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NATIONAL INDEX

OF

AGRICULTURAL

FIELD

EXPERIMENTS

VOL. 12 PART 2

RAJASTHAN

1954-59

PUBLISHED BY
INDIAN COUNCIL OF AGRICULTURAL RESEARCH
NEW DELHI
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 cooperation 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.

A. D. PANDIT

Vice-President,
Indian Council of Agricultural Research.

NEW DELHI,
March 26, 1965.
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.

V.G. Pansari
Statistical Adviser,

New Delhi,
March 25, 1965.
<table>
<thead>
<tr>
<th>Region and Headquarters</th>
<th>Statistical Staff from the Institute of Agricultural Research Statistics</th>
<th>Regional Supervisors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Andhra Pradesh</td>
<td>S.K. Jilani, P.R. Yerri</td>
<td>Dr. Mohd. Quadiruddin Khan, Joint Director of Agricultural.</td>
</tr>
<tr>
<td>(Hyderabad)</td>
<td></td>
<td>Late Dr. Syed Wahabuddin.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shri Md. Khasim Adoni, Joint Director of Extension.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shri N.V. Mohana Rao, Joint Director, Agricultural Research Institute, Rajendranagar.</td>
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<td></td>
<td></td>
<td>Shri L. Venkataraman, Deputy Director of Agriculture (Research).</td>
</tr>
<tr>
<td>2. Maharashtra</td>
<td>P.D. Mehta, B. Ramakrishnan</td>
<td>Shri D.S. Rangabho, Statistician, Department of Agriculture.</td>
</tr>
<tr>
<td>(Poona)</td>
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<td>Shri D.K. Desai, Deputy Director of Agriculture (Statistics).</td>
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<td></td>
<td></td>
<td>Shri J.B. Trivedi, Deputy Director of Agriculture (Statistics).</td>
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<tr>
<td>3. Gujarat (Ahmedabad)</td>
<td>S.P. Doshi</td>
<td>Dr. K. Kishen, Joint Director of Agriculture (Statistics).</td>
</tr>
<tr>
<td></td>
<td>S.N. Bajpai, M.P. Saxena, G.N. Bahuguna, A.C. Srivastava</td>
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<tr>
<td>(Lucknow)</td>
<td></td>
<td>Shri Piara Singh Sahota, Director of Crop Insurance.</td>
</tr>
<tr>
<td></td>
<td>A.C. Kasintha, B.L. Kasintha, M.S. Batra, G.P. Saha, S.N. Mukherjee</td>
<td>Shri Mohinder Singh Pannu, Statistician, Department of Agriculture.</td>
</tr>
<tr>
<td>5. Madhya Pradesh</td>
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<td>Shri G.P. Singh, Statistician, Department of Agriculture.</td>
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<td>(Bhopal)</td>
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<td>Shri R.S. Roy, Principal, Agricultural Research Institute, Sabour.</td>
</tr>
<tr>
<td>6. Punjab, Jammu</td>
<td></td>
<td>Shri H.C. Kothari, Statistician, Department of Agriculture,</td>
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<tr>
<td>&amp; Himachal Pradesh</td>
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<tr>
<td>(Chandigarh)</td>
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<td>7. Bihar (Sabour)</td>
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<td>8. Rajasthan (Jaipur)</td>
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<td>9. Orissa (Bhubaneswar)</td>
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<tr>
<td>10. West Bengal (Calcutta)</td>
<td>S.N. Nath</td>
<td>Shri S.N. Mukherjee, Statistical Officer, Directorate of Agriculture;</td>
</tr>
</tbody>
</table>
11. **Madras**
   (Coimbatore)
   - P. Prabhakara Rao
   - Late Shri M. Bhavani Sankar Rao,
   - Vice-Principal and Secretary, Research Council, Agricultural College and Research Institute, Coimbatore.
   - Shri T. Natarajan,
   - Agronomist.
   - Shri A.H. Sarma,
   - Extension Specialist.
   - Shri V. Raman,
   - Secretary, Research Council.
   - Shri K.R. Nargaraja Rao,
   - Secretary, Research Council.

12. **Assam**
   (Shillong)
   - T.K. Gupta
   - Dr. S.R. Barooah,
   - Director of Agriculture, Assam.
   - Shri B.N. Duara,
   - Joint Director of Agriculture, Assam.

13. **Mysore**
    (Bangalore)
    - K.A. Balakrishnan
    - Shri M.A. Wall,
    - Director of Statistics.
    - Shri B.V.S. Rao,
    - Assistant Director of Statistics.

14. **Kerala**
    (Trivandrum)
    - V.N. Iyer
    - Shri M. Janardanan Nair,
    - Director of Agriculture.
    - Shri N. Shankara Menon
    - Director of Agriculture.
    - Shri P.D. Nair,
    - Director of Agriculture.
ABBREVIATIONS COMMON TO EXPERIMENTS ON ANNUAL AND PERENNIAL CROPS AND EXPERIMENTS ON CULTIVATORS' FIELDS.

**Crops** - In the top left corner is given the name of the crop on which the experiment is conducted. Within brackets alongside 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
2. As.-Assam
3. Bh.-Bihar
4. Gj.-Gujarat
5. H.P.-Himachal Pradesh
7. K.-Kerala
8. M.P.-Madhya Pradesh
9. M.-Madras
10. Mh.-Maharashtra
11. Ms.-Mysore
12. Or.-Orissa
13. Ph.-Punjab
14. Rj.-Rajasthan
15. U.P.-Uttar 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
- X—Mixed cropping

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
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.

BASEL 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) 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, Conf.—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; Conf.—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 along with reference. (vi) Abnormal occurrences, like heavy rains, frost, storm etc., if any. (vii) Any other important information.
TABLE OF CONVERSIONS TO METRIC UNITS

<table>
<thead>
<tr>
<th>Unit</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 foot</td>
<td>304.8 mm</td>
</tr>
<tr>
<td>1 acre</td>
<td>0.404606 ha</td>
</tr>
<tr>
<td>1 gram</td>
<td>0.035274 oz</td>
</tr>
<tr>
<td></td>
<td>0.0085735 tola</td>
</tr>
<tr>
<td>1 kg</td>
<td>2.20462 lb</td>
</tr>
<tr>
<td>1 metric tone</td>
<td>0.9842 ton</td>
</tr>
<tr>
<td>1 lb./ac.</td>
<td>0.453592 kg</td>
</tr>
<tr>
<td>1 md./ac.</td>
<td>92.3099 kg/ha</td>
</tr>
<tr>
<td>1 ton/ac.</td>
<td>0.907185 ton</td>
</tr>
<tr>
<td>1 gallon (Imp.)</td>
<td>4.54609 lit</td>
</tr>
</tbody>
</table>
## Glossary of Vernacular Names of Crops

<table>
<thead>
<tr>
<th>St. No.</th>
<th>Name of Crop</th>
<th>Botanical name</th>
<th>Assamese</th>
<th>Bengali</th>
<th>Oriya</th>
<th>Telugu</th>
<th>Tamil</th>
<th>Malayalam</th>
<th>Kannada</th>
<th>Marathi</th>
<th>Gujarati</th>
<th>Hindi</th>
<th>Punjabi</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Paddy</td>
<td><em>Oryza sativa</em></td>
<td>Dhan</td>
<td>Dhan</td>
<td>Dhano</td>
<td>Vadiu</td>
<td>Nel</td>
<td>Nellu</td>
<td>Bhatta</td>
<td>Bhat</td>
<td>Dangar</td>
<td>Dhan</td>
<td>Chaul</td>
</tr>
<tr>
<td>2.</td>
<td>Wheat</td>
<td><em>Triticum aestivum</em></td>
<td>Gatun</td>
<td>Gatun</td>
<td>Gathu</td>
<td>Godamu</td>
<td>Kothumai</td>
<td>Gohambu</td>
<td>Godhi</td>
<td>Jowari</td>
<td>Jowari;</td>
<td>Jowar</td>
<td>Chau</td>
</tr>
<tr>
<td>3.</td>
<td>Jowar</td>
<td><em>Andropogon  ×</em> <em>Sorghum</em></td>
<td>Jowar</td>
<td>Jowar</td>
<td>Joura</td>
<td>Jonna</td>
<td>Cholam</td>
<td>Cholam</td>
<td>Jola</td>
<td>Jowari</td>
<td>Jowari;</td>
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<td>4.</td>
<td>Maize</td>
<td><em>Zea mays</em></td>
<td>Gom dhan</td>
<td>Bhutto</td>
<td>Macca</td>
<td>Mokkajonna</td>
<td>Mekkal-Cholam</td>
<td>Cholam</td>
<td>Cholam</td>
<td>Musukina</td>
<td>Jola</td>
<td>Makki</td>
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<td>7.</td>
<td>Potato</td>
<td><em>Solanum tuberosum</em></td>
<td>Alooguti</td>
<td>Alooguti</td>
<td>Alu</td>
<td>Bilati Alu</td>
<td>Bangala-Kilangu</td>
<td>Urunthai-Kilangu</td>
<td>Jolli</td>
<td>Jate:</td>
<td>Jote</td>
<td>Vatana</td>
<td>Muttar</td>
</tr>
<tr>
<td>8.</td>
<td>Peas</td>
<td><em>Pisum arvense</em></td>
<td>Motor</td>
<td>Chota</td>
<td>Bada</td>
<td>Chana</td>
<td>Desavali-Batani</td>
<td>Pattani</td>
<td>Jolli</td>
<td>Vatana</td>
<td>Muttar</td>
<td>Loja</td>
<td>Chola</td>
</tr>
<tr>
<td>10.</td>
<td>Bengal gram</td>
<td><em>Cicer arietinum</em></td>
<td>Butmah</td>
<td>Chola</td>
<td>Boot</td>
<td>Sanagal</td>
<td>Kadalai, Sundal-Kadalai</td>
<td>Kadalai</td>
<td>Jolli</td>
<td>Vatana</td>
<td>Naishkar</td>
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<tr>
<td>12.</td>
<td>Green gram</td>
<td><em>Phaseolus aureus</em></td>
<td>Magum</td>
<td>Magum</td>
<td>Sonamug</td>
<td>Mung</td>
<td>Pachch-ponalu</td>
<td>Pachchpayaru</td>
<td>Pachchpayaru</td>
<td>Hasaru</td>
<td>Hasaru</td>
<td>Moong</td>
<td>Moong</td>
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<tr>
<td>13.</td>
<td>Sugarcane</td>
<td><em>Saccharum officinarum</em></td>
<td>Kuhir</td>
<td>Kuhir</td>
<td>Akh</td>
<td>—</td>
<td>Cheruku</td>
<td>Karumbu</td>
<td>Karimbu</td>
<td>Kabbu</td>
<td>Oos</td>
<td>Sherdi</td>
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</table>

*Note: The above table includes the names of various crops along with their vernacular names in different Indian languages.*
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of Crop</th>
<th>Botanical Name</th>
<th>Assamese</th>
<th>Bengali</th>
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<th>Punjabi</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.</td>
<td>Sesamum</td>
<td><em>Sesamum indicum</em> L.</td>
<td>Til</td>
<td>Til</td>
<td>Rasi</td>
<td>Navvulu</td>
<td>Ello</td>
<td>Ellu</td>
<td>Yellu</td>
<td>Til, Ti</td>
<td>Tai</td>
<td>Alsi</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Linseed</td>
<td><em>Linum usitatissimum</em> L.</td>
<td>Tisi</td>
<td>Tishi</td>
<td>Peshi</td>
<td>Avise</td>
<td>Alivithai</td>
<td>Cherucha navithu</td>
<td>Agase</td>
<td>Javas, Ahsi</td>
<td>Alsi</td>
<td>Alsi</td>
<td></td>
</tr>
</tbody>
</table>
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RAJASTHAN STATE

1. General:
Rajasthan State is located on the north-western border of India. It lies between 24° and 30° N. latitude, and between 69° and 78° E. longitude, covering an area of about 84.3 million acres. The land utilization statistics of the State are given in table 1 below:

<table>
<thead>
<tr>
<th>Classification of area</th>
<th>Area in '000 acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total area as per village papers</td>
<td>84031</td>
</tr>
<tr>
<td>Forests</td>
<td>2367</td>
</tr>
<tr>
<td>Land put to non-agricultural uses</td>
<td>2820</td>
</tr>
<tr>
<td>Barren and unculturable land</td>
<td>12694</td>
</tr>
<tr>
<td>Permanent pastures and other grazing lands.</td>
<td>4329</td>
</tr>
<tr>
<td>Land under miscellaneous tree crops etc.</td>
<td>25</td>
</tr>
<tr>
<td>Culturable waste</td>
<td>16529</td>
</tr>
<tr>
<td>Fallow lands other than current fallows.</td>
<td>6924</td>
</tr>
<tr>
<td>Current fallows</td>
<td>5031</td>
</tr>
<tr>
<td>Net area sown</td>
<td>33352</td>
</tr>
<tr>
<td>Total cropped area</td>
<td>35741</td>
</tr>
<tr>
<td>Area sown more than once</td>
<td>2389</td>
</tr>
</tbody>
</table>


2. Topography:
The Aravali range runs from north-east to south-west almost across the entire State dividing it naturally into two parts, the north-western which comprises 3/5 and the south-eastern which comprises 2/5 of the total area. The north-western region is on the whole, a sandy, ill-watered and unproductive area. In the extreme west of this region it is more desert while towards the east it is comparatively more cultivable and habitable. The only river of consequence here is Luni. The soil yields rich returns if assured water supply is available as is known from the production in Ganganagar district which is served by canal. The climate of this region is extremely hot in summer, the temperature rising upto 50°C (122°F) and extremely cold in winter when, at places, the temperature goes below the freezing point.

3. Soil types and agro-climatic regions:
The soils of Rajasthan are predominantly of sandy or sandy loam type with 2 to 6 feet sand dunes scattered over the surface of practically the whole of west Rajasthan. As one proceeds towards east the soil texture is finer. The soils of Ajmer division are sandy loam, pale yellow to brown in colour. The region south-east of the Aravallis is higher in elevation, more fertile and also diversified in character. It contains extensive hill ranges and long stretches of rocks and wood-land. The region is traversed by many rivers although not perennial and in some parts there are fertile table lands and great stretches of excellent soil. The chief rivers are the Banas and the Chambal. The climate of this region is milder in comparison with that of the north-west region, because of higher rainfall. The soils are rich varying from loam, clay loam to clay including the black cotton soil in Jhalawar district and parts of Udaipur division, loam in Bharatpur and Alwar district. In parts of Udaipur division there are large forest areas in Dungarpur and Banswara districts.

The annual rainfall varies from less than 5 cm. to about 90 cm. The rainfall goes on
decreasing from south-west to north-east. Based on soil and climatic conditions obtaining in
the State, Rajasthan can be divided into the following seven regions.

| Table 2 |
|-------------------|-------------------|-------------------|
| Name of the region and district included | Soil type | Rainfall in cm | Cropping pattern |
| Region I | Jaipur, Bharatpur, Alwar, Ajmer, Tonk | Undifferentiated alluviums and red and yellow mixed | 55—70 | Jowar, wheat, barley, gram, potato, tur, groundnut, rapeseed, mustard |
| Region II | Ganganagar | Desert soil | 26 | Wheat, gram and cotton |
| Region III | Bikaner, Churu, Jaisalmer, Jodhpur, Nagaur, Barmer, Sikar, Jhunjhunu, Pali and Jalore | Predominantly desert, gray, brown in parts of some districts | 15—30 | Jowar, bajra, sesame and castor |
| Region IV | Udaipur, Chittor, Bhilwara and Jhalawar | Medium black and mixed red and black | 60—90 | Jowar, maize, cotton and groundnut |
| Region V | Sirohi | Gray brown | 50 | Maize and wheat |
| Region VI | Banswara and Dungarpur | Mixed red and black | 50 | Rice, maize and tur |
| Region VII | Kotah and Bundi | Mixed black | 70—75 | Jowar, wheat, linseed and potato |

4. Irrigation:

Total irrigated area is about 4,593 thousand acres which accounts for about 13.8% of the total cropped area. The various sources of irrigation and area irrigated under each source is given in the table 3 below:

<table>
<thead>
<tr>
<th>Source</th>
<th>Area in '000 acres</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt. canals</td>
<td>1,589</td>
<td>34.6</td>
</tr>
<tr>
<td>Private canals</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Tanks</td>
<td>299</td>
<td>6.5</td>
</tr>
<tr>
<td>Wells</td>
<td>2,633</td>
<td>57.3</td>
</tr>
<tr>
<td>Other sources</td>
<td>72</td>
<td>1.6</td>
</tr>
<tr>
<td>Total</td>
<td>4,593</td>
<td>100.0</td>
</tr>
</tbody>
</table>


5. Agricultural production and normal cropping pattern:

Millets like bajra and jowar, and pulse crops are extensively grown in the State of Rajasthan. But in places where assured water supply is available rice and wheat also are grown.
The area, total production and mean acre yields of different crops in the State are given in table 4 below:

**TABLE 4**

<table>
<thead>
<tr>
<th>Crop</th>
<th>Area in '000 acres</th>
<th>Production in '000 tons</th>
<th>Yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>282</td>
<td>128</td>
<td>1017</td>
</tr>
<tr>
<td>Wheat</td>
<td>2790</td>
<td>852</td>
<td>684</td>
</tr>
<tr>
<td>Barley</td>
<td>1038</td>
<td>437</td>
<td>943</td>
</tr>
<tr>
<td>Bajra</td>
<td>10689</td>
<td>808</td>
<td>169</td>
</tr>
<tr>
<td>Jowar</td>
<td>2545</td>
<td>269</td>
<td>237</td>
</tr>
<tr>
<td>Maize</td>
<td>1636</td>
<td>599</td>
<td>810</td>
</tr>
<tr>
<td>Small Millets</td>
<td>190</td>
<td>29.5</td>
<td>348</td>
</tr>
<tr>
<td>Gram</td>
<td>3771</td>
<td>534</td>
<td>317</td>
</tr>
<tr>
<td>Other pulses</td>
<td>4052</td>
<td>280</td>
<td></td>
</tr>
<tr>
<td>Sesamum</td>
<td>1196</td>
<td>28.5</td>
<td>35</td>
</tr>
<tr>
<td>Mustard</td>
<td>754</td>
<td>42.3</td>
<td>126</td>
</tr>
<tr>
<td>Linseed</td>
<td>294</td>
<td>28.5</td>
<td>217</td>
</tr>
<tr>
<td>Groundnut</td>
<td>477</td>
<td>93.5</td>
<td>439</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>74</td>
<td>567</td>
<td>7.66*</td>
</tr>
<tr>
<td>Cotton</td>
<td>578</td>
<td>184**</td>
<td>125</td>
</tr>
</tbody>
</table>

*tons/ac.  
**bales of 392 lb. each.

(Source: Statistical Abstract, Directorate of Economics and Statistics, (1963-64)).

6. **Experimentation and agricultural research**:

About 259 experiments are reported from the State of Rajasthan for the period of 1954-59. Crop-wise and type-wise distribution of these experiments is given in the table 5 below.

**TABLE 5**

<table>
<thead>
<tr>
<th>Crop</th>
<th>(M+MV)</th>
<th>Types (C+Cv+CM)</th>
<th>I</th>
<th>D</th>
<th>X</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy</td>
<td>2</td>
<td>—</td>
<td>1</td>
<td>—</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>Wheat</td>
<td>69</td>
<td>9</td>
<td>1</td>
<td>44</td>
<td>—</td>
<td>123</td>
</tr>
<tr>
<td>Jowar</td>
<td>12</td>
<td>3</td>
<td>—</td>
<td>4</td>
<td>—</td>
<td>19</td>
</tr>
<tr>
<td>Maize</td>
<td>6</td>
<td>2</td>
<td>—</td>
<td>7</td>
<td>—</td>
<td>15</td>
</tr>
<tr>
<td>Barley</td>
<td>17</td>
<td>—</td>
<td>—</td>
<td>8</td>
<td>—</td>
<td>25</td>
</tr>
<tr>
<td>Bajra</td>
<td>16</td>
<td>—</td>
<td>—</td>
<td>4</td>
<td>—</td>
<td>20</td>
</tr>
<tr>
<td>Vegetables</td>
<td>1</td>
<td>—</td>
<td>—</td>
<td>3</td>
<td>—</td>
<td>4</td>
</tr>
<tr>
<td>Pulses</td>
<td>12</td>
<td>—</td>
<td>—</td>
<td>6</td>
<td>—</td>
<td>18</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>2</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td>Cotton</td>
<td>9</td>
<td>3</td>
<td>—</td>
<td>2</td>
<td>—</td>
<td>14</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>7</td>
<td>—</td>
<td>3</td>
<td>3</td>
<td>—</td>
<td>10</td>
</tr>
<tr>
<td>Fodder crops</td>
<td>3</td>
<td>—</td>
<td>1</td>
<td>—</td>
<td>—</td>
<td>4</td>
</tr>
<tr>
<td>Mixed cropping</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>2</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>154</td>
<td>17</td>
<td>1</td>
<td>85</td>
<td>2</td>
<td>259</td>
</tr>
</tbody>
</table>

Besides these experiments, 118 experiments belonging to co-ordinated Model Agronomic experiments project of the Indian Council of Agricultural Research and experiments
conducted by the State on the cultivator's fields have also been included in the compendium. Experimental stations at Bassi, Borkhera (Kotah), Durgapur, Tabiji and Sriganganagar are the important centres where a number of experiments are carried out on different crops. Most of the experiments reported for the period in question are on wheat and millets like jowar, bajra and maize.

About 59% of the experiments are of manurial type while about 33% of the total experiments are insecticidal and fungicidal trials.

The number of plots taken in a block in the case of R.B.D. varied from 4 to 29 while the number of sub-plots per main-plot in split-plot design varied from 3 to 9. In confounded design the number plots per block are between 9 and 12. The plot size varied from 60 sq. ft. to 141 sq. yds. The maximum number of replications taken in an experiment is only 6.
PARTICULARS OF RESEARCH STATIONS AND SOIL ANALYSIS

1. Government Agricultural Experimental Farm, Bassi.

A. General information:
   (i) In Jaipur district, 1 mile from Bassi Railway Station. (ii) N.A. (iii) Established in 1947. (iv) Barley—bajra—wheat and moong are the major crops. (v) N.A.

B. Normal rainfall in cm.:
   Annual rainfall is about 51 cm.

C. Soil type and soil analysis:
   (i) Clay loam. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

D. Irrigation and drainage facilities:
   (i) (a) and (b) Irrigation done from well. (ii) N.A.

E. No. of experiments:
   Wheat—17, Jowar—3, Maize—1, Barley—20, Bajra—6, Gram—2, Moong—1, Cotton—1 and Groundnut—5. Total=56.

2. Government Agricultural Farm, Bilara.

A. General information to D. Soil type and soil analysis:
   Details are not available.

E. No. of experiments:
   Wheat—9, Total=9.


A. General information to D. Soil type and soil analysis:
   Details are not available.

E. No. of experiments:
   Mixed cropping—1, Total=1.

4. Government Agriculture Research Farm, Borkheda (Kotah).

A. General information:
   (i) In Ladpura tehsil of Kotah district. It is a levelled flat area surrounded by cultivator's fields on three sides and a village on one side. Slightly low lying. (ii) Medium black soils. (iii) Established in 1960. (iv) N.A. (v) Working out judicious schedules of cultural and manurial requirements of major crops. Improvement and plant protection research.

B. Normal rainfall in cm.:
   1      10    14    47    7     1     1      5    —     —     —     86
   (The period on which the average rainfall is based is not available).

C. Irrigation and drainage facilities:
   (i) (a) and (b) Canal irrigation from 1960. In addition there are three wells for emergency use. (ii) Yes, after each hectare plot there is a field drain which runs into the main drain leading to natural sela.
D. Soil type and soil analysis :
   (i) Medium black cotton soils. (ii) Chemical analysis : Nitrogen—Low to medium, Phosphate—medium and Potash—medium. (iii) Mechanical analysis—clay : 30%.

E. No. of experiments :
Paddy—2, Wheat—15, Jowar—10, Potato—1, Gram—6, Urid—1, Linseed—1, Total=36.

5. Government Agricultural Experimental Farm, Durgapur.

A. General information :
   (i) In Sanganer tehsil of Jaipur district. One mile from Durgapur Railway Station. (ii) Semi-arid zone. (iii) Established in 1945. (iv) In general no cropping pattern is followed as the blocks are allotted to the respective research sections. (v) Experiments are conducted on improvement of varieties, control of insects and pests, control of diseases, manurial, cultural and irrigational aspects.

B. Normal rainfall in cm. :
   — 7 11 3 — — — — — — 2 23
   (The average rainfall data is for the year 1963–1964).

C. Irrigation and drainage facilities :
   (i) (a) and (b) Irrigated from tube wells since 1951. (ii) Proper drainage system exists.

D. Soil type and soil analysis :
   (i) Sandy to sandy loam. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :
   Wheat—12, Barley—4, Bajra—9, Potato—1, Peas—1, Cowpea—1, Moong—1, Groundnut—3, Total=32.


A. General information :
   (i) In Sambhar tehsil of Jaipur district, 10 km. from Asalpur Jobner Railway Station. (ii) Semi-arid zone. (iii) Established in 1947. (iv) Kharif : G.M. crop (Sannhemp or guar). Rabi : wheat—barley and carrot. (v) N.A.

B. Normal rainfall in cm. :
   (The yearly average rainfall is 40 cm).

C. Irrigation and drainage facilities :
   (i) (a) and (b) Irrigation through well. (ii) No proper drainage system exists.

D. Soil type and soil analysis :
   (i) Sandy loam, deep soil, brownish red and granular in structure. (ii) pH—8.3 and N—0.02%. (iii) Mechanical analysis : coarse sand—17 to 18%, fine sand—55 to 60%, Silt—13.15% and Clay—9.10%.

E. No. of experiments :
   Wheat—4, Total=4.

7. Soil Conservation Research, Demonstration and Training Centre, Kotab.

A. General information to D. Soil type and soil analysis :
   Details are not available,
E. No. of experiments:
Wheat—4, Jowar—3, Mixed cropping—1, Total=8.

8. Government Seed Farm, Padasoli.
A. General information:
In Bassi tehsil of Jaipur district. 10 miles from Dausa Railway Station. (ii) Plain. (iii) Established in 1949. (iv) Kharif crops: Bajra, Jowar, Guar, til and urd; Rabi crops: wheat—gram, barley, sarson and pea. (v) It is a seed multiplication farm.

B. Normal rainfall in cm.:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainfall</td>
<td>2</td>
<td>10</td>
<td>17</td>
<td>6</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>2</td>
<td>13</td>
<td>37</td>
</tr>
</tbody>
</table>

(The average rainfall is for the period 1962 to 1964).

C. Irrigation and drainage facilities:
(i) (a) and (b) Rabi crops irrigated from Ramgarh dam through canal since 1949. (ii) Proper drainage system exists.

D. Soil type and soil analysis:
(i) Black hard clay soil, 2' to 2½' deep. When wet its structure is very loose. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments:
Gram—1, Total=1.

9. Government Agricultural Research Farm, Maksera.
A. General information:
(i) In Ajmer district, 4 miles from Beawar Railway Station. (ii) N.A. (iii) Established in 1936. (iv) Maize—barley—cotton and oats are the major crops. (v) N.A.

B. Normal rainfall in cm.:
(Annual rainfall is about 45 cm.).

C. Irrigation and drainage facilities:
(i) (a) and (b) Irrigation is done from the tank. (ii) N.A.

D. Soil type and soil analysis:
(i) Sandy loam. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments:
Wheat—4, Maize—1 and Cotton—3, Total=8.

10. Government Agricultural Farm, Mandore.
A. General information:
(i) In Jodhpur tehsil of Jodhpur district. One furlong from Mandore Railway Station. The land is levelled. (ii) Desert. (iii) Established in 1931. (iv) Fallow—wheat; Legumes—fallow—Bajra—fallow. (v) N.A.

B. Normal rainfall in cm.:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainfall</td>
<td>—</td>
<td>10</td>
<td>9</td>
<td>6</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>25</td>
</tr>
</tbody>
</table>

(The average rainfall data is for the period 1961 to 1964).
C. Irrigation and drainage facilities:
   (i) (a) and (b) There are three wells in this farm and electric pumps have been fitted on these wells. These wells were constructed prior to the formation of Rajasthan. (ii) There is no drainage problem.

D. Soil type and soil analysis:
   (i) Deep soils, light brown in colour and granular in structure. (ii) Chemical analysis: N—117 to 273 lb./ac., P₂O₅—16 to 722 lb./ac., K₂O—130 to 400 lb./ac. and pH—7.9 to 8.48. (iii) Mechanical analysis—N.A.

E. No. of experiments:
   Wheat—22, Bajra—3, Sesamum—1, Jowar-Fodder—3, Total=29.

11. Regional Agricultural Research Station, Sriganganagar.

A. General information:
   (i) In Sriganganagar tehsil of Sriganganagar district. Levelled planes. (ii) Indo-Gangetic alluvial plains of north India. (iii) Established in 1949. (iv) Sugarcane—cotton—wheat. (v) Experiments are conducted on Botanical, Agronomical, Entomological and Plant Pathological aspects.

B. Normal rainfall in cm.:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>3</td>
<td>23</td>
</tr>
</tbody>
</table>

(The average rainfall data is for the period 1961 to 1964).

C. Irrigation and drainage facilities:
   (i) (a) and (b) Irrigation done by canal water. (ii) No proper drainage system exists.

D. Soil type and soil analysis:
   (i) Sandy loam, light brown in colour and granular in structure. (ii) Chemical analysis: pH—8.2, available nitrogen—170 lb./ac., available P₂O₅—25 lb./ac., Potash—230 lb./ac. (iii) Mechanical analysis: Clay—15.8%, silt—22.5%, coarse sand—1.2% and fine sand—62.5.

E. No. of experiments:
   Wheat—18, Gram—3, Urid—1, Moong—1, Sugarcane—2, Cotton—7, Total=32.

12. Seed Multiplication Farm, Sawai Madhopur.

A. General information:
   (i) In Sawai Madhopur tehsil of Sawai Madhopur district. (ii) It represents hill tract in north side, but in the other three sides sandy and clayey loam tract. (iii) Established in 1958. (iv) G.M.—Wheat—Maize; Wheat—Jowar—Fallow. (v) No research work is being carried out.

B. Normal rainfall in cm.:

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>12</td>
<td>5</td>
<td>1</td>
<td>—</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>23</td>
<td></td>
</tr>
</tbody>
</table>

(The average rainfall data is for the year 1964—1965).

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

D. Soil type and soil analysis:
   (i) Sandy loam to clayey loam, brown to dark black in colour, not well levelled. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.
E. No. of experiments:
   Jowar—1, Maize—1, Barley—1, Groundnut—1, Total=4.

13. Government Agricultural Experimental Farm, Tabiji.

A. General information:
   (i) In Ajmer tehsil of Ajmer district. 3 miles from Tabiji Railway Station. Fairly
      levelled land.  (ii) Sandy loam tract.  (iii) Established in 1930.  (iv) Kharif: Bajra, maize,
      cotton, groundnut, mango and cowpea; Rabi: Wheat, barley, gram, peas and rapa.  (v)
      Experiments of different research sections such as Agronomy, Agriculture Chemistry, Entomo-
      logy, Economic Botony and Pathology etc. are conducted.

B. Normal rainfall in cm.:

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>11</td>
<td>14</td>
<td>8</td>
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<td></td>
<td></td>
<td></td>
<td>2</td>
<td>40</td>
</tr>
</tbody>
</table>

(The average rainfall data is for the last five years).

C. Irrigation and drainage facilities:
   (i) (a) and (b) 5 wells, out of which 3 are fitted with electric motors centrifugal pumps
      since 1956, before that Charas was being used.  (ii) There is no problem of water logging
      and natural drainage system exists.

D. Soil type and soil analysis:
   (i) Light brown, 5' to 6' deep.  (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments:


A. General information:
   (i) In Udaipur district. 3 miles from Udaipur Railway Station.  (ii) N.A.  (iii)
      Established in 1957.  (iv) Maize.  (v) N.A.

B. Normal rainfall in cm.:
   (Annual rainfall is about 64 cm.)

C. Irrigation and drainage facilities:
   (i) (a) and (b) Irrigation is done by well.  (ii) N.A.

D. Soil type and soil analysis:
   (i) Clay loam.  (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments:
   Wheat—4, Maize—2, Potato—1, Total=7.

15. Mewar Sugar Mill Farm, Udaipur.

A. General information to D. Soil type and soil analysis:
   Details are not available.

E. No. of experiments:
   Paddy—1, Total=1.
Crop : Paddy (Kharif).
Site : Mewar Sugar Mill Farm, Shapal Sugar (Udaipur).
Type : 'D'.
Object : To study the effects of insecticides for controlling Rices Gundhi Bug.

1. BASAL CONDITIONS:
(i) Paddy - Sugarcane - Mirki. (b) Mirki. (c) Sugar mill's waste used as manure. (ii) (a) and (b) N.A. (iii) 26.6.1959. (iv) (a) 6 ploughings. (b) and (c) N.A. (d) 1' between rows. (e) N.A. (f) N.A. (g) Rainfed (local). (h) Irrigated. (i) 2 weedings. (j) and (k) N.A.

2. TREATMENTS:
5 insecticides: I₀ = Control, I₁ = Endrin E.C. 0.2% spray, I₂ = Parathion dust 1% at 20 lb./ac., I₃ = Malathion dust 5% at 20 lb./ac. and I₄ = Foliodol E.C. 0.25%.

3. DESIGN:
(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 33' x 161/2'. (v) N.A. (vi) Yes.

4. GENERAL:
(i) Satisfactory. (ii) N.A. (iii) Yield of grain. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS:
(i) 751 lb./ac. (ii) 121.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>I₀</th>
<th>I₁</th>
<th>I₂</th>
<th>I₃</th>
<th>I₄</th>
<th>S.E./mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>677</td>
<td>623</td>
<td>777</td>
<td>745</td>
<td>731</td>
<td></td>
</tr>
</tbody>
</table>

S.E./mean = 69.9 lb./ac.

Crop : Paddy.
Site : Govt. Agri. & Exptl. Farm, Kotah.
Type : 'M'.
Object : To find suitable manural schedule for Paddy.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy. (b) N.A. (iii) 30.7.1954. (iv) (a) N.A. (b) Transplanting. (c) to (e) N.A. (v) 2 md./ac. of compost and cowdung. (vi) Local. (vii) Irrigated. (viii) 2 weedings and hoeings. (ix) N.A. (x) 1st week of October, 1954.

2. TREATMENTS:
All combinations of (1) and (2)
(1) 4 levels of N as A₃:\ N₀ = 0, N₁ = 20, N₂ = 40 and N₃ = 60 lb./ac.
(2) 4 levels of P₂O₅ as Super : P₀ = 0, P₁ = 20, P₂ = 40 and P₃ = 60 lb./ac.
Fertilizers were applied by spraying before cultivation.

3. DESIGN:
(i) Fict. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 3. (iv) (a) 15' x 24'. (b) 12' x 21'. (v) 14' x 11'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) and (b) N.A. (c) Nil. (v) and (vi) Nil. (vii) The expt. was conducted on cultivators farm at Alfanagar.

5. RESULTS:
(i) 1173 lb./ac. (ii) 503 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>P₀</td>
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<td>1054</td>
<td>1039</td>
<td>1239</td>
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<tr>
<td>P₃</td>
<td>1039</td>
<td>1143</td>
<td>1068</td>
<td>1707</td>
</tr>
</tbody>
</table>

Mean = 913 1076 1274 1428 1173
Crop - Paddy.
Site - Govt. Agri. & Exptl. Farm, Kotah.

Object: To find suitable manurial schedule for Paddy.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy. (b) N.A. (iii) 1st week of September, 1954. (iv) (a) N.A. (b) Japanese method. (c) to (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) 5 weeding. (ix) N.A. (x) Last week of December, 1954.

2. TREATMENTS:
   Same as in exp. no. 54(38) above.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 3. (iv) (a) 30'x131'. (b) 27'x101'. (v) 19'x11'.
   (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) N.A. (b) No. (c) Nil. (v) and (vi) Nil. (vii) The exp. was conducted on cultivators farm at Alfanagar.

5. RESULTS:
   (i) 1054 lb./ac. (ii) 458.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>P₃</th>
<th>Mean</th>
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<td>587</td>
<td>880</td>
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<td>1127</td>
<td>768</td>
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<td>1027</td>
<td>960</td>
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<td>1221</td>
<td>1267</td>
<td>1494</td>
<td>1274</td>
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<td>979</td>
<td>1149</td>
<td>986</td>
<td>1104</td>
<td>1054</td>
</tr>
</tbody>
</table>

S.E. of any marginal mean = 152.3 lb./ac.
S.E. of body of table = 264.5 lb./ac.

---

Crop - Wheat (Rabi).
Site - Govt. Agri. & Exptl. Farm, Bassi.

Ref = Rj. 54(1),
Type = ‘M’.

Object: To find out the optimum dose of N and P alone and in combination for Wheat.

1. BASAL CONDITIONS:
   (i) N.A. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 17.11.1954. (iv) (a) to (e) N.A. (v) N.A. (vi) C-59 (medium). (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 6.4.1955.

2. TREATMENTS:
   All combinations of (1), (2) and (3)
   (1) 3 levels of N as F.Y.M.: F₀=0, F₁=20 and F₂=30 lb./ac.
   (2) 3 levels of N as A/S : N₀=0, N₁=20 and N₂=30 lb./ac.
   (3) 3 levels of P₂O₅ as Super : P₀=0, P₁=25 and P₂=40 lb./ac.
   Time of application: N.A. Manures mixed with earth before application.
3. DESIGN
(i) Fact. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 4. (iv) (a) 22'×15'. (b) 19'×12'. (v) 1.5'×1.5'. (vi) Yes.

4. GENERAL:
(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1954—1955. (b) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:
(i) 1919 lb./ac. (ii) 260.8 lb./ac. (iii) Main effect of P and interaction P×F are highly significant. Interaction P×N is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>Mean</th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
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<td>1852</td>
<td>1762</td>
<td>1913</td>
<td>1879</td>
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<tr>
<td>F₁</td>
<td>1729</td>
<td>2075</td>
<td>2018</td>
<td>1940</td>
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<td>1971</td>
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<td>1861</td>
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<td>1792</td>
<td>1999</td>
<td>2101</td>
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</tr>
</tbody>
</table>

S.E. of any marginal mean = 43.4 lb./ac.
S.E. of body of any table = 75.3 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. and Exptl. Farm, Bassi.
Ref: Rj. 54(48).
Type: 'M'.

Object: To find out the optimum dose of N and P alone and in combination for Wheat.

