 42.3". (x) September—October, 1955.

2. TREATMENTS :

3 manurial treatments : M_0 = Control (cultivator's practice), M_1 = 30 lb./ac. of N as A/S and M_2 = 25 lb./ac. of K_2O as Mur. Pot.

Fertilizers were applied as top dressing when plants were 4 weeks old.

3. DESIGN :

(i) and (ii) Selected at random from the list of police stations in the district. 21 expts. in Burdwan and 30 expts. in Hooghly district. Single replication per village. (iii) (a) 0.50 to 0.75 ac. of land divided into 3 equal parts. (b) 2 circular cuts of 6' 7" diameter obtained at random within a sub-plot. (1/60 ac. approximately). (iv) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Green weight and dry fibre yield. (iv) 1952—1954. (v) and (vi) N.A. (vii) Green weight of plants were recorded separately for the two patches by crop cutting technique. The plants were then combined for retting and dry fibre extracted from fully retted plants. The dry weight of fibre from 2 cuts/plot was then converted to acreage.

5. RESULTS :

(i) 1810 lb./ac. (ii) 369.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of fibre in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	1544	1862	2023

S.E./mean = 51.7 lb./ac.

Crop :- Jute (Kharif).**Ref :- W.B. 54(20).****Centre :- Hooghly (district, c.f.).****Type :- 'M'.**

Object :— To study the effect of different doses of fertilizers on the yield of Jute in different soil regions.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Fallow. (c) Nil. (ii) Light and medium texture soil. (iii) Nil. (iv) Local (capsularis). (v) (a) 3 to 4 ploughings. (b) Broadcasting. (c) 30 lb./ac. (d) and (e) N.A. (vi) April—June, 1954. (vii) Unirrigated. (viii) Nil. (ix) 47.14%. (x) September—October, 1954.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(19) on page 263.

5. RESULTS :

(i) 1658 lb./ac. (ii) 230.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of fibre in lb./ac.

Treatment	M ₀	M ₁	M ₂
Av. yield	1460	1730	1785

S.E./mean = 32.2 lb./ac.

Crop :- Groundnut.

Ref :- W.B. 54(37).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To find out the effect of intercultural operations on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Wheat—Groundnut. (b) Wheat. (c) 250 mds./ac. of T.C. (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 13.6.1954. (iv) (a) 3 to 4 ploughings and laddering. (b) N.A. (c) 60 lb./ac. (d) 24" × 9". (e) 2. (v) 150 mds./ac. of cowdung. (vi) Spanish peanut (late, spreading type). (vii) Unirrigated. (viii) As per treatments. (ix) 36.82%. (x) 12.11.1954.

2. TREATMENTS :

6 cultural treatments : C₀=Control, C₁=1weeding and 1 mulching, C₂=2 weedings and 2 mulchings, C₃=3 weedings and 3 mulchings, C₄=1 weeding, 1 mulching and 1 earthing and C₅=2 weedings, 2 mulchings and 2 earthings.

3. DESIGN :

(i) L. Sq. (ii) (a) 6. (b) N A. (iii) 6. (iv) (a) 18' × 10'. (b) 16' × 6'. (v) 1' × 2'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Groundnut yield. (iv) (a) 1953—1955. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 5440 lb./ac. (ii) 862.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	C ₀	C ₁	C ₂	C ₃	C ₄	C ₅
Av. yield	6045	7036	6860	5084	4988	2625

S.E./mean = 352.1 lb./ac.

Crop :- Groundnut.

Ref :- W.B. 55(14).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To find out the effect of intercultural operations on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Wheat—Groundnut. (b) Wheat. (c) 250 mds./ac. of T.C. (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 8.6.1955. (iv) (a) 3 to 4 ploughings and ladderings. (b) N.A. (c) 60 lb./ac. (d) 24" × 9". (e) 2. (v) 150 mds./ac. of cowdung. (vi) Spanish peanut (late). (vii) Nil. (viii) As per treatments (ix) 42.6%. (x) 13.11.1955.

2. TREATMENTS :

Same as in expt. no. 54(37) on page 264.

3. DESIGN :

(i) L. Sq. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 24'×14'. (b) 22'×12'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Groundnut yield. (iv) (a) 1953—1955. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1257 lb./ac. (ii) 388.5 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	C ₀	C ₁	C ₂	C ₃	C ₄	C ₅
Av. yield	1246	1695	1069	1154	1279	1098

S.E./mean = 158.6 lb./ac.

Crop :- Groundnut.

Ref :- W.B. 54(55).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To find out the best spacing for Groundnut to get maximum yield.

1. BASAL CONDITIONS :

(i) (a) Mustard—Linseed groundnut. (b) Mustard—Linseed. (c) 150 mds./ac. cowdung. (ii) (a) Loamy. (b) Refer soil analysis, Berhampore. (iii) 17.6.1954. (iv) (a) 3 to 4 ploughings and ladderings. (b) N.A. (c) 25 to 65 lb./ac. (d) As per treatments. (e) 2 to 3. (v) 150 mds./ac. of cowdung. (vi) K—3 (Kopergaon early). (vii) Unirrigated. (viii) 2 weedings, 2 mulchings and 2 earthings. (ix) 36.82". (x) 3.11.1954.

2. TREATMENTS :

8 different spacings : S₁=12"×9", S₂=12"×12", S₃=18"×6", S₄=18"×9", S₅=18"×12", S₆=24"×6", S₇=24"×9" and S₈=24"×12".

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 18'×9'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Moderate. (ii) Nil. (iii) Groundnut yield. (iv) (a) 1952—1955. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1467 lb./ac. (ii) 226.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈
Av. yield	1103	1748	1494	1221	1629	1641	1523	1378

S.E./mean = 130.9 lb./ac.

Crop :- Groundnut.

Ref :- W.B. 55(15).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To find out the best spacing for Groundnut to get maximum yield.

1. BASAL CONDITIONS :

(i) (a) Mustard—Linseed followed by groundnut. (b) Mustard—Linseed. (c) 150 mds./ac. of cowdung. (ii) (a) Loamy. (b) N.A. (iii) 6.6.1955. (iv) (a) 3 to 4 ploughings and laddering. (b) N.A. (c) Varies according to spacing. (d) As per treatments. (e) 2 to 3. (v) 150 mds./ac. of cowdung. (vi) K—3 (Kopergaon early). (vii) Unirrigated. (viii) 2 weedings, 2 mulchings and 2 earthings. (ix) 42.60". (x) 5.11.1955.

2. TREATMENTS :

Same as in expt. no. 54(55) on page 265.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3 (iv) (a) 30'×12'. (b) 27×9'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.I. (iii) Groundnut yield. (iv) (a) 1952—1955. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 303 lb./ac. (ii) 62.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈
Av. yield	312	250	371	307	290	283	366	246

S.E./mean = 36.3 lb./ac.

Crop :- Groundnut.

Ref :- W.B. 54(54).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To find out the most suitable spacing for groundnut to get the maximum yield.

1. BASAL CONDITIONS :

(i) (a) Mustard+Linseed—Groundnut. (b) Mustard—Linseed. (c) 150 mds./ac. of cowdung. (ii) (a) Loamy sand. (b) Refer soil analysis, Berhampore. (iii) 12.6.1954. (iv) (a) 4 ploughings and ladderings. (b) N.A. (c) 20 to 63 lb./ac. (d) As per treatments. (e) 2 to 3. (v) 150 mds./ac. of cowdung. (vi) Spanish peanut (late). (vii) Unirrigated. (viii) 2 weedings and 2 mulchings. (ix) 34.53%. (x) 17.11.1954.

2. TREATMENTS :

Same as in expt. no. 54(55) on page 265.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 18'×9'. (v) N.A. (vi) Yes.

4. GENERAL :

Same as in expt. no. 54(55) on page 265.

5. RESULTS :

(i) 1807 lb./ac. (ii) 245.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈
Av. yield	1490	1613	1601	1759	1800	1772	2228	2193

S.E./mean = 100.6 lb./ac.

Crop :- Groundnut.

Ref :- W.B. 55(13).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To find out the most suitable spacing for groundnut to get the maximum yield.

1. BASAL CONDITIONS :

(i) (a) Mustard+Linseed—Groundnut. (b) Mustard—Linseed. (c) 150 mds./ac. of cowdung. (ii) (a) Loamy soil. (b) Refer soil analysis, Berhampore. (iii) 9.6.1955. (iv) (a) 4 ploughings and ladderings. (b) N.A. (c) 20 to 63 lb./ac. (d) As per treatments. (e) 2 to 3. (v) 150 mds./ac. of cowdung. (vi) Spanish peanut (late). (vii) Unirrigated. (viii) 2 weedings and 2 mulchings. (ix) 51.64%. (x) 20.11.1955.

2. TREATMENTS :

Same as in expt. no. 54(55) on page 265.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 30' × 12'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of unshelled groundnut. (iv) (a) 1952—1955. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 571 lb./ac. (ii) 128.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈
Av. yield	577	573	541	497	580	593	594	610

S.E./mean = 52.4 lb./ac.

Crop :- Til (Kharif).