1. BASAL CONDITIONS:
(i) Nil. (b) Fallow. (c) No. (ii) (a) Sandy loam. (b) N.A. (iii) 17.11.1954. (iv) (a) to (e) N.A. (v) Nil. (vi) C—591 (medium). (vii) Irrigated. (viii) and (ix) N.A. (x) 6.4.1955.

2. TREATMENTS to 4. GENERAL:
Same as in exp. no. 54(1) on page 2.
Fertilizers were sprayed. Time of application N.A.

5. RESULTS:
(i) 2092 lb./ac. (ii) 329.6 lb./ac. (iii) P effect and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>Mean</th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
</tr>
</thead>
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<tr>
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<td>2111</td>
<td>2061</td>
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<tr>
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<td>2138</td>
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<td>2159</td>
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<td>2286</td>
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</tbody>
</table>
Object:— To find the optimum dose of N and P alone and in combinations for Wheat.

1. **BASAL CONDITIONS**:
   
   (i) (a) Nil. (b) and (c) N.A.  
   (ii) (a) Sandy loam. (b) N.A.  
   (iii) 10.11.1955.  
   (iv) (a) 4 ploughings.  
   (b) N.A.  
   (c) 70 lb./ac.  
   (d) 9" between rows. (e) N.A.  
   (v) C—591 (medium).  
   (vi) Irrigated.  
   (vii) Nil.  
   (viii) N.A.  
   (ix) 7.4.1956.

2. **TREATMENTS**:
   
   Same as in expt. no. 54(1) on page 2.

3. **DESIGN**:
   
   (i) Factor in R.B.D.  
   (ii) (a) 27. (b) N.A.  
   (iii) 3. (iv) (a) 21'9"X8'. (b) 19'9"X6'.  
   (v) 1'X1'.  
   (vi) Yes.

4. **RESULTS**:
   
   (i) 1630 lb./ac.  
   (ii) 510.9 lb./ac.  
   (iii) None of the effects is significant.  
   (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>Mean</th>
<th>N₀</th>
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</tbody>
</table>

S.E. of any marginal mean = 98.3 lb./ac.
S.E. of body of any table = 170.3 lb./ac.
2. TREATMENTS

20 manural treatments: M₁₉ = 50 lb/ac. of N as F.Y.M., M₁₄ = 30 lb/ac. of N as F.Y.M., M₁₆ = 30 lb/ac. of N as A/S, M₁₉ = 25 lb/ac. of P₂O₅ as Super., M₁₆ = 20 lb/ac. of N as F.Y.M.+20 lb/ac. of P₂O₅ as Super., M₁₃ = 20 lb/ac. of N as F.Y.M.+30 lb/ac. of N as A/S, M₁₆ = 20 lb/ac. of N as F.Y.M.+25 lb/ac. of P₂O₅ as Super., M₁₃ = 20 lb/ac. of N as F.Y.M.+25 lb/ac. of P₂O₅ as Super., M₁₂ = 20 lb/ac. of N as F.Y.M.+30 lb/ac. of N as A/S, M₁₆ = 30 lb/ac. of N as A/S, M₁₆ = 30 lb/ac. of N as A/S, M₁₆ = 20 lb/ac. of N as A/S, M₁₆ = 20 lb/ac. of N as A/S.

Fertilizers sprayed at the time of cultivation.

3. DESIGN:

(i) R.B.D. (ii) a. 20. (b) N.A. (iii) 3. (iv) (a) 21'9" x 8', (b) 19'9" x 6', (v) 1' x 1'. (vi) Yes.

4. GENERAL:

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1956 only. (b) No. (c) Nil. (v) (a) N.A. (b) Nil (vi) and (vii) Nil.

5. RESULTS:

(i) 5678 lb/ac. (ii) 463.0 lb/ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>M₁, M₂, M₃, M₄, M₅, M₆, M₇, M₈, M₉</td>
<td>5964</td>
</tr>
</tbody>
</table>

S.E./mean = 25.3 lb/ac.

Crop: Wheat (Rabi).

Site: Govt. Agric. and Expd. Farm, Basai.

Object: To study the effect of levels of N and P with F.Y.M. on Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) 6' deep loam. (b) N.A. (iii) 18.11.1958. (iv) (a) 8 ploughings. (b) Drilled. (c) 10 lb/ac. (d) 5' between rows. (e) N.A. (v) 5060 lb/ac. of F.Y.M. (vi) R.B. 31 - 1. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 5.4.1959.

2. TREATMENTS:

All combination of (1), (2) and (3) + 3 extra treatments.

(1) 3 sources of N: S₁ = A/S, S₂ = A/S/N, and S₃ = Urea.

(2) 3 levels of N: N₁ = 0, N₂ = 20, and N₃ = 40 lb/ac.

(3) 3 levels of P₂O₅ as Super: P₁₀ = 0, P₁₀ = 20, and P₁₀ = 40 lb/ac.

Extra treatments: T₁₀ = 40 lb/ac. of N as A/S, T₁₀ = 40 lb/ac. of N as A/S, T₁₀ = 40 lb/ac. of N as A/S, T₁₀ = 40 lb/ac. of N as A/S/20 lb/ac. of P₂O₅ as Super., T₁₀ = 40 lb/ac. of N as A/S/20 lb/ac. of P₂O₅ as Super., T₁₀ = 40 lb/ac. of N as A/S/20 lb/ac. of P₂O₅ as Super.

3. DESIGN:

(i) R.B.D. (ii) (a) 12 plots/block; 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 30' 3" x 18'. (b) 24'3" x 12', (v) 3' x 1'. (vi) Yes.

4. GENERAL:

(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1956 - N.A. (b) and (c) N.A. (v) to (viii) N.A.
5. RESULTS:

(i) 1952 lb./ac. (ii) 192.6 lb./ac. (iii) Main effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

\[ T_1 = 2508, \, \text{lb./ac.} \quad T_2 = 2412 \, \text{lb./ac.} \quad T_3 = 2297 \, \text{lb./ac.} \]

<table>
<thead>
<tr>
<th></th>
<th>N_0</th>
<th>N_1</th>
<th>N_2</th>
<th>Mean</th>
<th>S_1</th>
<th>S_2</th>
<th>S_3</th>
</tr>
</thead>
<tbody>
<tr>
<td>P_1</td>
<td>1437</td>
<td>1713</td>
<td>1706</td>
<td>1619</td>
<td>1578</td>
<td>1706</td>
<td>1572</td>
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<tr>
<td>P_2</td>
<td>1681</td>
<td>1995</td>
<td>2290</td>
<td>1989</td>
<td>2085</td>
<td>2014</td>
<td>1867</td>
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<tr>
<td>P_3</td>
<td>1790</td>
<td>2213</td>
<td>2290</td>
<td>2098</td>
<td>1989</td>
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<td>1974</td>
<td>2095</td>
<td>1902</td>
<td>1884</td>
<td>1980</td>
<td>1841</td>
</tr>
</tbody>
</table>

S.E. of N or P marginal mean = 64.2 lb./ac.
S.E. of S marginal mean = 78.6 lb./ac.
S.E. of body of any table or T mean = 111.2 lb./ac.

---

Crop: Wheat (Rabi).
Site: Govt. Agri. and Exp. Farm, Bassi.
Type: "M".

Object: To study the effect of levels of N and P with F.Y.M. on Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 21.11.1959. (iv) (a) 7 ploughings. (b) Sown behind the plough. (c) 50 sprs./ac. (d) 9" between rows. (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) R.S. 31-1. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 25.4.1960.

2. TREATMENTS and 3. DESIGN:
Same as in expt. no. 58(41) on page 5.

4. GENERAL:

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

5. RESULTS:

(i) 2044 lb./ac. (ii) 165.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

\[ T_1 = 2539, \, \text{lb./ac.} \quad T_2 = 2457 \, \text{lb./ac.} \quad T_3 = 2411 \]

<table>
<thead>
<tr>
<th></th>
<th>N_0</th>
<th>N_1</th>
<th>N_2</th>
<th>Mean</th>
<th>S_1</th>
<th>S_2</th>
<th>S_3</th>
</tr>
</thead>
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<td>1435</td>
<td>2074</td>
<td>2127</td>
<td>1879</td>
<td>1778</td>
<td>2202</td>
<td>1656</td>
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<tr>
<td>P_2</td>
<td>1784</td>
<td>2055</td>
<td>2195</td>
<td>2011</td>
<td>1965</td>
<td>2107</td>
<td>1962</td>
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<tr>
<td>P_3</td>
<td>2013</td>
<td>1955</td>
<td>2320</td>
<td>2100</td>
<td>2086</td>
<td>2031</td>
<td>2183</td>
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<tr>
<td>Mean</td>
<td>1713</td>
<td>2031</td>
<td>2214</td>
<td>1997</td>
<td>1943</td>
<td>2113</td>
<td>1934</td>
</tr>
</tbody>
</table>

S.E. of S marginal mean = 64.2 lb./ac.
Crop - Wheat (Rabi).
Site: Govt. Agri. and Exptl. Farm, Bassi.

Object: To study the effect of Gypsum on saline and alkaline soil and Wheat yield.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Barley. (c) 140 md./ac. of F.Y.M. (ii) (a) Sandy loam. (b) N.A. (iii) 6.11.1957. (iv) (a) 3-4 ploughings. (b) Drilling. (c) 80 lb./ac. (d) 9" between rows. (e) N.A. (v) Nil. (vi) R.S. 31-1 (medium). (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 25,3.1958.

2. TREATMENTS:
   10 manurai treatments: M₀=Control, M₁=10 tons/ac. of F.Y.M. before sowing, M₂=10 tons/ac. of F.Y.M. after sowing, M₃=2 tons/ac. of Gypsum+10 tons/ac. of F.Y.M., M₄=4 tons/ac. of Gypsum+10 tons/ac. of F.Y.M., M₅=5 tons/ac. of Gypsum+10 tons/ac. of F.Y.M., M₆=20 tons/ac. of N as A/S+30 lb./ac. of P₂O₅ as Super, M₇=4 tons/ac. of Gypsum+10 tons/ac. of F.Y.M.+30 lb./ac. of N as A/S+30 lb./ac. of P₂O₅ as Super and M₈=4 tons/ac. of Gypsum.
   Treatments mixed with the soil before sowing.

3. DESIGN:
   (i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 2. (iv) (a) 30°x24°. (b) 24°x18°. (v) 3°x3°. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) Nil. (iii) Viability and yield. (iv) (a) 1957—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:
   (i) 1138 lb./ac. (ii) 382.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
<th>M₇</th>
<th>M₈</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>990</td>
<td>1002</td>
<td>1020</td>
<td>986</td>
<td>1100</td>
<td>1423</td>
<td>1605</td>
<td>1859</td>
<td>1817</td>
</tr>
</tbody>
</table>

S.E./mean = 270.8 lb./ac.

Crop - Wheat (Rabi).
Site: Govt. Agri. and Exptl. Farm, Bassi.

Object: To study the effect of Gypsum on saline and alkaline soil and Wheat yield.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Barley. (c) 140 md./ac. of F.Y.M. (ii) (a) Alkaline. (b) N.A. (iii) 6.11.1957. (iv) (a) 5 ploughings. (b) N.A. (c) 80 lb./ac. (d) 9" between rows. (e) N.A. (v) Nil. (vi) R.S. 31 1. (vii) Irrigated. (viii) 1 weeding. (ix) 0.71°. (x) 25,3.1958.

2. TREATMENTS and 3. DESIGN:
   Same as in expt. no. 37(9) above.

4. GENERAL:
   (i) N.A. (ii) Nil. (iii) Density of growth and yield. (iv) (a) 1957—N.A. (b) and (c) N.A. (v) to (vii) N.A.
5. RESULTS:
(i) 2013 lb./ac.  (ii) 386.0 lb./ac.  (iii) Treatment differences are significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M0</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
<th>M6</th>
<th>M7</th>
<th>M8</th>
<th>M9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1501</td>
<td>1655</td>
<td>1546</td>
<td>1495</td>
<td>1668</td>
<td>2156</td>
<td>2431</td>
<td>2816</td>
<td>2752</td>
<td>2111</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>273.0 lb./ac.</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

Crop : Wheat (Rabi).
Site : Govt. Agri. and Exptl. Farm, Basil.

Object : To study the effect of Gypsum on saline and alkaline soil and Wheat yield.

1. BASAL CONDITIONS:
(i) (a) No.  (b) Fallow.  (c) N.A.  (ii) (a) Sandy loam.  (b) N.A.  (iii) 14.11.1958.  (iv) (a) 7 ploughings.  
(b) N.A.  (c) 40 lb./ac.  (d) 9' between rows.  (e) N.A.  (v) N.A.  (vi) R.S. 31 - 1.  (vii) Irrigated.  (viii) 1 weeding.  (ix) N.A.  
(x) 2.4.1959.

2. TREATMENTS and 3. DESIGN:
Same as in exp. no. 51(9) on page 7.

3. GENERAL:
(i) N.A.  (ii) N.A.  (iii) Yield of grain.  (iv) (a) 1937—N.A.  (b) and (c) N.A.  (v) to (vii) N.A.

4. RESULTS:
(i) 2302 lb./ac.  (ii) 658.1 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M0</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
<th>M6</th>
<th>M7</th>
<th>M8</th>
<th>M9</th>
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</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1848</td>
<td>1694</td>
<td>2220</td>
<td>2124</td>
<td>1950</td>
<td>2432</td>
<td>2310</td>
<td>2983</td>
<td>2772</td>
<td>2688</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>465.4 lb./ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop : Wheat (Rabi).
Site : Govt. Agri. and Exptl. Farm, Basil.

Object : To study the effect of Gypsum on saline and alkaline soil and Wheat yield.

1. BASAL CONDITIONS:
(i) (a) No.  (b) Fallow.  (c) N.A.  (ii) (a) Sandy loam.  (b) N.A.  (iii) 14.11.1958.  
(iv) (a) 7 ploughings.  
(b) Sown behind the plough.  (c) 80 lb./ac.  (d) 9' between rows.  (e) N.A.  (v) N.A.  (vi) R.S. 31 - 1.  (vii) Irrigated.  
(viii) 1 weeding.  (ix) N.A.  
(x) 30.3.1960.

2. TREATMENTS and 3. DESIGN:
Same as in exp. no. 57(9) on page 7.

4. GENERAL:
(i) Good.  (ii) No.  (iii) Yield of grain.  (iv) (a) 1937—N.A.  (b) and (c) N.A.  (v) to (vii) Nil.

5. RESULTS:
(i) 1551 lb./ac.  (ii) 490.1 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M0</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
<th>M6</th>
<th>M7</th>
<th>M8</th>
<th>M9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>948</td>
<td>1007</td>
<td>1338</td>
<td>1410</td>
<td>1269</td>
<td>1664</td>
<td>1613</td>
<td>2168</td>
<td>3034</td>
<td>2046</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>346.6 lb./ac.</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>
Crop = Wheat (Rabi).  
Site = Govt. Agri. and Exptl. Farm, Bassi.  
Ref. = Rj. 54(58).  
Type = "M".

Object — To study the response of Wheat to B.M. with sandal crop.

1. BASAL CONDITIONS:
   (i) (a) Nil.  (b) Sand.  (c) Nil.  (d) 4 ploughings.  (b) to (c) N.A.  (v) Nil.  (vi) R.B.D.—2 (random). (vii) Weeded. (viii) No.  (x) N.A.  (x) 7.4.1955.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) Applications of sandal at 4 intervals. 1 = No application of sandal G.M., T1 = 45 and T4 = 60 and 21 days.
   (2) 4 levels of P2O5: P1 = 0, P2 = 40, P3 = 100 and P4 = 150 lb./ac.
   Time and method of application of P2O5—NH4.

3. DESIGN:
   (i) Factor in R.B.D.  (ii) (a) 16.  (b) N.A.  "(iii) 4.  (iv) (a) 10'x18'.  (b) 24'x12'.  (v) 3'x3'.  (vi) Yes.

4. GENERAL:
   (i) Nil.  (ii) Nil.  (iii) Nil.  (iv) 1954—N.A.  (b) No.  (v) Nil.  (v) to (vii) Nil.

5. RESULTS:
   (i) 1319 lb./ac.  (ii) 1416.6 lb./ac.  (iii) None of the effects is significant.  (iv) Av. yld. of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>P0</th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>T0</td>
<td>1008</td>
<td>1295</td>
<td>1336</td>
<td>1403</td>
<td>1360</td>
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<tr>
<td>T1</td>
<td>1007</td>
<td>1295</td>
<td>1426</td>
<td>1202</td>
<td>1332</td>
</tr>
<tr>
<td>T2</td>
<td>1000</td>
<td>1308</td>
<td>1284</td>
<td>1371</td>
<td>1316</td>
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<tr>
<td>T3</td>
<td>1400</td>
<td>1298</td>
<td>1100</td>
<td>1299</td>
<td>1249</td>
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<tr>
<td>Mean</td>
<td>1408</td>
<td>1278</td>
<td>1275</td>
<td>1316</td>
<td>1319</td>
</tr>
</tbody>
</table>

S.E. of any arithmetic mean = 35.4 lb./ac.
S.E. of body of table = 70.8 lb./ac.

Crop = Wheat (Rabi).  
Site = Govt. Agri. and Exptl. Farm, Bassi.  
Ref. = Rj. 54(46).  
Type = "MD".

Object — To study the residual effect of different doses of B.M. and Super applied to previous Groundnut crop on the yield of the subsequent crop of Wheat.

1. BASAL CONDITIONS:

2. TREATMENTS:
   7 manural treatments: M0—Control, M1 = 50 lb./ac. of P2O5 as Super, M2 = 100 lb./ac. of P2O5 as Super M3 = 150 lb./ac. of P2O5 as Super, M4 = 50 lb./ac. of P2O5 as B.M., M5 = 100 lb./ac. of P2O5 as B.M., and M6 = 150 lb./ac. of P2O5 as B.M.
   Fertilizers applied before sowing to the previous Groundnut crop.

3. DESIGN:
   (i) R.B.D.  (ii) (a) 7.  (b) N.A.  (iii) 4.  (iv) (a) 20'x24'.  (b) 24'x36'.  (v) 3'x3'.  (vi) Yes.

4. GENERAL:
   (i) Poor.  (ii) Nil.  (iii) Yield of grain.  (iv) 10/12.12.1954.  (b) No.  (c) Nil.  (v) to (vi) Nil.  (vi) Crop was sown late; hence yield was poor. (vii) Nil.
5. RESULTS:
(i) 383 lb/acre. (ii) 210.7 lb/acre. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/acre.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>257</td>
<td>254</td>
<td>501</td>
<td>571</td>
<td>404</td>
<td>360</td>
<td>360</td>
</tr>
</tbody>
</table>

S.E./mean = 105.4 lb/acre.

Crop = Wheat (Rabi).
Site = Govt. Agric. and Exptl. Farm, Bassi.

Ref = RJ. 55(5).
Type = 'M'.

Object: To find out the residual effect of different doses of B.M. and Super applied to previous Groundnut crop on the yield of subsequent crop of Wheat.

1. BASAL CONDITIONS:
(i) (a) Groundnut—Wheat. (b) Groundnut. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 3.12.1955. (iv) (a) 5 ploughings. (b) Drilling. (c) 40 cm/ac. (d) 9' between rows. (e) N.A. (v) N. (vi) C—59L. (vii) Irrigated. (viii) and (ix) N.A. (a) 14.6.1956.

2. TREATMENTS:
Same as in expt. no. 54(50) on page 9.

3. DESIGN:
(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 29' x 25'. (b) 24' x 20'. (v) 26' x 25'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
(i) 1325 lb/acre. (ii) 209.2 lb/acre. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/acre.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1221</td>
<td>1451</td>
<td>1381</td>
<td>1440</td>
<td>1250</td>
<td>1282</td>
<td>1252</td>
</tr>
</tbody>
</table>

S.E./mean = 104.6 lb/acre.

Crop = Wheat (Rabi).
Site = Govt. Agric. and Exptl. Farm, Bassi.

Ref = RJ. 55(34).
Type = 'M'.

Object: To find out the residual effect of different doses of B.M. and Super applied to previous Groundnut crop on the yield of subsequent crop of Wheat.

1. BASAL CONDITIONS:
(i) (a) Groundnut—Wheat. (b) Groundnut. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 15.10.1955. (iv) (a) to (e) N.A. (v) Nil. (vi) C—59L (medium). (vii) Unirrigated. (viii) Nil. (ix) N.A. (a) 7.3.1956.

2. TREATMENTS:
Same as in expt. no. 54(50) on page 9.

3. DESIGN:
(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 26' x 22'. (b) 24' x 20'. (v) 1' x 1'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.
RESULTS:

(i) 1319 lb./ac. (ii) 221.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1221</td>
<td>1451</td>
<td>1583</td>
<td>1593</td>
<td>1250</td>
<td>1262</td>
<td>1258</td>
</tr>
</tbody>
</table>

S.E./mean = 110.5 lb./ac.

Crop: Wheat (Rabi).

Site: Govt. Agril. Farm, Bilara.

Ref: Rj. 57(31).

Object: To study the effect of gypsum on the reclamation of alkaline soils and Wheat yield.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Saline. (b) N.A. (iii) 16.1.1957. (iv) (a) 10 ploughings. (b) Drilling. (c) 40 sq. ft. (d) 12" between rows. (e) N.A. (v) N.A. (vi) C—591. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 2.4.1958.

2. TREATMENTS:

10 manorial treatments: M₀—Control, M₁—10 tons/ac. of F.Y.M. in May-June, M₂—2 tons/ac. of F.Y.M. in October, M₃—2 tons/ac. of Gypsum + 10 tons/ac. of F.Y.M., M₄—6 tons/ac. of Gypsum + 10 tons/ac. of F.Y.M., M₅—20 tons/ac. of N as A/S + 30 lb./ac. of P₂O₅ as Super, M₆—4 tons/ac. of Gypsum + 10 tons/ac. of F.Y.M. + 20 lb./ac. of A/S + 30 lb./ac. of P₂O₅ as Super, M₇—4 tons/ac. of Gypsum + 20 lb./ac. of N as A/S + 30 lb./ac. of P₂O₅ as Super and M₈—4 tons/ac. of Gypsum.

3. DESIGN:

(i) R.B.D. (ii) 10. (b) N.A. (iii) 3. (iv) (a) 30'3"x24'. (b) 24'3"x18'. (v) 3'x3'. (vi) Yes.

4. GENERAL:

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

5. RESULTS:

(i) 1171 lb./ac. (ii) 367.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
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<tr>
<td>Av. yield</td>
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<td>902</td>
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<td>1647</td>
<td>928</td>
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</table>

S.E./mean = 212.4 lb./ac.

Crop: Wheat (Rabi).

Site: Govt. Agril. Farm, Bilara.

Ref: Rj. 58(20).

Type: 'M'.

Object: To study the effect of gypsum on reclamation of alkaline soil and Wheat yield.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Saline. (b) N.A. (iii) 16.1.1957. (iv) (a) 10 ploughings. (b) Drilling. (c) 40 sq. ft. (d) 10' between rows. (e) N.A. (v) N.A. (vi) N.P.—718. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 16.4.1959.

2. TREATMENTS and 3. DESIGN:

Same as expt. no. 57(31) above.

4. GENERAL:

(i) Normal. (ii) Slight attack of brown rust. (iii) Yield of grain. (iv) (a) 1957—N.A. (b) N.A. (c) Nil. (v) to (vii) N.A.
5. RESULTS:
(i) 1273 lb./ac. (ii) 254.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
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<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
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<td>Av. yield</td>
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<td>1634</td>
<td>1364</td>
<td>1317</td>
<td>1411</td>
<td>1330</td>
<td>1168</td>
<td>1095</td>
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<td>1142</td>
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</table>

S.E./mean = 147.0 lb./ac.

_Crop:_ Wheat _{Rabi}._
_Site:_ Govt. Agri. Farm, Bilara.

Object:—To study the response of gypsum on saline and alkaline soils and Wheat yield.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Saline and alkaline. (b) N.A. (iii) 16.11.1959. (iv) (a) 6 ploughings. (b) Drilling. (c) 40 srs./ac. (d) 9" between rows. (e) N.A. (v) N.A. (vi) N.P.—718. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 5.4.1960.

2. TREATMENTS and 3. DESIGN:
Same as in exp. no. 57(31) on page 11.

4. GENERAL:
(i) Good. (ii) 10% rust attack. (iii) Yield of grain. (iv) (a) 1957—N.A. (b) N.A. (c) Nil. (v) to (vii) N.A.

5. RESULTS:
(i) 1287 lb./ac. (ii) 197.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
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<th>M₂</th>
<th>M₃</th>
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<td>Av. yield</td>
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<td>1672</td>
<td>1266</td>
<td>1580</td>
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<td>1074</td>
<td>1198</td>
<td>1339</td>
<td>1373</td>
<td>1232</td>
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S.E./mean = 114.1 lb./ac.

_Crop:_ Wheat _{Rabi}._
_Site:_ Govt. Agri. Farm, Bilara.

Object:—To study the effect of gypsum on saline and alkaline soils.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Saline and alkaline. (b) N.A. (iii) 14.11.1959. (iv) (a) 8 ploughings. (b) Drilling. (c) 40 srs./ac. (d) 9" between rows. (e) N.A. (f) N.A. (v) N.P.—718. (vi) Irrigated. (vii) 3 weedings. (ix) N.A. (x) 5.4.1960.

2. TREATMENTS and 3. DESIGN:
Same as in exp. no. 57(31) on page 11.

4. GENERAL:
(i) Good. (ii) Slight attack of rust. (iii) Yield of grain. (iv) (a) 1957—N.A. (b) N.A. (c) Nil. (v) to (vii) N.A.

5. RESULTS:
(i) 2532 lb./ac. (ii) 3339 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.
Object: To study the residual effect of gypsum on the reclamation of alkaline soil and Wheat yield.

1. BASAL CONDITIONS:
   (i) Nil. (b) Nil. (c) Nil. (ii) Saline. (b) N.A. (iii) 16.11.1957. (iv) 6 ploughings. (b) N.A. (c) 40 srs./ac. (d) 12" between rows. (e) N.A. (vi) N.A. (vii) Irrigated. (viii) 1 weedings. (ix) N.A. (x) 1.26. (xi) 1.4.1958.

2. TREATMENTS and 3. DESIGN:
   Same as in exp. no. 57(31) on page 11. Treatments applied to previous crop.

4. GENERAL:
   (i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) and (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
   (i) 44 lb./ac. (ii) 139.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

   Treatment: $M_9$, $M_4$, $M_5$, $M_6$, $M_7$, $M_8$, $M_9$
   Av. yield: 466, 450, 381, 532, 485, 295, 402, 428, 429, 359
   S.E./mean = 80.6 lb./ac.


Object: To study the effect of gypsum and sulphur on the reclamation of alkaline soil and Wheat yield.

1. BASAL CONDITIONS:
   (i) Nil. (b) Fallow. (c) Nil. (ii) (a) Saline alkaline. (b) N.A. (iii) 16.11.1957. (iv) 6 ploughings. (b) N.A. (c) 40 srs./ac. (d) 12" between rows. (e) N.A. (vi) N.A. (vii) Irrigated. (viii) 1 weedings. (ix) N.A. (x) 1.26. (xi) 1.4.1958.

2. TREATMENTS:
   16 manurial treatments: $M_1$ = Control, $M_2$ = 10 tons/ac. of F.Y.M. in May-June, $M_3$ = 10 tons/ac. of F.Y.M. in October, $M_4$ = 2 tons/ac. of gypsum+10 tons/ac. of F.Y.M., $M_5$ = 2 tons/ac. of gypsum+10 tons/ac. of F.Y.M., $M_6$ = 6 tons/ac. of gypsum+10 tons/ac. of F.Y.M., $M_7$ = 1 ton/ac. of sulphur+10 tons/ac. of F.Y.M., $M_8$ = 1 ton/ac. of sulphur+10 tons/ac. of F.Y.M., $M_9$ = 1 ton/ac. of gypsum+20 lb./ac. of N as A/S+30 lb./ac. of P as Super+10 tons/ac. of F.Y.M., $M_{10}$ = 28 lb./ac. of gypsum, $M_{11}$ = 20 lb./ac. of sulphur, $M_{12}$ = of N as A/S+30 lb./ac. of P as Super+10 tons/ac. of F.Y.M., $M_{13}$ = 20 lb./ac. of N as A/S+30 lb./ac. of P as Super+10 tons/ac. of F.Y.M., $M_{14}$ = 20 lb./ac. of N as A/S+30 lb./ac. of P as Super+10 tons/ac. of F.Y.M., $M_{15}$ = 1 ton/ac. of gypsum+20 lb./ac. of N as A/S+30 lb./ac. of P as Super+10 tons/ac. of F.Y.M., $M_{16}$ = 20 lb./ac. of sulphur.

3. DESIGN:
   (i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 3. (iv) (a) 30"x24". (b) 24"x18". (v) 3"x3". (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1957—N.A. (b) and (c) N.A. (v) to (vii) N.A.
5. RESULTS:
(i) 1139 lb./ac.  (ii) 169.9 lb./ac.  (iii) Treatment differences are highly significant.  (iv) Av. yield of grain in lb./ac.

<table>
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<tr>
<th>Treatment</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
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<th>M₁₅</th>
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<td>1416</td>
<td>1125</td>
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<td>962</td>
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</table>

S.E./mean = 98.1 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Bilara.
Ref: Rj. 58(19).
Type: .M'.

Object: To study the effect of gypsum and sulphur on the reclamation of alkaline soil and Wheat yield.

1. BASAL CONDITIONS:
(i) (a) Nil.  (b) Fallow.  (c) Nil.  (ii) (a) Saline and alkaline.  (b) N.A.  (iii) 1.12.1958.  (iv) (a) 10 ploughings.  (b) Drilling.  (c) 40 hrs./ac.  (d) 10" between rows.  (e) N.A.  (v) N.A.  (vi) N.P.—118.  (vii) Irrigated.  (viii) 1 weeding.  (ix) N.A.  (x) 16.4.1959.

2. TREATMENTS and 3. DESIGN:
Same as in exp. no. 57(36) on page 13.

4. GENERAL:
(i) Good.  (ii) No.  (iii) Yield of grain.  (iv) (a) 1957—N.A.  (b) and (c) N.A.  (v) to (vii) N.A.
3. RESULTS:

(i) 1604 lb./ac.  (ii) 1923 lb./ac.  (iii) Treatment differences are highly significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
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<th>M₁₂</th>
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<td>Av. yield</td>
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<td>2026</td>
<td>1912</td>
<td>1681</td>
<td>1784</td>
<td>1499</td>
<td>1484</td>
<td>1745</td>
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</table>

S.E./mean = 114.0 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agril. Farm, Bikaner.

Object: To study the effect of different doses and sources of N and P on wheat yield.

1. BASAL CONDITIONS:

(i) (a) N.A. (b) Fallow. (c) Nil.  (d) Saline and alkaline.  (b) N.A.  (iii) 14.11.1959.  (iv) (a) 8 ploughings. (b) Dried. (c) 40 yr. (d) 9 ft. between rows. (e) N.A.  (v) N.A.  (vi) N.P.—718.  (vii) Irrigated. (viii) 2 weeding. (ix) N.A. (x) 2.4.1960.

2. TREATMENTS:

7 Manual treatments: M₄ = Control. M₅ = 1 md./ac. of Argemone Maxicana (dried leaves). M₆ = 2 md./ac. of Argemone Maxicana (dried leaves). M₇ = 3 md./ac. of Argemone Maxicana (dried leaves). M₈ = 10 lb./ac. N as F.Y.M. M₉ = 20 lb./ac. of N as F.Y.M. M₁₀ = 30 lb./ac. of N as F.Y.M.

3. DESIGN:

(i) R.B.D. (ii) 7.  (b) N.A.  (iii) 4.  (iv) (a) 30' 3' x 18'. (b) 24' 3' x 12'.  (v) 3' x 3'.  (vi) Yes.

4. GENERAL:

(i) Good.  (ii) 10% rust attack.  (iii) Yield of grain.  (iv) (a) 1959—N.A.  (b) and (c) N.A.  (v) N.A.  (vi) N.A.

5. RESULTS:

(i) 2106 lb./ac.  (ii) 281.8 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₉</th>
<th>M₁₀</th>
<th>M₄</th>
<th>M₃</th>
<th>M₅</th>
<th>M₄</th>
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<td>Av. yield</td>
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<td>2110</td>
<td>2079</td>
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S.E./mean = 140.9 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. and Exp. Farm, Durgapur.

Object: To find out the effect of different doses and sources of N and P on Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil.  (b) Fallow.  (c) Nil.  (d) Sandy loam.  (b) N.A.  (iii) 3.11.1954.  (iv) (a) to (e) N.A.  (v) Nil.  (vi) C—519 (medium).  (vii) Irrigated.  (viii) 1 weeding. (ix) N.A.  (x) 7.4.1955.

2. TREATMENTS:

All combinations of (1) and (2)

(1) 5 treatments consisting of 2 sources and 3 levels of N: N₀ = 0, N₁ = 20 lb./ac. of N as A/S, N₂ = 20 lb./ac. of N as Urea and N₃ = 40 lb./ac. of N as Urea.
3. DESIGN:
(i) Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 3. (iv) (a) 22'×15'. (b) 19'×12'. (v) 14'×14'. (vi) Yes.

4. GENERAL:
(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—coastd. (b) No. (c) Nil. (v) (a) Shri Ganganagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
(i) 1224 lb./ac. (ii) 176.3 lb./ac. (iii) Only main effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

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Mean: 692 1317 1409 1160 1542 1224

S.E. of N or P marginal mean = 45.5 lb./ac.
S.E. of body of table = 101.8 lb./ac.

---

Crop: Wheat (Rabi).
Site: Govt. Agri. and Exptl. Farm, Durgapura.

Object: To study the effect of various trace elements at different levels on the yield of Wheat.

1. BASAL CONDITIONS:
(a) Nil. (b) Barley. (c) 15 C.L./ac. of F.Y.M. (d) Sandy loam. (e) 15 C.L./ac. of F.Y.M. (f) 5, 10, 15 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super. (g) No. (h) 60 lb./ac. of N as A.I.S. + 30 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super. (i) Irrigated. (j) 5 weedings and hoeings. (k) N.A.

2. TREATMENTS:
All combinations of (1) and (2) + one control.
(1) 5 trace elements: T<sub>1</sub>=Ferrous sulphate, T<sub>2</sub>=Copper sulphate, T<sub>3</sub>=Zinc sulphate, T<sub>4</sub>=Magnesium sulphate and T<sub>5</sub>=Borax.
(2) 3 levels of the elements: L<sub>1</sub>=5, L<sub>2</sub>=10 and L<sub>3</sub>=15 lb./ac.

3. DESIGN:
(i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 3. (iv) (a) and (b) 24'×15'. (v) Nil. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1957—N.A. (b) and (c) N.A. (v) to (vii) N.A.

5. RESULTS:
(i) 253 lb./ac. (ii) 857.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.
Crop :- Wheat (Rahi).

Site :- Govt. Agrl. Farm, Durgapur.

Object :- To study the effect of foliar application of fertilizer on the yield of Wheat.

## 1. BASAL CONDITIONS:

(i) (a) Maize-Wheat, (b) Mainm. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 16.11.1959. (iv) (a) 4 ploughings. (b) N.A. (c) 40 cm./ac. (d) 2’ between rows. (e) N.A. (v) 20 lb./ac. of N as basal dose + 100 m/l.ac. of F.Y.M + 40 lb./ac. of Super. (vi) R.S. 31-1. (vii) Irrigated. (viii) and (ix) N.A. (x) 30.3.1960.

## 2. TREATMENTS:

All combinations of (1), (2) and (3)+3 extra treatments

1. 3 sources of N: $S_1$=Urea, $S_2$=AIS and $S_3$=A/N.
2. 3 levels of N: $N_1=10$, $N_2=15$ and $N_3=20$ lb./ac.
3. 2 times of application: $T_1=$Before tillering and $T_2=$Before flowering.

3. extra treatments: $E_1=$Water spray before tillering, $E_2=$Water spray before flowering and $E_3=$Control (no spray).

## 3. DESIGN:

(i) R.B.D. (ii) (a) 21. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 30’X18’. (v) N.A. (vi) Yes.

## 4. GENERAL:

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

## 5. RESULTS:

(i) 2544 lb./ac. (ii) 400.1 lb./ac. (iii) Only effect of E is significant. (iv) Av. yield of grain in lb./ac.

<table>
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<th>$E_1$</th>
<th>$E_2$</th>
<th>$E_3$</th>
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</tr>
</tbody>
</table>

Crop :- Wheat (Rahi).

Site :- Govt. Agrl. Farm, Durgapur.

Object :- To study the effect of foliar application of fertilizer on the yield of Wheat.

## 1. BASAL CONDITIONS:

(i) (a) Maize-Wheat, (b) Mainm. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 16.11.1959. (iv) (a) 4 ploughings. (b) N.A. (c) 40 cm./ac. (d) 2’ between rows. (e) N.A. (v) 20 lb./ac. of N as basal dose + 100 m/l.ac. of F.Y.M + 40 lb./ac. of Super. (vi) R.S. 31-1. (vii) Irrigated. (viii) and (ix) N.A. (x) 30.3.1960.

## 2. TREATMENTS:

All combinations of (1), (2) and (3)+3 extra treatments

1. 3 sources of N: $S_1$=Urea, $S_2$=AIS and $S_3$=A/N.
2. 3 levels of N: $N_1=10$, $N_2=15$ and $N_3=20$ lb./ac.
3. 2 times of application: $T_1=$Before tillering and $T_2=$Before flowering.

3. extra treatments: $E_1=$Water spray before tillering, $E_2=$Water spray before flowering and $E_3=$Control (no spray).

## 3. DESIGN:

(i) R.B.D. (ii) (a) 21. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 30’X18’. (v) N.A. (vi) Yes.

## 4. GENERAL:

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

## 5. RESULTS:

(i) 2544 lb./ac. (ii) 400.1 lb./ac. (iii) Only effect of E is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>$E_1$</th>
<th>$E_2$</th>
<th>$E_3$</th>
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<td>2500</td>
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<td>2759</td>
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</table>
Crop :- Wheat (Rabi).
Site :- Govt. Agri. Exptl. Farm, Kotah.
Object :- To study the response of Wheat to trace-elements.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) Bajra. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 27.11.1954. (iv) (a) 4 ploughings. (b) to (e) N.A. (v) Nil. (vi) C—591 (medium). (vii) Irrigated. (viii) and (ix) N.A. (x) 13.3.1955.

2. TREATMENTS :
   All combinations of (1) and (2)
   (1) 5 sources of trace-elements: T1—Zinc Sulphate, T2—Copper Sulphate, T3=Ferrous Sulphate, T4=Magnesium Sulphate and T5—Borax.
   (2) 3 levels of trace-elements: L1=5, L2=10 and L3=15 lb./ac.
   Treatments were mixed with soil and applied before sowing.

3. DESIGN :
   (i) Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) 26’×17’. (b) 20’×11’. (v) 3’×3’. (vi) Yes.

4. GENERAL :
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :
   (i) 551 lb./ac. (ii) 91.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T5</th>
<th>T4</th>
<th>T3</th>
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<td>543</td>
<td>594</td>
<td>636</td>
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<td>551</td>
<td>585</td>
<td>549</td>
<td>509</td>
</tr>
</tbody>
</table>

S.E. of T marginal mean = 30.6 lb./ac.
S.E. of body of table = 52.9 lb./ac.

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Exptl. Farm, Kotah.
Object :- To study the response of Wheat to trace-elements.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) Bajra. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 15.11.1955. (iv) (a) 4 ploughings. (b) to (e) N.A. (v) N.A. (vi) C—591 (medium). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 2.3.1956.
2. TREATMENTS:
All combinations of (1) and (2)-a control.
(1) 5 trace-elements: T1 = Borax, T2 = Ferrous Sulphate, T3 = Copper Sulphate, T4 = Magnesium Sulphate and T5 = Zinc Sulphate.
(2) 3 levels of trace-elements: L1 = 5, L2 = 10 and L3 = 20 lb./ac.
Treatments were sprayed before sowing.

3. DESIGN:
(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 3. (iv) (a) 22' × 13', (b) 20' × 11'. (v) 1' × 1'. (vi) Yes.

4. GENERAL:
(i) Good (ii) Nil (iii) Yield of grain. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) Mandore and Durgapur. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
(i) 547 lb./ac. (ii) 94.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
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<td>611</td>
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<td>Mean</td>
<td>509</td>
<td>585</td>
<td>551</td>
<td>548</td>
<td>557</td>
</tr>
</tbody>
</table>

S.E. of T marginal mean = 31.4 lb./ac.
S.E. of body of table or control mean = 54.3 lb./ac.

Crop:— Wheat (Rabi).
Ref:— Rj. 56(4).
Site:— Govt. Agri. Exp. Farm, Kotah.
Type:— 'M'.

Object:— To study the response of Wheat to trace-elements.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Jowar. (c) Nil. (ii) (a) Black cotton soil. (b) N.A. (iii) 9.10.1956. (iv) and (v) N.A. (vi) C—591 (medium). (vii) Irrigated. (viii) and (ix) N.A. (x) 24.4.1957.

2. TREATMENTS:
Same as in exp. no. 55(36) on page 18.

3. DESIGN:
(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 3. (iv) (a) and (b) 24' × 12'. (v) Nil. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) Mandore and Durgapur. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
(i) 547 lb./ac. (ii) 109.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
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<td>511</td>
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</tr>
</tbody>
</table>
Crop :- Wheat (Rabi).
Site : Govt. Agri. Exptl. Farm, Kotah.

Object :- To study the response of Wheat to trace-elements.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Wheat. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 2.11.1957. (iv) (a) 3 ploughings. (b) Drilling. (c) 60 to 70 lb./ac. (d) 12" between rows. (e) N.A. (v) 30 lb./ac. of N as A/S + 30 lb./ac. of P₂O₅ as Super. (vi) Local Malvi. (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 22.3.1958.

2. TREATMENTS:
   Same as in expt. no. 55(36) on page 18

3. DESIGN:
   (i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 3. (iv) (a) and (b) 24' 3" X 12'. (v) Nil. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—costnd. (b) No. (c) Nil. (v) (a) Mandore and Durgapur. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
   (i) 93 lb./ac. (ii) 31.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Control=57 lb./ac.</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
<th>T₅</th>
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<tr>
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<td>94</td>
<td>116</td>
<td>86</td>
<td>72</td>
</tr>
</tbody>
</table>

S.E. of T marginal mean = 10.4 lb./ac.
S.E. of body of table or control mean = 18.0 lb./ac.
5. RESULTS:

(i) 723 lb./ac.  (ii) 190.2 lb./ac.  (iii) None of the effects is significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
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<td>P₁</td>
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<tr>
<td>P₂</td>
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<tr>
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<td>723</td>
<td>711</td>
<td>730</td>
<td>729</td>
</tr>
</tbody>
</table>

S.E. of any marginal mean = 63.4 lb./ac.
S.E. of body of table = 109.8 lb./ac.

---

Crop: Wheat (Rabi).
Site: Govt. Agrl. Deptt., Rangpur, Bangladesh.
Ref: RJ. 55(29).
Type: 'M'.

Object: To study the effect of P and K on the yield of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil.  (b) Rapeseed.  (c) Nil.  (d) Clay loam.  (e) N.A.  (f) 14.11.1955.  (iv) (a) 4 ploughings.  (b) N.A.  (c) 40 hrs./ac.  (d) and (a) N.A.  (v) N.A.  (vi) C—591 (medium).  (vii) Unirrigated.  (viii) and (ix) N.A.  (x) 10.5.1956.

2. TREATMENTS:
   Same as in exp. no. 55(28) on page 20.

3. DESIGN:
   (i) Fact. in R.B.D.  (ii) (a) 5.  (b) N.A.  (iii) 3.  (iv) (a) 22' X 15'.  (b) 19' X 12'.  (v) 1.5' X 1.5'.  (vi) Yes.

4. GENERAL:
   (i) Good.  (ii) Nil.  (iii) Yield of grain.  (iv) (a) to (c) N.A.  (v) (a) and (b) Nil.  (vi) and (vii) Nil.

5. RESULTS:

(i) 723 lb./ac.  (ii) 190.2 lb./ac.  (iii) None of the effects is significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
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<th>N₂</th>
<th>Mean</th>
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<td>729</td>
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</table>

S.E. of any marginal mean = 63.4 lb./ac.
S.E. of body of table = 109.8 lb./ac.

---

Crop: Wheat (Rabi).
Site: Govt. Agrl. Deptt., Rangpur, Bangladesh.
Ref: RJ. 55(69).
Type: 'M'.

Object: To study the effect of different types and levels of superorganic fertilizers with levels of P and K.
1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 18.12.1959. (iv) (a) N.A. (b) Behind the plough. (c) 40 tons/ha. (d) 9' between rows. (e) N.A. (v) 5000 lb./ac. (vi) C—591. (vii) Irrigated. (viii) and (ix) N.A. (x) 13.14.4.1960.

2. TREATMENTS:
   All combinations of (1), (2), and (3)+3 extra treatments
   (1) 3 sources of N: S 1 = A/S, S 2 = A/S/N and S 3 = Urea.
   (2) 3 levels of N: N 0 = 0, N 1 = 20 and N 2 = 40 lb./ac.
   (3) 3 levels of Phosphorus: P 0 = 0, P 1 = 20 and P 2 = 40 lb./ac.
   3 extra treatments as:
   T 1 = 40 lb./ac. of N as A/S + 40 lb./ac. of P 2 and 20 lb./ac. of K 0 as Mur. Pot.
   T 2 = 40 lb./ac. of N as A/S, N + 40 lb./ac. of P 2 and 20 lb./ac. of K 0 as Mur. Pot.
   T 3 = 40 lb./ac. of N as A/S, N + 40 lb./ac. of P 2 and 20 lb./ac. of K 0 as Mur. Pot.

3. DESIGN:
   (i) R.B.D. (ii) (a) 12 plots/block; 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 30' x 9'. (b) 24' x 12'. (v) 3' x 3'. (vi) Yes. (vii) Nil.

4. GENERAL:
   (i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1959—N.A. (b) and (c) N.A. (v) N.A.

5. RESULTS:
   (i) 1315 lb./ac. (ii) 3395 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
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<th></th>
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<th>N 1</th>
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<th>S 2</th>
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</table>

S.E. of N or P marginal mean = 113.2 lb./ac.
S.E. of S marginal mean = 138.6 lb./ac.
S.E. of body of any table or T mean = 196.0 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Exptl. Farm, Kotah.
Ref: Rj. 55(38).
Type: ‘M’.

Object: To study the effect of catalysts, with and without F.Y.M. on Wheat yield.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) and (c) N.A. (ii) (a) Black soil. (b) N.A. (iii) 10.11.1955. (iv) (a) to (e) N.A. (v) Nil. (vi) RS. 31-1. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 22.3.1956.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 2 levels of F.Y.M.: F 0 = 0 and F 1 = 2 tons/ha.
   (2) 6 levels of chemicals: C 0 = 0, C 1 = 40 lb./ac. of catalyst, C 2 = 40 lb./ac. of catalyst, C 3 = 14 lb./ac. of Ferrous sulphate, C 4 = 28 lb./ac. of Ferrous sulphate and C 5 = 16 lb./ac. of Potassium permanganate.

Time and method of application—N.A.
3. DESIGN:
(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 14'×8'. (b) 12'×6'. (v) 1'×1'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—N.A. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
(i) 2939 lb./ac. (ii) 238.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
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<th></th>
<th>C₀</th>
<th>C₁</th>
<th>C₂</th>
<th>C₃</th>
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</tbody>
</table>

S.E. of C marginal mean = 97.1 lb./ac.
S.E. of F marginal mean = 56.0 lb./ac.,
S.E. of body of table = 137.3 lb./ac.

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Res. Farm, Makrera.
Ref :- Rj. 54(33).
Type :- 'M'.

Object :- To study the effect of different doses of N and P on the yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 16.11.1954. (iv) and (v) N.A. (vi) C—591. (vii) Irrigated. (viii) and (ix) N.A. (x) 15.3.1955.

2. TREATMENTS:
5 levels of N as A/S : N₀ = 0, N₁ = 20, N₂ = 40, N₃ = 60 and N₄ = 80 lb./ac.
Fertilizers were applied before cultivation by spraying.

3. DESIGN:
(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 33'×25'. (b) 28'×20'. (v) 2'×2'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain, (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS:
(i) 917 lb./ac. (ii) 248.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
<th>N₄</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>768</td>
<td>728</td>
<td>1100</td>
<td>1278</td>
<td>1012</td>
</tr>
</tbody>
</table>
| S.E./mean | 101.6 lb./ac.

Crop :- Wheat.
Site :- Govt. Agri. Res. Farm, Makrera.
Ref :- Rj. 55(15).
Type :- 'M'.

Object :- To study the effect of different levels of N and P on the yield of Wheat.
1. BASAL CONDITIONS:
(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 18.11.1955. (iv) and (v) N.A. (vi) C—591 (medium). (vii) Irrigated. (viii) and (ix) N.A. (x) 24.3.1956.

2. TREATMENTS:
5 treatments: \( M_0 = 0 \), \( M_1 = 20 \) lb./ac. of \( \text{N} \)+20 lb./ac. of \( \text{P}_2\text{O}_5 \), \( M_2 = 40 \) lb./ac. of \( \text{N}+40 \) lb./ac. of \( \text{P}_2\text{O}_5 \), \( M_3 = 60 \) lb./ac. of \( \text{N}+60 \) lb./ac. of \( \text{P}_2\text{O}_5 \) and \( M_4 = 60 \) lb./ac. of \( \text{N}+60 \) lb./ac. of \( \text{P}_2\text{O}_5 \).
N as A/S and \( \text{P}_2\text{O}_5 \) as Super were sprayed before sowing.

3. DESIGN:
(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 32' \times 18'. (b) 30' \times 16'. (v) 1' \times 1'. (vii) Yes.

4. GENERAL:
(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) to (c) N.A. (v) to (vi) Nil.

5. RESULTS:
(i) 620 lb./ac. (ii) 123.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
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<tr>
<th>Treatment</th>
<th>( M_0 )</th>
<th>( M_1 )</th>
<th>( M_2 )</th>
<th>( M_3 )</th>
<th>( M_4 )</th>
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<td>Av. yield</td>
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<td>542</td>
<td>604</td>
<td>744</td>
<td>808</td>
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<tr>
<td>S.E./mean</td>
<td>50.0</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Crop — Wheat (Rabi).
Site — Govt. Agric. Res. Farm, Makrera.

Object:—To study the effect of \( \text{N} \) in different forms on the yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 18.11.1955. (iv) and (v) N.A. (vi) C—591. (vii) Irrigated. (viii) and (ix) N.A. (x) 4.4.1956.

2. TREATMENTS:
5 treatments: \( A = \text{Control}, B = 30 \text{ lb./ac. of } \text{N as A/S}, C = 30 \text{ lb./ac. of } \text{N as compost}, D = 30 \text{ lb./ac. of } \text{N as FYM}, \) and \( E = 30 \text{ lb./ac. of } \text{N as oil cake} \).
Treatments were sprayed before sowing.

3. DESIGN:
(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 32' \times 18'. (b) 30' \times 16'. (v) 1' \times 1'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) to (c) N.A. (v) to (vi) Nil.

5. RESULTS:
(i) 1155 lb./ac. (ii) 313.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>( A )</th>
<th>( B )</th>
<th>( C )</th>
<th>( D )</th>
<th>( E )</th>
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</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1046</td>
<td>1254</td>
<td>1306</td>
<td>1166</td>
<td>1201</td>
</tr>
<tr>
<td>S.E./mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>127.9</td>
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</tbody>
</table>

Crop — Wheat.
Site — Govt. Agric. Res. Farm, Makrera.

Object:—To study the response to different sources of nitrogen on the yield of Wheat.
BASAL CONDITIONS:
(i) (a) Nil. (b) Man. (c) N.A. (d) Sandy loam. (b) N.A. (iii) 24.11.1955. (iv) (a) to (e) N.A. (v) N.A. (vi) C—59%. (vii) Irrigated. (viii) and (ix) N.A. (x) 15.3.1956.

2. TREATMENTS:
Same as in exp. no. 55(21) on page 24.

3. DESIGN:
(i) R.B.D. (ii) (a) N.A. (b) A. (iii) 6. (iv) (a) 32'x10'. (b) 30'x8'. (c) 1'x1'. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) No. (iii) Yield of grain. (iv) (a) to (c) N.A. (v) (a) Tadli. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
(i) 1954 lb./ac. (ii) 160 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
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<th>B</th>
<th>C</th>
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<td>1564</td>
<td>1671</td>
<td>1601</td>
<td>1708</td>
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<tr>
<td>S.E./mean</td>
<td>74.8 lb./ac.</td>
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</table>

Object:—To find the optimum dose of N and P alone in combination on Wheat.

1. BASAL CONDITIONS:
(i) (a) to (e) Nil. (ii) (a) Sandy. (b) N.A. (iii) 13.11.1954. (iv) (a) to (e) N.A. (v) Nil. (vi) C—59%: (medium). (vii) Irrigated. (viii) 1 weedling. (b) N.A. (x) 30.3.1955.

2. TREATMENTS:
All combinations of (1), (2) and (3)
(1) 3 levels of N as P.Y.M.: F₀ = 0, F₁ = 30 and F₂ = 50 lb./ac.
(2) 3 levels of N as A/S: N₀ = 0, N₁ = 20 and N₂ = 30 lb./ac.
(3) 3 levels of F₀/F₂ on super : F₀ = 0, F₁ = 25 and F₂ = 50 lb./ac.
Time and method of application N.A.

3. DESIGN:
(i) Focc. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 6. (iv) (a) 20'x15'. (b) 18'x12'. (v) 1'x14'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) to (c) Nil. (v) (a) Basalt. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
(i) 1979 lb./ac. (ii) 740.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
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<tr>
<td>1932</td>
<td>2104</td>
<td>1645</td>
</tr>
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<td>2314</td>
<td>2233</td>
<td>1979</td>
</tr>
<tr>
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<td>2085</td>
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<tr>
<td>1803</td>
<td>1903</td>
<td>1777</td>
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</table>
Crop:- Wheat.
Site:- Govt. Agri. Exptl. Farm, Mandore.

Objec--To find out the optimum dosage of nitrogenous and phosphatic fertilizers alone and in combination on Wheat.

1. BASAL CONDITIONS:
   (i) (a) Gram—Wheat. (b) Guar. (c) Nil. (ii) (a) Sandy. (b) N.A. (iii) 14.11.1954. (iv) (a) 4 ploughings. (b) N.A. (c) 40 lb./ac. (d) 5" between rows. (e) N.A. (v) Nil. (vi) C—596 (medium). (vii) Irrigated. (viii) and (ix) N.A. (x) 25.3.1955.

2. TREATMENTS:
   Same as in exp. no. 54(16) on page 25

3. DESIGN:
   (i) Fact. in R. B. D. (ii) (a) 27. (b) N.A. (iii) 4. (iv) (a) 22'×15'. (b) 18'×15'. (c) 5'×15'. (v) Yes.

4. GENERAL:
   (i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—contd. (b) No. (c) N.R. (v) (a) Basal. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
   (i) 1999 lb./ac. (ii) 245.7 lb./ac. (iii) None of the effects is significant. (iv) Ave. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>F₀</th>
<th>F₁</th>
<th>F₂</th>
<th>Mean</th>
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<td>1999</td>
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<td>1992</td>
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<td>1981</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

S.E. of any marginal mean = 40.9 lb./ac.
S.E. of body of any table = 70.9 lb./ac.
2. TREATMENTS:

All combinations of (1) and (2) + a control.
(1) 5 trace elements: \(T_1=\text{Borax}, T_2=\text{Ferrous sulphate}, T_3=\text{Copper sulphate}, T_4=\text{Magnesium sulphate}, T_5=\text{Zinc sulphate}.
(2) 3 levels of trace elements: \(L_1=5, L_2=10\) and \(L_3=20\) lb/ac.

3. DESIGN:

(i) R.B.D. (ii) 16. (b) N.A. (iii) 3. (iv) (a) 27\(3'\times15'\), (b) 24\(3'\times12'\). (v) 1'\times1''. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) to (c) N.A. (v) (a) Kotah. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:

(i) 2816 lb/ac. (ii) 275.6 lb/ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th></th>
<th>(T_1)</th>
<th>(T_2)</th>
<th>(T_3)</th>
<th>(T_4)</th>
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<td>2754</td>
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<td>2754</td>
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<tr>
<td>Mean</td>
<td>2865</td>
<td>2609</td>
<td>2897</td>
<td>2773</td>
<td>3020</td>
</tr>
</tbody>
</table>

S.E. of marginal mean = \(91.9\) lb/ac.
S.E. of body of table or control mean = \(159.1\) lb/ac.

Crop = Wheat (Rabi).
Site = Govt. Agri. Exptl. Farm, Mandore.
Object:—To study the effect of trace-elements on yield of Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Jowar. (c) Nil. (iii) (a) Sandy. (b) N.A. (iii) 10.11.1956. (iv) (a) 4 ploughings with disc harrow and 1 levelling. (b) N.A. (c) 40 srs/ac. (d) 5' between rows. (e) N.A. (v) Nil. (vi) C-591 (medium). (vii) Irrigated. (viii) Weeding. (ix) N.A. (a) 30, 31.3.1957.

2. TREATMENTS:

All combinations of (1) and (2) + 2 controls.
(1) 5 trace elements: \(T_1=\text{Borax}, T_2=\text{Ferrous sulphate}, T_3=\text{Copper sulphate}, T_4=\text{Magnesium sulphate}, T_5=\text{Zinc sulphate and} \ T_6=\text{Ammonium sulphate}.
(2) 3 levels of trace elements: \(L_1=5, L_2=10\) and \(L_3=20\) lb/ac.
Treatments were mixed with soil and sprayed before sowing.

3. DESIGN:

(i) R.B.D. (ii) (a) 20. (b) N.A. (iii) 3. (iv) (a) 30\(3'\times18'\). (b) 24\(3'\times12'\). (v) \(3'\times3'\). (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—cond. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 1243 lb/ac. (ii) 249.3 lb/ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb/ac.
Crop: Wheat (Rabi).  
Site: Govt. Agri. Exptl. Farm, Mandore.  
Ref: Rj. 55(42).  
Type: M'.

Object: To study the effect of trace elements on the yield of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Bajra. (c) Nil. (ii) (a) Sandy. (b) N.A. (iii) 13.11.1955. (iv) (a) 4—5 ploughings. (b) N.A. (c) 40 yrs./ac. (d) 9" between rows. (e) N.A. (v) Nil. (vi) RS—31(early). (vii) Irrigated. (viii) 4 weedings. (ix) N.A. (x) 10.3.1956.

2. TREATMENTS:
   All combinations of (1) and (2) + one control.
   (1) 5 trace-elements: $T_1$ = Borax, $T_2$ = Ferrous sulphate, $T_3$ = Copper sulphate, $T_4$ = Magnesium sulphate and $T_5$ = Zinc sulphate.
   (2) 3 levels of trace-elements: $L_1$ = 5, $L_2$ = 10 and $L_3$ = 20 lb./ac.
   The chemicals were sprayed.

3. DESIGN:
   (i) R.B.D. (ii) 16. (b) N.A. (iii) 3. (iv) (a) 26'x17'. (b) 20'x11'. (v) 3'x3'. (vi) Yes.

4. GENERAL:
   (i) Normal. (ii) Slight infection of rust. (iii) Yield of grain. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) Kotah. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
   (i) 2592 lb./ac. (ii) 4844 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
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<th></th>
<th>$T_1$</th>
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<td>2676</td>
<td>2475</td>
<td>2650</td>
<td>2684</td>
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</tbody>
</table>

S.E. of $T$ marginal mean = 161.6 lb./ac.
S.E. of body of table of control mean = 280.0 lb./ac.
Crop : Wheat (Rabi).
Site : Govt. Agrl. Exp. Farm, Mandore.
Object : To study the effect of different trace-elements at different levels on Wheat yield.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy. (b) N.A. (iii) 9.11.1957. (iv) (a) 6 ploughings. (b) Drilling. (c) 50 srs./ac. (d) 12" between rows. (e) N.A. (v) 30 lb./ac. of N+30 lb./ac. of P₂O₅ . (vi) C—591 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 1st week of April, 1958.

2. TREATMENTS :
   All combinations of (1) and (2)+one control.
   (1) 5 trace-elements : T₁=Borax, T₂=Ferrous sulphate, T₃=Copper sulphate, T₄=Magnesium sulphate and T₅=Zinc sulphate.
   (2) 3 levels of trace-elements : L₁=5, L₂=10 and L₃=15 lb./ac.

   Treatments were sprayed.

3. DESIGN :
   (i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 2. (iv) (a) and (b) 24°3′×12′. (v) Nil. (vi) Yes.

4. GENERAL :
   (i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :
   (i) 1104 lb./ac. (ii) 584.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Crop : Wheat (Rabi).
Site : Govt. Agrl. Exp. Farm, Mandore.
Object : To study the effect of different trace-elements on the yield of Wheat.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy. (b) N.A. (iii) 11.11.1956. (iv) (a) 4 ploughings. (b) Drilling. (c) 40 srs./ac. (d) 9° between rows. (e) N.A. (vi) RS 31—1. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 28.3 1957.

2. TREATMENTS :
   Same as in exp. no. 55(42) on page 28.

3. DESIGN :
   (i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 3. (iv) (a) 27°3′×15′. (b) 24°3′×12′. (v) 14′×14′. (vi) Yes.

4. GENERAL :
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :
   (i) 1099 lb./ac. (ii) 238.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

   Control = 1114 lb./ac.

<table>
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S.E of T marginal mean = 86.1 lb./ac.
S.E of body of table or control mean = 149.1 lb./ac.
Object :—To study the effect of trace elements on the yield of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 8.11.1958. (iv) (a) 9 ploughings. (b) Drilling. (c) 80 lb./ac. (d) 9' between rows (e) N.A. (v) 30 lb./ac. of N as A/S+30 lb./ac. of P₂O₅
   as Super. (vi) RS. (vii) Irrigated. (viii) N.A. (ix) 1.10.58. (x) 7.4.1959.

2. TREATMENTS and 3. DESIGN:
   Same as in expr. no. 57(42) on page 29

4. GENERAL:
   (i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—contd. (treatment changed in 1957). (b) No. (c) Nil. (v) to (vii) N.A.

5. RESULTS:
   (i) 303 lb./ac. (ii) 404.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

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</table>

S.E. of T marginal mean = 194.8 lb./ac.
S.E. of body of table or control mean = 337.0 lb./ac.

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

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Sandy. (b) N.A. (iii) 18.11.1959. (iv) (a) 9 ploughings. (b) Drilling. (c) 80 lb./ac. (d) 9' between rows (e) N.A. (v) 30 lb./ac. of N as A/S+30 lb./ac. of P₂O₅
   as Super. (vi) C—591. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 27.3 1960

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S.E. of T marginal mean = 134.9 lb./ac.
S.E. of body of table or control mean = 233.6 lb./ac.
2. TREATMENTS and 3. DESIGN:
Same as in capt. no. 57(42) on page 29

4. GENERAL:
(i) Geed. (ii) No. (iii) Yield of grain. (iv) (a) 1955—contd. (treatments changed in 1957). (b) No. (c) Nil. (v) N.A.

5. RESULTS:
(i) 407.9 lb./ac. (ii) 303.7 lb./ac. (iii) Only control vs. treatment is significant. (iv) Av. yield of grain in lb./ac.

Control = 622 lb./ac.

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S.E. of T marginal mean = 101.2 lb./ac.
S.E. of body of table or control mean = 175.4 lb./ac.

Crop := Wheat (*Rabi*).

Site := Govt. Agri. Exptl. Farm, Mandore.

Type := "M".

Object := To study the effect of different types of nitrogenous fertilizers at different levels with P and K.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 14.11.1958. (iv) (a) 7 ploughings. (b) Drilling. (c) 80 lb./ac. (d) 9' between rows. (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) C—591. (vii) Irrigated. (viii) 1 weeding. (ix) 1.10' (x) 5, 6.4.1959.

2. TREATMENTS:
   All combinations of (1), (2) and (3)+3 extra treatments.
   (i) 3 sources of N: S1=A/S, S2=A/S/N and S3=Urea.
   (2) 3 levels of N: N0=0, N1=20 and N2=40 lb./ac.
   (3) 3 levels of P205 as Super: P205-N0-P1-P2=20 and P3-P4=40 lb./ac.
   3 extra treatments: T1=40 lb./ac. of N as A/S+40 lb./ac. of P2O5 as Super+20 lb./ac. of K2O as Mur. Pot., T2=40 lb./ac. of N as A/S+N+40 lb./ac. of P2O5 as Super+40 lb./ac. of K2O as Mur. Pot. and T3=40 lb./ac. of N as Urea+40 lb./ac. of P2O5 as Super+20 lb./ac. of K2O as Mur. Pot.
   T1, T2 and T3 are repeated in each block. Time and method of application N.A.

3. DESIGN:
   (i) R.B.D. (ii) (a) 12 plots/block; 3 blocks/application. (b) N.A. (iii) 1. (iv) (a) 30°3'x18'. (b) 24°3'x12'. (v) 3'x3'. (vi) Yes.

4. GENERAL:
   (i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1958—contd. (b) N.A. (c) Nil. (v) to (vii) N.A.

5. RESULTS:
   (i) 1295 lb./ac. (ii) 266.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.
$T_1 = 1026 \, \text{lb./ac.}, \quad T_2 = 1142 \, \text{lb./ac.}, \quad \text{and} \quad T_3 = 1001 \, \text{lb./ac.}$

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S.E. of N or P marginal mean = 88.9 lb./ac.
S.E. of S marginal mean = 106.9 lb./ac.
S.E. of body of any table or T mean = 154.0 lb./ac.

---

**Crop**: Wheat (Rabi).

**Site**: Govt. Agri. Exptl. Farm, Mandore.

**Ref**: Rj. 59(67).

**Type**: 'M'.

Object—To study the effect of different types of nitrogenous fertilizers at different levels with P and K.

1. **BASAL CONDITIONS**:
   (i) (a) Nil. (b) Fallow. (c) Nil. (d) (a) Sandy loam. (b) N.A. (iii) 17.11.1959. (iv) (a) 8 ploughings. (b) Drilling. (c) 40 yrs./ac. (d) 9° between rows. (e) N.A. (v) 5000 lb./ac. of FYM. (vi) C—591. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 27.3.1960.

2. **TREATMENTS** to 4. **GENERAL**
   Same as in exp. no. 58(44) on page 31

5. **RESULTS**:
   (i) 1788 lb./ac. (ii) 207.1 lb./ac. (iii) Only T treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

$T_1 = 2066, \quad T_2 = 1912 \, \text{and} \quad T_3 = 1360 \, \text{lb./ac.}$

<table>
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<th>$N_2$</th>
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S.E. of N or P marginal mean = 69.0 lb./ac.
S.E. of S marginal mean = 84.6 lb./ac.
S.E. of body of any table or T mean = 119.6 lb./ac.
Crop = Wheat (Rabi).
Site = Govt. Agril. Expnl. Farm, Mandore.

Ref = Rj. 54(27).
Type = 'M'.

Object = To study the effect of different doses of P on Moong and its subsequent effect on Wheat.

1. BASAL CONDITIONS:
   (i) (a) Moong = Wheat. (b) Moong. (c) Nil. (d) (a) Sandy. (b) N.A. (ii) 15.11.1954. (iv) (a) to (c) N.A. (v) Nil. (vi) C=591 (medium). (vii) Unirrigated. (viii) and (ix) N.A. (x) 18.3.1955.

2. TREATMENTS:
   All combinations of (1) and (2) and one control
   (1) 2 sources of P:
   (a) P<sub>1</sub> = Super and P<sub>1</sub> = B.M.
   (3) 3 levels of P:
   (a) P<sub>1</sub> = 50, P<sub>2</sub> = 100 and P<sub>3</sub> = 150 lb./ac.
   Fertilizers sprayed at the time of cultivation of Moong crop.

3. DESIGN:
   (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 275' x 21'. (b) 24'3" x 18'. (v) 17' x 14'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—1955. (b) Yes. (c) Nil. (d) to (vii) Nil.

5. RESULTS:
   (i) 1105 lb./ac. (ii) 63.2 lb./ac. (iii) Main effects of P and 'control vs. others' are highly significant. Main effects of S are highly significant. (iv) Av. yield of grain in lb./ac.

   Control = 852 lb./ac.

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<th>P&lt;sub&gt;2&lt;/sub&gt;</th>
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</table>

S.E. of P marginal mean = 22.3 lb./ac.
S.E. of S marginal mean = 18.2 lb./ac.
S.E. of body of table or control mean = 31.6 lb./ac.

Crop = Wheat (Rabi).
Site = Govt. Agril. Expnl. Farm, Mandore.

Ref = Rj. 54(2).
Type = 'M'.

Object = To study the response of wheat the catalyst treatments.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Fallow. (c) No. (ii) (a) Sandy. (b) N.A. (iii) 3.11.1954. (iv) (a) 4 ploughings. (b) Drilling. (c) 40 lb./ac. (d) 9" between rows. (e) N.A. (v) Nil. (vi) C=591. (vii) Irrigated. (viii) and (ix) N.A. (x) 1.4.1955.

2. TREATMENTS:
   All combinations of (1) and (2).
   (1) 7 chemicals:
   C<sub>0</sub> = No catalyst, C<sub>1</sub> = Catalyst at 40 lb./ac., C<sub>2</sub> = Catalyst at 80 lb./ac., C<sub>3</sub> = Ferrous sulphate at 14 lb./ac., C<sub>4</sub> = Ferrous sulphate at 28 lb./ac., C<sub>5</sub> = Pot. Permanganate at 8 lb./ac. and C<sub>6</sub> = Pot. Permanganate at 16 lb./ac.
   (2) 2 levels of FYM at basal dressing: F<sub>0</sub> = 0, and F<sub>1</sub> = 2 tons/ac.
   Time and method of application = N.A.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 15' x 9'. (b) 12' x 6'. (v) 17' x 14'. (vi) Yes.
4. GENERAL:
(i) Geod. (ii) N.A. (iii) Yield of grain. (iv) (a) 1952—N.A. (b) No. (c) Nil. (v) (a) Basal... (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
(i) 1257 lb./ac. (ii) 487.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

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S.E. of C marginal mean = 199.1 lb./ac.
S.E. of F marginal mean = 106.4 lb./ac.
S.E. of body of table = 211.6 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Exptl. Farm, Mandore.
Ref: Rj. 55(39).
Type: 'M'.

Object: To study the response of Wheat to catalyst treatments.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Bajra. (c) Nil. (ii) (a) Sandy. (b) N.A. (iii) 12.10.1955. (iv) (a) 4 to 5 ploughings. (b) N.A. (c) 40 yrs., etc. (d) 9° between rows. (e) N.A. (f) Nil. (vi) RS—31 (early). (vii) Irrigated. (viii) and (ix) N.A. (x) 7.4.1956.

2. TREATMENTS:
All combinations of (1) and (2)
(1) 6 chemical treatments: C0=No catalyst, C1=40 lb./ac. of catalyst, C2=80 lb./ac. of catalyst, C3=14 lb./ac. of ferrous sulphate, C4=28 lb./ac. of ferrous sulphate and C5=Potassium permanganate at 16 lb./ac.
(2) 2 levels of F.Y.M. : F0=0, F1=2 tons/ac.

Time and method of application N.A.

3. DESIGN:
(i) Fact. in R.B.D. (ii) 12. (b) N.A. (iii) 3. (iv) (a) 15'x9'. (b) 12'x6'. (v) 1.5'x1.5'. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1952—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
(i) 1067 lb./ac. (ii) 303.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

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S.E. of C marginal mean = 123.7 lb./ac.
S.E. of F marginal mean = 71.4 lb./ac.
S.E. of body of table = 175.0 lb./ac.
Crop :- Wheat (Rabi).
Site :- Govt. Agri. Expnl. Farm, Mandore.

Object :- To study the response of Wheat to catalyst treatments.

1. BASAL CONDITIONS:
   (i) (a) Nil. (c) Fallow. (e) Nil. (ii) (a) Sandy. (b) N.A. (iii) 11.11.1956. (iv) (a) 3 ploughings with disc harrow. (b) N.A. (c) 40 sm. acc. (d) 9' between rows. (e) N.A. (v) Nil. (vi) RS. 31-1. (vii) Irrigated. (viii) 2 weeding. (ix) N.A. (x) 27.3.1957.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 6 chemicals : 
   - C0 = No catalyst, 
   - C1 = Catalyst at 40 lb./ac., 
   - C2 = Catalyst at 80 lb./ac., 
   - C3 = Ferrous sulphate at 14 lb./ac., 
   - C4 = Ferrous sulphate at 28 lb./ac. and 
   - C5 = Potassium Permanadate at 14 lb./ac.
   (2) 2 levels of F.Y.M. : F0 = 0, and F1 = 2 tons/ac.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) 24' x 12'. (v) Nil. (vi) Yes. (vii) Nil.

4. GENERAL:
   (i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1952-N.A. (b) No. (c) Nil. (v) to(vii) Nil.

5. RESULTS:
   (i) 1067 lb./ac. (ii) 380.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

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</table>

S.E. of F marginal mean = 89.6 lb./ac.
S.E. of C marginal mean = 155.2 lb./ac.
S.E. of body of table = 219.5 lb./ac.

Crop :- Wheat (Rabi).
Site :- Govt. Agrl. Expnl. Farm, Sriganganagar.

Object :- To find out the effect of different doses of nitrogenous and phosphatic fertilizers on the yield of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy. (b) N.A. (iii) 23.11.1954. (iv) (a) to (e) N.A. (v) Nil. (vi) C = 591. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 26.4.1955.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 5 levels of N from two sources : 
   - N0 = 0, N1 = 20 lb./ac. of N as A/S, 
   - N2 = 40 lb./ac. of N as A/S, 
   - N3 = 40 lb./ac. of N as Urea and 
   - N4 = 40 lb./ac. of N as Urea.
   (2) 2 levels of P2O5 from two sources : 
   - P0 = 0, P1 = 25 lb./ac. of P2O5 as Super, 
   - P2 = 40 lb./ac. of P2O5 as 
   - Super, P3 = 25 lb./ac. of P2O5 as B.M. and 
   - P4 = 40 lb./ac. of P2O5 as B.M.

   Time and method of application N.A.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 25. (b) N.A. (iii) 4. (iv) (a) 22' x 15'. (b) 19' x 12'. (v) H' x H'. (vi) Yes.
4. GENERAL:

(i) Normal. (ii) No. (iii) Yield of grain. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) Durgapura. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:

(i) 2139 lb./ac. (ii) 510.4 lb./ac. (iii) Only main effects of N are highly significant. (iv) Av. yield of grain in lb./ac.

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Mean 1621 1945 2236 2267 2526 2139

S.E. of any marginal mean = 114.1 lb./ac.
S.E. of body of table = 255.2 lb./ac.

---

Crop : Wheat (Rabi).
Site : Govt. Agri. Exptl. Farm, Sriganganagar.
Type : Rj. 55(27).
Object : To study the effect of nitrogenous and phosphatic fertilizers on the yield of Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Bajra. (c) Nil. (ii) (a) Sandy. (b) N.A. (iii) 15.11.1955. (iv) (a) to (e) N.A. (v) Nil. (vi) C—591 (medium). (vii) Irrigated. (viii) and (ix) N.A. (x) 4.5.1956.

2. TREATMENTS:

All combinations of (1) and (2)

(1) 5 levels of N from 2 sources : N₁=0, N₂=20 lb./ac. of N as A/S, N₃=40 lb./ac. of N as A/S, N₄=20 lb./ac. of N as Urea and N₅=40 lb./ac. of N as Urea.

(2) 3 levels of P₂O₅ as Super : P₀=0, P₁=25 and P₂=40 lb./ac.

Time and method of application N.A.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) (a) 30' 3° x 24'. (b) 24' 3° x 18'. (v) 3° x 3°. (vi) Yes.

4. GENERAL:

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

5. RESULTS:

(i) 1921 lb./ac. (ii) 150.3 lb./ac. (iii) Main effects of N and interaction N×P are significant. (iv) Av. yield of grain in lb./ac.

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Mean 1745 1892 1973 2029 1967 1921
Crop: Wheat (Rahi).
Site: Govt. Agri. Exp. Farm, Sripoganasagar.
Ref: Rj. 58(45).
Type: 'M'.

Object: To study the effect of different sources and levels of N in combinations with P and K on the yield of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Cotton. (c) Nil. (d) (a) Sand. (b) N.A. (iii) 17.1.1958. (iv) (a) 3 ploughings. (b) Drilling. (c) 32 mm./ac. (d) 9' between rows. (e) N.A. (v) 5000 lb./ac. of P.Y.M. (vi) C—59. (vii) Irrigated. (viii) Weeding and hoeing. (ix) F.A. (x) 22, 23.4.1959.

2. TREATMENTS:
   All combinations of (1), (2) and (3)+3 extra treatments.
   (1) 3 sources of N: S1=A/S, S2=A/C and S3=Urea.
   (2) 3 levels of N: N1=0, N2=20 and N3=40 lb./ac.
   (3) 3 levels of P0K0 as Super: P0=0, P1=20 and P2=40 lb./ac.
   3 extra treatments: T1=40 lb./ac. of N as A/S+40 lb./ac. of P0K0 as Super+20 lb./ac. of K2O as Mur. Pot., T2=40 lb./ac. of N as A/C+40 lb./ac. of P0K0 as Super+20 lb./ac. of K2O as Mur. Pot. and T3=40 lb./ac. of N as Urea+40 lb./ac. of P0K0 as Super+20 lb./ac. of K2O as Mur. Pot.