Ref :- W.B. 54(61).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To find out the best time of sowing for Til.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Berhampore. (iii) As per treatments. (iv) (a) Spading and 2 to 3 ploughings. (b) Line sowing. (c) 6 to 7 lb./ac. (d) 12" × 6". (e) N.A. (vi) 100 mds./ac. of cowdung. (vii) B—14 (early). (viii) Unirrigated. (ix) 2 to 3 weedings and thinning. (x) 37.30". (x) For treatment D₁ to D₄ after 90 days and for D₅ and D₆ after 80 days of sowing.

2. TREATMENTS :

6 dates of sowing : D₁=12th May to 9th June, D₂=27th May to 23rd June, D₃=12th June to 7th July, D₄=27th June to 21st July, D₅=12th July to 5th August and D₆=27th July to 20th August.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 11.5' × 7'. (b) 9.5' × 6'. (v) 1.0' × 0.5'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of seed. (iv) (a) 1952—1955. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 364 lb./ac. (ii) 107.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of seed in lb./ac.

Treatment	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆
Av. yield	1203	796	92	38	33	22

S.E./mean = 43.7 lb./ac.

Crop :- Til (Kharif).

Ref :- W.B. 55(80).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To find out the best time of sowing for Til.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Berhampore. (iii) As per treatments. (iv) (a) Spading and 1 to 2 ploughings. (b) Line sowing. (c) 6 lb./ac. (d) 12"×6". (e) N.A. (v) 80 to 100 mds./ac. of cowdung. (vi) B-14 (late). (vii) Unirrigated. (viii) 2 weedings and thinning. (ix) 40.10". (x) For treatments D₁ to D₄ after 90 days and for D₅ and D₆ after 80 days of sowing.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(61) on page 267.

5. RESULTS :

(i) 394 lb./ac. (ii) 237.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of seed in lb./ac.

Treatment	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆
Av. yield	790	814	415	223	64	56

S.E./mean = 96.8 lb./ac.

Crop :- Til (Kharif).

Ref :- W.B. 54(63).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :- To find out the best seed-rate for Til.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam (riverine). (b) Refer soil analysis, Berhampore. (iii) 15.6.1954. (iv) (a) 3 to 4 ploughings. (b) Line sowing. (c) As per treatments. (d) 12"×6". (e) Nil. (v) 100 to 150 mds./ac. of cowdung. (vi) B-14. (vii) Unirrigated. (viii) 2 weedings and 1 thinning. (ix) 38.61". (x) 17.9.1954.

2. TREATMENTS :

5 different seed rates : R₁=4, R₂=5, R₃=6, R₄=7 and R₅=8 lb./ac.

Seed applied by broadcast.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 22'×23'. (b) 20'×21'. (v) 1.0'×1.0' (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of seed. (iv) (a) 1953-1955. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 288 lb./ac. (ii) 40.4 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	R ₅
Av. yield	301	322	376	331	111

S.E./mean = 18.1 lb./ac.

Crop :- Til (Kharif).

Ref :- W.B. 55(82).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :- To find out the best seed-rate for Til.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam (riverine). (b) Refer soil analysis, Berhampore. (iii) 15 to 20.6.1955. (iv) (a) Spadings and 2 to 3 ploughings. (b) Line sowing. (c) As per treatments. (d) 12"×6". (e) Nil. (v) 100 mds./ac. of cowdung. (vi) B-14 (late). (vii) Unirrigated. (viii) 1 weeding and 2 thinnings. (ix) 46.47". (x) Last week of September, 1955.

2. TREATMENTS :

Same as in expt. no. 54(63) on page 268.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (ii) 5. (iv) (a) 22'×11'. (b) 20'×10'. (v) 1.0'×0.5'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of seed. (iv) (a) 1953—1955. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 123 lb./ac. (ii) 61.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅
Av. yield	89	139	176	107	103

S.E./mean = 27.3 lb./ac.

Crop :- Linseed (Rabi).

Ref :- W.B. 54(62).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To find out the optimum seed-rate for Linseed.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam (riverine). (b) Refer soil analysis, Berhampore. (iii) 25.10.1954. (iv) (a) Spading and 3 ploughings. (b) Line sowing. (c) As per treatments. (d) 12"×6". (e) N.A. (v) 100 mds./ac. of cowdung. (vi) B-37 (late). (vii) Unirrigated. (viii) 1 to 2 weedings and 2 thinnings. (ix) 4.75". (x) 10 to 15.3.1955.

2. TREATMENTS :

6 seed rates : R₁=8, R₂=10, R₃=12, R₄=14, R₅=16 and R₆=18 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 22'×16'. (b) 20'×15'. (v) 1'×0.5'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of seed. (iv) (a) 1952—1955. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1092 lb./ac. (ii) 132.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆
Av. yield	977	1113	1134	1123	1108	1095

S.E./mean = 53.9 lb./ac.

Crop :- Linseed (Rabi).

Ref :- W.B. 55(81).

Site :- State Agri. Farm, Berhampore.

Type :- 'C'.

Object :—To find out the optimum seed-rate for Linseed.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam (riverine). (b) Refer soil analysis, Berhampore. (iii) Last week of October, 1955. (iv) (a) 1 ploughing and 2 harrowings. (b) Line sowing. (c) As per treatments. (d) 12"×6". (e) Nil. (v) 80 to 100 mds./ac. of cowdung. (vi) B-37 (late). (vii) Unirrigated. (viii) 2 weedings and thinning. (ix) 7.68". (x) Last week of March, 1956.

2. TREATMENTS :

Same as in expt. no. 54(62) on page 269.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 23' × 11'. (b) 23' × 9.5'. (v) 0.75' both sides lengthwise. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain. (iv) (a) 1952—1955. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1296 lb./ac. (ii) 154.5 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of seed in lb./ac.

Treatment	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆
Av. yield	1030	1428	1440	1297	1381	1199

S.E./mean = 77.2 lb./ac.

Crop :- Toria (*Kharif*).

Ref :- W.B. 58(26).

Site :- State Agri. Farm, Malda.

Type :- 'M'.

Object :- To find the out effect of N alone and in combination with P on the yield of Toria.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Alluvial (loam). (b) Refer soil analysis, Malda. (iii) 15 to 20.10.1958. (iv) (a) 3 to 4 ploughings and spading. (b) Line sowing. (c) 4 to 5 lb./ac. (d) 12" × 6". (e) N.A. (v) 150 mds./ac. of cowdung. (vi) B-54 (late). (vii) Unirrigated. (viii) 2 to 3 weedings and 2 thinnings. (ix) 48". (x) 22 to 30.1.1959.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N as A/S : N₀=0, N₁=20, N₂=40 and N₃=60 lb./ac.

(2) 3 levels of P₂O₅ as Super : P₀=0, P₁=30 and P₂=60 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 17' × 12'. (b) 15' × 11'. (v) 1' × 0.5'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1958—1962. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 512 lb./ac. (ii) 134.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	497	546	509	485	509
P ₁	443	400	578	504	481
P ₂	460	581	554	586	545
Mean	467	509	547	525	512

S.E. of N marginal mean = 38.7 lb./ac.

S.E. of P marginal mean = 33.7 lb./ac.

S.E. of body of table = 67.0 lb./ac.

Crop :- Toria (Kharif).**Ref :- W.B. 59(48).****Site :- State Agri. Farm, Malda.****Type :- 'M'.**

Object :- To find out the effect of N alone and in combination with P on the yield of Potato.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Alluvial (loam). (b) Refer soil analysis, Malda. (iii) 22 to 28.10.1959. (iv) (a) 3 to 4 ploughings, 3 spadings and harrowings. (b) Line sowing. (d) 4 to 5 lb./ac. (e) 12" x 6". (e) N.A. (v) N.A. (vi) B-54 (late). (vii) Irrigated. (viii) Weeding and thinning. (ix) N.A. (x) Last week of January, 1960.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 58(26) on page 270.

5. RESULTS:

(i) 1412 lb./ac. (ii) 145.2 lb./ac. (iii) Main effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	N ₃	Mean
P ₀	1089	1380	1422	1583	1368
P ₁	1234	1312	1514	1703	1441
P ₂	1284	1373	1507	1548	1428
Mean	1202	1355	1481	1611	1412

S.E. of N marginal mean = 41.9 lb./ac.

S.E. of P marginal mean = 36.3 lb./ac.

S.E. of body of table = 72.6 lb./ac.

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Crop :- Mustard (Rabi).**Ref :- W.B. 57(55).****Site :- State Agri. Farm, Kalyani.****Type :- 'M'.**

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

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Loam and sandy loam. (b) Refer soil analysis, Kalyani. (iii) 2.11.1957. (iv) (a) 3 to 4 ploughings and 2 spadings. (b) Line sowings. (c) to (e) N.A. (v) N.A. (vi) Tori-7. (viii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 15.1.1958.

2. TREATMENTS:

All combinations of (1) and (2)

(1) 3 levels of N as A/S : N₀=0, N₁=40 and N₂=60 lb./ac.(2) 2 levels of P₂O₅ as Super : P₀=0 and P₁=60 lb./ac.**3. DESIGN:**

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 38' x 19'. (b) 36' x 17'. (v) 1' x 1'. (vi) Yes.

4. GENERAL:

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) No. (b) and (c) Nil. (v) (a) No. (b) Nil. (v) N.A. (vii) Nil.