3. DESIGN:
   (i) R.B.D. (ii) (a) 12 plots/block; 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 30'×30'. (b) 26'4'×16'6'. (v) 2'×8'. (vi) Yes.

4. GENERAL:
   (i) Normal. (ii) Slight attack of rust and smut. (iii) Yield of grain. (iv) (a) 1958—N.A. (b) and (c) N.A. (v) to (vii) N.A.

5. RESULTS:
   (i) 1444 lb./ac. (ii) 296.9 lb./ac. (iii) Only main effect of N is significant. (iv) Av. yield of grain in lb./ac.

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S.E. of N or P marginal mean = 99.0 lb./ac.
S.E. of S marginal mean = 121.2 lb./ac.
S.E. of body of any table or T means = 171.4 lb./ac.
Object:—To study the effect of different sources and levels of N in combinations with P and K on the yield of Wheat.

1. BASAL CONDITIONS:

   (i) (a) Nil. (b) Sugarcane. (c) Nil.  
   (ii) (a) Sandy.  
   (iii) 2.11.1959.  
   (iv) (a) 4 ploughings.  
   Drilling. (a) 40 cm. across. (b) 9" between rows. 
   (c) 40 srs./ac. (d) 9'. (e) 40 lb./ac. of F.Y.M. (f) C-591. (g) Unirrigated. (h) 3 weedings. (i) N.A. (j) 14, 15 and 16.4.1960.

2. TREATMENTS:

   All combinations of (1), (2) and (3)+3 extra treatments.  
   (1) 3 sources of N: S₁ = A/S, S₂ = A/S/N and S₃ = Urea.  
   (2) 3 levels of N: N₀ = 0, N₁ = 20 lb./ac. and N₂ = 40 lb./ac.  
   (3) 3 levels of P₂₀ as Super: P₁₀ = 0, P₂₀ = 20 and P₃₀ = 40 lb./ac. 
   3 extra treatments: T₁₀ = 40 lb./ac. of N as A/S+40 lb./ac. of P₂₀ as Super+20 lb./ac. of K₂₀ as Mur. Pot. T₂₀ = 40 lb./ac. of N as A/S+40 lb./ac. of P₂₀ as Super+20 lb./ac. of K₂₀ as Mur. Pot. and T₃₀ = 40 lb./ac. of N as Urea+40 lb./ac. of P₂₀ as Super+20 lb./ac. of K₂₀ as Mur. Pot.

3. DESIGN:

   (i) R.B.D. (ii) (a) 12 plots/block; 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 30'4"X18', (b) 26'4"X16'6". (v) 2'X9'. (vi) Yes.

4. GENERAL:

   (i) Normal (ii) No. (iii) Yield of grain. (iv) (a) 1958—contd. (b) and (c) N.A. (v) to (vii) N.A.

5. RESULTS:

   (i) 1856 lb./ac. (ii) 317.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac. 

   \[
   T₁ = 1729 \text{ lb./ac.} \quad T₂ = 2170 \text{ lb./ac.} \quad T₃ = 2414 \text{ lb./ac.}
   \]

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</table>

   Mean: 1461 1911 2111 1828 1641 1955 1847

   S.E. of N or P marginal mean = 129.2 lb./ac.
   S.E. of S marginal mean = 158.2 lb./ac.
   S.E. of body of any table or T mean = 223.8 lb./ac.

Object:—To study the effect of C/N alone and in combination with Super on the yield of Wheat.

1. BASAL CONDITIONS:

   (i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy. (b) N.A. (iii) 13.11.1955. (iv) (a) to (e) N.A. (v) Nil. (vi) C—591 (medium). (vii) Unirrigated. (viii) and (ix) N.A. (x) 4.5.1956.
2. TREATMENTS:

All combinations of (1) and (2)
(1) 3 levels of N as C/N: N0=0, N1=20 and N2=40 lb/ac.
(2) 3 levels of P as Super: P0=0, P1=20 and P2=40 lb/ac.
Treatments were mixed with soil and applied before sowing.

3. DESIGN:

(i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 30'3"x24'. (b) 24'3"x18'. (v) 3'x3'. (vi) Yes.

4. GENERAL:

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

5. RESULTS:

(i) 2165 lb/ac. (ii) 263.6 lb/ac. (iii) Only main effect of P is highly significant. (iv) Av. yield of grain in lb/ac.

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S.E. of N or P marginal mean = 76.2 lb/ac.
S.E. of body of table = 131.8 lb/ac.
Crop: Wheat (Rabi).
Site: Govt. Agri. Exptl. Farm, Sriganganagar.

Object: To study the effect of trace elements on Wheat.

1. BASAL CONDITIONS:
   (a) Nil. (b) Har. (c) Nil. (d) (a) Sandy. (b) N.A. (ii) 13.11.1955. (iv) (a) to (e) N.A. (v) N.A. (vi) C—591 (medium). (vii) Irrigated (viii) Hand hoeing (ix) N.A. (x) 4.5.1956.

2. TREATMENTS:
   Same as in expt. no. 54(25) on page 39

3. DESIGN:
   (i) R.B.D. (ii) 16. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 20' x 11'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Y. 50—N.A. (b) N.a. (c) Nil. (d) N.A. (e) N.A. (f) N.A. (g) N.A. (h) N.A. (i) N.A. (j) N.A. (k) N.A. (l) 4.5.1956.

5. RESULTS:
   (i) 1605 lb./ac. (ii) 260.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

   Control = 1764 lb./ac.

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</table>

S.E. of T marginal mean = 86.9 lb./ac.
S.E. of body of table or control mean = 150.6 lb./ac.

---

Crop: Wheat (Rabi).
Site: Govt. Agri. Exptl. Farm, Sriganganagar.

Object: To study the effect of green manuring with guar on succeeding Wheat crop.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Guar. (c) N.A. (d) (a) Sandy. (b) N.A. (ii) 10.11.1956. (iv) (a) Disc harrowing and beaming. (b) N.A. (c) 40 rts./ac. (d) and (e) N.A. (v) N.A. (vi) C—591 (medium). (vii) Irrigated. (viii) to (a) N.A. (v) 5.5.1957.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 4 timings of burying of guar crop: T0=0, T1=65, T2=60 and T3=75 days of sowing of guar crop.
   (2) 4 levels of P2O5 as Super : P0=0, P1=50, P2=100 and P3=150 lb./ac.
   Time and method of application N.A.
3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 3. (iv) (a) 27'3"x15'. (b) 24'3"x12'. (v) 11'x11'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
   (i) 1373 lb./ac. (ii) 511.4 lb./ac. (iii) Only main effect of T is significant. (iv) Av. yield of grain in lb./ac.

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S.E. of P or T marginal mean = 147.6 lb./ac.
S.E. of body of table = 295.2 lb./ac.

Crop = Wheat (Rabi).
Site = Govt. Agri. Res. Farm, Tahiji.

Ref.: Rj. 54(30).
Type: 'M'.

Object:—To study the effect of different sources of P with N on the yield of Wheat.

1. BASAL CONDITIONS:
   (i) (a) to (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 14.11.1954. (iv) (a) to (e) N.A. (v) N.A. (v)
   C—591. (vi) Irrigated. (vii) to (x) N.A.

2. TREATMENTS:
   All combinations of (1) and (2)+one control.
   (1) 2 sources of P₂O₅: S₁=B.M. and S₂=Super.
   (2) 3 levels of P₂O₅: P₁=40, P₂=60 and P₃=80 lb./ac.

3. DESIGN:
   (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 33'x19'. (b) 30'x16'. (v) 11'x11'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) No. (iii) Yield of grain. (iv) (a) N.A. (b) No. (c) Nil. (v) (a) Makrera. (b) Nil. (v)
   to (vii) Nil.

5. RESULTS:
   (i) 1170 lb./ac. (ii) 229.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

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Object:—To study the effect of different levels of N on the yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 8.11.1954. (iv) (a) to (e) N.A. (v) Nil. (vi) C—59. (vii) Irrigated. (viii) and (ix) N.A. (x) 31.3.1955.

2. TREATMENTS:
5 levels of N as A/S: N₀=0, N₁=20, N₂=40, N₃=60 and N₄=80 lb./ac. Fertilizers were sprayed before cultivation.

3. DESIGN:
(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 33’x19’. (b) 30’x16’. (v) 1’x1’. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) Makrera, (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
(i) 133 lb./ac. (ii) 267 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
<th>N₄</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1291</td>
<td>1286</td>
<td>1343</td>
<td>1329</td>
<td>1218</td>
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<tr>
<td>S.E./mean</td>
<td>116.5 lb./ac.</td>
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Crop:—Wheat (Rabi).
Site:—Govt. Agri. Res. Farm, Tabiji.
Ref:—Rj. 54(31).
Type:—‘M’.
Crop: Wheat (Rabi),

Site: Govt. Agri. Res. Farm, Tabijji.

Object: To study the effect of different levels of N and P on the yield of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.11.1954. (iv) (a) to (e) N.A. (v) Nil. (vi) C=991. (vii) 2 weedings. (ix) N.A. (x) 1.2.1955.

2. TREATMENTS:
   7 manurial treatments:
   - M₀ = Control
   - M₁ = 50 lb./ac. of N as A/S
   - M₂ = 50 lb./ac. of N as compost
   - M₃ = 50 lb./ac. of P₂O₅ as Super
   - M₄ = 50 lb./ac. of N as compost + 120 lb./ac. of P₂O₅ as Super
   Fertilizers were sprayed before cultivation.

3. DESIGN:
   (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 18’ X 32’. (b) 16’ X 30’. (v) 1’ X 1’. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) YIELD of grain. (iv) (a) N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
   (i) 1071 lb./ac. (ii) 146.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>S.E./mean</th>
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<td>Av. yield</td>
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<td>1087</td>
<td>977</td>
<td>977</td>
<td>1208</td>
<td>1092</td>
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</table>

S.E./mean = 73.4 lb./ac.
4. GENERAL:
(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) 1957—N.A. (b) and (c) N.A. (v) to (vii) N.A.

5. RESULTS:
(i) 774 lb./ac. (ii) 280.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

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<tr>
<th></th>
<th>C_0</th>
<th>C_1</th>
<th>C_2</th>
<th>C_3</th>
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<td>649</td>
<td>801</td>
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<td>782</td>
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<td>750</td>
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<td>871</td>
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<tr>
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<td>814</td>
<td>795</td>
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<td>774</td>
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S.E. of C marginal mean = 140.3 lb./ac.
S.E. of F marginal mean = 75.0 lb./ac.
S.E. of body of table = 198.4 lb./ac.

Crop :- Wheat (Rabi).
Ref :- Rj. 58(17).
Site :- Govt. Agri. Res. Farm, Tabiji.
Type :- ‘M’.

Object :- To study the effect of different catalysts with and without F.Y.M. on the yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 27, 28.11.1958 and 1.12.1958. (iv) (a) 6 ploughings. (b) Drilling. (c) 80 lb./ac. (d) 9’ between rows. (e) —. (v) N.A. (vi) R.S. 31—1. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 7.4.1959.

2. TREATMENTS:
Same as in expt. no. 57 (11) on page 43

3. DESIGN:
(i) Fact in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 30'3"x18'. (b) 24'3"x12'. (v) 3'x3'. (vi) Yes.

4. GENERAL:
(i) Poor (ii) Nil. (iii) Yield of grain. (iv) (a) 1957—N.A. (b) and (c) N.A. (v) to (vii) N.A.

5. RESULTS:
(i) 1913 lb./ac. (ii) 209.6 lb./ac. (iii) Only main effect of C is significant. (iv) Av. yield of grain in lb./ac.

<table>
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<tr>
<th></th>
<th>C_0</th>
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<th>C_2</th>
<th>C_3</th>
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<td>1913</td>
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S.E. of C marginal mean = 85.6 lb./ac.
S.E. of F marginal mean = 45.7 lb./ac.
S.E. of body of table = 121.0 lb./ac.

Crop :- Wheat (Rabi).
Ref :- Rj. 56(MAE).
Site :- Govt. Agri. Farm, Sonipat.
Type :- ‘M’.

Object :- Type II—To study the effect of N, P, K and F.Y.M. on Wheat.
1. BASAL CONDITIONS:
(i) (a) Cotton—Sesji—Maize—Wheat. (b) Maize. (c) As per treatments. (ii) (a) Sandy. (b) N.A. (iii) 17 to 23-Nov.1956. (iv) (a) 2 disc-harrowings, cross-wise and one beamings a week before sowing. (b) N.A. (c) 70 lb./ac. (d) 9' to 12' between rows. (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) 6.82'. (x) 6 to 15 May, 1957.

2. TREATMENTS:
All combinations of (1), (2), (3) and (4).
(1) 3 levels of N as A/S: N₀ = 0, N₁ = 20 and N₂ = 40 lb./ac.
(2) 3 levels of P₀ as Triple-Sulphate: P₀ = 0, P₁ = 20 and P₂ = 40 lb./ac.
(3) 3 levels of K₀ as Pot. Sulphate: K₀ = 0, K₁ = 20 and K₂ = 40 lb./ac.
(4) 2 levels of F.Y.M.: F₀ = 0 and F₁ = 5000 lb./ac.

3. DESIGN:
(i) 3² x 2 fact. confd. (ii) (a) 9 plots/block; 6 blocks/replication. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 29' x 15'. (v) N.A. (vi) Yes.

4. GENERAL:
(i) Crop lodged at the time of harvest. (ii) Yellow and black rust attack. No control measures taken.
(iii) Grain yield. (iv) (a) 1956—contd. (modified in 1957). (b) and (c) Yes. (v) to (vii) Nil.

5. RESULTS:
(i) 1215 lb./ac. (ii) 132.0 lb./ac. (iii) Main effect of N and interactions N × P, N × K, N × F are highly significant. Main effect of P and interactions K × F and P × K × F are significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>P₀</th>
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</table>

S.E. of marginal mean of N, P or K = 22.0 lb./ac.
S.E. of marginal mean of P = 18.0 lb./ac.
S.E. of body of N × P, N × K or P × K table = 38.1 lb./ac.
S.E. of body of N × F, P × F or K × F table = 31.1 lb./ac.

Crop = Wheat (Rabi).
Site = Govt. Agri. Farm, Sriganganagar.
Object-Type—To study the effect of N, P, K and F.Y.M. on Wheat.
2. TREATMENTS:
Same as in expt. no. 56(MAE) type II on page 44.

3. DESIGN:
(i) 3x2 fact. confd. (ii) (a) 9 plots/block; 6 blocks/replication. (b) N.A. (iii) I. (iv) (a) N.A. (b) 29'x15'. (v) N.A. (vi) Yes.

4. GENERAL:
(i) Normal. (ii) Attack of white ants and rust incidence. Aldrin powder was used with irrigation. (iii) Grain yield. (iv) (a) 1956—contd. (b) and (c) Yes, (v) to (vii) Nil.

5. RESULTS:
(i) 1037 lb./ac. (ii) 162.0 lb./ac. (iii) Main effect of N and P alone are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>P₀</th>
<th>P₁</th>
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<td>1025</td>
<td>1034</td>
<td>1053</td>
<td>1037</td>
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</table>

S.E. of marginal mean of N, P or K = 38.2 lb./ac.
S.E. of marginal mean of F = 31.2 lb./ac.
S.E. of body of NxF, NxK or PxF table = 66.1 lb./ac.
S.E. of body of NxF, PxF or KxF table = 54.0 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Sriganganagar.
Ref: Rj. 58(MAE).
Type: 'M'.

Object:—Type II—To study the effect of N, P, K and F.Y.M. on Wheat.

1. BASAL CONDITIONS:
(i) (a) Cotton—Senji—Maize—Wheat. (b) Maize. (c) As per treatments. (ii) (a) Desert soil. (b) N.A. (iii) 3rd and 4th week of November, 1958. (iv) (a) 4 ploughings and 1 harrowing. (b) N.A. (c) 70 lb./ac. (d) 9” between rows. (e) N.A. (f) Nil. (g) C—591 (late). (h) Irrigated. (i) (vii) 2 weedings and 1 hoeing. (ix) 5°. (x) Last week of April, 1959.

2. TREATMENTS and 3. DESIGN:
Same as in expt. no. 57(MAE) type II on page 45

4. GENERAL:
(i) Satisfactory. (ii) White ant and yellow rust attack. (iii) Grain yield. (iv) (a) 1956—contd. (b) and (c) Yes. (v) to (vii) Nil.

5. RESULTS:
(i) 1651 lb./ac. (ii) 269.6 lb./ac. (iii) Main effect of N is highly significant and main effect of P is significant. (iv) Av. yield of grain in lb./ac.
Crop - Wheat (Rabi).

Site - Govt. Agri. Farm, Sriganganagar.

Ref - RJ. 59(MAE).

Type - 'M'.

Object: - Type II - To study the effect of N, P, K and F.Y.M. on Wheat.

1. BASAL CONDITIONS:
   (i) (a) Cotton - Soyab Maize - Wheat.  (b) Maize.  (c) As per treatments.
   (ii) (a) Desert soil.  (b) N.A.
   (iii) 2nd week of Nov., 1959.
   (iv) (a) 3 ploughings.  (b) N.A.
   (v) 1956—contd.
   (vi) C-591 (late).

2. TREATMENTS and 3. DESIGN:
   Same as in exp. no. 57(MAE) type II on page 45.

4. GENERAL:
   (i) Normal.  (ii) White ant attack.  No control measures taken.  (iii) Grain yield.
   (iv) (a) 1956—contd.  (b) and (c) Yes.  (v) to (vii) Nil.

5. RESULTS:
   (i) 1734 lb/ac.  (ii) 220.0 lb/ac.  (iii) Main effects of N and P alone are highly significant.
   (iv) Av. yield of grain in lb/ac.

<table>
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<tr>
<th></th>
<th>N&lt;sub&gt;0&lt;/sub&gt;</th>
<th>N&lt;sub&gt;1&lt;/sub&gt;</th>
<th>N&lt;sub&gt;2&lt;/sub&gt;</th>
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</table>

S.E. of marginal mean of N, P or K = 65.5 lb/ac.
S.E. of marginal mean of F = 51.9 lb/ac.
S.E. of body of N×P, N×K or P×K = 110.1 lb/ac.
S.E. of body of N×F, P×F or K×F = 89.9 lb/ac.

Crop - Wheat (Rabi).

Site - Govt. Agri. Farm, Sriganganagar.

Ref - RJ. 59(MAE).

Type - 'M'.

Object: - Type II - To study the effect of N, P, K and F.Y.M. on Wheat.

1. BASAL CONDITIONS:
   (i) (a) Cotton - Soyab Maize - Wheat.  (b) Maize.  (c) As per treatments.
   (ii) (a) Desert soil.  (b) N.A.
   (iii) 2nd week of Nov., 1959.
   (iv) (a) 3 ploughings.  (b) N.A.  (c) 70 lb/ac.
   (v) 9'.  (vi) C-591 (late).

2. TREATMENTS and 3. DESIGN:
   Same as in exp. no. 57(MAE) type II on page 45.

4. GENERAL:
   (i) Normal.  (ii) White ant attack.  No control measures taken.  (iii) Grain yield.
   (iv) (a) 1956—contd.  (b) and (c) Yes.  (v) to (vii) Nil.

5. RESULTS:
   (i) 1734 lb/ac.  (ii) 220.0 lb/ac.  (iii) Main effects of N and P alone are highly significant.
   (iv) Av. yield of grain in lb/ac.

<table>
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<th>N&lt;sub&gt;2&lt;/sub&gt;</th>
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S.E. of marginal mean of N, P or K = 65.5 lb/ac.
S.E. of marginal mean of F = 51.9 lb/ac.
S.E. of body of N×P, N×K or P×K = 110.1 lb/ac.
S.E. of body of N×F, P×F or K×F = 89.9 lb/ac.
S.E. of marginal mean of \(N, P\) or \(K\)  
S.E. of marginal mean of \(F\)  
S.E. of body of \(N \times P, N \times K\) or \(P \times K\) table  
S.E. of body of \(N \times F, P \times F\) or \(K \times F\) table

---

**Crop:** Wheat (Rabi).  
**Site:** Govt. Agri. Farm, Sriganganagar.  
**Ref:** Rj. 57(MAE).  
**Type:** 'M'.

**Object:** Type III—To study the effect of continuous manuring of Wheat.

1. **BASAL CONDITIONS:**
   - (i) (a) Cotton—Wheat—Gram. (b) (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) Oct.-Nov. 1957. (iv) (a) 2 disc-bar sowings and 2 beamings. (b) N.A. (c) 70 lb./ac. (d) 9° between rows. (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) 2.30°. (x) April-May, 1958.

2. **TREATMENTS:**
   - Treatment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8
   - 1st year | M | M | M | M | 0 | 0 | 0 | 0
   - 2nd year | M | M | 0 | 0 | M | M | 0 | 0
   - 3rd year | M | 0 | M | 0 | M | 0 | M | 0
   - Notation: 0=Control and M=30 lb./ac. of \(N+30\) lb./ac. of \(P_{2}O_{5}\).

3. **DESIGN:**
   - (i) R.B.D. (ii) 8. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 30°X14.5°. (v) N.A. (vi) Yes.

4. **GENERAL:**
   - (i) Normal. (ii) Attack of white ant and rust incidence. Aldrin powder was used with irrigation. (iii) Grain yield. (iv) (a) 1957—contd. (1st year). (b) and (c) Yes. (v) to (vii) Nil.

5. **RESULTS:**
   - (i) 2608 lb./ac. (ii) 337.0 lb./ac. (iii) Treatment differences is not significant. (iv) Av. yield of grain in lb./ac.
   - Treatment | M | 0
   - Av. yield | 2740 | 2477
   - S.E./mean = 119.1 lb./ac.

---

**Crop:** Wheat (Rabi).  
**Site:** Govt. Agri. Farm, Sriganganagar.  
**Ref:** Rj. 58(MAE).  
**Type:** 'M'.

**Object:** Type III—To study the effect of continuous manuring of Wheat.

1. **BASAL CONDITIONS:**
   - (i) (a) Cotton—Wheat—Gram. (b) Cotton. (c) As per treatments. (ii) (a) Desert soil. (b) N.A. (iii) 3rd and 4th week of Nov. 1958. (iv) (a) 4 ploughings and 1 harrowing. (b) N.A. (c) 70 lb./ac. (d) 9° between rows. (e) N.A. (v) Nil. (vi) C-591 (late). (vii) Irrigated. (viii) 2 weedings and 1 hoeing. (ix) 3°. (x) 4th week of April 1959.

2. **TREATMENTS and DESIGN:**
   - Same as in expt. no. 57(M.A.E.) type III above

3. **GENERAL:**
   - (i) Normal. (ii) White ant and yellow rust attack. (iii) Grain yield. (iv) (a) 1957—contd. (b) and (c) Yes. (v) to (vii) Nil.

4. **RESULTS:**
   - (i) 1307 lb./ac. (ii) 229.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.
Crop: Wheat (Rabi).

Site: Govt. Agri. Farm, Sriganganagar.

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

Object: Type III—To study the effect of continuous manuring of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Cotton—Wheat—Gram. (b) Cotton. (c) As per treatments.
   (ii) (a) Desert soil. (b) N.A. (iii) 2nd week of Nov. 1959.
   (iv) (a) 3 ploughings. (b) N.A. (c) 70 lb./ac. (d) 9'. (e) N.A. (v) N.A. (vi) C—591 (late).
   (vii) Irrigated. (viii) 1 weeding and 1 hoeing. (ix) 2'. (x) April—May 1960.

2. TREATMENTS and 3. DESIGN:
   Same as in exp. no. 57 (MAE) type III on page 48

4. GENERAL:
   (i) Good. (ii) White-ant attack. (iii) Grain yield. (iv) (a) 1957—contd. (b) and (c) Yes.
   (v) to (vii) Nil.

5. RESULTS:
   (i) 1688 lb./ac. (ii) 236.6 lb./ac. (iii) "Control vs others" alone is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>MMM</th>
<th>MM0</th>
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S.E./mean = 167.3 lb./ac.

Crop: Wheat (Rabi).

Site: Govt. Agri. Farm, Sriganganagar.

Ref: 57(MAE). Type: ‘M’.

Object: Type IV—To study the effect of direct and indirect manuring of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Legume—Wheat. (b) and (c) As per treatments.
   (ii) (a) Desert soil. (b) N.A. (iii) 29.11.1957.
   (iv) (a) 2 disc harrowings and 2 beamings. (b) N.A. (c) 70 lb./ac. (d) 9'. (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) 2.30'. (x) April—May 1968.

2. TREATMENTS:
   Main-plot treatments:
   All combinations of (1) and (2)+control (L₀P₀)
   (1) 2 previous legume crops: L₁ = Moong and L₂ = Urid.
   (2) 3 levels of P₂O₅ as Triple Super applied to legumes: P₀ =0, P₁ =40 and P₂ =80 lb./ac.

   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) 3 sub-plots/main-plot; 7 main-plots/replications. (b) N.A. (iii) 3, (iv) (a) N.A.
   (b) 29'×15'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) Satisfactory. (ii) Attack of rust and white ants. Aldrin used with irrigation. (iii) Grain yield. (iv)
   (a) 1957—contd. (b) and (c) Yes. (v) to (vii) N.A.
5. RESULTS:

(i) 1459 lb./ac. (ii) (a) 316.5 lb./ac. (b) 293.8 lb./ac. (iii) "Control vs. others" is highly significant and main effect of N is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>L1P0</th>
<th>L1P1</th>
<th>L1P2</th>
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</table>

S.E. of difference of two:

1. LP marginal means = 163.3 lb./ac.
2. N marginal means = 90.7 lb./ac.
3. N means at the same level of LP = 239.9 lb./ac.
4. LP means at the same level of N = 235.0 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Sriganganagar.

Ref: 38(MAE).
Type: M'.

Object: Type IV—To study the effect of direct and indirect manuring of Wheat.

1. BASAL CONDITIONS:

(i) (a) Legume—Wheat. (b) and (c) As per treatments. (ii) Desert soil. (b) N.A. (iii) 3rd and 4th week of Nov, 1958. (iv) (a) 4 ploughings and 1 harrowing. (b) N.A. (c) 70 lb./ac. (d) 9°. (e) N.A. (v) N.A. (vi) C—591 (late). (vii) Irrigated. (viii) 2 weedings and 1 hoeing. (ix) 7°. (x) 4th week of April 1959.

2. TREATMENTS and DESIGN:

Same as in exp. no. 57(MAE) type IV on page 49.

4 GENERAL:

(i) Satisfactory. (ii) White ant and yellow rust attack. (iii) Grain yield. (iv) (a) 1957—cond. (b) and (c) Yes. (v) to (vii) N.A.

5. RESULTS:

(i) 1109 lb./ac. (ii) (a) 159.4 lb./ac. (b) 127.3 lb./ac. (iii) Main effect of P and N are highly significant and "control vs. others is" significant. (iv) Av. yield of grain in lb./ac.

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<th>L1P0</th>
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<th>L1P2</th>
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<td>1082</td>
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</table>

S.E. of difference of two:

1. LP marginal means = 75.1 lb./ac.
2. N marginal means = 39.3 lb./ac.
3. N means at the same level of LP = 103.9 lb./ac.
4. LP means at the same level of N = 113.3 lb./ac.
Crop: Wheat (Rabi).

Site: Govt. Agri. Farm, Sriganganagar.

Ref: Rj. 59(FAE).

Type: 'M'.

Object:—Type IV—To study the effect of direct and indirect manuring of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Legume—Wheat. (b) and (c) As per treatments. (ii) (a) Desert soil. (b) N.A. (iii) 2nd week of Nov., 1959. (iv) (a) 3 ploughings. (b) N.A. (c) 70 lb./ac. (d) 9'. (e) N.A. (v) Nil. (vi) C—591 (late). (vii) Irrigated. (viii) 1 weeding and 1 hoeing. (ix) 2'. (x) April—May, 1960.

2. TREATMENTS:
   Same as in exp. no. 57 (MAE) type IV on page 49

3. DESIGN:
   (i) Split-plot. (ii) 3 sub-plots/main-plot ; 7 main-plots/replication. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 31'x12'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) Normal. (ii) White ant attack. (iii) Grain yield. (iv) (a) 1957—contd. (b) and (c) Yes. (v) to (vii) Nil.

5. RESULTS:
   (i) 1314 lb./ac. (ii) (a) 377.7 lb./ac. (b) 255.3 lb./ac. (iii) Main effect of P and N are highly significant. "Control vs. others" is significant. (iv) Av. yield of grain in lb./ac.

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S.E. of difference of two
1. LP marginal means = 178.0 lb./ac.
2. N marginal means = 78.8 lb./ac.
3. N means at the same level of LP = 208.4 lb./ac.
4. LP means at the same level of N = 246.3 lb./ac.

Crop: Wheat (Rabi).

Site: Govt. Agri. Farm, Sriganganagar.

Ref: Rj. 56(FAE).

Type: 'M'.

Object:—Type VI—To study the effect of different sources and levels of P along with their methods of application.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) 17 to 23.11.1956. (iv) (a) 2 disc-harrowings and one beaming. (b) N.A. (c) 70 lb./ac. (d) 9' to 12'. (e) N.A. (v) Guara crop ploughed in situ. (vi) C—591 (late). (vii) Irrigated. (viii) N.A. (ix) 6.82'. (x) 10 to 15.6.1957.

2. TREATMENTS:
   All combinations of (1), (2) and (3)+control.
   (1) 2 sources of P2O5: S1=Triple Super and S2=Ammo. Phos.
   (2) 2 levels of P2O5: P1=20 and P2=40 lb./ac.
   (3) 3 methods of application: M1=Broadcasting, M2=2' below seed and M3=Band placement.

3. DESIGN:
   (i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.
4. GENERAL

(i) Crop lodged. (ii) Yellow and black rust attack. No control measures taken. (iii) Grain yield. (iv) (a) 1956—contd. (b) No. (c) Yes. (v) (a) Nil. (b) N.A. (vi) Season was not favourable to the crop. (vii) Nil.

5. RESULTS:

(i) 1763 lb./ac. (ii) 244.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
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S.E. of marginal mean of S or P = 57.7 lb./ac.
S.E. of marginal mean of M = 70.6 lb./ac.
S.E. of body of S×M or P×M table = 99.9 lb./ac.
S.E. of body of S×P table = 81.6 lb./ac.

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Sriganganagar.

Ref :- Rj. 57(MAE).
Type :- ‘M’.

Object: —Type VI—To study the effect of different sources and levels of P along with their methods of application.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) Oct.-Nov., 1957. (iv) (a) 2 disc-harrowings and 2 beamings. (b) N.A. (c) 70 lb./ac. (d) 9'. (e) N.A. (v) N.A. (vi) Rj.—31—1 (late). (vii) Irrigated. (viii) N.A. (ix) 2.30'. (x) April—May, 1958.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 56(MAE) type VI on page 51

4. GENERAL:

(i) Satisfactory. (ii) Attack of white ants and rust. Aldrin used with irrigation. (iii) Grain yield. (iv) (a) 1956—contd. (b) No. (c) Yes. (v) to (vii) Nil.

5. RESULTS:

(i) 2402 lb./ac. (ii) 323.5 lb./ac. (iii) Main effect of M alone is significant. (iv) Av. yield of grain in lb./ac.

<table>
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Object:—Type VI—To study the effect of different sources and levels of P along with their methods of application.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) 3rd and 4th week of Nov., 1958. (iv) (a) 4 ploughing and 1 harrowing (b) N.A. (c) 70 lb./ac. (d) 9". (e) N.A. (v) N.A (vi) C—591 (late). (vii) Irrigated. (viii) 2 weedings and 1 hoeing. (ix) 5". (x) 4th week of April, 1959.

2. TREATMENTS:
   Same as in expt. no 56(MAE) type VI on page 51

3. DESIGN:
   (i) R.B D. (ii) (a) 13. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 30'×14.5'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) Satisfactory. (ii) White ant and yellow rust attack. (iii) Grain yield. (iv) (a) 1956—contd. (b) No. (c) Yes. (v) to (vii) N.A.

5. RESULTS:
   (i) 1792 lb./ac. (ii) 187.3 lb./ac. (iii) Main effect of S alone is significant. (iv) Av. yield of grain in lb./ac.

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<table>
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<tr>
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<td>1967</td>
<td>1802</td>
<td>1868</td>
<td>1879</td>
<td>1944</td>
<td>1814</td>
</tr>
<tr>
<td>Mean</td>
<td>1848</td>
<td>1757</td>
<td>1822</td>
<td>1809</td>
<td>1832</td>
<td>1786</td>
</tr>
<tr>
<td>P₁</td>
<td>1958</td>
<td>1712</td>
<td>1827</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P₂</td>
<td>1738</td>
<td>1802</td>
<td>1817</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

S.E. of marginal mean of S or P = 44.1 lb./ac.
S.E. of marginal mean of M = 54.1 lb./ac.
S.E. of body of S×M or P×M table = 76.5 lb./ac.
S.E. of body of S×P table = 62.4 lb./ac.

---

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Sriganganagar.
Ref :- Rj. 58(MAE).
Type :- 'M'.

---

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Sriganganagar.
Ref :- Rj. 59(MAE).
Type :- 'M'.

Object:—Type VI—To study the effect of different sources and levels of P along with their methods of application.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) 2nd week of Nov., 1959. (iv) (a) 3 ploughings. (b) N.A. (c) 70 lb./ac. (d) 9". (e) N.A. (f) N.A. (g) C—591 (late). (h) Irrigated. (i) 1 weeding and 1 hoeing. (ii) 2°. (x) April—May, 1960.
2. TREATMENTS:
Same as in Expt. no. 56 (MAE) type VI on page 51.

3. DESIGN:
(i) R.B.D. (ii) (a) 13, (b) N.A. (iii) 3, (iv) (a) N.A. (b) 30'x14'. (v) N.A. (vi) Yes.

4. GENERAL:
(i) Good. (ii) White ant attack. (iii) Grain yield. (iv) (a) 1956—contd. (b) No. (c) Yes. (v) to (vii) Nil.

5. RESULTS:
(i) 2284 lb./ac. (ii) 185.0 lb./ac. (iii) Interaction SxP xM and 'control vs. others' are highly significant. Main effect of P is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>Mean</th>
<th>P₁</th>
<th>P₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>S₁</td>
<td>2362</td>
<td>2255</td>
<td>2230</td>
<td>2282</td>
<td>2205</td>
<td>2359</td>
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<td>S₂</td>
<td>2288</td>
<td>2485</td>
<td>2329</td>
<td>2367</td>
<td>2303</td>
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<td>2325</td>
<td>2370</td>
<td>2279</td>
<td>2325</td>
<td>2254</td>
<td>2395</td>
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<td>P₁</td>
<td>2213</td>
<td>2320</td>
<td>2230</td>
<td>2230</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P₂</td>
<td>2497</td>
<td>2420</td>
<td>2328</td>
<td>2328</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

S.E. of marginal mean of S or P  = 43.6 lb./ac.
S.E. of marginal mean of M  = 53.4 lb./ac.
S.E. of body of S x P x M table  = 13.5 lb./ac.
S.E. of body of S x P table  = 61.7 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Kotah.
Type: M'.

Object:—Type I (a)—To study the effect of P and different sources and levels of N on Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) (a) Medium black soil. (b) N.A. (iii) 3, 4.11.1955. (iv) (a) to (e) N.A. (v) Nil, (vi) C—591. (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 20.4.1956.

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=AS, S₂=AN and S₃=Urea.
(3) 3 levels of P₂O₅ as Super: P₀=0, P₁=20 and P₂=40 lb./ac.
Extra treatments: T₁=60 lb./ac. of N+40 lb./ac. of P₂O₅, T₂=40 lb./ac. of N+60 lb./ac. of P₂O₅, and T₃=60 lb./ac. of N+60 lb./ac. of P₂O₅.
N in extra treatments applied as A/S.

3. DESIGN:
(i) R.B.D. (ii) (a) 12 plots/block; 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 36'x20'. (b) 28'x15.5'. (v) N.A. (vi) Yes

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

5. RESULTS:
(i) 2225 lb./ac. (ii) 32.1 lb./ac. (iii) Main effect of P and interactions N x P and N x S are highly significant. (iv) Av. yield of grain in lb./ac.
Crop: Wheat (Rabi)
Site: Govt. Agri. Farm, Kotah.
Ref: Rj. 55(TCM).
Type: 'M'.

Object:— Type II—To study the effect of time of application of N on Wheat.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A.  (ii) (a) Medium black soil.  (b) N.A.  (iii) 2.3.11.1955.  (iv) (a) to (e) N.A.  (v) Nil,  (vi) C—591.  (vii) Irrigated.  (viii) Nil. (ix) N.A.  (x) 16.4.1956.

2. TREATMENTS:
   All combinations of (1) and (2) + a control.
   (1) 3 sources of 20 lb./ac. of N : S1=A/S, S2=A/N and S3=Urea.
   (2) 2 times of application : T1=At sowing (1.11.1955) and T2=With 1st irrigation (26.11.1955).

3. DESIGN:
   (i) R.B.D.  (ii) (a) 7.  (b) N.A.  (iii) 4.  (iv) (a) 30' x 30'.  (b) 28' x 26'.  (v) N.A.  (vi) Yes.

4. GENERAL:
   (i) Crop lodged.  (ii) Nil.  (iii) Grain yield.  (iv) (a) 1953—1955.  (b) No.  (c) N.A.  (v) (a) and (b) N.A.  (vi) Crop damaged by rats.  (vii) Nil.

5. RESULTS:
   (i) 2346 lb./ac.  (ii) 290.4 lb./ac.  (iii) None of the effects is significant.  (iv) Av. yield of grain in lb./ac.

Control = 2214 lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>S1</th>
<th>S2</th>
<th>S3</th>
<th>Mean</th>
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<tbody>
<tr>
<td>T1</td>
<td>2383</td>
<td>2454</td>
<td>2390</td>
<td>2459</td>
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<tr>
<td>T2</td>
<td>2286</td>
<td>2325</td>
<td>2369</td>
<td>2327</td>
</tr>
<tr>
<td>Mean</td>
<td>2334</td>
<td>2390</td>
<td>2379</td>
<td>2368</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of S = 99.1 lb./ac.
S.E. of marginal mean of T = 80.9 lb./ac.
S.E. of body of table or control mean = 140.2 lb./ac.
Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Kotah.
Object: To study the effect of sources, levels and methods of application of P on Wheat.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Medium black soil. (b) N.A. (iii) 9.10.11.1955. (iv) (a) to (e) N.A. (v) Nil. (vi) C=591. (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 25 to 29.4.1956.