5. RESULTS:

(i) 209 lb./ac. (ii) 41.0 lb./ac. (iii) Main effects of N and P are highly significant and N x P interaction is significant. (iv) Av. yield of grain in lb./ac.

	N ₀	N ₁	N ₂	Mean
P ₀	118	210	193	174
P ₁	119	332	283	245
Mean	118	271	238	209

S.E. of N marginal mean = 14.5 lb./ac.
 S.E. of P marginal mean = 11.8 lb./ac.
 S.E. of body of table = 20.5 lb./ac.

Crop :- Mustard (Rabi).

Ref :- W.B. 58(30).

Site :- State Agri. Farm, Kalyani.

Type :- 'M'.

Object :— To study the effects of N and P on the yield of Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam and sandy loam. (b) Refer soil analysis, Kalyani. (iii) 15.11.1958. (iv) (a) 4 to 5 ploughings. (b) Broadcast. (c) As per treatments. (d) and (e) N.A. (v) 80 to 100 mds./ac. of cowdung. (vi) Rai—5. (vii) Unirrigated. (viii) 2 weedings and 1 thinning. (ix) N.A. (x) 7.3.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(55) on page 271.

5. RESULTS :

(i) 743 lb./ac. (ii) 275.3 lb./ac. (iii) Only main effect of N is significant. (iv) Av. yield of seed in lb./ac.

	N ₀	N ₁	N ₂	Mean
P ₀	373	996	781	717
P ₁	580	884	845	770
Mean	476	940	813	743

S.E. of N marginal mean = 97.3 lb./ac.
 S.E. of P marginal mean = 79.4 lb./ac.
 S.E. of body of table = 137.6 lb./ac.

Crop :- Mustard (Rabi).

Ref :- W.B. 59(SFT).

Centre :- Nadia (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) to (v) N.A. (vi) October to November, 1959. (vii) to (ix) N.A. (x) March, 1960.

2. 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. Pot.
 nk = 20 lb./ac. of N as A/S+20 lb./ac. of K_2O as Mur. Pot.
 pk = 20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. 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 homogenous zones and one field assistant 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 *kharif* cereal, 8 on *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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per treatments. (vi) and (vii) N.A.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response of mustard in lb./ac.	74	16	58	15.6	-25	25	16	25	11.5

Control yield = 263 lb./ac. and no. of trials = 8.

Crop :- Mustard (*Rabi*).

Ref :- W.B. 59(SFT).

Centre :- Nadia (c.f.).

Type :- 'M'.

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

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) to (v) N.A. (vi) October to November, 1959. (vii) to (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 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 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 *kharif* cereal, 8 on *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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1959—contd. (b) No. (c) N.A. (v) As per treatments. (vi) and (vii) N.A.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ ''	n ₂ '''
Av. yield of grain in lb./ac.	296	370	403	395	411	329	379

G.M. = 369 lb./ac., S.E./mean = 17.5 lb./ac. and no. of trials = 9.

Crop :- Mustard (Rabi).

Ref :- W.B. 59(SFT).

Centre :- 24 Parganas (c.f.).

Type :- 'M'.

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

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 273 conducted at Nadia.

5. RESULTS :

Treatment	0	n ₁	n ₂	n ₁ '	n ₂ '	n ₁ '''	n ₂ '''
Av. yield of grain in lb./ac.	288	329	362	329	329	346	321

G.M. = 329 lb./ac., S.E./mean = 26.8 lb./ac. and no. of trials = 3.

Crop :- Cotton and Paddy (Kharif).

Ref :- W.B. 54(8).

Site :- State Agri. College Farm, Tollyganj.

Type :- 'X'.

Object :—To study the effect of mixed cropping of Cotton with Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) 75 mds./ac. of F.Y.M. (ii) (a) Light loam. (b) Refer soil analysis, Tollyganj. (iii) Paddy : 31.5.1954 and Cotton : 1 6.1954. (iv) (a) 4 to 5 ploughings with ladderings. (b) Line sowing of cotton and broadcast for paddy. (c) N.A. (d) As per treatments. (e) N.A. (v) 75 mds./ac. of F.Y.M. (vi) Cotton : D—5 (late) and Paddy : *Dular* (early). (vii) Unirrigated. (viii) 2 weedings, 2 mulchings with hand hoe and 1 earthing. (ix) 57.25". (x) Paddy : 4.9.1954 and Cotton : November to March, 1955.

2. TREATMENTS :

5 treatments : T₁=Cotton alone with 3'×2' spacing, T₂=Cotton alone with 2½'×1' spacing, T₃=*Aus* paddy broadcast followed by gram, T₄=*Aus* paddy with 3'×2' spacing of cotton and T₅=*Aus* paddy with 5'×2' spacing of cotton.

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) and (b) 30'×24'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. Paddy lodging at maturity in early September. (ii) Jassid in early stages of growth, stem (beetles) borers when plants are about 1½' to 2' long. Leaf insects (leaf-rollers) almost at all stages of growth and development from August to October. Black arm and anthracnose disease. 5% water soluble DDT sprayed at fortnightly interval. Seed treatment with Agrosen G.N. and concentrated sulphuric acid. (iii) Yield of paddy and cotton. (iv) (a) 1953—1954. (b) No. (c) Nil. (v) (a) Berhampore, Chandernagore and Burdwan. (b) Nil. (vi) Gram failed due to severe drought during late phases of the growth and development. (vii) The raw data and analysis are not available.

5. RESULTS :

(i) to (iii) N.A. (iv) Av. yield of grain of paddy and cotton in lb./ac.

Treatment	T ₁	T ₂	T ₃	T ₄	T ₅
Av. yield Paddy	—	—	2240	1312	1385
Cotton	1344	1255	—	1342	1339

S.E's = N.A.

Crop :- Cotton and Paddy (Kharif).

Ref :- W.B. 55(89).

Site :- State Agri. College Farm, Tollyganj.

Type :- 'X'.

Object :—To find out whether mixed cropping of Cotton with Paddy would be profitable.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Tollyganj. (iii) N.A. (iv) (a) Ploughing and laddering. (b) Line sowing of cotton and broadcast for paddy. (c) N.A. (d) 3'×2' for cotton. (e) N.A. (v) N.A. (vi) Cotton : D—5 and Paddy : N.A. (vii) Unirrigated. (viii) Thinning and laddering. (ix) and (x) N.A.

2. TREATMENTS :

3 treatments : T₁=Cotton alone, T₂=Paddy alone and T₃=Cotton with a spacing of 3'×2' sown mixed with paddy.

3. DESIGN :

(i) R.B.D. : (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 40'×20'. (b) 38'×18'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain and kapas. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) Berhampore. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 578 Rs./ac. (ii) 97.81 Rs./ac. (iii) Treatment differences are significant. (iv) Av. money value of produce in Rs./ac.

Treatment	T ₁	T ₂	T ₃
Av. value	515	516	702

S.E./mean = 39.93 Rs./ac.

Crop :- Cotton and Paddy (Kharif).

Ref :- W.B. 56(54).

Site :- State Agri. College Farm, Tollyganj.

Type :- 'X'.

Object :—To find out whether mixed cropping of Cotton with Paddy would be profitable.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Tollyganj. (iii) N.A. (iv) (a) 3 to 4 ploughings. (b) Line sowing for cotton and broadcast for paddy. (c) N.A. (d) 3'×2' for cotton. (e) N.A. (v) N.A. (vi) Cotton D—5 and Paddy : N.A. (vii) Unirrigated. (viii) Weeding and thinning. (ix) and (x) N.A.

2. TREATMENTS :

Same as in expt. no. 55(89) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 44'×26'. (b) 42'×24'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Yield of grain and kapas. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) Berhampore. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 646 Rs./ac. (ii) 74.19 Rs./ac. (iii) Treatment differences are highly significant. (iv) Av. money value of produce in Rs./ac.

Treatment	T ₁	T ₂	T ₃
Av. value	647	408	884

S.E./mean = 30.29 Rs./ac.

Crop :- Cotton and Paddy (*Kharif*) and Gram (*Rabi*). Ref :- W.B. 55(90).

Site :- State Agri. Farm, Berhampore.

Type :- 'X'.

Object :- To find out whether mixed cropping of Cotton with Paddy would be profitable.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Berhampore. (iii) N.A. (iv) (a) Ploughing and laddering. (b) Broadcast for paddy and line sowing for cotton. (c) N.A. (d) 3' × 2' for cotton. (e) N.A. (v) N.A. (vi) Cotton D-5, Paddy and Gram : N.A. (vii) Unirrigated. (viii) Thinning and weeding. (ix) and (x) N.A.

2. TREATMENTS :

3 treatments : T₁=Cotton alone, T₂=Paddy in *kharif* followed by Gram in *rabi* and T₃=Cotton with a spacing of 3' × 2' sown mixed with Paddy.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 44' × 26'. (b) 42' × 24'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain and *kapas*. (iv) (a) 1955-1957. (b) No. (c) Nil. (v) (a) Tollyganj. (b) Nil. (vi) Nil. (vii) The money value in T₂ is based on the yield of Paddy in *kharif* and Gram in *rabi*.

5. RESULTS :

(i) 512 Rs./ac. (ii) 88.16 Rs./ac. (iii) Treatment differences are highly significant. (iv) Av. money value of produce in Rs./ac.

Treatment	T ₁	T ₂	T ₃
Av. value	262	730	544

S.E./mean = 44.08 Rs./ac.

Crop :- Cotton and Paddy (*Kharif*) and Gram (*Rabi*). Ref :- W.B. 56(53).

Site :- State Agri. Farm, Berhampore.

Type :- 'X'.

Object :- To find out whether mixed cropping of Cotton with Paddy would be profitable.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Berhampore. (iii) N.A. (iv) (a) Ploughing and laddering. (b) Broadcast for paddy and line sowing for cotton. (c) N.A. (d) 3' × 2' for cotton. (e) N.A. (v) N.A. (vi) Cotton D-5, Paddy and Gram : N.A. (vii) Unirrigated. (viii) Weeding and thinning. (ix) and (x) N.A.

2. TREATMENTS :

Same as in expt. no. 55(90) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 62' × 32'. (b) 60' × 30'. (v) 1' × 1'. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) N.A. (iii) Yield of grain and *kapas*. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Tollyganj. (b) Nil. (vi) Nil. (vii) The money value in T_2 is based on the yield of Paddy in *kharif* and Gram in *rabi*.

5. RESULTS :

(i) 281 Rs./ac. (ii) 40.50 Rs./ac. (iii) Treatment differences are highly significant. (iv) Av. money value of produce in Rs./ac.

Treatment	T_1	T_2	T_3
Av. value	215	316	312

S.E./mean = 20.25 Rs./ac.

Crop :- Cotton and Paddy (*Kharif*) and Gram (*Rabi*). Ref :- W.B. 57(67).

Site :- State Agri. Farm, Berhampore.

Type :- 'X'.

Object :— To find out whether mixed cropping of Cotton with Paddy would be profitable.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Berhampore. (iii) N.A. (iv) (a) 3 to 4 ploughings and laddering. (b) Broadcast for paddy and line sowing for cotton. (c) N.A. (d) 3'×2' for cotton. (e) N.A. (v) N.A. (vi) Cotton : H—14 and D—5. Paddy and gram : N.A. (vii) Unirrigated. (viii) Weeding and thinning. (ix) and (x) N.A.

2. TREATMENTS :

5 treatments : T_1 =Cotton D—5 alone, T_2 =Paddy in *kharif* followed by gram in *rabi*, T_3 =Cotton D—5 with a spacing of 3'×2' sown mixed with paddy, T_4 =Cotton H—14 alone and T_5 =Cotton H—14 with a spacing of 3'×2' sown mixed with paddy.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 62'×32'. (b) 60'×30'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain and *kapas*. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) and (vi) Nil. (vii) The money value in T_2 is based on the yield of paddy in *kharif* and gram in *rabi*.

5. RESULTS :

(i) 746 Rs./ac. (ii) 124.23 Rs./ac. (iii) Treatment differences are highly significant. (iv) Av. money value of produce in Rs./ac.

Treatment	T_1	T_2	T_3	T_4	T_5
Av. value	860	343	962	714	853

S.E./mean = 55.56 Rs./ac.

Crop :- Banana.

Ref :- W.B. 58(40).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :— To study the effect of N alone and in combination with P on the yield of Banana.

BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) Champa. (v) 10.11.1957. (vi) 3 to 4 months. (vii) 80 to 100 mds./ac. of F.Y.M. (viii) 2 to 3 ploughings, stackings and spading. (ix) Nil. (x) Unirrigated. (xi) 45.20%. (xii) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N as A/S : $N_0=0$, $N_1=4$, $N_2=8$ and $N_3=12$ ozs./plant.

(2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=4$ ozs./plant.

Manures were applied after plantation.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) 0.24 ac. (iii) 4. (iv) 4 rows of 5 plants each (green) and 2 rows of 3 plants each (net). (v) 2 rows of 2 plant. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of banana. (iv) (a) 1958—contd. (b) and (c) N.A. (v) (a) No. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 23.03 lb./plant. (ii) 2.29 lb./plant. (iii) Main effect of N alone is highly significant. (iv) Av. yield of banana in lb./plant.

	N_0	N_1	N_2	N_3	Mean
P_0	20.76	21.81	24.05	24.14	22.69
P_1	20.10	23.10	24.79	25.49	23.37
Mean	20.43	22.45	24.42	24.82	23.03

S.E. of N marginal mean = 0.81 lb./plant.

S.E. of P marginal mean = 0.57 lb./plant.

S.E. of body of table = 1.15 lb./plant.

Crop :- Banana.

Ref :- W.B. 59(52).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :— To find out the optimum level of N and ascertain the response of P at different levels of N for perennial plantation.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By sucker. (iv) *Champa*. (v) 10.11.1957/N.A. (vi) 3 to 4 months. (vii) 10 tons/ac. of $\frac{1}{2}$ T.C. (viii) Ploughing, spading, desuckering and staking. (ix) Nil. (x) Unirrigated. (xi) 78.43%. (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(40) on page 277.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of banana. (iv) (a) 1957—contd. (b) N.A. (v) (a) and (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 23.52 lb./plant. (ii) 2.99 lb./plant. (iii) None of the effects is significant. (iv) Av. yield of banana in lb./plant.

	N_0	N_1	N_2	N_3	Mean
P_0	22.33	24.05	24.50	22.63	23.38
P_1	19.68	25.50	23.95	25.55	23.67
Mean	21.00	24.78	24.22	24.09	23.5

S.E. of N marginal mean	= 1.06 lb./plant.
S.E. of P marginal mean	= 0.75 lb./plant.
S.E. of body of table	= 1.50 lb./plant.

Crop :- Banana.

Ref :- W.B. 55(51).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To study the effect of application of K and P in combinations with N both from inorganic and organic sources on the yield of Banana.

1. BASAL CONDITIONS:

(i) Paddy and sugarcane were sown previously but the land remained fallow for two years before the experiment. (ii) (a) Clay soil, new alluvium. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Champa* (local medium). (v) 20.6.1955 Spacing 8'×8' in pits of 3' depth of 3' diameter. (vi) 3 months. (vii) 20 tons/ac. of T.C. at 32 lb./pit on 16.6.1955. (viii) Spading, pulverising and desukering on occasion. (ix) Nil. (x) Irrigated. (xi) 68.11%. (x) 22.8.1956 to 21.11.1956.

2. TREATMENTS :

12 manurial treatments: M_0 = Control, M_1 = 4 ozs. of N as mustard or groundnut cake, M_2 = 4 ozs. of N as A/S, M_3 = $M_1 + M_2$, M_4 = 2 M_1 , M_5 = 2 M_2 , M_6 = $M_1 + M_2 + K_2O$ as Pot. Sul. to make up a total of 8 ozs., M_7 = 2 M_1 + 8 ozs. of K_2O as pot. sul., M_8 = $M_1 + M_2 + P_2O_5$ as Super to make up a total of 8 ozs., M_9 = 2 M_1 + 8 ozs. of P_2O_5 as Super, M_{10} = $M_1 + M_2 + K_2O$ as Pot. Sul. to make up a total of 8 ozs. and P_2O_5 as Super to make up a total of 8 ozs. and M_{11} = 8 ozs. of N as A/S + 8 ozs. of K_2O as Pot. Sul. + 8 ozs. of P_2O_5 as Super.

Fertilizers were applied in two equal doses just before and after the monsoon and were applied per plant.

3. DESIGN :

(i) R.B.D. (ii) 12. (iii) 4. (iv) 2 rows of 4 plants each. (v) 1 row around the plot. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Height, girth, no. of suckers leaves length and breadth of lomina, size of flower and yield of banana. (iv) (a) 1955—contd. (b) No. (v) and (vi) Nil. (vii) A great number of plants were damaged by the severe storm and flood during September—October 1956 and as a result data on yield were recorded in some cases to a very few plants/plot.

5. RESULTS :

(i) 20.79 lb./plant. (ii) 1.54 lb./plant. (iii) Treatment differences are not significant. (iv) Av. yield of banana in lb./plant.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}
Av. yield	20.48	20.87	21.38	19.67	20.24	20.72	20.96	20.85	19.99	21.50	20.66	22.12

S.E./means = 0.77 lb./plant.

Crop :- Banana.

Ref :- W.B. 56(38).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :- To study the effect of application of K and P in combination with N both from organic and inorganic sources on the yield of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Champa*. (v) 20.6.1955. Planting suckers 8'×8' spacing. (vi) 3 to 4 months. (vii) Nil. (viii) Spading, staking, removal of excess suckers etc. (ix) Nil. (x) Unirrigated. (xi) 74.78%. (xii) N.A.

2. TREATMENTS:

Same as in expt. no. 55(51) on page 279.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) 1.70 ac. (iii) 4. (iv) 4 rows of 6 plants each (gross), and 2 rows of 4 plants (net). (v) 1 guard row around. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Height, girth and yield of banana. (iv) (a) 1955—contd. (b) N.A. (v) (a) No. (b) Nil. (vi) Heavy rain during September—October. (vii) N.A.

5. RESULTS :

Yield of banana

(i) 20.78 lb./plant. (ii) 1.33 lb 'plant. (iii) Treatment differences are not significant. (iv) Av. yield of banana in lb./plant.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀	M ₁₁
Av. yield	20.48	20.86	21.37	19.63	20.24	20.71	20.96	20.85	19.99	21.44	20.66	22.12

S.E./mean = 0.67 lb./plant.