2. TREATMENTS:
   All combinations of (1), (2) and (3)+3 control plots
   (1) 3 sources of P2O5: S1=Ammo. Phos., S2=Dical. Phos. and S3=Super.
   (2) 2 levels of P2O5: P1=20 and P2=40 lb./ac.
   (3) 3 methods of application: M1=Broadcast, M2=Band placement and M3=21" below seed.

3. DESIGN:
   (i) 3x2x3 control plots. (ii) (a) 7 plots/block, 3 blocks/replication with one control plot in each block. (b) N.A. (iii) 4. (iv) (a) 25'x25', (b) 20.75'x21'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) Crop lodged. (ii) Nil. (iii) Grain yield. (iv) (a) 1953-1955. (b) No. (c) Nil. (v) and (vi) N.A. (vii) M x S table and corresponding S.E. are unadjusted.

5. RESULTS:
   (i) 2007 lb./ac. (ii) 272.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>Mean</th>
<th>P2</th>
<th>P3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2116</td>
<td>2047</td>
<td>1900</td>
<td>2021</td>
<td>2055</td>
<td>1987</td>
</tr>
<tr>
<td>1998</td>
<td>2129</td>
<td>2010</td>
<td>2046</td>
<td>2066</td>
<td>2026</td>
</tr>
<tr>
<td>1942</td>
<td>2052</td>
<td>1892</td>
<td>1962</td>
<td>2023</td>
<td>1900</td>
</tr>
<tr>
<td>Mean</td>
<td>2019</td>
<td>2076</td>
<td>1934</td>
<td>2010</td>
<td>2048</td>
</tr>
</tbody>
</table>

   S.E. of marginal means of M or S = 55.5 lb./ac.
   S.E. of marginal mean of P = 45.3 lb./ac.
   S.E. of body of M x S table = 111.0 lb./ac.
   S.E. of body of M x P or S x P table = 78.5 lb./ac.
3. DESIGN:
   (i) R.B.D.  (ii) (a) 10.  (b) N.A.  (iii) 4.  (iv) (a) 32'x28'.  (b) 28'x24'.  (v) N.A.  (vi) Yes.

4. GENERAL:
   (i) No lodging.  (ii) Nil.  (iii) Grain yield.  (iv) (a) 1953—1955.  (b) No.  (c) Yes.  (v) (a) and (b) N.A.
   (vi) and (vii) Nil.

5. RESULTS:
   (i) 1523 lb./ac.  (ii) 216.1 lb./ac.  (iii) None of the effects is significant.  (iv) Av. yield of grain in lb./ac.

   \[
   \begin{array}{c|ccc|c}
   \text{Control} & N_0 & N_1 & N_2 & \text{Mean} \\
   \hline
   S_1 & 1318 & 1679 & 1644 & 1547 \\
   S_2 & 1469 & 1525 & 1616 & 1550 \\
   S_3 & 1446 & 1662 & 1425 & 1511 \\
   \hline
   \text{Mean} & 1411 & 1612 & 1573 & 1536 \\
   \end{array}
   \]
   S.E. of any marginal mean = 62.4 lb./ac.
   S.E. of body of table or control mean = 108 lb./ac.

**Crop :- Wheat.**

**Centre :- Pisanganj (c.f.).**

**Crop :- Wheat (Rabi).**

**Centre :- Pisanganj (c.f.).**

Object :- Type I (i) :- To study the effect of different sources and levels of N on Wheat.

1. BASAL CONDITIONS:
   (i) (a) N.A.  (b) Maize.  (c) Heavily manured with F.Y.M.  (ii) Sandy loam.  (iii) and (iv) N.A.  (v)
   (a) to (e) N.A.  (vi) November, 1955.  (vii) Irrigated.  (viii) and (ix) N.A.  (x) April, 1956.

2. TREATMENTS:
   0 = Control.
   \( n_1 = 20 \text{ lb./ac. of N as A/S.} \)
   \( n_2 = 40 \text{ lb./ac. of N as A/S.} \)
   \( n_2' = 20 \text{ lb./ac. of N as Urea.} \)
   \( n_2'' = 40 \text{ lb./ac. of N as Urea.} \)

3. DESIGN:
   (i) R.B.D. with 5 plots/replcation.  (ii) For the layout of the experiments in each block, villages were
   selected at random and a list was prepared of the cultivators growing wheat in each selected village. From
   this list two cultivators were selected at random and one field each belonging to the selected cultivators was
   taken in each selected field an unreplicated trial was laid out.  (iii) (a) and (b) N.A.  (iv) Yes.

4. GENERAL:
   (i) Normal.  (ii) Nil.  (iii) Yield of grain.  (iv) (a) to (e) No.  (v) to (vii) Nil.

5. RESULTS:
   Treatment 0  \( n_1 \)  \( n_2 \)  \( n_2' \)  \( n_2'' \)
   Av. yield 889 1126 1275 1159 1289
   G.M. = 1148 lb./ac.; S.E. = 12.6 lb./ac. and no. of trials = 54.
1. BASAL CONDITIONS :

2. TREATMENTS :
   0  — Control.
   \( n_1 = 23 \) lb./ac. of N as A/S.
   \( n_2 = 40 \) lb./ac. of N as A/S.
   \( n_3 = 20 \) lb./ac. of N as Nitrochalk.
   \( n_4 = 40 \) lb./ac. of N as Nitrochalk.

3. DESIGN :
   (i) R.B.D. with plots/trial.  (ii) For the layout of the experiments in each block, villages were selected at random and a list of cultivators growing wheat in each selected village was prepared. From this list two cultivators were selected at random and one field each belonging to the selected cultivators was taken and in each selected field an unreplicated trial was laid out. (iii) (a) and (b) N.A.  (iv) Yes.

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

5. RESULTS :
   Treatment  
   \[
   \begin{array}{cccc}
   \text{Treatment} & 0 & n_1 & n_2 \\
   \text{Av. yield} & 979 & 1185 & 1382 & 1078 & 1218 \\
   \end{array}
   \]
   G.M. = 1168 lb./ac., S.E. = 56.0 lb./ac., no. of trials = 19.

   Crop :- Wheat (Rabi).
   Centre :- Pisanganj (c.f.).
   Ref :- Rj. 55(TCM).
   Type :- 'M'.

Object :- Type I (ii)—To study the effect of different sources and levels of N on Wheat.

1. BASAL CONDITIONS :
   (i) (a) N.A.  (b) Maize.  (c) Heavily manured with F.Y.M.  (ii) Sandy soil.  (iii) to (v) N.A.  (vi) November, 1955.  (vii) Irrigated. (viii) and (ix) N.A.  (x) April, 1956.

2. TREATMENTS :
   Same as in expt. no. 54(TCM) type I(ii) conducted at Pisanganj on page 57

5. RESULTS :
   Treatment  
   \[
   \begin{array}{cccc}
   \text{Treatment} & 0 & n_1 & n_2 \\
   \text{Av. yield} & 872 & 1053 & 1168 & 1111 & 1094 \\
   \end{array}
   \]
   G.M. = 1060 lb./ac.; S.E. = 62.7 lb./ac. and no. of trials = 8.

   Crop :- Wheat.
   Centre :- Pisanganj (c.f.).
   Ref :- Rj. 55(TCM).
   Type :- 'M'.

Object :- Type II (i)—To study the effect of N and P on Wheat.

1. BASAL CONDITIONS :
2. TREATMENTS:
0 = Control.

\( p = 20 \text{ lb./ac. of } P_2O_5 \text{ as Super.} \)
\( n_1 p = 20 \text{ lb./ac. of } P_2O_5 + 20 \text{ lb./ac. of } N \text{ as A/S.} \)
\( n_2 p = 20 \text{ lb./ac. of } P_2O_5 + 40 \text{ lb./ac. of } N \text{ as A/S.} \)
\( n_1 ' p = 20 \text{ lb./ac. of } P_2O_5 + 40 \text{ lb./ac. of } N \text{ as Urea.} \)
\( n_2 ' p = 20 \text{ lb./ac. of } P_2O_5 + 40 \text{ lb./ac. of } N \text{ as A/S.} \)

3. DESIGN:
(i) R.B.D. with 6 plots/trial. (ii) For layout of the experiments in each block, villages were selected at random and a list was prepared of the cultivators growing wheat crop in each selected village. From this list two cultivators were selected at random and one field each belonging to the selected cultivators was taken and in each selected field an unreplicated trial was laid out. (iii) (a) and (b) N.A. (iv) Yes.

4. GENERAL:
(i) Normal. (ii) No. (iii) Grain yield. (iv) (a) to (c) N.A. (vi) and (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
<th>0</th>
<th>p</th>
<th>n_1 p</th>
<th>n_2 p</th>
<th>n_1 ' p</th>
<th>n_2 ' p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>880</td>
<td>996</td>
<td>1119</td>
<td>1267</td>
<td>1201</td>
<td>1308</td>
</tr>
</tbody>
</table>

G.M. = 1128 lb./ac.; S.E. = 32.9 lb./ac. and no. of trials = 33.
2. TREATMENTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>(n_1)</th>
<th>(n_1p_1)</th>
<th>(n_1p_2)</th>
<th>(n_1p_3)</th>
<th>(n_1p_4)</th>
</tr>
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<tbody>
<tr>
<td>Av. yield</td>
<td>915</td>
<td>946</td>
<td>1129</td>
<td>1211</td>
<td>1182</td>
<td>1188</td>
</tr>
</tbody>
</table>

G.M. = 1078 lb./ac., S.E. = 44.1 lb./ac. and no. of trials = 11.

3. DESIGN and 4. GENERAL:

Same as in exp. no. 55(TCM) type II (i) conducted at Pisanganj on page 58.

5. RESULTS:

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

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) Red and yellow soil. (iii) to (v) N.A. (vi) Nov., 1954, (vii) Irrigated. (viii) and (ix) N.A. (x) March, 1955.

2. TREATMENTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>(n_1)</th>
<th>(n_1p_1)</th>
<th>(n_1p_2)</th>
<th>(n_1p_3)</th>
<th>(n_1p_4)</th>
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<tr>
<td>Av. yield</td>
<td>966</td>
<td>1081</td>
<td>1070</td>
<td>1150</td>
<td>1128</td>
<td>1182</td>
</tr>
</tbody>
</table>

G.M. = 1096 lb./ac., S.E. = 44.1 lb./ac. and no. of trials = 11.
2. TREATMENTS to 4. GENERAL:
Same as in exp. no. 54(TCM) type IV conducted at Pisanganj on page 60.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>( n )</th>
<th>( n_{p1} )</th>
<th>( n_{p2} )</th>
<th>( n_{p1,k1} )</th>
<th>( n_{p1,k2} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>823</td>
<td>987</td>
<td>1020</td>
<td>1070</td>
<td>1111</td>
</tr>
<tr>
<td>G.M.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Crop:** Wheat (Rabi).
**Centre:** Raisingnagar (c.f.)
**Ref:** Rj. 55(TCM).
**Type:** 'M'.

Object:—Type I (i)—To study the effect of different sources and levels of N on Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov., 1955. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1956.

2. TREATMENTS to 4. GENERAL:
Same as in exp. no. 54(TCM) type I (i) conducted at Pisanganj on page 57.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>( n )</th>
<th>( n_{p1} )</th>
<th>( n_{p2} )</th>
<th>( n_{p1,k1} )</th>
<th>( n_{p1,k2} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1440</td>
<td>1613</td>
<td>1761</td>
<td>1662</td>
<td>1819</td>
</tr>
<tr>
<td>G.M.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Crop:** Wheat (Rabi).
**Centre:** Raisingnagar.
**Ref:** Rj. 54(TCM).
**Type:** 'M'.

Object:—Type I (ii)—To study the effect of different sources and levels of N on Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov., 1954. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1955.

2. TREATMENTS to 4. GENERAL:
Same as in exp. no. 54(TCM) type I (ii) conducted at Pisanganj on page 57.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>( n )</th>
<th>( n_{p1} )</th>
<th>( n_{p2} )</th>
<th>( n_{p1,k1} )</th>
<th>( n_{p1,k2} )</th>
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</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1412</td>
<td>1661</td>
<td>1918</td>
<td>1557</td>
<td>1637</td>
</tr>
<tr>
<td>G.M.</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Crop:** Wheat (Rabi).
**Centre:** Raisingnagar (c.f.)
**Ref:** Rj. 55(TCM).
**Type:** 'M'.

Object:—Type I (iii)—To study the effect of different sources and levels of N on Wheat.
1. BASAL CONDITIONS:
   (i) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov., 1955. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1956.

2. TREATMENTS to 4. GENERAL:
   Same as in expt. no. 54(TCM) type I (ii) conducted at Pisanganj on page 57

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>( p_1 )</th>
<th>( n_1p_1 )</th>
<th>( n_2p_1 )</th>
<th>( n_3p_1 )</th>
<th>( n_4p_1 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1624</td>
<td>1685</td>
<td>1893</td>
<td>1697</td>
<td>1753</td>
<td></td>
</tr>
</tbody>
</table>

G.M. = 1690 lb./ac., S.E. = 60.9 lb./ac. and no. of trials = 14.

---

Crop: Wheat.  
Centre: Raisingnagar (c.f).  
Object: Type II (i)—To study the effect of N and P on Wheat.

1. BASAL CONDITIONS:
   (i) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov., 1955. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1956.

2. TREATMENTS to 4. GENERAL:
   Same as in expt. no. 55(TCM) type II (i) conducted at Pisanganj on page 58.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>( p_1 )</th>
<th>( n_1p_1 )</th>
<th>( n_2p_1 )</th>
<th>( n_3p_1 )</th>
<th>( n_4p_1 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1624</td>
<td>1685</td>
<td>2000</td>
<td>2181</td>
<td>2049</td>
<td>2049</td>
</tr>
</tbody>
</table>

G.M. = 1959 lb./ac., S.E. = 64.2 lb./ac. and no. of trials = 15.

---

Crop: Wheat (Rabi).  
Centre: Raisingnagar (c.f).  
Object: Type II (ii)—To study the effect of N and P on Wheat.

1. BASAL CONDITIONS:
   (i) to (c) N.A. (ii) Sandy soils. (iii) to (v) N.A. (vi) Nov., 1954. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1955.

2. TREATMENTS to 4. GENERAL:
   Same as in expt. no. 54(TCM) type II (ii) conducted at Pisanganj on page 59.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>( p_1 )</th>
<th>( n_1p_1 )</th>
<th>( n_2p_1 )</th>
<th>( n_3p_1 )</th>
<th>( n_4p_1 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1604</td>
<td>1990</td>
<td>1986</td>
<td>2259</td>
<td>1910</td>
<td>1977</td>
</tr>
</tbody>
</table>

G.M. = 1934 lb./ac.; S.E. = 84.6 lb./ac. and no. of trials = 21.

---

Crop: Wheat (Rabi).  
Centre: Raisingnagar (c.f).  
Object: Type III (iii)—To study the effect of N and P on Wheat.
1. BASAL CONDITIONS:
   (i) (a) to (c) N.A.  (ii) Desert soil.  (iii) to (v) N.A.  (vi) Nov., 1954.  (vii) Irrigated.  (viii) and (ix) N.A.
   (x) April, 1955.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 55(TCM) type III (ii) conducted at Pisanganj on page 59.

5. RESULTS:
   Treatment  
<table>
<thead>
<tr>
<th>0</th>
<th>n₁</th>
<th>n₁p₁</th>
<th>n₁p₂</th>
<th>n₁p₁⁺</th>
<th>n₁p₂⁺</th>
</tr>
</thead>
<tbody>
<tr>
<td>1650</td>
<td>1957</td>
<td>2138</td>
<td>2109</td>
<td>2015</td>
<td>2034</td>
</tr>
</tbody>
</table>
   G.M. = 1979 lb./ac., S.E. = 98.7 lb./ac. and no. of trials = 9.

   Crop :- Wheat (Rabi).
   Centre :- Raisingnagar (c.f.).
   Object :- Type III (iii) — To study the effect of N and P on Wheat.

   1. BASAL CONDITIONS:
   (i) (a) to (c) N.A.  (ii) Desert soil.  (iii) to (v) N.A.  (vi) Nov., 1955.  (vii) Irrigated.  (viii) and (ix) N.A.
   (x) April, 1956.

   2. TREATMENTS:
   0 = Control,
   n₁ = 20 lb./ac. of N as A/S,
   n₁p₁ = 20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super,
   n₁p₂ = 20 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Super,
   n₁p₁⁺ = 20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Bonemeal,
   n₁p₂⁺ = 20 lb./ac. of N as A/S+40 lb./ac. of P₂O₅ as Bonemeal.

   3. DESIGN:
   (i) R.B.D. with 4 plots/trial.  (iii) For layout of the experiments in each block, villages were selected at random and a list was prepared of the cultivators growing wheat crop in each selected village. From this list two cultivators were selected at random and one field belonging to the selected cultivators was taken and in each selected field an unreplicated trial was laid out.  (iii) (a) and (b) N.A.  (iv) Yes.

   5. RESULTS:
   Treatment  
<table>
<thead>
<tr>
<th>0</th>
<th>n₁</th>
<th>n₁p₁</th>
<th>n₁p₂</th>
<th>n₁p₁⁺</th>
<th>n₁p₂⁺</th>
</tr>
</thead>
<tbody>
<tr>
<td>1350</td>
<td>1558</td>
<td>1753</td>
<td>1943</td>
<td>1731</td>
<td>1762</td>
</tr>
</tbody>
</table>
   G.M. = 1654 lb./ac.; S.E. = 65.2 lb./ac. and no. of trials = 13

   Crop :- Wheat (Rabi).
   Centre :- Raisingnagar (c.f.).
   Ref :- Rj. 55(TCM).
   Type :- ‘M’.
4. GENERAL:
(i) Normal. (ii) Nil. (iii) Grain yield. (iv) and (v) No. (vi) and (vii) Nil.

5. RESULTS:

Treatment | 0 | n₁ | n₂P₁ | n₂P₂ | n₂P₃K₂ | n₂P₄K₃ | n₂P₅K₄
---|---|---|---|---|---|---|---
Av. yield | 1425 | 1952 | 2056 | 2228
G.M. = 1915 lb./ac.; S.E. = 92.2 lb./ac. and no. of trials = 8.

Crop :- Wheat (Rabi).
Centre :- Raisingnagar (c.f.).

Ref :- Rj. 54(TCM).
Type :- 'M'.

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

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) November, 1954. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1955.
2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 54(TCM) type IV conducted at Pisanganj on page 60.
3. RESULTS:

Treatment | 0 | n₁ | n₂P₁ | n₂P₂ | n₂P₃K₂ | n₂P₄K₃ | n₂P₅K₄
---|---|---|---|---|---|---|---
Av. yield | 1563 | 1714 | 1977 | 2015 | 2011 | 2163
G.M. = 1927 lb./ac.; S.E. = 97.1 lb./ac. and no. of trials = 18.

Crop :- Wheat (Rabi).
Centre :- Raisingnagar (c.f.).

Ref :- Rj. 55(TCM).
Type :- 'M'.

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

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) November, 1955. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1956.
2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 54(TCM) type IV conducted at Pisanganj on page 60.
3. RESULTS:

Treatment | 0 | n₁ | n₂P₁ | n₂P₂ | n₂P₃K₂ | n₂P₄K₃ | n₂P₅K₄
---|---|---|---|---|---|---|---
Av. yield | 1094 | 1094 | 1210 | 1341 | 1391 | 1473 | 1448
G.M. = 1326 lb./ac.; S.E. = 65.0 lb./ac. and no. of trials = 11.

Crop :- Wheat.
Centre :- Sumerpur (c.f.).

Ref :- 55(TCM).
Type :- 'M'.

Object :- Type I (i) — To study the effect of different sources and levels of N on Wheat.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Follow. (c) Nil. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov., 1915. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1956.
2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 55(TCM) type I (i) conducted at Pisanganj on page 57.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n₁</th>
<th>n₂</th>
<th>n₃</th>
<th>n₄</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>617</td>
<td>831</td>
<td>897</td>
<td>798</td>
<td>806</td>
</tr>
</tbody>
</table>

G.M. = 790 lb./ac.; S.E. = 42.0 lb./ac. and no. of trials = 13.

Object:—Type I (ii)—To study the effect of different sources and levels of N on Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov., 1954, (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1955.

2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 54(TCM) type I (ii) conducted at Pisanganj on page 57.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n₁</th>
<th>n₂</th>
<th>n₃</th>
<th>n₄</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>940</td>
<td>988</td>
<td>1159</td>
<td>995</td>
<td>986</td>
</tr>
</tbody>
</table>

G.M. = 1014 lb./ac.; S.E. = 44.4 lb./ac. and no. of trials = 14.

Object:—Type II (i)—To study the effect of different sources and levels of N on Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov., 1955. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1956.

2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 54(TCM) type I (ii) conducted at Pisanganj on page 57.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n₁</th>
<th>n₂</th>
<th>n₃</th>
<th>n₄</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>576</td>
<td>724</td>
<td>741</td>
<td>773</td>
<td>790</td>
</tr>
</tbody>
</table>

G.M. = 721 lb./ac.; S.E. = 58.6 lb./ac. and no. of trials = 4.

Object:—Type II (i)—To study the effect of N and P on Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov., 1955. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1956.
2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 55(TCM) type II (ii) conducted at Pisanganj on page 58.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>P1</th>
<th>N2P2</th>
<th>N3P3</th>
<th>N4P4</th>
<th>N5P5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>601</td>
<td>749</td>
<td>596</td>
<td>1119</td>
<td>864</td>
<td>1012</td>
</tr>
</tbody>
</table>

G.M. = 890 lb./ac., S.E. = 55.1 lb./ac. and no. of trials = 9.

Crop: Wheat (Rabi).
Centre: Sumerpur (c.f.).
Ref: Rj. 54(TCM).
Type: 'M'.

Object:—Type II (ii)—To study the effects of N and P on Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov., 1954. (vii) Irrigated. (viii) and (ix) N.A. (x) March, 1955.

2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 54(TCM) type II (ii) conducted at Pisanganj on page 59.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>P1</th>
<th>N2P2</th>
<th>N3P3</th>
<th>N4P4</th>
<th>N5P5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>837</td>
<td>897</td>
<td>983</td>
<td>1057</td>
<td>1039</td>
<td>1065</td>
</tr>
</tbody>
</table>

G.M. = 980 lb./ac., S.E. = 38.7 lb./ac. and no. of trials = 21.

Crop: Wheat (Rabi).
Centre: Sumerpur (c.f.).
Ref: Rj. 54(TCM).
Type: 'M'.

Object:—Type III (ii)—To study the effect of N and P on Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov., 1954. (vii) Irrigated. (viii) and (ix) N.A. (x) March, 1955.

2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 55(TCM) type III (ii) conducted at Pisanganj on page 59.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>N1</th>
<th>N2P1</th>
<th>N3P1</th>
<th>N4P1''</th>
<th>N5P1''</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>937</td>
<td>986</td>
<td>1085</td>
<td>1003</td>
<td>1067</td>
<td>1107</td>
</tr>
</tbody>
</table>

G.M. = 1048 lb./ac., S.E. = 36.2 lb./ac. and no. of trials = 18.

Crop: Wheat (Rabi).
Centre: Sumerpur (c.f.).
Ref: Rj. 54(TCM).
Type: 'M'.

Object:—Type III (ii)—To study the effect of N and P on Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov. 1955. (vii) Irrigated. (viii) and (ix) N.A. (x) April 1956.
2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 55 (TCM) type III (ii) conducted at Rasisinganagar on page 68.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>1201</th>
<th>1254</th>
<th>1392</th>
<th>1185</th>
<th>1284</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

G.M. = 1215 lb./ac.; S.E. = 97.9 lb./ac. and no. of trials = 3.

Crop: Wheat (Rabi).
Centre: Sumerpur (c.f.).

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

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov., 1954. (vii) Irrigated. (viii) and (ix) N.A. (x) March, 1955.

2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 54(TCM) type IV conducted at Pisanganj on page 60.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>1005</th>
<th>1185</th>
<th>1210</th>
<th>1333</th>
<th>1375</th>
<th>1284</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>964</td>
<td>1005</td>
<td>1057</td>
<td>1333</td>
<td>1064</td>
<td>1243</td>
<td></td>
</tr>
</tbody>
</table>

G.M. = 1013 lb./ac.; S.E. = 41.1 lb./ac. and no. of trials = 17.

Crop: Wheat (Rabi).
Centre: Sumerpur (c.f.).

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

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Desert soil. (iii) to (v) N.A. (vi) Nov. 1955. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1955.

2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 54(TCM) type IV conducted at Pisanganj on page 60.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>1201</th>
<th>1254</th>
<th>1392</th>
<th>1185</th>
<th>1284</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>913</td>
<td>1185</td>
<td>1210</td>
<td>1333</td>
<td>1275</td>
<td>1284</td>
</tr>
</tbody>
</table>

G.M. = 1200 lb./ac.; S.E. = 34.6 lb./ac. and no. of trials = 9.

Crop: Wheat (Rabi).
Centre: Bilara (c.f.).

Object:—To study the effect of gypsum on alkaline soil and Wheat yield.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Wheat. (c) N.A. (ii) Saline alkaline. (iii) 6 lb./ac. of compost. (iv) N.P. 718 (improved, medium to late). (v) (a) N.A. (b) Broadcasting. (c) 40 srs./ac. (d) and (e) N.A. (vi) 5 10,1957. (vii) Irrigated. (viii) and (ix) N.A. (x) 20.3,1958.
2. TREATMENTS:

M₀ = Control, M₁ = 10 tons/ac. of F.Y.M. in May, M₂ = 10 tons/ac. of F.Y.M. in October, M₃ = 2 tons/ac. of gypsum + 10 tons/ac. of F.Y.M., M₄ = 4 tons/ac. of gypsum + 10 tons/ac. of F.Y.M., M₅ = 6 tons/ac. of gypsum + 10 of P₂O₅ as Super applied in October, M₆ = 4 tons/ac. of gypsum and M₇ = 4 tons/ac. of gypsum. N, P and F.Y.M. applied before sowing.

3. DESIGN:

(i) R.B.D with 3 replications and 10 plots/replication. (ii) N.A. (iii) 30'3' x 24'. (b) 24'3' x 18'. (iv) Yes.

4. GENERAL:

(i) Fair. (ii) Nil. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:

(i) 1156 lb./ac. (ii) 614.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
<th>M₇</th>
<th>M₈</th>
<th>M₉</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1155</td>
<td>813</td>
<td>1314</td>
<td>701</td>
<td>1266</td>
<td>1540</td>
<td>791</td>
<td>1488</td>
<td>1163</td>
<td>1129</td>
</tr>
</tbody>
</table>

S.E./mean = 354.6 lb./ac.

Crop: Wheat (Rabi).
Centre: Banswara (c.f.).
Ref: Rj. 57(SFT).
Type: 'M'.

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

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) and (v) N.A. (vi) October—November, 1957. (vii) to (ix) N.A. (x) April, 1958.

2. TREATMENTS:

₀ = Control (no manure).
₁ = 20 lb./ac. of N as A/S.
₂ = 20 lb./ac. of P₂O₅ as Super.
₃ = 20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super.
₄ = 20 lb./ac. of K₂O as Mur. of Pot.
₅ = 20 lb./ac. of N as A/S+20 lb./ac. of K₂O as Mur. of Pot.
₆ = 20 lb./ac. of P₂O₅ as Super+20 lb./ac. of K₂O as Mur. of Pot.
₇ = 20 lb./ac. of K₂O as Mur. of Pot.
₈ = 20 lb./ac. of N as A/S+20 lb./ac. of P₂O₅ as Super+20 lb./ac. of K₂O as Mur. of Pot.
₉ = 20 lb./ac. of K₂O as Mur. of Pot.

3. DESIGN:

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

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) and (c) N.A. (v) As per design. (vi) and (vii) Nil.
5. **RESULTS:**

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>41</td>
<td>41</td>
<td>-41</td>
<td>29.6</td>
<td>25</td>
<td>16</td>
<td>16</td>
<td>-33</td>
<td>29.6</td>
</tr>
<tr>
<td>No. of trials</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

_Crop:_ Wheat  
_Centre:_ Banswara (c.f.).  
_Ref:_ Rj. 58(SFT).  
_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) Red and black soil.  
   (iii) Nil.  
   (iv) and (v) N.A.  
   (vi) October—November, 1958.  
   (vii) As per results.  
   (viii) and (ix) N.A.  
   (x) April 1959.

2. **TREATMENTS** to 4. **GENERAL:**
   Same as in expt. no. 57(SFT) type A on page 68 conducted at Banswara.

5. **RESULTS:**

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigated</td>
<td>99</td>
<td>49</td>
<td>-33</td>
<td>79.0</td>
<td>-66</td>
<td>-16</td>
<td>16</td>
<td>66</td>
<td>43.6</td>
</tr>
<tr>
<td>Av. response in lb./ac.</td>
<td>99</td>
<td>49</td>
<td>-33</td>
<td>79.0</td>
<td>-66</td>
<td>-16</td>
<td>16</td>
<td>66</td>
<td>43.6</td>
</tr>
<tr>
<td>Control mean</td>
<td>8.39 lb./ac. and no. of trials = 8.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unirrigated</td>
<td>74</td>
<td>10</td>
<td>-16</td>
<td>18.9</td>
<td>16</td>
<td>33</td>
<td>107</td>
<td>33</td>
<td>17.3</td>
</tr>
<tr>
<td>Av. response in lb./ac.</td>
<td>74</td>
<td>10</td>
<td>-16</td>
<td>18.9</td>
<td>16</td>
<td>33</td>
<td>107</td>
<td>33</td>
<td>17.3</td>
</tr>
<tr>
<td>Control mean</td>
<td>8.39 lb./ac. and no. of trials = 6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

_Crop:_ Wheat  
_Centre:_ Banswara (c.f.).  
_Ref:_ Rj. 59(SFT).  
_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) Red and black soil.  
   (iii) Nil.  
   (iv) and (v) N.A.  
   (vi) October—November, 1959.  
   (vii) Irrigated.  
   (viii) and (ix) N.A.  
   (x) April, 1960.

2. **TREATMENTS** to 4. **GENERAL:**
   Same as in expt. no. 57(SFT) type A on page 68 conducted at Banswara.

5. **RESULTS:**

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>156</td>
<td>49</td>
<td>33</td>
<td>22.2</td>
<td>-25</td>
<td>0</td>
<td>25</td>
<td>16</td>
<td>32.9</td>
</tr>
<tr>
<td>Control mean</td>
<td>757 lb./ac. and no. of trials = 11.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Crop :- Wheat (Rabi).
Centre :- Kotah (c.f.).

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) Medium black soil. (iii) Nil. (iv) and (v) N.A. (vi) October—November, 1957. (vii) to (ix) N.A. (x) April, 1958.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 57(SFT) type A on page 68 conducted at Banswara.

5. RESULTS :

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>P</th>
<th>K</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>140</td>
<td>58</td>
<td>58</td>
<td>24.7</td>
<td>66</td>
<td>49</td>
<td>16</td>
<td>33</td>
<td>24.7</td>
</tr>
<tr>
<td>No. of trials</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ref :- Rj. 57(SFT).
Type :- 'M'.

-------

Crop :- Wheat
Centre :- Kotah (c.f.).

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) Medium black soil. (iii) Nil. (iv) and (v) N.A. (vi) October—November, 1958. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 57(SFT) type A on page 68 conducted at Banswara.

5. RESULTS :

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>P</th>
<th>K</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>156</td>
<td>123</td>
<td>91</td>
<td>36.2</td>
<td>0</td>
<td>33</td>
<td>99</td>
<td>25</td>
<td>29.6</td>
</tr>
<tr>
<td>Control mean = 790 lb./ac. and no. of trials = 10.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ref :- Rj. 58(SFT).
Type :- 'M'.

-------

Crop :- Wheat
Centre :- Kotah (c.f.).

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) Medium black soil. (iii) Nil. (iv) and (v) N.A. (vi) October—November, 1959. (vii) As per result. (viii) and (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 57(SFT) type A on page 68 conducted at Banswara.

5. RESULTS :

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>P</th>
<th>K</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>156</td>
<td>115</td>
<td>66</td>
<td>46.9</td>
<td>16</td>
<td>25</td>
<td>25</td>
<td>33</td>
<td>29.6</td>
</tr>
<tr>
<td>Control mean = 831 lb./ac. and no. of trials = 6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ref :- Rj. 59(SFT).
Type :- 'M'.

-------

Crop :- Wheat
Centre :- Kotah (c.f.).

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) Medium black soil. (iii) Nil. (iv) and (v) N.A. (vi) October—November, 1959. (vii) As per result. (viii) and (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 57(SFT) type A on page 68 conducted at Banswara.

5. RESULTS :

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>P</th>
<th>K</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>156</td>
<td>115</td>
<td>66</td>
<td>46.9</td>
<td>16</td>
<td>25</td>
<td>25</td>
<td>33</td>
<td>29.6</td>
</tr>
<tr>
<td>Control mean = 831 lb./ac. and no. of trials = 6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ref :- Rj. 59(SFT).
Type :- 'M'.
<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>58</td>
<td>91</td>
<td>49</td>
<td>12.3</td>
<td>49</td>
<td>-31</td>
<td>16</td>
<td>-8</td>
<td>13.2</td>
</tr>
<tr>
<td>Control mean =</td>
<td>296 lb./ac. and no. of trials = 5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Crop = Wheat.**  
**Centre = Pali (c.f.).**

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) Desert. (iii) Nil. (iv) and (v) N.A. (vi) October—November, 1959. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1960.

2. **TREATMENTS to 4. GENERAL:**
   Same as in expt. no. 57(SFT) type A on page 68 conducted at Banswara.

5. **RESULTS:**
   Effect | n | p | k | S.E. | np | nk | pk | npk | S.E. |
   Av. response in lb./ac. | 296 | 156 | 115 | 94.3 | 15 | -8 | 41 | 107 | 40.3 |
   Control mean = 1160 lb./ac. and no. of trials = 12. | |

---

**Crop = Wheat.**  
**Centre = Sriganganagar (c.f.).**

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) Desert. (iii) Nil. (iv) and (v) N.A. (vi) October—November, 1958. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1959.

2. **TREATMENTS to 4. GENERAL:**
   Same as in expt. no. 57(SFT) type A on page 68 conducted at Banswara.

5. **RESULTS:**
   Effect | n | p | k | S.E. | np | nk | pk | npk | S.E. |
   Av. response in lb./ac. | 280 | 140 | 74 | 28.0 | 0 | -49 | -16 | -8 | 26.3 |
   Control mean = 1086 lb./ac. and no. of trials = 6. | |
2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 57(SFT) type A on page 68 conducted at Banswara.

5. RESULTS:

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>304</td>
<td>197</td>
<td>66</td>
<td>29.6</td>
<td>82</td>
<td>—25</td>
<td>33</td>
<td>16</td>
<td>23.9</td>
</tr>
</tbody>
</table>

Control mean = 1210 lb./ac. and no. of trials = 14.

Crop = Wheat (Rabi).
Centre = Banswara (c.f.).

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 and black soil. (iii) Nil. (iv) and (v) N.A. (vi) Oct. 1957. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1958.

2. TREATMENTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0 = Control.</th>
<th>$n_1'$=10 lb./ac. of N as Urea.</th>
<th>$n_1''$=40 lb./ac. of N as Urea.</th>
<th>$n_1'''$=20 lb./ac. of N as $\frac{A}{S}/N$.</th>
<th>$n_1''''$=40 lb./ac. of N as $\frac{A}{S}/N$.</th>
</tr>
</thead>
</table>

3. DESIGN:

(i) and (ii) The district has been divided into four agriculturally homogenous 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/ohana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on a kharif cereal, 8 on a rabi cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of Type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate applications 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) N.A. (b) 1/80 ac. (iv) Yes.

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

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>$n_1'$</th>
<th>$n_1''$</th>
<th>$n_1'''$</th>
<th>$n_1''''$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1029</td>
<td>1045</td>
<td>1308</td>
<td>1168</td>
<td>1243</td>
</tr>
</tbody>
</table>

G.M. = 1346 lb./ac.; S.E. = 71.0 lb./ac. and no. of trials = 13.

Crop = Wheat (Rabi).
Centre = Banswara (c.f.).

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) Desert. (iii) Nil. (iv) and (v) N.A. (vi) Oct.—Nov. 1958. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1959.
2. TREATMENTS to 4. GENERAL:
Same as in expt. no. 57(SFT) type B on page 72 conducted at Banswara.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n1</th>
<th>n2</th>
<th>n1'</th>
<th>n2'</th>
<th>n1''</th>
<th>n2''</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>708</td>
<td>749</td>
<td>930</td>
<td>836</td>
<td>864</td>
<td>749</td>
<td>856</td>
</tr>
</tbody>
</table>

G.M. = 869 lb/ac.; S.E. = 127.4 lb/ac. and no. of trials = 7.

---

Crop: Wheat.
Centre: Banswara (c.f.)
Ref: Rj. 58(SFT).
Type: 'M'.

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

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Red and black. (iii) Nil. (iv) and (v) N.A. (vi) Oct.—Nov. 1959. (vii) As per results. (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 CI/A/N.
   n2'' = 40 lb/ac. of N as CI/A/N.

3. DESIGN and 4. GENERAL:
   Same as in expt. no. 57(SFT) type B on page 72 conducted at Banswara.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n1</th>
<th>n2</th>
<th>n1'</th>
<th>n2'</th>
<th>n1''</th>
<th>n2''</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>724</td>
<td>897</td>
<td>1037</td>
<td>1037</td>
<td>1078</td>
<td>971</td>
<td>938</td>
</tr>
</tbody>
</table>

G.M. = 955 lb/ac.; S.E. = 26.8 lb/ac. and no. of trials = 9.

---

Crop: Wheat (Rabi).
Centre: Kotah.
Ref: Rj. 57(SFT).
Type: 'M'.

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

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Medium black. (iii) Nil. (iv) and (v) N.A. (vi) Oct. 1957. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1958.

2. TREATMENTS to 4. GENERAL:
   Same as in expt. no. 57(SFT) type B on page 72 conducted at Banswara.
Object:—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>$n_1$</th>
<th>$n_2$</th>
<th>$n_1'$</th>
<th>$n_2'$</th>
<th>$n_1''$</th>
<th>$n_2''$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av yield</td>
<td>625</td>
<td>716</td>
<td>749</td>
<td>773</td>
<td>897</td>
<td>699</td>
</tr>
</tbody>
</table>

G.M. = 745 lb./ac.; S.E. = 27.3 lb./ac. and no. of trials = 13.

Crop:—Wheat (Rabi).

Centre:—Kotah (c.f.).

Ref:—Rj. 58(SFT).

Type:—‘M’.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Desert. (iii) Nil. (iv) and (v) N.A. (vi) October—November, 1958. (vii) Irrigated. (viii) and (ix) N.A. (x) April, 1959.