Height measurement

(i) 96.53 inches/plant. (ii) 3.12 inches/plant. (iii) Treatment differences are not significant. (iv) Av. measurement of height in inches/plant.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀	M ₁₁
Av. yield	90.79	94.54	95.44	96.31	98.30	97.56	97.23	98.98	96.77	98.16	97.10	97.16

S.E./mean = 1.56 inches/plant.

Girth measurement

(i) 23.13 inches/plant. (ii) 0.60 inches/plant. (iii) Treatment differences are not significant. (iv) Av. measurement of girth in inches/plant.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀	M ₁₁
Av. yield	21.87	22.70	22.80	23.06	23.47	23.15	23.24	23.50	23.24	23.52	22.98	24.05

S.E./mean = 0.30 inches/plant,

Crop :- Banana.

Ref :- W.B. 57(41).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object :— To study the effect of application of K and P in combination with N both from organic and inorganic sources on the yield of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Champa*. (v) 20.6.1955, plant suckers, 8' × 8' spacing. (vi) 3 to 4 months. (vii) N.A. (viii) Weeding, staking and removed excess suckers. (ix) Nil. (x) Unirrigated. (xi) 46.17%. (xii) N.A.

2. TREATMENTS :

Same as in expt. no. 55(51) on page 279.

3. DESIGN :

(i) R.B.D. (ii) 12. (b) 1.70 ac. (iii) 4. (iv) 4 rows of 6 plants (gross) and 2 rows of 4 plants (net). (v) 1 guard row around. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Height girth and yield of banana. (iv) (a) 1955—cond. (b) N.A. (v) (a) No. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

Yield of banana

(i) 22.89 lb./plant. (ii) 2.62 lb./plant. (iii) Treatment differences are highly significant. (iv) Av. yield of banana in lb./plant.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀	M ₁₁
Av. yield	18.38	20.09	20.52	24.53	24.37	22.35	24.70	22.33	24.40	22.58	26.39	24.00

S.E./mean = 1.31 lb./plant.

Height measurement

(i) 113.91 inches/plant. (ii) 6.49 inches/plant. (iii) Treatment differences are not significant. (iv) Av. height in inches/plant.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀	M ₁₁
Av. height	106.87	107.84	106.41	112.65	115.19	118.15	115.45	116.51	112.86	117.45	116.90	120.70

S.E./mean = 3.25 inches/plant.

Girth measurement

(i) 27.45 inches/plant. (ii) 2.63 inches/plant. (iii) Treatment differences are significant. (iv) Av. girth in inches/plant.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀	M ₁₁
Av. girth	24.66	25.70	24.23	30.19	26.80	27.29	29.24	26.69	29.16	28.02	28.84	28.54

S.E./mean = 1.31 inches/plant.

Crop :- Banana.

Ref :- W.B. 58(33).

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object:—To study the effect of application of K and P in combination with N both from organic and inorganic sources on the yield of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Champa*. (v) 20.6.1955, Planting suckers, 8'×8' spacing. (vi) 3 to 4 months. (vii) N.A. (viii) Spading, staking and removal of suckers. (ix) Nil. (x) Unirrigated. (xi) 45.20". (xii) N.A.

2. TREATMENTS :

Same as in expt. no. 55(51) on page 279.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) 1.70 ac. (iii) 4. (iv) (a) 4 rows of 6 plants (gross) and 2 rows of 4 plants (net). (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Height, girth and yield of banana. (iv) (a) 1955—contd. (b) N.A. (v) (a) N.A. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

Yield of banana

(i) 19.90 lb./plant. (ii) 1.24 lb./plant. (iii) Treatment differences are highly significant. (iv) Av. yield of banana in lb./plant.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀	M ₁₁
Av. yield	16.78	18.40	19.93	19.94	19.52	20.00	20.46	19.73	19.93	21.50	22.13	20.50

S.E./mean = 0.62 lb./plant.

Height measurement

(i) 116.74 inches/plant. (ii) 1.20 inches/plant. (iii) Treatment differences are highly significant. (iv) Av. height in inches/plant.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀	M ₁₁
Av. height	103.33	115.90	119.17	115.96	111.71	116.90	122.77	120.42	118.16	121.20	119.40	115.96

S.E./mean = 0.60 inches/plant.

Girth measurement

(i) 27.32 inches/plant. (ii) 5.13 inches/plant. (iii) Treatment differences are highly significant. (iv) Av. girth in inches/plant.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀	M ₁₁
Av. yield	28.11	25.36	26.17	26.57	26.39	26.62	27.30	28.80	28.07	28.67	28.62	27.23

S.E./mean = 2.56 inches/plant.

Crop :- Banana.

Ref :- W.B. 59(53)-

Site :- State Agri. Farm, Chinsurah.

Type :- 'M'.

Object:—To study the effect of application of K and P in combination with N both from organic and inorganic sources on the yield of Banana.

1. BASAL CONDITIONS:

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Champa*. (v) 20.6 1955. Suckers placed, 1.5' deep and 1.5' in diameter. (vi) 3 months. (vii) 25 tons/ac. of T.C. (viii) Ploughing, spading and staking etc. (ix) Nil. (x) Unirrigated. (xi) 78.43%. (xii) N.A.

2. TREATMENTS :

Same as in expt. no. 55(51) on page 279.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) 4 rows of 6 plants (gross) and 2 rows of 4 plants (net). (v) 8' x 8' around each plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of banana. (iv) (a) 1955—contd. (b) N.A. (v) (a) No. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 23.85 lb./plant. (ii) 1.88 lb./plant. (iii) Treatment differences are not significant. (iv) Av. yield of banana in lb./plant.

Treatment	M ₀	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀	M ₁₁
Av. yield	22.62	24.82	25.50	22.87	25.77	23.35	23.00	23.47	24.07	22.45	23.75	24.47

S.E./mean = 0.94 lb./plant.

Crop :- Banana.

Ref :- W.B. 54(42).

Site :- State Horti. Res. Stn., Krishnagar.

Type :- 'C'.

Object:—To find out the optimum spacing for dwarf variety of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Krishnagar. (iii) By suckers. (iv) N.A. (v) 20.7.1950. Suckers placed in pits of 1.5' depth and 1.5' diameter. (vi) 2 to 3 months. (vii) 8 oz./plant of N ($\frac{1}{2}$ organic + $\frac{1}{2}$ inorganic). T.C. mixed with soil and applied at the onset of monsoon. A/S given in 4 equal doses starting with onset of monsoon and at an interval of a month. (viii) 2 spadings. (ix) Nil. (x) Irrigated. (xi) 42.25". (xii) N.A.

2. TREATMENTS :

2 spacings : $S_1=8' \times 8'$ and $S_2=6' \times 6'$.

3. DESIGN :

(i) Paired plot. (ii) (a) 2. (b) N.A. (iii) 6. (iv) 9 plants for S_1 and 16 plants for S_2 . (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Spraying D.D.T. (wettable) 4 times at an interval of fortnight to avoid incidence of beetle. (iii) Height, girth, leaf count and yield of banana. (iv) (a) 1950—1954. (b) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 233.18 lb./plot. (ii) 7.33 lb./plot. (iii) Treatment difference is highly significant. (iv) Av. yield of banana in lb./plot.

Treatment	S_1	S_2
Av. yield	169.50	296.86

S.E./mean = 2.99 lb./plot.

Crop :- Banana.

Ref :- W.B. 57(39).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

Object :—To find out the optimum spacing and desuckering practices on the yield of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Champa*. (v) 22.5.1956 ; as per treatments. (vi) 3 to 4 months. (vii) 80 mds./ac. of cowdung. (viii) Spading, staking and harrowing. (ix) Nil. (x) Irrigated. (xi) 46.17". (xii) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 spacings : $S_1=7' \times 7'$, $S_2=9' \times 9'$ and $S_3=10\frac{1}{2}' \times 10\frac{1}{2}'$.

(2) 2 suckering practices : $C_1=1$ sucker only allowed when mother plant shoots and $C_2=1$ st sucker allowed to grow when the mother plant is 6 months old and the second sucker when the plant shoots.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) $378' \times 63'$. (iii) 4. (iv) Single row of 6 plants. (v) 1 border row is kept. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Height, girth, leaf count and yield of banana. (iv) (a) 1956—contd. (expt. failed in 1956). (b) N.A. (v) (a) No. (b) Nil. (vi) Heavy rain during the growth. (vii) Nil.

5. RESULTS :

(i) 26.2 lb./plant. (ii) 5.90 lb./plant. (iii) None of the effects is significant. (iv) Av. yield of banana in lb./plant.

	S ₁	S ₂	S ₃	Mean
C ₁	25.8	26.7	31.1	27.9
C ₂	22.8	24.2	26.5	24.5
Mean	24.3	25.5	28.8	26.2

S.E. of S marginal mean = 2.09 lb./plant.
 S.E. of C marginal mean = 1.70 lb./plant.
 S.E. of body of table = 2.95 lb./plant.

Crop :- Banana.

Ref :- W.B. 58(64).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

Object :— To find out the optimum spacing and desuckering practices on the yield of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By sucker. (iv) *Champa*. (v) 22.5.1956. (vi) 3 to 4 months. (vii) N.A. (viii) Spading, ploughing and laddering. (ix) Nil. (x) to (xii) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57,39) on page 283.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of banana. (iv) (a) 1956—contd. (b) N.A. (v) (a) No. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 24.06 lb./plant. (ii) 2.63 lb./plant. (iii) Main effects of S and C are highly significant. (iv) Av. yield of banana in lb./plant.

	S ₁	S ₂	S ₃	Mean
C ₁	25.82	24.87	29.06	26.58
C ₂	19.06	21.20	23.37	21.54
Mean	22.44	23.54	26.21	24.06

S.E. of S marginal mean = 0.93 lb./plant.
 S.E. of C marginal mean = 0.76 lb./plant.
 S.E. of body of table = 1.32 lb./plant.

Crop :- Banana.

Ref :- W.B. 59(49).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

Object :— To find out the optimum spacing and desuckering practices for perennial plantation.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By sucker. (iv) *Champa*. (v) 22.5.1956. Suckers placed in 1.5' deep and 1' to 1.5' in diameter. (vi) 2 to 3 months. (vii) N.A. (viii) Ploughing, spading and staking. (ix) Nil. (x) Unirrigated. (xi) 78.43%. (xii) N.A.

2. TREATMENTS :

Same as in expt. no. 57(39) on page 283.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 378'×63'. (iii) 4. (iv) 63'×63'. 81 plants for S₁, 49 plants for S₂ and 36 plants for S₃. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of banana. (iv) (a) 1956— contd. (b) N.A. (v) (a) N.A. (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 28.32 lb./plant. (ii) 3.70 lb./plant. (iii) Main effect of S only is significant. (iv) Av. yield of banana in lb./plant.

	S ₁	S ₂	S ₃	Mean
C ₁	26.30	27.45	30.47	28.07
C ₂	24.07	30.17	31.45	28.56
Mean	25.18	28.81	30.96	28.32

S.E. of S marginal mean. = 1.31 lb./plant.

S.E. of C marginal mean = 1.07 lb./plant.

S.E. of body of table = 1.85 lb./plant.

Crop :- Banana.

Ref :- W.B. 58(34).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

Object :— To find out the optimum spacing and desuckering practices on the yield of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Kabuli* (Dwarf). (v) 25.3.1957. (vi) 3 to 4 months. (vii) N.A. (viii) Laddering, spading and harrowing. (ix) N.A. (x) Irrigated. (xi) 45.20". (xii) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 spacings : S₁=5'3"×5'3", S₂=6'×6' and S₃=7'×7'.

(2) 2 suckering practices : C₁=1 sucker only allowed when mother plant shoots and C₂=1st sucker allowed to grow when the mother plant is 6 months old and the second sucker when the plant shoots.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) 84'×126'. (iii) 4. (iv) 2 rows of 3 plants. (v) 1 guard row around each plot and 1 border row around the block. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Height, girth, leaf count and yield of banana. (iv) (a) 1957— contd. (b) N.A. (v) (a) No. (b) Nil. (vi) and (vii) N.A.

5. RESULTS :

(i) 23.10 lb./plant. (ii) 2.40 lb./plant. (iii) Main effect of S alone is significant. (iv) Av. yield of banana in lb./plant.

	S ₁	S ₂	S ₃	Mean
C ₁	22.66	22.51	27.07	24.08
C ₂	20.74	22.00	23.60	22.12
Mean	21.70	22.26	25.33	23.10

S.E. of S marginal mean = 0.85 lb./plant.
 S.E. of C marginal mean = 0.69 lb./plant.
 S.E. of body of table = 1.20 lb./plant.

Crop :- Banana.

Ref :- W.B. 59(50).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

Object :— To find out the optimum spacing and desuckering practices for perennial plantation.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By sucker. (iv) *Kabuli*. (v) 25 3.1957 : N.A. (vi) 3 to 4 months. (vii) N.A. (viii) Ploughing, spading and staking. (ix) N.A. (x) Irrigated. (xi) 78.43%. (xii) N.A.

2. TREATMENTS :

Same as in expt. no. 58(34) on page 285.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) 84' × 126'. (iii) 4. (iv) (a) 42' × 42' ; 2 rows of 3 plants. (v) N.A. (vi) Yes.

4. GENERAL :

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

5. RESULTS :

(i) 23.76 lb./plant. (ii) 2.28 lb./plant. (iii) None of the effects is significant. (iv) Av. yield of banana in lb./plant.

	S ₁	S ₂	S ₃	Mean
C ₁	22.65	23.00	23.53	23.06
C ₂	23.58	24.28	25.50	24.45
Mean	23.11	23.64	24.52	23.76

S.E. of S marginal mean = 0.81 lb./plant.
 S.E. of C marginal mean = 0.66 lb./plant.
 S.E. of body of table = 1.14 lb./plant.

Crop :- Banana.

Ref :- W.B. 59(54).

Site :- State Agri. Farm, Chinsurah.

Type :- 'C'.

Object :— To determine the optimum period for which a plantation should be kept for Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Champa*. (v) 12.12.1956; N.A. (vi) 3 to 4 months. (vii) N.A. (viii) Ploughing, spading and staking. (ix) Nil. (x) Irrigated. (xi) 78.43%. (xii) N.A.

2. TREATMENTS :

3 cultural treatments : C_1 = Plantation ratooned for 3 years ; uprooted and replanted and ratooned for 3 years ; again uprooted and replanted for 3 years, so as to complete 3 plantings of 3 years duration each in a period of 10 years, C_2 = Plantation ratooned for 5 years ; uprooted and replanted and ratooned for 5 years so as to complete 2 plantings of 5 years duration each in a period of 10 years and C_3 = Plantation ratooned for a period of 10 years.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 60' x 40' (4 rows of 6 plants). (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of banana. (iv) (a) 1957—contd. (b) Nil. (v) (a) No. (b) Nil. (vi) N.A. (vii) Experiments for 1957 and 1958 are not available.

5. RESULTS :

(i) 20.3 lb./plant for (1st ratoon) and 35.5 lb./plant for (2nd ratoon). (ii) 3.07 lb./plant for (1st ratoon) and N.A. for (2nd ratoon). (iii) Treatment differences are not significant. (iv) Av. yield of banana in lb./plant.

Treatment	C_1	C_2	C_3
Av. yield (1st ratoon)	20.5	20.6	19.8
Av. yield (2nd ratoon)	34.5	36.3	35.8

S.E./mean for (1st ratoon) = 1.25 lb./plant and for (2nd ratoon) = N.A.

Crop :- Banana.

Ref :- W.B. 54(16).

Site :- State Agri. Farm, Chinsurah.

Type :- 'I'.

Object :—To study how far irrigation improves yield and quality of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay soil and new alluvium. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Martaman* (local medium). (v) 28.10.1954 ; 8' x 8' in pits of 3' deep and 3' in diameter. (vi) 3 months. (vii) 64 lb./pit of T.C. mixed thoroughly with soil before planting, 1.25 lb./plant of A/S and 1.5 lb./plant of P_2O_5 as Super as surface dressing. (viii) Spading and desuckering. (ix) Nil. (x) Irrigated as per treatments. (xi) 41.78%. (xii) No harvest—1st year of expt.

2. TREATMENTS :

4 irrigational treatments : I_0 = Control (no irrigation), I_1 = Irrigation at an interval of 1 month (i.e. in November, December, January, February, March, April and May), I_2 = Irrigation at an interval of 2 months (i.e. in November, January, March and May) and I_3 = Irrigation at an interval of 3 months (i.e. November, February and May).

Plots were flooded at an uniform rate by the help of tube well.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) 24 plants (gross) and 8 plants (net). (v) A border of one line of plants round the whole experimental area. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Height, girth, no. of leaves, suckers length and breadth of lamina. (iv) (a) 1954—contd. (b) N.A. (v) to (vii) Nil.

5. RESULTS :**Height measurement**

(i) 56.00 inches/plant. (ii) 1.93 inches/plant. (iii) Treatment differences are highly significant. (iv) Av. height in inches/plant.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. height	49.99	63.04	55.46	55.49

S.E./mean = 0.79 inches/plant.

Girth measurement

(i) 17.43 inches/plant. (ii) 0.51 inches/plant. (iii) Treatment differences are highly significant. (iv) Av. girth in inches/plant.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. girth	15.98	19.19	17.27	17.29

S.E./mean = 0.21 inches, plant.

Leaf counts

(i) 8.43 leaves/plant. (ii) 0.08 leaves/plant. (iii) Treatment differences are highly significant. (iv) Av. no. of leaves/plant.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. no. of leaves	8.18	8.81	8.31	8.41

S.E./mean = 0.03 leaves/plant.

Crop :- Banana.

Ref :- W.B. 55(7).

Site :- State Agri. Farm, Chinsurah.

Type :- 'I'.

Object :—To study how far irrigation improves yield and quality of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay soil, new alluvium. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Martaman*. (v) 28.10.1954. (vi) 3 months. (vii) N.A. (viii) Spading and desuckering. (ix) Nil. (x) As per treatments. (xi) 68.11%. (xii) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(16) on page 287.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of banana and other biometric observations. (iv) (a) 1954—contd. (b) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 23.49 lb./plant. (ii) 2.51 lb./plant. (iii) Treatment differences are not significant. (iv) Av yield of banana in lb./plant.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. yield	24.85	23.64	22.93	22.53

S.E./mean = 1.02 lb./plant.