2. TREATMENTS:—GENERAL:
   Same as in exp. no. 57(SFT) type B on page 72 conducted at Banswara.

3. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>$n_1$</th>
<th>$n_2$</th>
<th>$n_1'$</th>
<th>$n_2'$</th>
<th>$n_1''$</th>
<th>$n_2''$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av yield</td>
<td>749</td>
<td>839</td>
<td>938</td>
<td>963</td>
<td>1029</td>
<td>880</td>
</tr>
</tbody>
</table>

G.M. = 909 lb./ac.; S.E. = 127.4 lb./ac. and no. of trials = 7.

Crop:—Wheat.

Centre:—Kotah (c.f.).

Ref:—Rj. 59(SFT).

Type:—‘M’.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Medium black. (iii) Nil. (iv) and (v) N.A. (vi) October—November 1959. (vii) As per results. (viii) and (ix) N.A. (x) April, 1960.

2. TREATMENTS:
   $n_0$ = Control (no manure).
   $n_1$ = 20 lb./ac. of N as A/S.
   $n_1'$ = 20 lb./ac. of N as A/S.
   $n_2$ = 40 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.

3. DESIGN:—GENERAL:
   Same as in exp. no. 57(SFT) type B on page 72 conducted at Banswara.

6. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>$n_1$</th>
<th>$n_2$</th>
<th>$n_1'$</th>
<th>$n_2'$</th>
<th>$n_1''$</th>
<th>$n_2''$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av yield</td>
<td>617</td>
<td>749</td>
<td>839</td>
<td>658</td>
<td>691</td>
<td>708</td>
</tr>
</tbody>
</table>

G.M. = 729 lb./ac.; S.E. = 17.5 lb./ac. and no. of trials = 5.

Unirrigated

<table>
<thead>
<tr>
<th>Treatment</th>
<th>$n_1$</th>
<th>$n_2$</th>
<th>$n_1'$</th>
<th>$n_2'$</th>
<th>$n_1''$</th>
<th>$n_2''$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av yield</td>
<td>387</td>
<td>444</td>
<td>477</td>
<td>436</td>
<td>461</td>
<td>485</td>
</tr>
</tbody>
</table>

G.M. = 454 lb./ac.; S.E. = — and no. of trials = 5.
Crop :- Wheat.  
Centre :- Sriganganagar (c.f.).  
Ref :- Rj. 58(SFT).  
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) Desert.  (iii) Nil.  (iv) and (iv) N.A.  (vi) October—November, 1958.  (vii) Irrigated.  (viii) and (ix) N.A.  (x) April, 1959.

2. TREATMENTS :

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1218</td>
</tr>
<tr>
<td>n1</td>
<td>1382</td>
</tr>
<tr>
<td>n2</td>
<td>1300</td>
</tr>
<tr>
<td>n1''</td>
<td>1331</td>
</tr>
</tbody>
</table>

G.M. = 1382 lb./ac., S.E. = 32.0 lb./ac. and no. of trials = 8.

5. RESULTS :

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1218</td>
</tr>
<tr>
<td>n1'</td>
<td>1382</td>
</tr>
<tr>
<td>n2'</td>
<td>1300</td>
</tr>
<tr>
<td>n1''</td>
<td>1331</td>
</tr>
</tbody>
</table>

G.M. = 1382 lb./ac., S.E. = 32.0 lb./ac. and no. of trials = 8.
1. **BASAL CONDITIONS**:
   (i) (a) to (c) N.A.  (ii) Desert.  (iii) Nil.  (iv) and (v) N.A.  (vi) October—November 1959.  (vii) Irrigated.  (viii) and (ix) N.A.  (x) April, 1960

2. **TREATMENTS**:
   (i) 0 = Control (no manure).
   (ii) $n_1 = 20$ lb./ac. of N as A/S.
   (iii) $n_2 = 40$ lb./ac. of N as A/S.
   (iv) $n_3 = 20$ lb./ac. of N as Urea.
   (v) $n_4 = 40$ lb./ac. of N as Urea.
   (vi) $n_5 = 20$ lb./ac. of N as C/A/N.
   (vii) $n_6 = 40$ lb./ac. of N as C/A/N.

3. **DESIGN** and 4. **GENERAL**:
   Same as in exp. no. 57 (SFTI type Bon page 72 conducted at Banswara.

5. **RESULTS**:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>$n_1$</th>
<th>$n_2$</th>
<th>$n_3$</th>
<th>$n_4$</th>
<th>$n_5$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1201</td>
<td>1440</td>
<td>1728</td>
<td>1366</td>
<td>1531</td>
<td>1531</td>
</tr>
</tbody>
</table>

   **G.M.** = 1514 lb./ac., **S.E.** = 29.7 lb./ac. and no. of trials = 12.

---

**Object** — Response of different varieties of Wheat to different levels of N.

1. **BASAL CONDITIONS**:
   (i) (a) No.  (b) Fallow.  (c) Nil.  (ii) (a) Sandy.  (b) Refer soil analysis, Jobner.  (iii) 23.11.1958.  (iv) (a) 10 ploughings.  (b) Behind the plough.  (c) 1 md./ac.  (d) Row to row 1'.  (e) N.A.  (v) 100 mds./ac of F.Y.M.+100 lb./ac of Super.  (vi) As per treatments.  (vii) Irrigated.  (viii) 1 weeding.  (ix) 0.8'.  (x) 1st week of April, 1959.

2. **TREATMENTS**:
   All combinations of (1) and (2)
   (1) 2 varieties: $V_1 = R$ S.-31-1 and $V_2 = C$-591.
   (2) 6 levels of N: $N_0 = 0, N_1 = 20, N_2 = 40, N_3 = 60, N_4 = 80$ and $N_5 = 100$ lb./ac.
   Source, time and method of application N.A.

3. **DESIGN**:
   (i) Fact. in R.B.D.  (ii) (a) 12.  (b) N.A.  (iii) 4.  (iv) (a) N.A  (b) 1/80 ac.  (v) N.A.  (vi) Yes.

4. **GENERAL**:
   (i) Normal.  (ii) Nil.  (iii) Yield of grain.  (iv) (a) 1958—1959.  (b) Yes.  (c) Nil.  (v) to (vii) N.A.

5. **RESULTS**:
   (i) 2082 lb./ac.  (ii) 283.7 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>$N_0$</th>
<th>$N_1$</th>
<th>$N_2$</th>
<th>$N_3$</th>
<th>$N_4$</th>
<th>$N_5$</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_1$</td>
<td>1958</td>
<td>2279</td>
<td>2412</td>
<td>2235</td>
<td>2235</td>
<td>2191</td>
<td>2218</td>
</tr>
<tr>
<td>$V_2$</td>
<td>1812</td>
<td>1896</td>
<td>2156</td>
<td>2006</td>
<td>1900</td>
<td>1905</td>
<td>1946</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>1855</td>
<td>2088</td>
<td>2284</td>
<td>2130</td>
<td>2068</td>
<td>2048</td>
<td>2082</td>
</tr>
</tbody>
</table>

S.E. of V marginal mean = 58.3 lb./ac.
S.E. of N marginal mean = 101.0 lb./ac.
S.E. of body of table = 142.8 lb./ac.
Crop: Wheat (Rabi).


Ref: Rj. 59(72).

Type: 'MV'.

Object: To study the response of different varieties of Wheat to different levels of N.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Guar (G.M.). (c) No. (ii) (a) Sandy. (b) Refer soil analysis, Jobner.
   (iv) (a) 10 ploughings. (b) Behind the plough. (c) 40 srt./ac. (d) 12" between rows. (e) N.A. (v) N.A.
   (vi) As per treatment. (vii) Irrigated. (viii) 1 weeding. (x) 0.90'. (x) 1st week of April, 1960.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 58(46) on page 76.

5. RESULTS:
   (i) 237 lb./ac. (ii) 338.6 lb./ac. (iii) Main effects of N and V are significant. (iv) Av. yield of grain
   in lb./ac.

<table>
<thead>
<tr>
<th>N1</th>
<th>N2</th>
<th>N3</th>
<th>N4</th>
<th>N5</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>2024</td>
<td>2666</td>
<td>2956</td>
<td>2681</td>
<td>2487</td>
</tr>
<tr>
<td>2485</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V2</td>
<td>2037</td>
<td>2249</td>
<td>2588</td>
<td>2412</td>
<td>2240</td>
</tr>
<tr>
<td>2257</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

S.E. of V marginal mean = 69.1 lb./ac.
S.E. of N marginal mean = 119.7 lb./ac.
S.E. of body of the table = 169.3 lb./ac.

Crop: Wheat (Rabi).

Site: Govt. Agri. Farm, Kotah.

Ref: Rj. 55(TCM).

Type: 'MV'.

Object:—Type VIII:—To study the effect of N and P on different varieties on Wheat.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) (a) Medium black soil. (b) N.A. (iii) 17.11.1955. (iv) (a) to (e) N.A. (v) Nil.
   (vi) As per treatments. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 1.5.1956.

2. TREATMENTS:
   All combinations of (1), (2) and (3).
   (1) 3 varieties: V1 = Malvi (local), V2 = Rj.-31-1 and V3 = C.-591.
   (2) 3 levels of N: N0 = 0, N1 = 20 and N2 = 40 lb./ac.
   (3) 3 levels of P2O5: P0 = 0, P1 = 20 and P2 = 40 lb./ac.

3. DESIGN:
   (i) 3F Factor confd. (ii) (a) 9 plots/block; 3 blocks/replications. (b) N.A. (iii) I. (iv) (a) 45'x20'. (b)
   37'x18'. (v) N.A. (vi) Yes.

4. GENERAL:
   (ii) Crop lodged. (iii) Nil. (iii) Grain yield. (iv) (a) 1953—1955. (b) No. (c) Nil. (v) (a) and (b) N.A.
   (vi) and (vii) Nil.

5. RESULTS:
   (i) 3257 lb./ac. (ii) 298.5 lb./ac. (iii) Main effect of V is highly significant and main effect of N is significant.
   (iv) Av. yield of grain in lb./ac.
Crop :- Wheat (Rabi)  
Type :- 'C'.

Object :- To find out the optimum seed rate and row to row spacing of unirrigated Wheat.

1. BASAL CONDITIONS:
   (i) (a) to (c) Nil. (ii) (a) Clay loam, (b) N.A.  (iii) 16 to 18.10.1958, (iv) (a) 2 ploughings and 3 bakherings (b) Behind the plough. (c) and (d) As per treatments. (v) N.A. (vi) Nil. (vii) Unirrigated. (viii) 2 weeding. (ix) and (x) N.A.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 3 seed rates: \( R_1 = 33 \), \( R_2 = 66 \) and \( R_3 = 99 \) lb./ac.
   (2) 3 row spacing: \( S_1 = 8\)', \( S_2 = 12\) and \( S_3 = 16\)'.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 41'3"x33'. (v) 3'4" around. (vi) Yes.

4. GENERAL:
   (i) Poor growth. (ii) Nil. (iii) Yield of grain. (iv) (a) 1958 - contd. (b) Yes. (c) N.A. (v) N.A.

5. RESULTS:
   (i) 469 lb./ac. (ii) 70.9 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>( R_1 )</th>
<th>( R_2 )</th>
<th>( R_3 )</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>( S_1 )</td>
<td>513</td>
<td>472</td>
<td>479</td>
<td>488</td>
</tr>
<tr>
<td>( S_2 )</td>
<td>450</td>
<td>499</td>
<td>431</td>
<td>460</td>
</tr>
<tr>
<td>( S_3 )</td>
<td>489</td>
<td>438</td>
<td>434</td>
<td>469</td>
</tr>
</tbody>
</table>

\[
\text{S.E. of any marginal mean} = 16.7 \text{ lb./ac.} \\
\text{S.E. of body of table} = 28.9 \text{ lb./ac.}
\]
1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Wheat. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 28.10.1959. (iv) (a) 2 ploughings and 3 bakherings. (b) Behind the plough. (c) and (d) As per treatments. (e) N.A. (v) Nil. (vi) Malvi (vii) Unirrigated. (viii) 2 weedings. (ix) and (a) N.A.

2. TREATMENTS to 4. GENERAL:
   Same as in expt. no. 58(47) on page 78.

3. RESULTS:
   (i) 123 lb./ac. (ii) 40.8 lb./ac. (iii) Only S effect is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>129</td>
<td>15</td>
<td>91</td>
<td>102</td>
</tr>
<tr>
<td>S2</td>
<td>103</td>
<td>141</td>
<td>115</td>
<td>120</td>
</tr>
<tr>
<td>S3</td>
<td>154</td>
<td>154</td>
<td>129</td>
<td>146</td>
</tr>
<tr>
<td>Mean</td>
<td>129</td>
<td>127</td>
<td>112</td>
<td>123</td>
</tr>
</tbody>
</table>

S.E. of any marginal mean = 9.6 lb./ac.
S.E. of body of table = 16.7 lb./ac.

Crop: Wheat (Rabi)  Ref: Rj. 58(49)
Object: To find out the best sowing date of Wheat under dry farming conditions.

1. BASAL CONDITIONS:
   (i) (a) to (c) Nil. (ii) (a) Clay. (b) N.A. (iii) As per treatments. (iv) (a) 1 ploughing and 4 bakherings. (b) Behind the plough. (c) 20 lb./ac. (d) Row to row: 9" to 12". (e) N.A. (v) Nil. (vi) Malvi. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 30.3.1959.

2. TREATMENTS:

3. DESIGN:
   (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 41'3" X 33'. (v) 3'4" around. (vi) Yes.

4. GENERAL:
   (i) F. ir. (ii) Nil. (iii) Yield of grain. (iv) (a) 1958—contd. (b) Yes. (c) N.A. (v) to (vii) N.A.

5. RESULTS:
   (i) 37.5 lb./ac. (ii) 47.13 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

   Treatment | S1  | S2  | S3  | S4  |
   Treatment | 287 | 326 | 356 | 301 |
   Av. yield |     |     |     |     |
   S.E./mean | 19.2 lb./ac.  |
1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Clay. (b) N.A. (iii) As per treatments. (iv) (a) 1 ploughing and 4 bakhering. (b) Behind the plough. (c) 20 srs./ac. (d) Row to row: 9" to 12". (e) N.A. (v) Nil. (vi) Malli. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 22.3.1960.

2. TREATMENTS:

3. DESIGN and 4. GENERAL:
   Same as expt. no. 58(49) on page 79.

5. RESULTS:
   (i) 130 lb/ac. (ii) 64.6 lb/ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>S1</th>
<th>S2</th>
<th>S3</th>
<th>S4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>0</td>
<td>110</td>
<td>263</td>
<td>148</td>
</tr>
<tr>
<td>S.E./mean</td>
<td></td>
<td></td>
<td>26.4</td>
<td></td>
</tr>
</tbody>
</table>

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Sriganganagar.
Object: To find out the optimum seed rate for Wheat.

1. BASAL CONDITION:
   (i) (a) Nil. (b) N.A. (c) 20 lb/ac. of N+20 lb/ac. of P2O5. (ii) (a) and (b) N.A. (iii) November, 1959. (iv) (a) 4 ploughings. (b) N.A. (c) As per treatments. (d) Row to row 9". (e) N.A. (vi) C-591. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) April, 1959.

2. TREATMENTS:
   8 seed rates: S1=25, S2=30, S3=35, S4=40, S5=45, S6=50, S7=55 and S8=60 srs./ac.

3. DESIGN:
   (i) R.B.D. (ii) 8. (iii) 6. (iv) (a) 30" x 18". (b) 28" x 15" (v) 1' x 1'. (vi) Yes.

4. GENERAL:
   (i) and (ii) N.A. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
   (i) 1894 lb/ac. (ii) 256.2 lb/ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>S1</th>
<th>S2</th>
<th>S3</th>
<th>S4</th>
<th>S5</th>
<th>S6</th>
<th>S7</th>
<th>S8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>2128</td>
<td>1947</td>
<td>1935</td>
<td>1873</td>
<td>1911</td>
<td>1902</td>
<td>1747</td>
<td>1693</td>
</tr>
<tr>
<td>S.E./mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>104.6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Tabiji.
Object: To find out the optimum seed rate for Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Maize. (c) 40 lb/ac. of N+40 lb/ac. of P2O5. (ii) (a) and (b) N.A. (iii) Nov., 1959. (iv) (a) 4 ploughings. (b) N.A. (c) As per treatments. (d) Row to row 9". (e) N.A. (vi) N.P.-718. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) March, 1960.
2. TREATMENTS to 4. GENERAL:
Same as in exp. no. 59(77) on page 80

5. RESULTS:
(i) 2210 lb/ac. (ii) 240.6 lb/ac. (iii) The treatment differences are not significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>S₁</th>
<th>S₂</th>
<th>S₃</th>
<th>S₄</th>
<th>S₅</th>
<th>S₆</th>
<th>S₇</th>
<th>S₈</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>2142</td>
<td>2194</td>
<td>2282</td>
<td>2299</td>
<td>2230</td>
<td>2074</td>
<td>2247</td>
<td>2213</td>
</tr>
</tbody>
</table>

S.E./mean = 93.2 lb/ac.

Crop :- Wheat.
Site :- Govt. Agr. Res. Farm, Tabiji.

Object :- To study the response of different varieties of Wheat at various seed rates.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 28.11.1955. (iv) (a) 4 ploughings. (b) N.A. (c) As per treatments. (d) and (e) N.A. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) and (ix) N.A. (x) 19.3.1956.

2. TREATMENTS:
All combinations of (1) and (2).
(1) 3 seed rates : S₁ = 30, S₂ = 40 and S₃ = 50 srs/ac.
(2) 2 varieties : V₁ = C-59 (medium) and V₂ = Desi.

3. DESIGN:
(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 35' × 24'. (b) 33' × 22'. (v) 1' × 1'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) No. (iii) Yield of grain. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
(i) 1862 lb/ac. (ii) 318.8 lb/ac. (iii) None of the effects is highly significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th></th>
<th>S₁</th>
<th>S₂</th>
<th>S₃</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>V₁</td>
<td>1863</td>
<td>1933</td>
<td>1902</td>
<td>1899</td>
</tr>
<tr>
<td>V₂</td>
<td>1772</td>
<td>1956</td>
<td>1788</td>
<td>1825</td>
</tr>
</tbody>
</table>

Mean 1798 1944 1845 1862

S.E. of V marginal mean = 91.8 lb/ac.
S.E. of S marginal mean = 112.4 lb/ac.
S.E. of body of table = 159.4 lb/ac.

Crop :- Wheat (Rabi).
Site :- S.K.N. Agri. College, Johinder.

Object :- To study the effect of varying seed rates and levels of N on Wheat yield.
1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Wheat. (c) F.Y.M.—amount N.A. (ii) (a) Sandy. (b) N.A. (iii) 17.11.1958. (iv) (a)
   10 ploughings. (b) N.A. (c) As per treatments. (d) Row to row 9". (e) N.A. (v) 100 mds/ac. of F.Y.M.

2. TREATMENTS:
   All combinations of (1) and (2).
   (1) 3 seed rates: S1 = 30, S2 = 40 and S3 = 50 srs.fac.
   (2) 4 levels of N: N0 = 0, N1 = 30, N2 = 60 and N3 = 90 lb./ac.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 36'X15'. (b) 34'X13'. (v) 1'XI'.
   (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1958—1959. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS:
   (i) 3348 lb./ac. (ii) 349.8 lb./ac. (iii) The effects of N, S and the interaction N X S are significant. (iv) Av.
   yield of grain in lb./ac.

<table>
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<tr>
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S.E. of marginal mean of S = 87.4 lb./ac.
S.E. of marginal mean of N = 101.0 lb./ac.
S.E. of body of the table = 174.9 lb./ac.

Crop : Wheat (Rabi).
Ref : Rj. 59(71).
Type : CM'.

Object : To find the effect of varying seedrates and levels of N on the yield of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy. (b) N.A. (iii) 31.10.1959. (iv) (a) 10 ploughings. (b)
   N.A. (c) As per treatments. (d) Row to row 9". (e) N.A. (v) 100 mds/ac. of F.Y.M. (vi) RS—31—I.
   (vii) Irrigated. (viii) 1 weeding. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL:
   Same as in expt. no. 58(45) on page 81

5. RESULTS:
   (i) 4256 lb./ac. (ii) 369.4 lb./ac. (iii) Only the main effect of N is significant. (iv) Av. yield of grain
   in lb./ac.

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Crop: Wheat (Rabi)

Site: Govt. Agri. Farm, Sriganganagar.

Ref: Rj. 56(MAE).

Type: "CM'.

Object: Type VIII—To study the effect of seed rate, date of sowing and manures on Wheat.

1. BASAL CONDITIONS:
   (i) (a) to (c) Nil. (ii) (a) Desert soil. (b) N.A. (iii) D1 =7.11.1956, D2 =22.11.1956 and D3 =7.12.1956. (iv) (a) 2 disc-harrowings and one beaming. (b) N.A. (c) As per treatments. (d) 12°. (e) N.A. (v) Nil.
   (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) 6.82°. (x) 6 to 15.5.1957.

2. TREATMENTS:
   Main-plot treatments:
   All combinations of (1) and (2)
   (1) 3 seed rates: R1 =50, R2 =70 and R3 =90 lb./ac.
   (2) 3 dates of sowing: D1 =15 days before normal, D2 =Normal and D3 =15 days after normal.
   Sub-plot treatments:
   All combinations of (1) and (2)
   (1) 3 levels of N as A's: N0 =0, N1 =20 and N2 =40 lb./ac.
   (2) 3 levels of P2O5 as super: P0 =0, P1 =20 and P2 =40 lb./ac.

3. DESIGN:
   (i) Split-plot. (ii) (a) 9 sub-plots/main-plot : 9 main-plots/replication. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 1/124.78 ac. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) Normal crop lodged. (ii) Yellow and black rust attack. No control measures taken. (iii) Grain yield.
   (iv) (a) 1935—contd. (b) No. (c) Yes. (v) (a) Nil. (b) N.A. (vi) Season was not favourable to the crop, (vii) Nil.

5. RESULTS:
   (i) 1795 lb./ac. (ii) (a) 405.4 lb./ac. (b) 255.8 lb./ac. (iii) Main effects of N and P are highly significant.
   (iv) Av. yield of grain in lb./ac.

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<th></th>
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</table>
S.E. of difference of two
1. R or D marginal means = 78.0 lb./ac.
2. N or P marginal means = 49.2 lb./ac.
3. N or P means at the same level of R or D = 85.3 lb./ac.
4. R or D means at the same level of N or P = 181.1 lb./ac.
S.E. of body of R X D table = 95.6 lb./ac.
S.E. of body of N X P table = 60.3 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Sriganganagar.
Ref: Rj. 37 (MAE).
Type: 'GM'.

Object: Type VIII: To study the effect of seed rate, date of sowing and manures on Wheat.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (b) Desert soil. (c) N.A. (iii) D1=10.11.1957, D2=26.11.1957 and D3=12.12.1957.
   (iv) (a) 2 disc-harrowings and 2 beamings. (b) N.A. (c) As per treatments. (d) 9°. (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) 2.30°. (x) April-May, 1958.

2. TREATMENTS:
   Same as in exp. no. 56 (MAE) type VIII on page 75.

3. DESIGN:
   (i) Split-plot. (ii) 9 sub-plots/main-plot ; 9 main-plots/replication. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 29°x15°. (v) N.A. (vi) Yes.

4. GENERAL
   (iv) (a) 1956—contd. (b) No. (c) Yes. (v) to (vii) N.A.

5. RESULTS:
   (i) 1614 lb./ac. (ii) (a) 679.9 lb./ac. (b) 274.2 lb./ac. (iii) Main effect of D, N and P are highly significant. (iv) Av. yield of grain in lb./ac

<table>
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<th>D3</th>
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S.E. of difference of two
1. R or D marginal means = 130.8 lb./ac.
2. N or P marginal means = 52.8 lb./ac.
3. N or P means at the same level of R or D = 91.4 lb./ac.
4. R or D means at the same level of N or P = 160.9 lb./ac.
S.E. of body of R X D table = 64.6 lb./ac.
S.E. of body of N X P table = 64.6 lb./ac.
Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Sriganganagar.

Ref: Rj. 56(MAE).
Type: "CM".

Object:—Type VIII—To study the effect of seed rate, date of sowing and manures on Wheat.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) \(D_1 = 21.1.1958\), \(D_2 = 22.11.1958\) and \(D_3 = 7.12.1958\).
   (iv) (a) 4 ploughings and 1 harrowing. (b) N.A. (c) As per treatments. (d) 9°. (e) N.A. (v) N.A. (vi) C—591 (late). (vii) Irrigated. (viii) 2 weedings and 1 hoeing. (ix) 5°. (x) 4th week of April, 1959.

2. TREATMENTS:
   Same as in exp. no. 56(MAE) type VIII on page 75.

3. DESIGN:
   (i) Split-plot. (ii) (a) 9 sub-plots/main-plot ; 9 main-plots/replication. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 50'x14.5'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—contd. (b) No. (c) Yes. (v) to (vii) N.A.

5. RESULTS:
   (i) 1828 lb./ac. (ii) (a) 872.6 lb./ac. (b) 239.0 lb./ac. (iii) Main effect of \(D\), \(N\) and \(P\) are highly significant. (iv) *Av. yield of grain in lb./ac.

<table>
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<th>(D_1)</th>
<th>(D_2)</th>
<th>(D_3)</th>
<th>(P_1)</th>
<th>(P_2)</th>
<th>(P_3)</th>
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S.E. of difference of two
1. \(R\) or \(D\) marginal means = 167.9 lb./ac.
2. \(N\) or \(P\) marginal means = 46.0 lb./ac.
3. \(N\) or \(P\) means at the same level of \(R\) or \(D\) = 79.7 lb./ac.
4. \(R\) or \(D\) means at the same level of \(N\) or \(P\) = 311.9 lb./ac.
S.E. of body of \(R\times D\) table = 205.7 lb./ac.
S.E. of body of \(N\times P\) table = 56.3 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Sriganganagar.

Ref: Rj. 59(MAE).
Type: "CM".

Object:—Type VIII—To study the effect of seed rate, date of sowing and manures on Wheat.
1. BASAL CONDITIONS:
(i) (a) to (c) N.A.  (ii) (a) Desert soil.  (b) N.A.  (iii) $D_1=13.11.1959$, $D_2=28.11.1959$ and $D_3=13.12.1956$.  
(iv) (a) 3 ploughings.  (b) N.A.  (c) As per treatments.  (d) 9'.  (e) N.A.  (v) Nil.  (vi) C—391 (late).  
(vii) Irrigated.  (viii) 1 weeding and 1 hoeing.  (ix) 2'.  (x) April—May, 1960.

2. TREATMENTS:
Same as in ext. 56(MAE) type VIII on page 75.

3. DESIGN:
(i) Split-plot.  (ii) (a) 9 main-plots/block; 9 sub-plots/main-plot.  (b) N.A.  (iii) 2.  (iv).  
(a) N.A.  (b) 30'x14.5'.  (v) N.A.  (vi) Yes.

4. GENERAL:
(i) Good.  (ii) N.A.  (iii) Grain yield.  (iv) (a) 1955—contd.  (b) No.  (c) Yes.  (d) to (vii) Nil.

5. RESULTS:
(i) 1872 lb./ac.  (ii) (a) 539.3 lb./ac.  (b) 267.7 lb./ac.  (iii) Main effect of $D$ and $N$ and interaction $D \times N$ are highly significant. Main effect of $P$ is significant.  (iv) Av. yield of grain in lb./ac.

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<th>$D_1$</th>
<th>$D_2$</th>
<th>$D_3$</th>
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<th>$P_2$</th>
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S.E. of difference of two
1. R or D marginal means = 103.8 lb./ac.
2. N or P marginal means = 51.5 lb./ac.
3. N or P means at the same level of R or D = 89.2 lb./ac.
4. R or D means at the same level of N or P = 127.1 lb./ac.
S.E. of body of $R \times D$ table = 63.1 lb./ac.
S.E. of body of $N \times P$ table

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Tabiji.
Ref :- Rj. 59(75).
Type :- 'T'.

Object :- To study the bed size in relation to volume of water and frequency of irrigation.

1. BASAL CONDITIONS:
(i) (a) Nil.  (b) Maize.  (c) 40 lb./ac. o N 4-40 lb./ac. of $P_2O_5$.  (ii) (a) and (b) N.A.  (iii) October, 1959.  
(iv) (a) 4 ploughings.  (b) N.A.  (c) 1 md./ac.  (d) Row to row 9'.  (e) N.A.  (f) N.A.  (g) R.S.—31—1.  
(vi) As per treatments.  (vii) and (ix) N.A.  (x) April, 1960.
2. TREATMENTS:

Main-plot treatments:
All combinations of (1) and (2)
(1) 3 levels of irrigation: \( I_1 = 1\), \( I_2 = 2\) and \( I_3 = 3\) in. /ac.
(2) 2 bed sizes: \( B_1 = 4\) strips, \( B_2 = 6\) sq. plots and \( B_3 = A\) whole plots.

Sub-plot treatments:
3 frequencies of irrigation: \( F_1 = 4\), \( F_2 = 5\) and \( F_3 = 6\) irrigations.

3. DESIGN:

(i) Split-plot. (ii) (a) 9 main-plots/block; 3 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) 33"x33". (b) 29"x29". (v) 1'x1'. (vi) Yes.

4. GENERAL:

(i) and (ii) N.A. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:

(i) 2066 lb. /ac. (ii) (a) 70.1 lb. /ac. (b) 160.7 lb. /ac. (iii) Main plot treatments are highly significant. \( I, B, F\) effects and interaction \( I \times F\) are significant. (iv) Av. yield of grain in lb. /ac.

<table>
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S.E. of difference of two
1. Main-plot marginal means = 28.6 lb. /ac.
2. Sub-plot marginal means = 37.9 lb. /ac.
3. Sub-plot means at the same level of main-plot = 113.6 lb. /ac.
4. Main-plot means at the same level of sub-plot = 97.1 lb. /ac.

Crop: Wheat (Rabi).
Ref: Rj. 56(MAE).
Site: Govt. Agri. Farm, Sriganganagar.
Type: 'IM'.

Object: Type 1 – To study the effect of frequency and intensity of irrigation along with manures on Wheat.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) 17 to 23.11.1956. (iv) (a) 2 disc-harrowings and 1 beam-cutting. (b) N.A. (c) 70 lb. /ac. (d) 9" to 12" between rows. (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) 6.53'. (x) 6 to 15.5.1957.

2. TREATMENTS:

Main-plot treatments:
All combinations of (1) and (2)
(1) 3 intensities of irrigation: \( I_1 = 2\), \( I_2 = 3\) and \( I_3 = 4\) in.
(2) 3 frequencies of irrigation: \( F_1 = 3\), \( F_2 = 4\) and \( F_3 = 5\) irrigations.

Sub-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 \( P_2\) as Triple Super: \( P_0 = 0\), \( P_1 = 30\) and \( P_2 = 60\) lb. /ac.
3. DESIGN:
(i) Split-plot. (ii) (a) 9 sub-plots/main-plot ; 9 main-plots/replication. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 28' x 15.5'. (v) N.A. (vi) Yes.

4. GENERAL:
(i) Normal. (ii) Yellow and black rust attack. (iii) Grain yield. (iv) (a) 1956—contd. (b) No. (c) Yes. (v) to (vii) Nil.

5. RESULTS:
(i) 2030 lb./ac. (ii) (a) 626.2 lb./ac. (b) 295.9 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

<table>
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<th></th>
<th>F₁</th>
<th>F₂</th>
<th>F₃</th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
<th>P₁</th>
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<td>2078</td>
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S.E. of difference of two
1. I or F marginal means = 120.5 lb./ac.
2. N or P marginal means = 56.9 lb./ac.
3. N or P means at the same level of I or F = 98.6 lb./ac.
4. I or F means at the same level of N or P S.E. of body of I×F table = 251.1 lb./ac.
S.E. of body of N×P table = 147.6 lb./ac.
S.E. of body of N×P table = 69.7 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Sriganganagar.
Ref: Rj. 57(MAE).
Type: I'M'.

Object:—Type I—To study the effect of frequency and intensity of irrigation along with manures on Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) Oct.—Nov., 1957. (iv) (a) 2 disc-harrowings and 2 beamings. (b) N.A. (c) 70 lb./ac. (d) 9'. (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) N.A. (vii) N.A. (viii) Apr.—May, 1958.

2. TREATMENTS and 3. DESIGN:
Same as in exp. no. 56(MAE) type I on page 87.

4. GENERAL:
(i) Normal. (ii) Attack of white ants and rust incidence. Aldrin powder used with irrigation. (iii) Grain yield. (iv) (a) 1956—contd. (b) No. (c) Yes. (v) to (vii) N.A.
5. RESULTS:
(i) 2023 lb./ac. (ii) (a) 203.3 lb./ac. (b) 147.8 lb./ac. (iii) Main effect of F, N and P are highly significant. (iv) Av. yield of grain in lb./ac.

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<th>F₂</th>
<th>F₃</th>
<th>N₀</th>
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<th>N₂</th>
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<td>2044</td>
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</table>

S.E. of difference of two
1. I or F marginal means = 39.1 lb./ac.
2. N or P marginal means = 28.4 lb./ac.
3. N or P means at the same level of I or F = 49.3 lb./ac.
4. I or F means at the same level of N or P = 57.2 lb./ac.
S.E. of body of I×P table = 47.9 lb./ac.
S.E. of b. dy of N×P table = 34.8 lb./ac.

Crop : Wheat (Rabi), Site : Govt. Agri. Farm, Srigangapur.

Ref : Rj. 50 (MAE).
Type : 'IM'.

Object :- Type I - To study the effect of frequency and intensity of irrigations along with manures on Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) 3rd and 4th week of November, 1958. (iv) (a) 4 ploughings and 1 harrowing. (b) N.A. (c) 70 lb./ac. (d) 9' (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) 2 weedings and 1 hoeing. (ix) 5'. (x) 4th week of April, 1959.

2. TREATMENTS:
All combinations of (1), (2), (3) and (4)
(1) 3 intensities of irrigation : I₁ = 2', I₂ = 3' and I₃ = 4'.
(2) 3 frequencies of irrigation : F₁ = 3, F₂ = 4, F₃ = 5 irrigations.
(3) 3 levels of N : N₀ = 0, N₁ = 30 and N₂ = 60 lb./ac.
(4) 3 levels of P : P₀ = 0, P₁ = 30 and P₂ = 60 lb./ac.

3. DESIGN:
(i) 9° fact. confd. (ii) (a) 9 plots/block ; 9 blocks/replications. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 32.25'×13.5'. (v) N.A. (vi) Yes.

4. GENERAL:
(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd (modified in 1958). (b) No. (c) Yes. (v) to (vii) Nil.
5. RESULTS:

(i) 2167 lb./ac.  
(ii) 202.4 lb./ac.  
(iii) Main effect of N and P are highly significant. Main effect of I is significant.  
(iv) Av. yield of grain in lb./ac.

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<th>F₃</th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
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S.E. of any marginal mean
S.E. of body of any table

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Crop :- Wheat (Rabi).

Site :- Govt. Agri. Farm, Sriganganagar.

Ref :- Rj. 59 (MAE).

Type :- 'IM'.

Object :- Type I—To study the effect of frequency and intensity of irrigation along with manures on Wheat.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A.  
(ii) (a) Desert soil.  
(iii) 2nd week of November, 1959.  
(iv) (a) 4 ploughings.  
(b) N.A.  
(c) 70 lb./ac.  
(d) 9°.  
(e) N.A.  
(v) C—591 (late).  
(vi) Irrigated.  
(vii) 1 weeding and 1 hoeing.  
(ix) 2°.  
(x) April—May 1960.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 58(MAE), type I on page 89.

5. RESULTS:

(i) 1812 lb./ac.  
(ii) 238.3 lb./ac.  
(iii) Main effects of P, N and P and interaction I × F are highly significant.  
(iv) Av. yield of grain in lb./ac.

<table>
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<th>F₃</th>
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Crop :- Wheat.
Site :- Govt. Agri. Exptl. Farm, Bassi.

Object :- To study the effect of soaking seed in different strength of solutions of Pot. Phosphate and A/S.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 6.12.1955. (iv) (a) 4 ploughings. (b) N.A. (c) 70 lb/ac. (d) Row to row 9'. (e) N.A. (v) Nil. (vi) C-591 (medium). (vii) Irrigated. (viii) and (ix) N.A. (x) 16.4.1956.

2. TREATMENTS :
29 seed-soakings treatments: T_0 = Control, T_1 = S_1 C_1 D_1, T_2 = S_1 C_2 D_1, T_3 = S_1 C_3 D_1, T_4 = S_1 C_5 D_1, T_5 = S_2 C_1 D_1, T_6 = S_2 C_2 D_1, T_7 = S_2 C_3 D_1, T_8 = S_2 C_5 D_1, T_9 = S_2 C_6 D_1, T_{10} = S_3 C_1 D_1, T_{11} = S_3 C_2 D_1, T_{12} = S_3 C_3 D_1, T_{13} = S_3 C_5 D_1, T_{14} = S_3 C_6 D_1, T_{15} = S_4 C_1 D_1, T_{16} = S_4 C_2 D_1, T_{17} = S_4 C_3 D_1, T_{18} = S_4 C_5 D_1, T_{19} = S_4 C_6 D_1, T_{20} = S_5 C_1 D_1, T_{21} = S_5 C_2 D_1, T_{22} = S_5 C_3 D_1, T_{23} = S_5 C_5 D_1, T_{24} = S_5 C_6 D_1, T_{25} = S_6 C_1 D_1, T_{26} = S_6 C_2 D_1, T_{27} = S_6 C_3 D_1, T_{28} = S_6 C_5 D_1, T_{29} = S_6 C_6 D_1.

S_1 = Potass um phos.; S_2 = A/S, C_1 = 0.25%, C_2 = 0.5%, C_3 = 1%, C_4 = 2.5% and C_5 = 5%; M_1 = 0.25% of S_1 and S_2, M_2 = 0.5% of S_1 and S_2, M_3 = 1% of S_1 and S_2, W = Water only; D_1 = 6 and D_2 = 12 hours duration of seed soaking.