Crop :- Banana.

Ref :- W.B. 56(36).

Site :- State Agri. Farm, Chinsurah.

Type :- 'I'.

Object :—To study how far irrigation improves the yield and quality of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Heavy clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (i) *Martaman*. (v) 28.10.1954. (vi) 3 to 4 months. (vii) N.A. (viii) Spading, 4 to 5 ploughings and 2 ladderings. (ix) Nil. (x) As per treatments. (xi) 74.78%. (xii) N.A.

2. TREATMENTS :

Same as in expt. no. 54(16) on page 287.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 0.85 ac. (iii) 6. (iv) 4 rows of 6 plants (gross) and 2 rows of 4 plants (net). (v) One row around. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attack of banana wilt, diseased cloves removed. (iii) Height, girth, leaf count and yield of banana. (iv) (a) 1954—1956. (b) N.A. (v) (a) Nil. (b) N.A. (vi) Heavy rain during September and October, lodged. (vii) Nil.

5. RESULTS :

(i) 23.52 lb./plant. (ii) 2.56 lb./plant. (iii) Treatment differences are not significant. (iv) Av. yield of banana in lb./plant.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. yield	22.95	23.68	24.88	22.57

S.E./mean = 1.04 lb./plant.

Crop :- Banana.

Ref :- W.B. 54(15).

Site :- State Agri. Farm, Chinsurah.

Type :- 'I'.

Object :— To study how far irrigation improves yield and quality of Banana.

1. BASAL CONDITIONS :

(i) Paddy, sugarcane cultivated in the past but land remained fallow for two years before this experiment. (ii) (a) Clay, new alluvium. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Kabuli* (local medium). (v) 13.11.1954; 6' x 6' in pits of 3' depth and 3' diameter. (vi) 3 months old. (vii) 25 tons of T.C. was applied on 7.1.1955. at 64 lb./pit and this was thoroughly mixed with soil before planting. (viii) Spading and desuckering. (ix) Nil. (x) As per treatments. (xi) 41.78". (xii) No harvest in first year.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(16) on page 287.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Height, girth, number of leaves and suckers/plant. (iv) (a) 1954—contd. (b) Nil. (v) and (vi) Nil. (vii) The lack of uniform response to irrigation in growth may be attributed to rainfall received from Dec., 1954 to Dec., 1955.

5. RESULTS :

Height measurement

(i) 35.87 inches/plant. (ii) 0.83 inches/plant. (iii) Treatment differences are highly significant. (iv) Av. height in inches/plant.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. height	32.93	37.97	36.40	36.18

S.E./mean = 0.34 inches/plant.

Girth measurement

(i) 15.85 inches/plant. (ii) 0.32 inches/plant. (iii) Treatment differences are highly significant. (iv) Av. girth in inches/plant.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. girth	14.73	16.83	16.08	15.77

S.E./mean = 0.13 inches/plant.

No. of leaves

(i) 8.22 leaves/plant. (ii) 0.13 leaves/plant. (iii) Treatment differences are highly significant. (iv) Av. no. of leaves/plant.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. no. of leaves	7.88	8.70	8.18	8.14

S.E./mean = 0.05 leaves/plant.

Crop :- Banana.

Ref :- W.B. 55(16).

Site :- State Agri. Farm, Chinsurah.

Type :- 'P'.

Object :—To study the effect of irrigation on the yield and quality of Banana.

1. BASAL CONDITIONS:

(i) N.A. (ii) (a) Clay, new alluvium. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Kabuli*. (v) 13.11.1954. (vi) 3 months. (vii) 25 tons of T.C. applied at 64 lb./pit. on 26 to 29.4.1956. 10 ozs./pit of A/S, 1.5 lb./ac. of Super and 8 ozs./pit of Potash on 30.4.1956 as surface dressing. (viii) Spading and desuckering (ix) Nil. (x) As per treatments. (xi) 68.11". (xii) 22.10.1955 to 17.2.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(16) on page 287.

4. GENERAL :

(i) Satisfactory. (ii) Slight attack by beetle—Gammexane dusted. Panama disease on a small no. of plants. (iii) Yield of banana and other biometric observations. (iv) (a) 1954—contd (b) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 30.83 lb./plant. (ii) 4.17 lb./plant. (iii) Treatment differences are not significant. (iv) Av. yield of banana in lb./plant.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. yield	29.15	29.71	31.42	33.06

S.E./mean = 1.70 lb./plant.

Crop :- Banana.

Ref :- W.B. 56(37).

Site :- State Agri. Farm, Chinsurah.

Type :- 'P'.

Object :—To study how far irrigation improves the yield and quality of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Heavy clay loam. (b) Refer soil analysis, Chinsurah. (iii) By sucker. (iv) *Kabuli*. (v) 13.11.1954. (vi) 3 to 4 months. (vii) N.A. (viii) Spadding, ploughing, laddering and staking. (ix) Nil. (x) As per treatments. (xi) 74.78". (xii) N.A.

2. TREATMENTS :

Same as in expt. no. 54(16) on page 289.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 0.50 ac. (iii) 6. (iv) 4 rows of 6 plants (gross) and 2 rows of 4 plants (net). (v) Single border row kept around. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of banana wilt. (iii) Height, girth, leaf count and yield of banana. (iv) (a) 1954—contd. (b) N.A. (v) (a) No. (b) Nil. (vi) Heavy rain during September—October. (vii) Nil.

5. RESULTS :

(i) 32.98 lb./plant. (ii) 2.95 lb./plant. (iii) Treatment differences are not significant. (iv) Av. yield of banana in lb./plot.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. yield	33.53	31.80	32.82	33.79

S.E./mean = 1.20 lb./plant.

Crop :- Banana.

Ref :- W.B. 57(40).

Site :- State Agri. Farm, Chinsurah.

Type :- 'P'.

Object :— To study how far irrigation improves the yield and quality of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Kabuli*. (v) 13.11.1954. (vi) 3 to 4 months. (vii) N.A. (viii) Spading, 2 to 3 ploughings, laddering and staking. (ix) Nil. (x) As per treatments. (xi) 46.17%. (xii) N.A.

2. TREATMENTS :

Same as in expt. no. 54(16) on page 287.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 0.50 ac. (iii) 6. (iv) 4 rows of 6 plants (gross) and 2 rows of 4 plants (net). (v) Single border row kept around. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of banana. (iv) (a) 1954—contd. (b) N.A. (v) (a) and (b) Nil. (vi) and (vii) N.A.

5. RESULTS :

(i) 24.19 lb./plant. (ii) 2.60 lb./plant. (iii) Treatment differences are not significant. (iv) Av. yield of banana in lb./plant.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. yield	22.83	26.33	24.25	23.33

S.E./mean = 1.06 lb./plant.

Crop :- Banana.

Ref :- W.B. 58(32).

Site :- State Agri. Farm, Chinsurah.

Type :- 'P'.

Object :— To study how far irrigation improves the yield and quality of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Kabuli*. (v) 13.11.1954. (vi) 3 to 4 months. (vii) N.A. (viii) Spading, staking and weeding etc. (ix) Nil. (x) As per treatments. (xi) 45.20%. (xii) N.A.

2. TREATMENTS :

Same as in expt. no. 54(16) on page 287.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 0.50 ac. (iii) 6. (iv) 4 rows of 6 plants (gross) and 2 rows of 4 plants (net). (v) Single border row kept around. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of banana. (iv) (a) 1954—contd. (b) Nil. (v) (a) No. (b) No. (vi) and (vii) N.A.

5. RESULTS :

(i) 30.12 lb./plant. (ii) 2.05 lb./plant. (iii) Treatment differences are significant. (iv) Av. yield of banana in lb./plant.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. yield	27.24	34.06	30.24	28.95

S.E./mean = 0.84 lb./plant.

Crop :- Banana.

Ref :- W.B. 59(51).

Site :- State Agri. Farm, Chinsurah.

Type :- P.

Object :-To study how far irrigation improves yield and quality of Banana.

1. BASAL CONDITIONS :

(i) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Chinsurah. (iii) By suckers. (iv) *Kabuli*. (v) 13.11.1954. Sucker placed in 1.5' deep and 1.5' in diameter. (vi) 2 to 3 months. (vii) N.A. (viii) Ploughing, spading and staking. (ix) Nil. (x) As per treatments. (xi) 78.43%. (xii) N.A.

2. TREATMENTS :

Same as in expt. no. 54(16) on page 287.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 0.12 ac. (iii) 6. (iv) 4 rows of 6 plants (gross) and 2 rows of 4 plants (net). (v) 6' x 6'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of banana. (iv) (a) 1954—1959. (b) N.A. (v) (a) No. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 24.62 lb./plant. (ii) 1.64 lb./plant. (iii) Treatment differences are not significant. (iv) Av. yield of banana in lb./plant.

Treatment	I ₀	I ₁	I ₂	I ₃
Av. yield	24.11	25.01	23.53	25.81

S.E./mean = 0.67 lb./plant.

ADDENDUM

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(97).

Centre :- Joypur, (Bankura, c.f.).

Type :- 'M'.

Object :—To study the effect of application of N and P alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (iii) and (iv) N.A. (v) (a) Ploughing, spading and land preparation. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (vi) Middle of July, 1955. (vii) N.A. (viii) Weeding and thinning. (ix) N.A. (x) Last week of December, 1955.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of N as A/S : $N_0=0$, $N_1=15$, $N_2=30$, $N_3=45$ and $N_4=60$ lb./ac.

(2) 5 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$, $P_2=40$, $P_3=60$ and $P_4=80$ lb./ac.

Super applied before transplanting and A/S was top-dressed 3 to 4 weeks after transplantation.

3. DESIGN :

(i) Fact. in R.B.D. ; 25 plots/block with 4 replicaitons. (ii) N.A. (iii) (a) 36'×18'. (b) 34'×16'. (iv) Yes.

4. GENERAL

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1953—1955. (b) Yes. (c) N.A. (v) Several other centres (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 2649 lb./ac. (ii) 314.6 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	P_3	P_4	Mean
N_0	2367	2205	2134	2183	2489	2276
N_1	2260	2547	2507	2609	2540	2493
N_2	2344	2504	2988	2841	2690	2673
N_3	2710	2548	2844	3003	2767	2774
N_4	3070	2931	3006	2965	3171	3029
Mean	2550	2547	2696	2720	2731	2649

S.E. of any marginal mean = 70.3 lb./ac.

S.E. of body of table = 157.3 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 55(98).

Centre :- Mandia (Bankura, c.f.).

Type :- 'M'.

Object :—To study the effect of application of N and P alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Loamy sand and N.A. (iii) and (iv) N.A. (v) (a) 2 to 3 ploughings and land preparation. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (vi) Last week of July, 1955. (vii) Irrigated. (viii) 1 to 2 weedings and thinning. (ix) 35.08". (x) Middle of December, 1955.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of P_2O_5 : $P_0=0$, $P_1=20$, $P_2=40$, $P_3=60$ and $P_4=80$ lb./ac.

(2) 5 levels of N: $N_0=0$, $N_1=15$, $N_2=30$, $N_3=45$ and $N_4=60$ lb./ac.

Super was ploughed in before transplanting and A/S was top-dressed 4 weeks after transplanting by broadcast.

3. DESIGN :

(i) Fact. in R.B.D. ; 25 plots/block with 4 replications. (ii) N.A. (iii) (a) 22'×33'. (b) 20'×31'. (iv) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1954–1956. (b) Yes. (c) N.A. (v) Several other centres. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1767 lb./ac. (ii) 231.4 lb./ac. (iii) P effect and interaction N×P are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	P_3	P_4	Mean
N_0	1820	1662	1582	1751	1875	1738
N_1	1318	1720	1807	2078	1760	1737
N_2	1571	1736	1911	1762	1898	1776
N_3	1795	1840	1791	1891	1891	1842
N_4	1753	1749	1836	1684	1689	1742
Mean	1651	1741	1785	1833	1823	1767

S.E. of any marginal mean = 45.0 lb./ac.

S.E. of body of table = 100.7 lb./ac.

Crop :- Paddy (*Aman*).

Ref :- W.B. 56(58).

Centre :- Mandia (Bankura, c.f.).

Type :- 'M'.

Object :—To study the effect of application of N and P alone in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loamy sand and N.A. (iii) N.A. (iv) *Bhasamanik* (medium). (v) (a) 2 ploughings, laddering and land preparation. (b) Transplanting. (c) N.A. (d) 9"×9". (e) 2 to 3. (vi) 15 to 20.7.1956. (vii) Irrigated. (viii) 2 to 3 weedings and local cultural operation. (ix) 35.78". (x) Middle of December, 1956.

2. TREATMENTS :

Same as in expt. no. 55(97) on page 293.

3. DESIGN :

(i) Fact. in R.B.D. ; 25 plots/block and 4 replications. (ii) N.A. (iii) (a) 22'×33'. (b) 20'×31'. (iv) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1954–1956. (b) Yes. (c) N.A. (v) and (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1989 lb./ac. (ii) 251.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	P ₃	P ₄	Mean
N ₀	1820	1935	1749	2035	2109	1930
N ₁	1646	1749	1840	2093	2098	1885
N ₂	1838	2102	2042	2060	2120	2032
N ₃	2051	1954	1975	2185	2069	2047
N ₄	2242	2073	2129	1969	1851	2053
Mean	1919	1963	1947	2068	2049	1989

S.E. of any marginal mean = 56.4 lb./ac.
S.E. of body of table = 126.0 lb./ac.

Crop :- Paddy (Aman).

Ref :- W.B. 55(101).

Centre :- Cooch Behar, Sadar (Cooch Behar, c.f.).

Type :- 'M'.

Object :- To study the effect of application of N and P alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Fine sandy loam and N.A. (iii) and (iv) N.A. (v) (a) 2 to 3 ploughings and land preparation. (b) Transplanting. (c) to (e) N.A. (vi) Last week of July to 1st week of August, 1955. (vii) Unirrigated. (viii) 1 to 2 weedings and local cultural operation. (ix) 86.82". (x) 15.12.1955 to 7.1.1956.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 5 levels of P₂O₅ : P₀=0, P₁=20, P₂=40, P₃=60 and P₄=80 lb./ac.

(2) 5 levels of N : N₀=0, N₁=15, N₂=30, N₃=45 and N₄=60 lb./ac.

P₂O₅ as Super was ploughed in at the time of land preparation before transplanting and N as A/S was top-dressed 4 to 5 weeks after transplantation.

3. DESIGN :

(i) Fact. in R.B.D. ; 25 plots/block and 4 replications. (ii) N.A. (iii) (a) 38'×22'. (b) 36'×20'. (iv) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1954-1955. (b) and (c) N.A. (v) Several other centres (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1641 lb./ac. (ii) 237.2 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	P ₃	P ₄	Mean
N ₀	1268	1330	1365	1369	1361	1339
N ₁	1525	1704	1623	1688	1727	1653
N ₂	1797	1703	1668	1828	1525	1704
N ₃	1672	1715	1672	1839	1614	1702
N ₄	1567	1797	1945	1968	1754	1806
Mean	1566	1650	1655	1738	1596	1641

S.E. of any marginal mean = 53.0 lb./ac.
S.E. of body of table = 118.6 lb./ac.

Crop :- Paddy (Aman).**Ref :- W.B. 55(100).****Centre :- Lakshya, Mahisadal Tamluk (Midnapore). Type :- 'M'.**

Object :- To study the effect of application of N and P alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :(i) (a) to (c) N.A. (ii) Loam & N.A. (iii) N.A. (iv) *Patnai*. (v) (a) N.A. (b) Transplanting. (c) to (e) N.A. (vi) Last week of July to 1st week of August 1955. (vii) N.A. (viii) Weeding and thinning. (ix) 55.36%. (x) Last week of December, 1955.**2. TREATMENTS :**

Same as in expt. no. 55(97) on page 293.

3. DESIGN :

(i) Fact. in R.B.D. ; 25 plots/block and 4 replications. (ii) N.A. (iii) (a) 38' × 22'. (b) 36' × 20'. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Yield of grain. (iv) (a) 1953—1955. (b) Yes. (c) N.A. (v) Several other centres. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1968 lb./ac. (ii) 276.4 lb./ac. (iii) N effect is highly significant. P effect is significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	P ₃	P ₄	Mean
N ₀	1108	1369	1507	1439	1503	1385
N ₁	1328	1997	1939	1987	1905	1831
N ₂	2222	2081	2081	2298	2090	2154
N ₃	2190	2600	2318	2423	2471	2400
N ₄	2094	2302	2135	1950	1876	2071
Mean	1788	2070	1996	2019	1969	1968

S.E. of any marginal mean = 61.8 lb./ac.
S.E. of body of table = 138.2 lb./ac.**Crop :- Paddy (Aman).****Ref :- W.B. 55(99).****Centre :- Hatgobindapur, Plassay (Nadia).****Type :- M'.**

Object :- To study the effect of application of N and P alone and in combination on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam. (iii) N.A. (iv) Local. (v) (a) Ploughing and 2 ladderings etc. (b) Transplanting. (c) to (e) N.A. (vi) N.A. (vii) Irrigated. (viii) 1 to 3 weedings. (ix) 28.51%. (x) N.A.

2. TREATMENTS :

Same as in expt. no. 55(97) on page 293.

3. DESIGN :

(i) Fact. in R.B.D. ; 25 plots/block and 4 replications. (ii) N.A. (iii) (a) 38' × 20'. (b) 36' × 18'. (iv) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1953—1955. (b) and (c) N.A. (v) Several other centres (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 1962 lb./ac. (ii) 285.9 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of grain in lb./ac.

	P ₀	P ₁	P ₂	P ₃	P ₄	Mean
N ₀	1543	1828	1426	1811	1851	1692
N ₁	2078	2018	1893	2040	2210	2048
N ₂	2024	1828	2081	1597	2168	1940
N ₃	2204	2424	2301	2101	2035	2213
N ₄	1586	2303	1858	2009	1819	1915
Mean	1887	2080	1912	1912	2017	1962

S.E. of any marginal mean = 64.0 lb./ac.

S.E. of body of table = 143.0 lb./ac.