3. DESIGN :
(i) R.B.D. (ii) (a) 29. (b) N.A. (iii) 3. (iv) (a) 16' x 9'. (b) 12' x 5'. (v) 2' x 2'. (vi) Yes.

4. GENERAL :
(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) and (b) No. (c) Nil. (v) (a) Mandore. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :
(i) 578 lb/ac. (ii) 198.0 lb/ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T_0</th>
<th>T_1</th>
<th>T_2</th>
<th>T_3</th>
<th>T_4</th>
<th>T_5</th>
<th>T_6</th>
<th>T_7</th>
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<td>614</td>
<td>500</td>
<td>500</td>
<td>464</td>
<td>555</td>
<td>450</td>
<td>683</td>
<td>696</td>
<td>637</td>
<td>651</td>
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<table>
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<th>T_{11}</th>
<th>T_{12}</th>
<th>T_{13}</th>
<th>T_{14}</th>
<th>T_{15}</th>
<th>T_{16}</th>
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<tr>
<td>Av. yield</td>
<td>673</td>
<td>491</td>
<td>573</td>
<td>546</td>
<td>419</td>
<td>482</td>
<td>637</td>
<td>683</td>
<td>582</td>
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<th>Treatment</th>
<th>T_{19}</th>
<th>T_{20}</th>
<th>T_{21}</th>
<th>T_{22}</th>
<th>T_{23}</th>
<th>T_{24}</th>
<th>T_{25}</th>
<th>T_{26}</th>
<th>T_{27}</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>664</td>
<td>601</td>
<td>491</td>
<td>518</td>
<td>469</td>
<td>601</td>
<td>696</td>
<td>582</td>
<td>637</td>
<td>651</td>
</tr>
</tbody>
</table>

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

--

Crop :- Wheat.
Site :- Agri. Govt. and Exptl. Farm, Bassi.

Object :- To study the effect of seed dressing by different chemicals on Wheat.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) Jowar. (c) Nil. (ii) (a) Yellow alluvium. (b) N.A. (iii) 1st week of November, 19/5. (iv) (a) to (e) N.A. (v) Nil. (vi) RS-31 (early). (vii) Irrigated. (viii) 3 weedings and hoeings. (ix) N.A. (x) 12.4.1956.

2. TREATMENTS :
6 seed treatments: T_0 = Control, T_1 = 4, T_2 = 8 tolas/md. of Semonea, T_3 = 8 tolas/mdl. of Agrosan, T_4 = 9 and T_5 = 20 tolas/mdl. of Spergon.
3. DESIGN:
   (i) R.B.D.  (ii) (a) 6.  (b) N.A.  (iii) 4.  (iv) (a) 25'×9'.  (b) 22'×6'.  (v) 11'×11'.  (vi) Yes.

4. GENERAL:
   (i) Good.  (ii) Nil.  (iii) Yield of grain.  (iv) (a) and (b) No.  (c) Nil.  (v) (a) Durgapur, Mandore and Ganganagar.  (b) N.A.  (vi) and (vii) Nil.

5. RESULTS:
   (i) 1564 lb./ac.  (ii) 366 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
<th>T₅</th>
</tr>
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<tbody>
<tr>
<td>Av. yield</td>
<td>1388</td>
<td>1614</td>
<td>1:86</td>
<td>1374</td>
<td>1676</td>
<td>1614</td>
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<tr>
<td>S.E./mean</td>
<td>183 lb./ac.</td>
<td></td>
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**Crop**: Wheat.

**Site**: Govt. Agri. and Exptl. Farm, Bassi.

**Ref**: Rj. 55(46).

**Type**: 'D'.

Object:—To study the effect of dusting and spraying sulphur solution on Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil.  (b) Fallow.  (c) Nil.  (ii) (a) Yellow alluvium.  (b) N.A.  (iii) 1st week of November, 1955.  (iv) (a) to (e) N.A.  (v) Nil.  (vi) R.S.—31 (early).  (vii) Irrigated.  (viii) Nil.  (ix) N.A.  (x) 26, 29.3.1956.

2. TREATMENTS:
   4 treatments: T₀ = Control, T₁ = Dusting with sulphur at 25 lb./ac., T₂ = Spraying with colloidal sulphur solution (1 : 100), T₃ = Spraying with ultra sulphur solution.

Sulphur was sprayed on 5.2.1956.

3. DESIGN:
   (i) R.B.D.  (ii) (a) 4.  (b) N.A.  (iii) 4.  (iv) (a) 33'×21'.  (b) 30'×18'.  (v) 11'×11'.  (vi) Yes.

4. GENERAL:
   (i) Good.  (ii) Attack of rust—control measures N.A.  (iii) Yield of grain.  (iv) (a) and (b) No.  (c) Nil.  (v) to (vii) Nil.

5. RESULTS:
   (i) 1911 lb./ac.  (ii) 155.1 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1756</td>
<td>2005</td>
<td>1971</td>
<td>1913</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>77.6 lb./ac.</td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

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**Crop**: Wheat (Rabi).

**Site**: Govt. Agri. Exptl. Farm, Durgapur.

**Ref**: Rj. 55(47).

**Type**: 'D'.

Object:—To study the response of seed dressing by different chemicals on Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil.  (b) Jowar.  (c) Nil.  (ii) (a) Sandy loam.  (b) N.A.  (iii) 2nd week of November, 1955.  (iv) (a) 4 ploughings.  (b) to (e) N.A.  (v) Nil.  (vi) R.S.—31 (early).  (vii) Irrigated.  (viii) Nil.  (ix) N.A.  (x) 25.3.1956.

2. TREATMENTS to 4. GENERAL:
   Same as in expt. no. 55(44) on page 91.
5. RESULTS:
(i) 1855 lb./ac.  (ii) 357.7 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
<th>T₅</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>1810</td>
<td>1840</td>
<td>2138</td>
<td>1727</td>
<td>1820</td>
<td>1788</td>
</tr>
</tbody>
</table>

S.E./mean = 178.9 lb./ac.

Crop: Wheat (Rabi)
Site: Govt. Agri. Farm, Dargapara

Ref: Rj. 58(36).  Type: 'D'.

Object: To test the relative efficacy of different seed dressings on yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) Nil.  (b) Guar.  (c) N.A.  (ii) (a) Sandy.  (b) N.A.  (iii) 7.11.1958.  (iv) (a) to (e) N.A.  (v) and (vi) N.A.  (vii) Irrigated.  (viii) 1 weeding.  (ix) N.A.  (x) 31.3.1959.

2. TREATMENTS:

3. DESIGN:
(i) R.B.D.  (i) 10.  (b) N.A.  (iii) 4.  (iv) (a) and (b) 15'x9'.  (v) Nil.  (vi) Yes.

4. GENERAL:
(i) and (ii) N.A.  (iii) Yield of grain.  (iv) (a) 1958—contd.  (b) and (c) N.A.  (v) to (vii) N.A.

5. RESULTS:
(i) 883 lb./ac.  (ii) 335.3 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
<th>T₅</th>
<th>T₆</th>
<th>T₇</th>
<th>T₈</th>
<th>T₉</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>797</td>
<td>505</td>
<td>1142</td>
<td>612</td>
<td>735</td>
<td>684</td>
<td>195</td>
<td>1281</td>
<td>669</td>
<td>1167</td>
</tr>
</tbody>
</table>

S.E./mean = 167.7 lb./ac.

Crop: Wheat (Rabi)
Site: Govt. Agri. Farm, Dargapara

Ref: Rj. 59(19).  Type: 'D'.

Object: To test the relative efficacy of seed dressing fungicides on yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) Nil.  (b) Guar.  (c) G.M. only.  (ii) (a) Sandy loam.  (b) N.A.  (iii) 11.11.1959.  (iv) (a) N.A.  (b) Dibbling.  (c) N.A.  (d) Row to row 9'.  (e) N.A.  (v) N.A.  (vi) R.S.—31—1.  (vii) Irrigated.  (viii) 3 seedings.  (ix) and (x) N.A.

2. TREATMENTS:
Same as in expt. no. 58(36) above except that the no. of replications is 6.

3. RESULTS:
(i) 2388 lb./ac.  (ii) 394.7 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
<th>T₅</th>
<th>T₆</th>
<th>T₇</th>
<th>T₈</th>
<th>T₉</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>2339</td>
<td>2413</td>
<td>2228</td>
<td>2316</td>
<td>2581</td>
<td>2423</td>
<td>2292</td>
<td>2497</td>
<td>2413</td>
<td>2373</td>
</tr>
</tbody>
</table>

S.E./mean = 161.2 lb./ac.
Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Durgapura.

Object: To find out the effect of different levels of sulphur for the control of rust of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil (b) Guar. (c) N.A. (ii) (a) Sandy soil. (b) N.A. (iii) 5.11.1958. (iv) (a) to (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) 1 weeding on 16.12.1978. (ix) and (x) N.A.

2. TREATMENTS:
   6 sulphur treatments: T₀ = Control, T₁ = Dusting with sulphur, T₂ = Spraying colloidal sulphur (1 : 25), T₃ = Spraying with ultra sulphur solution (1 lb. in 60 gallons water), T₄ = Spraying with colloidal sulphur (1 : 50), T₅ = Spraying with colloidal sulphur (1 : 100).

3. DESIGN:
   (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 24' × 18'. (b) 18' x 12'. (v) 3' x 3'. (vi) Yes.

4. GENERAL:
   (i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1958—N.A. (b) and (c) N.A. (v) to (vii) N.A.

5. RESULTS:
   (i) 1582 lb./ac. (ii) 386.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
<th>T₅</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>1565</td>
<td>1426</td>
<td>1682</td>
<td>1740</td>
<td>1549</td>
<td>1530</td>
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</table>

S.E./mean = 193.2 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Durgapura.

Ref: Rj. 59(20).
Type: 'D'.

Object: To find out the economic way of controlling weeds in Wheat.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Maize. (c) A/S. Quantity—N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 14 11.1959. (iv) (a) and (b) N.A. (c) 1.25 md./ac. (d) and (e) N.A. (v) N.A. (vi) C=591. (vii) Irrigated. (viii) and (ix) N.A. (x) 3.4.1960.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 58(32) above.

5. RESULTS:
   (i) 1885 lb./ac. (ii) 571.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
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<td>Av. yield</td>
<td>1878</td>
<td>1768</td>
<td>2256</td>
<td>1960</td>
<td>1626</td>
<td>1821</td>
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S.E./mean = 185.6 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Durgapura.

Ref: Rj. 59(31).
Type: 'D'.

Object: To find out the economic way of controlling weeds in Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil (b) Guar. (c) N.A. (ii) (a) Sandy. (b) N.A. (iii) 5.11.1958. (iv) (a) and (b) N.A. (c) 1 md./ac. (d) and (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) 3.4.1959.
2. TREATMENTS:

5 treatments: T₀=Control, T₁=Local method of weeding, T₂=1 post emergence application of weedicides, T₃=2 post emergence applications of weedicides and T₄=T₃+Cultural method of weeding.

3. DESIGN:

(i) R.B.D. (ii) (a) 5, (b) N.A. (iii) 6. (iv) (a) 2'×18' (b) 18'×12'. (v) 3'×3'. (vi) Yes.

4. GENERAL:

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

5. RESULTS:

(i) 2112 lb/ac. (ii) 301.1 lb/ac. (iii) The treatment differences are highly significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>1873</td>
<td>2700</td>
<td>2014</td>
<td>1689</td>
<td>2284</td>
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<tr>
<td>S.E./mean</td>
<td>123.0 lb/ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Object:—To find out the economic way of controlling weeds in Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Cow-pea. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.11.1959. (iv) (a) and (b) N.A. (c) 12.5 md/ac. (d) and (e) N.A. (v) N.A. (vi) C=591. (vii) Irrigated. (viii) and (ix) N.A. (x) 27.4.1960.

2. TREATMENTS to 4. GENERAL:

Same as in exp. no. 58(31) on page 94.

5. RESULTS:

(i) 2180 lb/ac. (ii) 303.1 lb/ac. (iii) Treatment differences are highly significant; (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>2533</td>
<td>2403</td>
<td>2134</td>
<td>1765</td>
<td>2067</td>
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<tr>
<td>S.E./mean</td>
<td>123.8 lb/ac.</td>
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</table>

Object:—To study the effect of various weedicides at different doses on the control of weeds in Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Cow-pea. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 6.11.1958. (iv) (a) and (b) N.A. (c) 1md/ac. (d) and (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) and (ix) N.A. (x) 6.4.1959.

2. TREATMENTS:

Main-plot treatments:

W₁=Sodium salt of 2,4-D, W₂=Ethylester of 2,4-D, W₃=Amine salt of 2,4-D, and W₄=Sodium salt of M.C.P.A.

Sub-plot treatments:

Sub level of weedicides: L₀=Control, L₁=8, L₂=12, L₃=16 and L₄=20 ozs/ac. of acid equivalent.

3. DESIGN:

(i) Split-plot. (ii) (a) 4 main-plots/block. (b) N.A. (iii) 4. (iv) (a) 24'×18'. (b) 18'×12'. (v) 3'×3'. (vi) Yes.
4. GENERAL:
(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1958—N.A. (b) and (c) N.A. (v) to (vii) N.A.

5. RESULTS:
(i) 1706 lb./ac. (ii) (a) 569.9 lb./ac. (b) 628.8 lb./ac. (iii) None of the treatment effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>L₀</th>
<th>L₁</th>
<th>L₂</th>
<th>L₃</th>
<th>L₄</th>
<th>Mean</th>
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<tbody>
<tr>
<td>W₁</td>
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<td>1807</td>
<td>1871</td>
<td>1659</td>
<td>159</td>
<td>1740</td>
</tr>
<tr>
<td>W₂</td>
<td>1781</td>
<td>1594</td>
<td>1549</td>
<td>1845</td>
<td>1755</td>
<td>1705</td>
</tr>
<tr>
<td>W₃</td>
<td>1819</td>
<td>1728</td>
<td>1768</td>
<td>1607</td>
<td>134</td>
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<td>1794</td>
<td>1794</td>
<td>2302</td>
<td>1665</td>
<td>1691</td>
<td>1849</td>
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</tbody>
</table>

Mean 1824 1606 1872 1694 1533 1706

S.E. of difference of two
W marginal means = 125.4 lb./ac.
L marginal means = 155.2 lb./ac.
L means at the same level of W = 310.4 lb./ac.
W means at the same level of L = 304.7 lb./ac.

---

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Durgapura.
Ref: Rj. 59(31).
Type: 'D'.

Object: To study the effect of various weedicides at different doses on the control of weeds in Wheat.

1. BASAL CONDITIONS
(i) (a) Nil. (b) N.A. (c) G.M. (ii) (a) Sandy loam. (b) N.A. (iii) 12.11.1959. (iv) (a) 4 ploughings, (b) N.A. (c) 1.5 md./ac. (d) and (e) N.A. (v) C—591. (vi) Irrigated. (vii) and (ix) N.A. (x) 25.4.1960.

2. TREATMENTS to 4. GENERAL:
Same as in exp. no. 58(26) on page 95.

5. RESULTS:
(i) 2278 lb./ac. (ii) (a) 471.3 lb./ac. (b) 597.0 lb./ac. (iii) None of the treatment effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>L₀</th>
<th>L₁</th>
<th>L₂</th>
<th>L₃</th>
<th>L₄</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>W₁</td>
<td>2489</td>
<td>2401</td>
<td>2054</td>
<td>2653</td>
<td>2061</td>
<td>2332</td>
</tr>
<tr>
<td>W₂</td>
<td>2155</td>
<td>2294</td>
<td>2193</td>
<td>1979</td>
<td>2133</td>
<td>2151</td>
</tr>
<tr>
<td>W₃</td>
<td>2514</td>
<td>1973</td>
<td>2433</td>
<td>2470</td>
<td>2319</td>
<td>2342</td>
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<tr>
<td>W₄</td>
<td>2319</td>
<td>1966</td>
<td>2508</td>
<td>2149</td>
<td>2489</td>
<td>2286</td>
</tr>
</tbody>
</table>

Mean 2369 2159 2297 2313 2251 2278

S.E. of difference of two
W marginal means = 101.4 lb./ac.
L marginal means = 149.3 lb./ac.
L means at the same level of W = 298.5 lb./ac.
W mean at the same level of L = 287.0 lb./ac.
Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Kotah.

Object: To study the response of guar and tamarind seed powder on Wheat.

1. BASAL CONDITIONS:
   (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 10.12.1958. (iv) (a) 3 ploughings.
   (b) Drilling. (c) 80 lb./ac. (d) Row to row 1'.
   (e) N.A. (f) N.A. (g) R.S.—31-1. (h) Irrigated.
   (i) N.A. (x) 15.4.1959.

2. TREATMENTS:
   All combinations of (1) and (2) + a control.
   (1) 2 seed powders: \( S_1 = \text{Guar seed powder} \) and \( S_2 = \text{Tamarind seed powder} \).
   (2) 3 concentrations of powder: \( L_1 = 0.025\% \), \( L_2 = 0.05\% \) and \( L_3 = 0.10\% \).

3. DESIGN:
   (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) 32'x18'. (b) 24'x12'. (v) 3'x3'. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) Slight insect attack. Control measure—N.A. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
   (i) 1490 lb./ac. (ii) 317.0 lb./ac. (iii) S effect and control vs. treatment are significant. (iv) Av. yield of grain in lb./ac.

   \[
   \begin{array}{cccc|c}
   \hline
   & L_1 & L_2 & L_3 & \text{Mean} \\
   \hline
   S_1 & 1516 & 1157 & 1372 & 1348 \\
   S_2 & 1946 & 1734 & 1466 & 1715 \\
   \hline
   \text{Mean} & 1731 & 1445 & 1419 & 1552 \\
   \hline
   \end{array}
   \]

   S.E. of S marginal mean = 105.7 lb./ac.
   S.E. of L marginal mean = 129.4 lb./ac.
   S.E. of body of table or control mean = 183.0 lb./ac.

---

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Kotah.

Object: To find out the effect of different chemicals for the control of rust.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Maize. (c) N.A. (ii) (a) Black cotton soil. (b) N.A. (iii) 8.12.1958. (iv) (a) 4 ploughings.
   (b) N.A. (c) 1 md./ac. (d) and (e) N.A. (v) N.A. (vi) H_2O—65. (vii) Irrigated. (viii) N.A. (ix) 3.7'.
   (x) N.A.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 58(32) on page 94.

5. RESULTS:
   (i) 1223 lb./ac. (ii) 317.0 lb./ac. (iii) The treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

   \[
   \begin{array}{cccccccc}
   \hline
   \text{Treatment} & T_0 & T_1 & T_2 & T_3 & T_4 & T_5 \\
   \hline
   \text{Av. yield} & 1401 & 1182 & 1118 & 1170 & 1286 & 1183 \\
   \hline
   \text{S.E./mean} & 135.0 lb./ac. \\
   \end{array}
   \]
Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Kotah.
Object :- To find out the effect of different chemicals for the control of rust.

1. BASAL CONDITIONS :
(i) (a) and (b) N.A. (c) G.M. (ii) (a) Black cotton soil. (b) N.A. (iii) 26.10.1959. (iv) (a) 5 ploughings.
(b) to (e) N.A. (v) N.A. (vi) C—591. (vii) to (ix) N.A. (x) 29.3.1960.

2. TREATMENTS to 4. GENERAL :
Same as in exp. no. 58(32) on page 94.

5. RESULTS :
(i) 1628 lb./ac. (ii) 476.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain
in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
<th>T₅</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1626</td>
<td>1736</td>
<td>1497</td>
<td>1891</td>
<td>1616</td>
</tr>
</tbody>
</table>

S.E./mean = 238.4 lb./ac.

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Kotah.
Object :- To find out the economic way of controlling weeds in Wheat.

1. BASAL CONDITIONS :
(i) (a) to (c) N.A. (ii) (a) Black cotton soil. (b) N.A. (iii) 9.12.1958. (iv) (a) 4 ploughings. (b) N.A.
(c) 1 md./ac. (d) and (e) N.A. (v) N.A. (vi) C—591. (vii) Irrigated. (viii) N.A. (ix) 3.7'. (x) N.A.

2. TREATMENTS to 4. GENERAL :
Same as in exp. no 58(31) on page 94.

5. RESULTS :
(i) 1070 lb./ac. (ii) 137.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain
in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1089</td>
<td>1054</td>
<td>1089</td>
<td>1033</td>
<td>1114</td>
</tr>
</tbody>
</table>

S.E./mean = 56.1 lb./ac.

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Kotah.
Object :- To find out the economic way of controlling weeds in Wheat.

1. BASAL CONDITIONS :
(i) (a) to (c) N.A. (ii) (a) Black cotton soil. (b) N.A. (iii) 25.10.1959. (iv) (a) 5 ploughings. (b) to (e) N.A.

2. TREATMENTS to 4. GENERAL :
Same as in exp. no 58(31) on page 94.
5. RESULTS:
(i) 2092 lb./ac. (ii) 270.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of gram in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₂</th>
<th>T₁</th>
<th>T₃</th>
<th>T₄</th>
<th>T₅</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>2187</td>
<td>2107</td>
<td>2069</td>
<td>2019</td>
<td>2080</td>
<td></td>
</tr>
<tr>
<td>S.E./mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>110.3 lb./ac.</td>
</tr>
</tbody>
</table>

Crop : Wheat (Rabi).  
Site : Govt. Agri. Farm, Kotah.  
Ref : RJ 59(37).  
Type : DOT.

Object : To study the effect of five doses and four formulations of weedicides in the controlling of weeds in Wheat.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Fallow. (c) N.A. (ii) (a) Black cotton soil. b) N.A. (iii) 25.10.1959. (iv) 5 ploughings. (b) to (c) N.A. (v) N.A. (vi) C=59.1. (vii) to (ix) N.A. (x) 31.3.1960.

2. TREATMENTS to 6. GENERAL:
Same as in exp no. 58(26) on page 95.

5. RESULTS:
(i) 365 lb./ac. (ii) (a) 132.2 lb./ac. (b) 154.0 lb./ac. (iii) None of the treatment effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>L₂</th>
<th>L₁</th>
<th>L₃</th>
<th>L₄</th>
<th>L₅</th>
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</tr>
</thead>
<tbody>
<tr>
<td>W₁</td>
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<td>202</td>
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<td>340</td>
<td>359</td>
<td>318</td>
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<tr>
<td>W₂</td>
<td>359</td>
<td>384</td>
<td>195</td>
<td>315</td>
<td>243</td>
<td>299</td>
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<tr>
<td>W₃</td>
<td>416</td>
<td>507</td>
<td>539</td>
<td>410</td>
<td>451</td>
<td>465</td>
</tr>
<tr>
<td>W₄</td>
<td>425</td>
<td>410</td>
<td>353</td>
<td>347</td>
<td>366</td>
<td>300</td>
</tr>
<tr>
<td>Mean</td>
<td>377</td>
<td>376</td>
<td>366</td>
<td>353</td>
<td>355</td>
<td>365</td>
</tr>
</tbody>
</table>

S.E. of the difference of two
W marginal mean = 40.8 lb./ac.
L marginal mean = 58.1 lb./ac.
W means at the same level of W = 77.0 lb./ac.
W means at the same level of L = 80.0 lb./ac.

Crop : Wheat (Rabi).  
Site : Govt. Agri. Farm, Kotah.  
Ref : RJ 59(31).  
Type : DOT.

Object : To study the efficacy of different pesticides for the control of Wheat.

1. BASAL, CONDITIONS:
(i) (a) Fallow—Wheat—Moong—Urd—Wheat. (b) Wheat (c) Nil. (i) (a) and (b) N.A. (ii) 27.10.1959—(iv) (a) 5 ploughings. (b) and (c) N.A. (d) Row to row 1', (e) N.A. (v) N.A. (vi) Malvi. (vii) Untreated. (viii) Weeding (ix) 0.1'. (x) N.A.

2. TREATMENTS:
6 pesticide treatments: T₀=Control, T₁=D.D.T., W.P. 0.25%, T₂=Aldrin, E.C. 0.05%, T₃=Dieldrin E.C. 0.05% and T₄=Endrin E.C. 0.05%.

All pesticides at 40 gallons/ac.
3. DESIGN:
(i) R.B.D. (ii) S. (b) N.A. (iii) S. (iv) (a) 56'×19'; (b) 33'×16'; (v) 11'×11'; (vi) Yes.

4. GENERAL:
(i) N.A. (ii) Termites, soil beetles and wheat-borer. Control measures—N.A. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
(i) 127 lb./ac. (ii) 40.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>122</td>
<td>102</td>
<td>140</td>
<td>143</td>
<td>130</td>
</tr>
</tbody>
</table>

S.E./mean = 23.3 lb./ac.

Crop -> Wheat.

Ref -> Rj. 55(45).

Site -> Govt. Agri. Exptl. Farm, Mandore.

Type -> ‘D’.

Object:—To study the response of seed dressing by different chemicals on Wheat.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy. (b) N.A. (iii) 20.11.1955. (iv) (a) to (a) N.A. (v) Nil. (vi) RS = 31 (early). (vii) Irrigated. (viii) 4 weedings. (ix) N.A. (x) 1st week of April, 1956.

2. TREATMENTS:
6 seed treatments: T₀ = Control, T₁ = Semeron at 4 toilets/ac., T₂ = Semeron at 8 toilets/ac., T₃ = Agrosan at 8 toilets/ac., T₄ = Spergon at 20 toilets/ac. and T₅ = Ceresan at 9 toilets/ac.

3. DESIGN:
(i) R.B.D. (i) (a) 6. (b) N.A. (iii) 4. (iv) (a) 25'×8'. (b) 22'×6'. (v) 11'×11'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) N.A. (b) Yes. (c) N.A. (v) (a) Durgapura, Bassi and Ganganagar. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:
(i) 134 lb./ac. (ii) 160 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
<th>T₅</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1295</td>
<td>1398</td>
<td>1336</td>
<td>1357</td>
<td>1377</td>
<td>1285</td>
</tr>
</tbody>
</table>

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

Crop -> Wheat (Rabi).

Ref -> Rj. 57(43).

Site -> Govt. Agri. Farm, Mandore.

Type -> ‘D’.

Object:—To find the effect of pre-sowing seed in different solutions.

1. BASAL CONDITIONS:
(i) (a) to (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 5.11.1957. (iv) (a) 6 ploughings. (b) Drilling. (c) 1 m. from. (d) Row to row 1'. (e) N.A. (v) N.A. (vi) C = 591. (vii) Irrigated. (viii) 2 weedings. (x) and (a) N.A.
2. TREATMENTS:

All combinations of (1) and (2).

(1) 16 solutions: 
- \( S_0 = \text{Water only,} \)
- \( S_1 = 0.25\% \text{ A/S solution,} \)
- \( S_2 = 0.5\% \text{ A/S solution,} \)
- \( S_3 = 1\% \text{ A/S solution,} \)
- \( S_4 = 0.25\% \text{ Pot. Phos. solution,} \)
- \( S_5 = 0.5\% \text{ Pot. Phos. solution,} \)
- \( S_6 = 1\% \text{ Pot. Phos. solution,} \)
- \( S_7 = S_1 + S_4, \)
- \( S_8 = S_2 + S_5, \)
- \( S_9 = S_3 + S_6, \)
- \( S_{10} = S_1 + S_3 + S_4 + S_5, \)
- \( S_{11} = S_2 + S_6, \)
- \( S_{12} = S_4 + S_5 + S_6, \)
- \( S_{13} = S_1 + S_2 + S_3 + S_4 + S_5 + S_6, \)
- \( S_{14} = S_1 + S_2 + S_3 + S_4 + S_5 + S_6, \)
- \( S_{15} = S_4 + S_5 + S_6 + S_7 + S_8 + S_9 + S_{10} + S_{11} + S_{12} + S_{13} + S_{14} + S_{15}. \)

(2) 2 durations of seed soaking: \( D_1 = 6 \) and \( D_2 = 12 \) hours.

3. DESIGN:

(i) R.B.D. (ii) (a) 32. (b) N.A. (iii) \( \times 10\). (iv) \( \times 6\). (v) \( \times 2\). (vi) Yes.

4. GENERAL:

(i) N.A. (ii) Nil. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:

(i) 949 lb./ac. (ii) 437.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>( S_0 )</th>
<th>( S_1 )</th>
<th>( S_2 )</th>
<th>( S_3 )</th>
<th>( S_4 )</th>
<th>( S_5 )</th>
<th>( S_6 )</th>
<th>( S_7 )</th>
<th>( S_8 )</th>
<th>( S_9 )</th>
<th>( S_{10} )</th>
<th>( S_{11} )</th>
<th>( S_{12} )</th>
<th>( S_{13} )</th>
<th>( S_{14} )</th>
<th>( S_{15} )</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>D_1</td>
<td>440</td>
<td>655</td>
<td>966</td>
<td>1169</td>
<td>300</td>
<td>536</td>
<td>429</td>
<td>1030</td>
<td>923</td>
<td>1309</td>
<td>1502</td>
<td>1051</td>
<td>1438</td>
<td>1180</td>
<td>1137</td>
<td>655</td>
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<tr>
<td>D_2</td>
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<td>622</td>
<td>1760</td>
<td>1395</td>
<td>429</td>
<td>494</td>
<td>601</td>
<td>976</td>
<td>815</td>
<td>1288</td>
<td>1567</td>
<td>1213</td>
<td>1059</td>
<td>644</td>
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<td>Mean</td>
<td>338</td>
<td>619</td>
<td>1363</td>
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<td>869</td>
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<td>1535</td>
<td>1137</td>
<td>1224</td>
<td>912</td>
<td>1213</td>
<td>972</td>
</tr>
</tbody>
</table>

S.E./mean = 252.4 lb./ac.

---

**Crop:** Wheat (Rabi).

**Site:** Govt. Agri. Farm, Mandore.

**Object:** To study the effect of five doses and four formulation of weedicides for control of weeds in Wheat.

1. **BASAL CONDITIONS:**

(i) (a) N.A. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 9.11.1958. (iv) (a) 8 ploughings. (b) N.A. (c) 1 md./ac. (d) Row to row 9". (e) N.A. (f) N.A. (vi) R.S.—31—1. (vii) Irrigated. (viii) to (x) N.A.

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

Same as in expt. no. 58(26) on page 95.

5. **RESULTS:**

(i) 3469 lb./ac. (ii) (a) 1044.3 lb./ac. (b) 549.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>( L_1 )</th>
<th>( L_2 )</th>
<th>( L_3 )</th>
<th>( L_4 )</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>( W_1 )</td>
<td>3465</td>
<td>3101</td>
<td>3639</td>
<td>3681</td>
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<td>( W_2 )</td>
<td>3109</td>
<td>3012</td>
<td>3407</td>
<td>3202</td>
</tr>
<tr>
<td>( W_3 )</td>
<td>3349</td>
<td>3099</td>
<td>3838</td>
<td>3439</td>
</tr>
<tr>
<td>( W_4 )</td>
<td>3191</td>
<td>3751</td>
<td>3732</td>
<td>3603</td>
</tr>
<tr>
<td>Mean</td>
<td>3528</td>
<td>3241</td>
<td>3654</td>
<td>3481</td>
</tr>
</tbody>
</table>
S.E. of differences of two
1. W marginal mean = 233.5 lb./ac.
2. L marginal mean = 137.3 lb./ac.
3. L means at the same level of W = 274.5 lb./ac.
4. W means at the same level of L = 338.9 lb./ac.

**Crop : Wheat (Rabi).**

**Site : Govt. Agri. Farm, Mandore.**

**Ref :** Rj. 59(35).

**Type :** 'D'.

Object :— To study the effect of five doses and four formulations of weedicides for controlling of weeds in Wheat.

1. BASAL CONDITIONS : 
(a) to (c) N.A. 
(b) Sandy loam. 
(c) 12.11.1959. 
(d) and (e) N.A. 
(x) 24.3.1960.

2. TREATMENTS to 4. GENERAL : 
Same as in expt. no. 58(26) on page 95.

5. RESULTS : 
(i) 679 lb./ac. 
(ii) (a) 269.2 lb./ac. 
(b) 276.7 lb./ac. (iii) L effect is highly significant and W effect is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1</td>
<td>378</td>
<td>1172</td>
<td>832</td>
<td>744</td>
</tr>
<tr>
<td>W2</td>
<td>485</td>
<td>857</td>
<td>800</td>
<td>1040</td>
</tr>
<tr>
<td>W3</td>
<td>466</td>
<td>473</td>
<td>492</td>
<td>592</td>
</tr>
<tr>
<td>W4</td>
<td>384</td>
<td>592</td>
<td>725</td>
<td>794</td>
</tr>
<tr>
<td>Mean</td>
<td>428</td>
<td>773</td>
<td>712</td>
<td>792</td>
</tr>
</tbody>
</table>

S.E. of the difference of two
1. W marginal mean = 60.2 lb./ac.
2. L marginal mean = 69.2 lb./ac.
3. L means at the same level of W = 138.3 lb./ac.
4. W means at the same level of L = 137.6 lb./ac.

**Crop : Wheat (Rabi).**

**Site : Govt. Agri. Farm, Mandore.**

**Ref :** Rj. 58(34).

**Type :** 'D'.

Object :— To find out the economic way of controlling weeds in Wheat.

1. BASAL CONDITIONS : 
(a) N.A. 
(b) Fallow. 
(c) Sandy loam. 
(d) 6.11.1958. 
(e) and (b) N.A. 
(x) 25.3.1959.

2. TREATMENTS to 4. GENERAL : 
Same as in expt. no. 58(31) on page 94.

5. RESULTS : 
(i) 813 lb./ac. 
(ii) 356.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.
Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Mandore.

Object: To find out the economic way of controlling weeds in Wheat.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 9.11.1959. (iv) (a) and (b) N.A. (c) 1 ml./ac. (d) and (e) N.A. (v) to (ix) N.A. (x) 23.3.1960.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 58(31) on page 94.

5. RESULTS:
   (i) 742 lb./ac. (ii) 366.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.
   Treatment | \( T_0 \) | \( T_1 \) | \( T_2 \) | \( T_3 \) | \( T_4 \)
---|---|---|---|---|---
Av. yield | 774 | 1020 | 776 | 651 | 844
S.E./mean = 145.6 lb./ac.

---

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Mandore.

Ref: Rj. 59(44).
Type: 'D'.

Object: To study the efficacy of different pesticides against termites on Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Fallow. (c) N.A. (E) (a) Sandy soil. (b) N.A. (iii) 27.9.1959. (iv) (a) 4 ploughings. (b) N.A. (c) 35 srs./ac. (d) Row to row 1½'. (c) N.A. (v) N.A. (vi) RS—31—1. (vii) Irrigated. (viii) 3 weedings. (ix) and (x) N.A.

2. TREATMENTS:
   6 pesticide treatments: \( T_0 = \) Control, \( T_1 = \) Aldrin dust 1.5%, \( T_2 = \) Dieldrin dust 1.5%, \( T_3 = \) Endrin dust 1.5%, \( T_4 = \) B.H.C. dust 1.5% and \( T_5 = \) D.D.T. at 1.5%.
   All pesticides applied at 30 lb./ac.

3. DESIGN:
   (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 3. (iv) (a) 33'×18½'. (b) 33'×16½'. (v) 1'×1'. (vi) Yes.

4. GENERAL:
   (i) Severe attack of termites due to water scarcity. (ii) Nil. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
   (i) 960 lb./ac. (ii) 171.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.
   Treatment | \( T_0 \) | \( T_1 \) | \( T_2 \) | \( T_3 \) | \( T_4 \)
---|---|---|---|---|---
Av. yield | 773 | 893 | 773 | 630 |
S.E./mean = 149.5 lb./ac.

---

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Mandore.

Ref: Rj. 59(22).
Type: 'D'.

Object: To find out the economic way of controlling weeds in Wheat.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 9.11.1959. (iv) (a) and (b) N.A. (c) 1 ml./ac. (d) and (e) N.A. (v) to (ix) N.A. (x) 23.3.1960.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 58(31) on page 94.

5. RESULTS:
   (i) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.
   Treatment | \( T_0 \) | \( T_1 \) | \( T_2 \) | \( T_3 \) | \( T_4 \)
---|---|---|---|---|---
Av. yield | 609 | 807 | 893 | 773 | 630
S.E./mean = 149.5 lb./ac.
1. BASAL CONDITIONS:

(i) (a) Nil. (b) Gram. (c) N.A. (ii) Sandy loam. (b) N.A. (iii) 4.11.1954. (iv) (a) 2 disc harrowings. (b) N.A. (c) 1 md./ac. (d) Row to row 9'. (e) N.A. (v) N.A. (vi) C—591 (medium). (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) April, 1955.

2. TREATMENTS:

4 treatments: T0=Control, T1=0.02%, T2=0.05% and T3=0.1% of Guar seed powder. Method of application—N.A.

3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 19'x11'. (b) 16'x9'. (v) 1'x1'. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1952—N.Â. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS:

(i) 2319 lb./ac. (ii) 218.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T0</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1468</td>
<td>2130</td>
<td>2455</td>
<td>3221</td>
<td></td>
</tr>
<tr>
<td>S.E./mean</td>
<td>109.0 lb./ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Crop :- Wheat.  
Site :- Govt. Agri. Farm, Sriganganagar.  
Object :- To study the effect of Guar seed powder on Wheat.

---

Crop :- Wheat.  
Site :- Govt. Agri. Exptl. Farm, Sriganganagar.  
Object :- To study the response of seed dressing by different chemicals on Wheat.

---

Crop :- Wheat (Rabi).  
Site :- Govt. Agri. Farm, Sriganganagar.  
Object :- To find out the economic way of controlling weeds in Wheat.

---

Crop :- Wheat.  
Site :- Govt. Agri. Farm, Sriganganagar.  
Object :- To study the effect of Guar seed powder on Wheat.

---

Crop :- Wheat.  
Site :- Govt. Agri. Farm, Sriganganagar.  
Object :- To study the effect of Guar seed powder on Wheat.
2. TREATMENTS to 4. GENERAL:
Same as in exp. no. 58(31) on page 94.

5. RESULTS:
(i) 1131 lb./ac. (ii) 376.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1090</td>
<td>1300</td>
<td>1229</td>
<td>815</td>
<td>1223</td>
</tr>
<tr>
<td>S.E./mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>153.6 lb./ac.</td>
</tr>
</tbody>
</table>

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Sriganganagar.

Ref :- Rj. 59(33).
Type :- 'D'.

Object :- To study the effect of five doses and four formulations of weedicides in the controlling of weeds in Wheat.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Gram. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.11.1959. (iv) (a) and (b) N.A. (c) 30 hrs./ac. (d) and (e) N.A. (v) N.A. (vi) C = 591. (vii) Irrigated. (viii) and (ix) N.A. (x) 13.4.1960.

2. TREATMENTS to 4. GENERAL:
Same as in exp. no. 58(26) on page 95.

5. RESULTS:
(i) 1906 lb./ac. (ii) (a) 881.0 lb./ac. (b) 493.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>L₁</th>
<th>L₂</th>
<th>L₃</th>
<th>L₄</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>W₁</td>
<td>1579</td>
<td>2146</td>
<td>1988</td>
<td>1572</td>
<td>1862</td>
</tr>
<tr>
<td>W₂</td>
<td>2256</td>
<td>1556</td>
<td>1831</td>
<td>1783</td>
<td>1289</td>
</tr>
<tr>
<td>W₃</td>
<td>2483</td>
<td>2319</td>
<td>1954</td>
<td>2354</td>
<td>2240</td>
</tr>
<tr>
<td>W₄</td>
<td>1780</td>
<td>1859</td>
<td>1727</td>
<td>1579</td>
<td>1563</td>
</tr>
</tbody>
</table>

Mean 2024 1972 1875 1922 1738 1906

S.E. of the difference of two
1. W marginal means = 197.7 lb./ac.
2. L marginal means = 123.4 lb./ac.
3. L means at the same level of W = 246.7 lb./ac.
4. W means at the same level of L = 256.3 lb./ac.

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Sriganganagar.

Ref :- Rj. 59(57).
Type :- 'D'.

Object :- To find out the effect of different chemicals for the control of rust of Wheat.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Gram. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.11 1959. (iv) (a) 4 ploughings. (b) N.A. (c) 30 hrs./ac. (d) and (e) N.A. (v) N.A. (vi) C = 591. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS to 4. GENERAL:
Same as in exp. no. 58(32) on page 94.
5. RESULTS:
(i) 1862 lb./ac. (ii) 344.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T0</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1859</td>
<td>1576</td>
<td>1969</td>
<td>2013</td>
<td>1875</td>
<td>1881</td>
<td></td>
</tr>
<tr>
<td>S.E./mean</td>
<td>172.0 lb./ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Sriganganagar.
Ref :- Rj 59(28).
Type :- 'D'.

Object :- To test the relative efficacy of seed dressing fungicides on the yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Gram. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.11.1959. (iv) (a) and (b) N.A. (c) 35 srs./ac. (d) and (e) N.A. (v) N.A. (vi) C—591. (vii) Irrigated. (viii) and (ix) N.A. (x) 15.4.1960.

2. TREATMENTS:
10 seed treatments: T0 = Control, T1 = Agrosan at 6 tolas/med., T2 = Ceresan at 6 tolas/med., T3 = Ceresan at 10 tolas/med., T4 = Hunasan at 6 tolas/med., T5 = Fernasen 10 tolas/med., T6 = Harvesan at 10 tolas/med., T7 = Tiletex at 6 tolas/med., T8 = Copper carbonate at 12 tolas/med. and T9 = Sulphur at 12 tola/med.

3. DESIGN:
(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 15' × 9'. (v) N.A. (vi) Yes.

4. GENERAL:
(i) and (ii) N.A. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
(i) 1636 lb./ac. (ii) 233.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T0</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
<th>T8</th>
<th>T9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1395</td>
<td>1539</td>
<td>1583</td>
<td>1324</td>
<td>1512</td>
<td>1791</td>
<td>1936</td>
<td>1852</td>
<td>1704</td>
<td>1728</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>95.3 lb./ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Sriganganagar.
Ref :- Rj 59(41).
Type :- 'D'.

Object :- To find out the efficacy of different insecticides against termites on Wheat.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Gram. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 29.10.1959. (iv) (a) 3 ploughings. (b) N.A. (c) 35 srs./ac. (d) Row to row 12'. (e) N.A. (v) N.A. (vi) C—591. (vii) Unirrigated. (viii) 2 hoeings and 1 weeding. (ix) and (x) N.A.

2. TREATMENTS:
4 insecticides: T0 = Control, T1 = 5% B.H.C., T2 = 2% Aldrin and T3 = 2% Toxaphenol. Dusting with 30 lb./ac. of the insecticides done 3 weeks after sowing.

3. DESIGN:
(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 33' × 16'. (v) N.A. (vi) Yes.
4. GENERAL:
(i) N.A. (ii) Nil. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
(i) 505 lb./ac. (ii) 149.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T0</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>75</td>
<td>730</td>
<td>1020</td>
<td>197</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 86.3 lb./ac.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Crop:** Wheat (Rabi).  
**Site:** Govt. Agri. Farm, Sriganganagar.  
**Ref:** Rj. 59(45).  
**Type:** 'D'.

Object:—To find out the efficacy of different insecticides against termites on Wheat.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Sandy loam. (b) N.A.  (iii) 24.10.1959. (iv) (a) 3 ploughings. (b) N.A. (c) 35 srs./ac. (d) Row to row 1½'. (e) N.A. (v) N.A. (vi) C—591. (vii) Unirrigated. (viii) 2 hoeings and 1 weeding. (ix) and (x) N.A.

2. TREATMENTS:
4 insecticides: T0=Control, T1=5% B.H.C., T2=2% Aldrin and T3=2% Toxaphene.  
Insecticides dusted at 30 lb./ac. in 2 doses: Just before sowing and 3 weeks after sowing.

3. DESIGN and 4. GENERAL:
Same as in exp. no. 59(41) on page 106.

5. RESULTS:
(i) 571 lb./ac. (ii) 242.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T0</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>192</td>
<td>847</td>
<td>1148</td>
<td>98</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 140.1 lb./ac.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Crop:** Wheat (Rabi).  
**Site:** Govt. Agri. Farm, Sriganganagar.  
**Ref:** Rj. 59(46).  
**Type:** 'D'.

Object:—To find out the efficacy of different insecticides against termites on Wheat.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Sandy loam. (b) N.A.  (iii) 24.10.1959. (iv) (a) 3 ploughings. (b) N.A. (c) 35 srs./ac. (d) Row to row 1½'. (e) N.A. (v) N.A. (vi) C—591. (vii) Unirrigated. (vii) 2 hoeings and 1 weeding. (ix) and (x) N.A.

2. TREATMENTS:
4 insecticides: T0=Control, T1=5% B.H.C., T2=2% Aldrin and T3=2% Toxaphene.  
Insecticides dusted just before sowing at 30 lb./ac.

3. DESIGN and 4. GENERAL:
Same as in exp. no. 59(41) on page 106.
5. RESULTS:
(i) 365 lb./ac. (ii) 336.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>137</td>
<td>713</td>
<td>420</td>
<td>185</td>
</tr>
</tbody>
</table>

S.E./mean = 19.45 lb./ac.

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Tabiji.

Object :- To study the residual effect of Guar and Tamarind seed powder on the yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) No. (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 1.12.1958. (iv) (a) 6 ploughings. (b) Drilling. (c) 80 lb./ac. (d) Row to row 9'. (e) N.A. (v) N.A. (vi) R.S.—31-1. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 5.4.1959.

2. TREATMENTS:
All combinations of (1) and (2)+a control.
(1) 2 types of seed powder : S₁ = Guar seed and S₂ = Tamarind seed.
(2) 3 levels of powder : L₁ = 0.025%, L₂ = 0.05% and L₃ = 0.10%.

3. DESIGN:
(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) 30'x18'.' (b) 24'x12'. (v) 3'x3'. (vi) Yes.

4. GENERAL:
(i) Poor. (ii) No. (iii) Yield of grain. (iv) (a) to (vi) N.A.

5. RESULTS:
(i) 1717 lb./ac. (ii) 143.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 1577 lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>L₁</th>
<th>L₂</th>
<th>L₃</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>S₁</td>
<td>1766</td>
<td>1657</td>
<td>1906</td>
<td>1776</td>
</tr>
<tr>
<td>S₂</td>
<td>1622</td>
<td>1791</td>
<td>1701</td>
<td>1705</td>
</tr>
<tr>
<td>Mean</td>
<td>1694</td>
<td>1724</td>
<td>1803</td>
<td>1740</td>
</tr>
</tbody>
</table>

S.E. of S marginal mean = 47.7 lb./ac.
S.E. of L marginal mean = 58.4 lb./ac.
S.E. of body of table or control = 82.7 lb./ac.

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Tabiji.

Object :- To find out the economic way of controlling weeds in Wheat.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) (a) Sandy. (b) N.A. (iii) 21.11.1958. (iv) (a) and (b) N.A. (c) 1md./ac. (d) and (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS to 4. GENERAL:
Same as in exp. n.o. 58(31) on page 94.
5. RESULTS:
(i) 3617 lb./ac.  (ii) 502.5 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>3129</td>
<td>3720</td>
<td>3879</td>
<td>3450</td>
<td>3909</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>205.2 lb./ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Tabiji.
Ref: Rj. 59(39).
Type: 'D'.

Object: To find out the economic way of controlling weeds in Wheat.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Jowar. (c) N.A.  (ii) (a) Sandy loam. (b) N.A.  (iii) 13.11.1959.  (iv) (a) and (b) N.A.  (c) 1 md./ac.  (d) and (e) N.A.  (v) N.A.  (vi) R.S.—31—I.  (vii) Irrigated.  (viii) to (x) N.A.

2. TREATMENTS to 4. GENERAL
Same as in exp. no. 58(31) on page 94.

5. RESULTS:
(i) 3738 lb./ac.  (ii) 348.9 lb./ac.  (iii) Treatment differences are highly significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
</tr>
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<tbody>
<tr>
<td>Av. yield</td>
<td>3270</td>
<td>3875</td>
<td>3788</td>
<td>3388</td>
<td>4369</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>142.5 lb./ac.</td>
<td></td>
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</tr>
</tbody>
</table>

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Tabiji.
Ref: Rj. 58(25).
Type: 'D'.

Object: To study the effect of five doses and four formulations of weedicides for the control of weeds in Wheat.

1. BASAL CONDITIONS
(i) (a) to (c) N.A.  (ii) (a) Sandy. (b) N.A.  (iii) 11.11.1958.  (iv) (a) and (b) N.A.  (c) 1 md./ac.  (d) and (e) N.A.  (v) N.A.  (vi) Irrigated.  (vii) and (ix) N.A.  (x) 26 and 27.3.1959.

2. TREATMENTS to 4. GENERAL:
Same as in exp. no. 58(26) on page 95.

5. RESULTS:
(i) 2184 lb./ac.  (ii) (a) 693.6 lb./ac.  (b) 500.9 lb./ac.  (iii) Only L effect is highly significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>L₀</th>
<th>L₁</th>
<th>L₂</th>
<th>L₃</th>
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<tbody>
<tr>
<td>W₁</td>
<td>1620</td>
<td>2777</td>
<td>1594</td>
<td>2083</td>
<td>2379</td>
<td>2091</td>
</tr>
<tr>
<td>W₂</td>
<td>1440</td>
<td>3587</td>
<td>2777</td>
<td>2057</td>
<td>1954</td>
<td>2363</td>
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<tr>
<td>W₃</td>
<td>1543</td>
<td>3201</td>
<td>2314</td>
<td>1903</td>
<td>1594</td>
<td>2111</td>
</tr>
<tr>
<td>W₄</td>
<td>1491</td>
<td>3382</td>
<td>2494</td>
<td>1852</td>
<td>1646</td>
<td>2173</td>
</tr>
<tr>
<td>Mean</td>
<td>1523</td>
<td>3237</td>
<td>2295</td>
<td>1974</td>
<td>1893</td>
<td>2184</td>
</tr>
</tbody>
</table>
Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Tabiji.

Object :- To study the effect of five doses and four formulations of weedicides for the control of weeds in Wheat.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Jowar. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.11.1959. (iv) (a) and (b) N.A. (e) 1 md./ac. (d) and (e) N.A. (v) N.A. (vi) R.S.—31.1. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS to 4. GENERAL:
Same as in exp. no. 58(26) on page 95.

3. RESULTS:
(i) 2722 lb./ac. (ii) (a) 564.7 lb./ac. (b) 685.7 lb./ac. (ii) Only L effect is highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>L₀</th>
<th>L₁</th>
<th>L₂</th>
<th>L₃</th>
<th>L₄</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>W₁</td>
<td>2349</td>
<td>2975</td>
<td>3091</td>
<td>2637</td>
<td>2728</td>
<td>2756</td>
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<tr>
<td>W₂</td>
<td>1905</td>
<td>2420</td>
<td>3675</td>
<td>3065</td>
<td>2823</td>
<td>2778</td>
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<tr>
<td>W₃</td>
<td>22.8</td>
<td>3000</td>
<td>2632</td>
<td>3343</td>
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<tr>
<td>W₄</td>
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<td>2677</td>
<td>3040</td>
<td>2536</td>
<td>2702</td>
<td>2620</td>
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<tr>
<td>Mean</td>
<td>2154</td>
<td>2768</td>
<td>3110</td>
<td>2895</td>
<td>2681</td>
<td>2722</td>
</tr>
</tbody>
</table>

S.E. of difference of two
1. W marginal means = 155.1 lb./ac.
2. L marginal means = 125.2 lb./ac.
3. L means at the same level of W = 250.5 lb./ac.
4. W means at the same level of L = 272.6 lb./ac.

Crop :- Wheat (Rabi).
Site :- Agri. College Farm, Udaipur.

Object :- To study the effect of five doses and four formulations of weedicides for the control of weeds in Wheat.

1. BASAL CONDITIONS:
(i) and (ii) N.A. (iii) 24.11.1958. (iv) (a) and (b) N.A. (c) 1 md./ac. (d) and (e) N.A. (v) N.A. (vi) C—591. (vii) and (viii) N.A. (ix) 0.375'. (x) N.A.

2. TREATMENTS to 4. GENERAL:
Same as in exp. no. 58(26) on page 95.

5. RESULTS:
(i) 1873 lb./ac. (ii) (a) 789.7 lb./ac. (b) 472.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.
### Crop: Wheat (Rabi)

#### Site: Govt. Agri. Farm, Udaipur

**Object:** To study the effect of five doses and five formulations of weedicides for controlling the weeds in Wheat.

#### BASAL CONDITIONS:

1. (a) N.A.  
2.  
   - (a) Clay loam.  
   - (b) N.A.  
   - (c) 1 mld./ac.  
   - (d) and (e) N.A.  
   - (i) 5 ploughings.  
   - N.A.  
   - N.A.  

#### TREATMENTS:

Same as in exp. no. 58(26) on page 95.

#### DESIGN:

1. Split-plot  
2.  
   - 4 main-plots/block; 5 sub-plots/main-plot.  
   - N.A.  
   - N.A.  
   - 19'x15'.  
   - 3'x3'.  
   - Yes.

#### GENERAL:

1. and (ii) N.A.  
2.  
   - Yield of grain.  
   - To (vii) N.A.

#### RESULTS:

1. 3028 lb./ac.  
2. (a) 583.1 lb./ac.  
3. (b) 379.5 lb./ac.  
4. Only L effect is significant.  
5. Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>L₀</th>
<th>L₁</th>
<th>L₂</th>
<th>L₃</th>
<th>L₄</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
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<td>3130</td>
<td>3258</td>
<td>3316</td>
<td>3444</td>
<td>3216</td>
</tr>
<tr>
<td>W₂</td>
<td>5196</td>
<td>2560</td>
<td>2688</td>
<td>2711</td>
<td>2978</td>
<td>2827</td>
</tr>
<tr>
<td>W₃</td>
<td>3211</td>
<td>3153</td>
<td>2996</td>
<td>2753</td>
<td>3165</td>
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<td>3293</td>
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<td>3167</td>
<td>3034</td>
<td>2876</td>
<td>2921</td>
<td>3141</td>
<td>3038</td>
</tr>
</tbody>
</table>

S.E. of difference of two

1. W marginal means  
   = 130.4 lb./ac.
2. L marginal means  
   = 94.9 lb./ac.
3. L means at the same level of W  
   = 189.8 lb./ac.
4. W means at the same level of L  
   = 214.1 lb./ac.
Crop: Wheat (Rabi).
Site: Agri. College Farm, Udaipur.

Object: To find out the economic way of controlling weeds in Wheat.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) (a) Black cotton soil. (b) N.A. (iii) 21.11.1958. (iv) (a) and (b) N.A. (c) 1 md/acre. (d) and (e) N.A. (v) N.A. (vi) C—591. (vii) Irrigated. (viii) N.A. (ix) 0.375". (x) N.A.

2. TREATMENTS to 4. GENERAL:
   Same as in expt. no. 58(31) on page 94.

5. RESULTS:
   (i) 2444 lb/acre. (ii) 4.2.0 lb/acre. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/acre.

   Treatment | $T_0$ | $T_1$ | $T_2$ | $T_3$ | $T_4$
---|---|---|---|---|---
Av. yield | 2443 | 2409 | 2122 | 2623 | 2623
S.E./mean = 168.2 lb/acre.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Udaipur.

Object: To find out the economic way of controlling weeds in Wheat.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Maize. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 1.12.1959. (iv) (a) 5 ploughings. (b) N.A. (c) 1 md/acre. (d) and (e) N.A. (v) N.A. (vi) C—591. (vii) Irrigated. (viii) and (ix) N.A. (x) 22.4.1960.

2. TREATMENTS to 4. GENERAL:
   Same as in expt. no. 58(31) on page 94.

5. RESULTS:
   (i) 2014 lb/acre. (ii) 415.9 lb/acre. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/acre.

   Treatment | $T_0$ | $T_1$ | $T_2$ | $T_3$ | $T_4$
---|---|---|---|---|---
Av. yield | 1794 | 2185 | 1996 | 1865 | 2230
S.E./mean = 169.8 lb/acre.

Crop: Jowar (Kharij).
Site: Govt. Agri. Exptl. Farm, Bassi.

Object: To study the effect of catalysts on the yield of Jowar.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 3.7.1954. (iv) (a) 1 ploughing after rains. (b) to (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 6.10.1954.

2. TREATMENTS:
   All combinations of (1) and (2).
   (1) 7 manurial treatments: $M_0=0$, $M_1=40$ lb/acre of catalyst, $M_2=80$ lb/acre of catalyst, $M_3=14$ lb/acre of FeSO$_4$, $M_4=28$ lb/acre of FeSO$_4$, $M_5=8$ lb/acre of Pot. Permanganate and $M_6=16$ lb/acre of Pot. permanganate.
   (2) 2 levels of F.Y.M. as basal dressing: $F_0=0$ and $F_1=2$ tons/acre.
3. DESIGN:
(i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 15' x 9'. (b) 12' x 6'. (v) 1.5' x 1.5'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) N.A. (b) No. (c) Nil. (v) (a) Durgapura. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
(i) 1791 lb./ac. (ii) 314.2 lb./ac. (iii) Only interaction $F \times M$ is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>$M_0$</th>
<th>$M_1$</th>
<th>$M_2$</th>
<th>$M_3$</th>
<th>$M_4$</th>
<th>$M_5$</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>$F_0$</td>
<td>2041</td>
<td>1314</td>
<td>1512</td>
<td>1505</td>
<td>1792</td>
<td>2018</td>
<td>2366</td>
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<tr>
<td>$F_1$</td>
<td>1739</td>
<td>2170</td>
<td>2094</td>
<td>1512</td>
<td>1739</td>
<td>1610</td>
<td>1535</td>
</tr>
<tr>
<td>Mean</td>
<td>1890</td>
<td>1777</td>
<td>1803</td>
<td>1538</td>
<td>1766</td>
<td>1814</td>
<td>1950</td>
</tr>
</tbody>
</table>

S.E. of $M$ marginal mean = 128.3 lb./ac.
S.E. of $F$ marginal mean = 68.6 lb./ac.
S.E. of body of table = 181.4 lb./ac.

Crop :- Jowar (Kharif).
Site :- Govt. Agri. Exp. Farm, Bassi.

Object :- To study the effect of catalysts on the yield of Jowar.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) N.A. (c) Nil. (ii) (a) Sandy to sandy loam. (b) N.A. (iii) 6.7.1955. (iv) and (v) N.A.
(vi) Local (early). (vii) Unirrigated. (viii) and (ix) N.A. (x) 4.11.1955.

2. TREATMENTS:
All combinations of (1) and (2)
(1) 6 manurial treatments : $M_0$ = Control, $M_1$ = Catalyst at 40 lb./ac., $M_2$ = Catalyst at 80 lb./ac., $M_3$ = $FeSO_4$ at 14 lb./ac., $M_4$ = $FeSO_4$ at 28 lb./ac. and $M_5$ = Pot. permanganate at 16 lb./ac.
(2) 2 levels of F.Y.M. : $F_0$ = 0 and $F_1$ = 2 tons/ac.
These treatments were mixed with earth thoroughly and applied before sowing.

3. DESIGN:
(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 20'2' x 13'. (b) 16'2' x 9'. (v) 2' x 2'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) Kotah. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:
(i) 1399 lb./ac. (ii) 271.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>$M_0$</th>
<th>$M_1$</th>
<th>$M_2$</th>
<th>$M_3$</th>
<th>$M_4$</th>
<th>$M_5$</th>
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<tbody>
<tr>
<td>$F_0$</td>
<td>984</td>
<td>1314</td>
<td>1559</td>
<td>1635</td>
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<td>1482</td>
<td>1360</td>
</tr>
<tr>
<td>$F_1$</td>
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<td>1467</td>
<td>1558</td>
<td>1455</td>
<td>1199</td>
<td>1390</td>
<td>1438</td>
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<tr>
<td>Mean</td>
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<td>1545</td>
<td>1193</td>
<td>1436</td>
<td>1399</td>
</tr>
</tbody>
</table>
Crop : Jowar (Kharif).
Site : Govt. Agri. Exptl. Farm, Bassi.

Object:—To study the effect of catalysts on the yield of Jowar.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) (c) N.A. (ii) (a) Sandy to sandy loam. (b) N.A. (iii) 10.7.1956. (iv) (a) 3 ploughings. (b) to (e) N.A. (v) Nil. (vi) Local (medium). (vii) Unirrigated. (viii) and (ix) N.A. (x) 9.11.1956.

2. TREATMENTS:
   Same as in expt. no. 55(7) on page 113.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 30'3' × 18'. (b) 24'3' × 12'. (v) 3' × 3' (vi) Yes.

4. GENERAL:
   (i) (a) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1957—N.A. (b) No. (c) Nil. (v) to (vii) N.A.

5. RESULTS:
   (i) 316 lb./ac. (ii) 19.3 lb./ac. (iii) Main effect of M is significant. Main effect of F and interaction M×F are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>Mean疱</th>
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<td>312</td>
<td>333</td>
<td>322</td>
<td>317</td>
<td>318</td>
<td>316</td>
</tr>
</tbody>
</table>

S.E. of M marginal mean = 11.0 lb./ac.
S.E. of F marginal mean = 64.1 lb./ac.
S.E. of body of table = 157.0 lb./ac.

Crop : Jowar (Kharif).
Site : Soil Cons. Res. Demon. and Tr. Centre Kotah. Type : 'M'.

Object:—To find out the best manuring dose for Jowar under rainfed conditions.

1. BASAL CONDITIONS:
   (i) (a) to (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) N.A. (iv) (a) 1 ploughing and 3 bakherings. (b) Sowing behind the plough. (c) 7 lb./ac. (d) Rows 1' apart. (e) N.A. (v) Nil. (vi) R.S.—1. (vii) Unirrigated. (viii) 2 weedings. (ix) and (x) N.A.

2. TREATMENTS:
   T₁ = Control, T₂ = 5 C.L./ac. of F.Y.M. giving 20 lb./ac. of N, T₃ = 10 C.L./ac. of F.Y.M. giving 40 lb./ac. of N and T₄ = 20 C.L./ac. of F.Y.M. giving 80 lb./ac. of N.

3. DESIGN:
   (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.
4. GENERAL:
(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1959-1963. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
(i) 145 lb./ac. (ii) 40.5 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>106</td>
<td>152</td>
<td>159</td>
<td>163</td>
</tr>
</tbody>
</table>

S.E./mean = 18.1 lb./ac.

Crop: Jowar (Kharif).
Site: Govt. Agri. Exptl. Farm, Kotah.

Ref: Rj. 54(15).
Type: M'.

Object: To find out the optimum dose of N and P alone and in combinations for Jowar.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) and (c) N.A. (ii) (a) Black soil. (b) N.A. (iii) 6.7.1954. (iv) (a) 2 ploughings. (b) to (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) and (ix) N.A. (x) 31.10.1954.

2. TREATMENTS:

M₀ = Control, M₁ = 20 lb./ac. of N as A/S, M₂ = 40 lb./ac. of N as F.Y.M., M₃ = 40 lb./ac. of N as F.Y.M., M₄ = 20 lb./ac. of P₂O₅ as Super, M₅ = 20 lb./ac. of N as A/S + 30 lb./ac. of P₂O₅ as Super, M₆ = 40 lb./ac. of N as A/S + 30 lb./ac. of P₂O₅ as Super, M₇ = 20 lb./ac. of N as F.Y.M. + 30 lb./ac. of P₂O₅ as Super and M₈ = 40 lb./ac. of N as F.Y.M. + 30 lb./ac. of P₂O₅ as Super.

3. DESIGN:
(i) R.B.D. (ii) Ia) II. (b) N.A. (iii) 3. (iv) (a) 15'x20', (b) 12'x18', (v) 12'x1'. (vi) Yes.

4. GENERAL:
(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
(i) 151 lb./ac. (ii) 222 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
<th>M₇</th>
<th>M₈</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>909</td>
<td>998</td>
<td>1460</td>
<td>1043</td>
<td>1818</td>
<td>1371</td>
<td>1505</td>
<td>1818</td>
<td>2101</td>
</tr>
</tbody>
</table>

S.E./mean = 128.2 lb./ac.

Crop: Jowar (Kharif).
Site: Govt. Agri. Exptl. Farm, Kotah.

Ref: Rj. 54(6).
Type: M'.

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

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Wheat. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 3.7.1954 (iv) (a) to (e) N.A. (v) Nil. (vi) Local. (vii) Irrigated. (viii) and (ix) N.A. (x) 28.11.1954.

2. TREATMENTS:
Same as in expt. no. 54(15) above.

3. DESIGN:
(i) R.B.D. (ii) Ia) II. (b) N.A. (iii) 3. (iv) (a) 24'x3'x18', (b) 18'x3'x12'. (v) 3'x3'. (vi) Yes.
4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
(i) 2584 lb/ac. (ii) 841.4 lb/ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
<th>M₇</th>
<th>M₈</th>
<th>M₉</th>
<th>M₁₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1552</td>
<td>1706</td>
<td>2422</td>
<td>1790</td>
<td>3120</td>
<td>2378</td>
<td>2583</td>
<td>3120</td>
<td>3598</td>
<td>2552</td>
<td>3802</td>
</tr>
</tbody>
</table>

S.E./mean = 485.8 lb/ac.

---

Crop := Jowar ('Kharif').
Site := Govt. Agri. Exptl. Farm, Kotab.
Object := To study the effect of different types of N at different levels with and without F.Y.M. and Super.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Wheat. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 17.7.1954. (iv) (a) N.A. (b) Drilling. (c) 8 yrs./ac. (d) 12' between rows. (e) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 1.12.1954.

2. TREATMENTS:
M₀=Control, M₁=20 lb/ac. of N as A/S+5000 lb/ac. of F.Y.M.+30 lb/ac. of P₂O₅ as Super, M₂=40 lb/ac. of N as A/S+5000 lb/ac. of F.Y.M.+30 lb/ac. of P₂O₅ as Super, M₃=20 lb/ac. of N as A/S/N+5000 lb/ac. of F.Y.M.+30 lb/ac. of P₂O₅ as Super, M₄=40 lb/ac. of N as Urea+5000 lb/ac. of F.Y.M.+30 lb/ac. of P₂O₅ as Super, M₅=5000 lb/ac. of F.Y.M.+30 lb/ac. of P₂O₅ as Super, M₆=5000 lb/ac. of F.Y.M. as F.Y.M. and M₇=30 lb/ac. of P₂O₅ as Super, M₈=5000 lb/ac. of F.Y.M. as Super.

3. DESIGN:
(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 30'3'X18'. (b) 24'3'X12'. (v) 3'X3'. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) to (e) N.A. (v) to (vii) N.A.

5. RESULTS:
(i) 332 lb/ac. (ii) 23.6 lb/ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
<th>M₇</th>
<th>M₈</th>
<th>M₉</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>354</td>
<td>195</td>
<td>354</td>
<td>520</td>
<td>366</td>
<td>260</td>
<td>346</td>
<td>190</td>
<td>452</td>
<td>279</td>
</tr>
</tbody>
</table>

S.E./mean = 87.3 lb/ac.

---

Crop := Jowar ('Kharif').
Site := Govt. Agri. Exptl. Farm, Kotab.
Object := To study the effect of trace elements on the yield of Jowar.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Wheat. (c) Nil. (ii) (a) Black soil. (b) N.A. (iii) 16.7.1954. (iv) (a) 2 ploughings after rains. (b) to (e) N.A. (v) Nil. (vi) Local (medium). (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 13.10.1954.
2. TREATMENTS:

All combinations of (1) and (2) + one control.
(1) 2 trace elements: T1=Ferrous sulphate and T2=Copper sulphate.
(2) 3 levels of treatments: L1=5, L2=10 and L3=15 lb/ac.

Time and method of application—N.A.

3. DESIGN:

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) 15'x14'. (b) 12'x11'. (v) 1'x1'. (vi) Yes.

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) —. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 1266 lb/ac. (ii) 219.1 lb/ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb/ac.

\[
\begin{array}{ccc|c}
 & L_1 & L_2 & L_3 & \text{Mean} \\
 T_1 & 1255 & 1407 & 1262 & 1308 \\
 T_2 & 1020 & 1272 & 1407 & 1266 \\
\end{array}
\]

S.E. of T marginal mean = 73.0 lb/ac.
S.E. of body of table or control mean = 126.5 lb/ac.

\[\text{Crop :- Jowar (Kharif).} \]
\[\text{Site :- Govt. Agri. Exptl. Farm, Kotah.} \]
\[\text{Ref :- RJ. 58(6).} \]
\[\text{Type :- 'M'.} \]

Object :-To study the effect of different types of trace-elements at different levels on the yield of Jowar.

1. BASAL CONDITIONS:

(i) (a) No. (b) Jowar. (c) N.A. (ii) Clay loam. (b) N.A. (iii) 16.6.1958. (iv) (a) N.A. (b) Drilling. (c) 8 lb/ac. (d) 12' between rows. (e) N.A. (f) N.A. (g) Local. (h) Irrigated. (i) 2 weedings. (ii) N.A. (x) 28.11.1958.

2. TREATMENTS:

All combinations of (1) and (2) + 2 extra treatments.
(1) 5 sources of trace elements: S1=Copper sulphate, S2=Zine sulphate, S3=Borax powder, S4=Magnesium sulphate and S5=Ferrous sulphate.
(2) 3 levels of trace elements: L1=5, L2=10 and L3=15 lb/ac.

20 lb/ac. of N as A/S+20 lb/ac. of P2O5 as Super applied to all treatments combinations.
Extra treatments: T0=control (2 plots) and T1=20 lb/ac. of N as A/S+20 lb/ac. of P2O5 as Super.

3. DESIGN:

(i) R.B.D. (ii) (a) 18. (b) N.A. (iii) 3. (iv) (a) 30'x15'. (b) 24'x12'. (v) 3'x3'. (vi) Yes.

4. GENERAL:

(i) and (ii) N.A (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:

(i) 504 lb/ac. (ii) 167.8 lb/ac. (iii) Only interaction S X L is significant. (iv) Av. yield of grain in lb/ac.
Object:—To study the effect of organic matters on the yield of Jowar.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Black soil. (b) N.A. (iii) 2nd week of July 1954. (iv) (a) 2 ploughings. (b) N.A. (c) 40 srs./ac. (d) and (e) N.A. (v) Nil. (vi) Local (medium). (vii) Unirrigated. (viii) and (ix) N.A. (x) 10.11.1954.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 3 levels of straw of wheat: S₀=0, S₁=1 ton/ac. applied during ploughing and S₂=2 tons/ac. applied after ploughing.
   (2) 5 levels of F.Y.M.: F₀=0, F₁=1 ton/ac. applied during ploughing, F₂=1 ton/ac. applied after ploughing, F₃=2 tons/ac. applied during ploughing and F₄=2 tons/ac. applied after ploughing.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 3 (iv) (a) 24'x18'. (b) 18'x12'. (v) 3'x3'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
   (i) 3066 lb./ac. (ii) 100 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>F₀</th>
<th>F₁</th>
<th>F₂</th>
<th>F₃</th>
<th>F₄</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>S₀</td>
<td>2311</td>
<td>2833</td>
<td>3549</td>
<td>2686</td>
<td>3842</td>
<td>3044</td>
</tr>
<tr>
<td>S₁</td>
<td>3052</td>
<td>2955</td>
<td>3126</td>
<td>2823</td>
<td>2865</td>
<td>2964</td>
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<tr>
<td>S₂</td>
<td>2727</td>
<td>3622</td>
<td>2307</td>
<td>3460</td>
<td>3622</td>
<td>3188</td>
</tr>
<tr>
<td>Mean</td>
<td>2697</td>
<td>3137</td>
<td>3061</td>
<td>2990</td>
<td>3443</td>
<td>3069</td>
</tr>
</tbody>
</table>

S.E. of F marginal mean = 333.7 lb./ac.
S.E. of S marginal mean = 258.4 lb./ac.
S.E. of body of table = 577.9 lb./ac.
Crop :- Jowar (Kharif).
Site :- Govt. Agri. Exptl. Farm, Kotah.

Object :- To study the effect of catalysts on the yield of Jowar.

1. BASAL CONDITIONS :
   (i) (a) Wheat—Jowar—Fallow. (b) Wheat. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 3.7.1954.
   (iv) (a) to (e) N.A. (v) 2 tons/ac. of F.Y.M. (vi) Local. (vii) Unirrigated. (viii) and (ix) N.A.
   (x) 15.12.1954.

2. TREATMENTS :
   Same as in exp. no. 54(20) on page 112.

3. DESIGN :
   (i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 14"×8", (b) 12"×6". (v) 1′×1′. (vi) Yes.

4. GENERAL :
   (i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) and (b) No.
   (vi) and (vii) Nil.

5. RESULTS :
   (i) 1878 lb./ac. (ii) 380.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
<th>M₇</th>
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<tr>
<td>F₀</td>
<td>1606</td>
<td>2021</td>
<td>2125</td>
<td>1969</td>
<td>1814</td>
<td>1959</td>
<td>1903</td>
<td>1858</td>
</tr>
<tr>
<td>F₁</td>
<td>1866</td>
<td>1866</td>
<td>2306</td>
<td>1969</td>
<td>1969</td>
<td>1399</td>
<td>1917</td>
<td>1099</td>
</tr>
<tr>
<td>Mean</td>
<td>1736</td>
<td>1944</td>
<td>2216</td>
<td>1969</td>
<td>1892</td>
<td>1694</td>
<td>1710</td>
<td>1878</td>
</tr>
</tbody>
</table>

S.E. of M marginal mean = 155.5 lb./ac.
S.E. of F marginal mean = 83.2 lb./ac.
S.E. of body of table = 219.9 lb./ac.

Crop :- Jowar (Kharif).
Site :- Govt. Agri. Exptl. Farm, Kotah.

Object :- To study the effect of catalysts on the yield of Jowar.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Black soil. (b) N.A. (iii) 13.7.1957. (iv) (a) 2 ploughings. (b)
   N.A. (c) 40 yrs./ac. (d) and (e) N.A. (v) Nil. (vi) Local (medium). (vii) Unirrigated. (viii) Nil. (ix)
   N.A. (x) 2.11.1957.

2. TREATMENTS :
   All combinations of (1) and (2)
   (1) 7 manural treatments : M₀=0, M₁=Catalyst at 40 lb./ac., M₂=Catalyst at 80 lb./ac., M₃=
   Ferrous sulphate at 15 lb./ac., M₄=Ferrous sulphate at 30 lb./ac.,
   M₅=Pot. permanganate at 10 lb./ac. and M₆=Pot permanganate at 15 lb./ac.
   (2) 2 levels of F.Y.M. : F₀=0 and F₁=5000 lb./ac.

3. DESIGN :
   (i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 30′3"×18′. (b) 24′3"×12′. (v) 3′×3′. (vi) Yes.

4. GENERAL :
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) N.A. (b) No. (c) Nil. (v) to(vii) Nil.

5. RESULTS :
   (i) 345 lb./ac. (ii) 138.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.
Object—Type A —To study the response of Jowar to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Desert. (iii) Nil. (iv) and (v) N.A. (vi) August, 1955. (vii) to (ix) N.A. (x) November, 1958.

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 Mtr. of Pot.
   nk = 20 lb./ac. of N as A/S+20 lb./ac. of K2O as Mtr. of Pot.
   pk = 20 lb./ac. of P2O5 as Super+20 lb./ac. of K2O as Mtr. of Pot.
   npk = 20 lb./ac. of N as A/S+20 lb./ac. of P2O5 as Super+20 lb./ac. of K2O as Mtr. of Pot.

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

5. RESULTS:
   Effect n p k S.E. np nk pk npk S.E.
   Av. response in lb./ac. 165 107 16 21.4 0 0 25 82 20.6
   Control mean = 518 lb./ac. and no. of trials = 12.
Crop: Jowar.
Centre: Kotah (c.f.).

Ref: Rj. 59(SFT).
Type: 'M'.

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

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Black. (iii) Nil. (iv) and (v) N.A. (vi) August, 1959. (vii) to (ix) N.A. (x) November, 1959.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 58(SFT) type A on page 120 conducted at Kotah.

3. RESULTS:

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>140</td>
<td>122</td>
<td>66</td>
<td>40.3</td>
<td>16</td>
<td>0</td>
<td>16</td>
<td>8</td>
<td>23.0</td>
</tr>
</tbody>
</table>

Control mean = No. of trials = 10.

Crop: Jowar.
Centre: Kotah (c.f.).

Ref: Rj. 57(SFT).
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) Medium black. (iii) Nil. (iv) and (v) N.A. (vi) August, 1957. (vii) to (ix) N.A. (x) November, 1957.

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 A/S/N.
   n₂'' = 40 lb./ac. of N as A/S/N.

3. DESIGN and 4. GENERAL:
   Same as in exp. no. 58(SFT) type A on page 120 conducted at Kotah.

5. RESULTS:

   Treatment 0 n₁ n₂ n₁' n₂' n₁'' n₂''
   Av. yield 815 946 1004 922 971 971 1037
   G.M. = 952 lb./ac., S.E. = 23.3 lb./ac., and no. of trials = 12.

Crop: Jowar.
Centre: Kotah (c.f.).

Ref: Rj. 58(SFT).
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) Desert. (iii) Nil. (iv) and (v) N.A. (vi) August 1958. (vii) to (ix) N.A. (x) November, 1958.
2. TREATMENTS to 4. GENERAL:
Same as in expn. no. 57(SFT) type B on page 121 conducted at Kotah.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n_1</th>
<th>n_2</th>
<th>n_3</th>
<th>n_4</th>
<th>n_5</th>
<th>n_6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>625</td>
<td>839</td>
<td>872</td>
<td>732</td>
<td>872</td>
<td>815</td>
<td>798</td>
</tr>
</tbody>
</table>

G.M. = 793 lb./ac.; S.E. = 35.5 lb./ac. and no. of trials = 10.

Crop :- Jowar.  
Centre :- Kotah (c.f.).

Ref :- Rj. 59(SFT).  
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) Medium black. (iii) Nil. (iv) and (v) N.A. (vi) August, 1959, (vii) to (ix) N.A. (x) November, 1959.

2. TREATMENTS:

| n_1   | 20 lb./ac. of N as A/S,  |
| n_2   | 40 lb./ac. of N as A/S,  |
| n_4"  | 20 lb./ac. of N as Urea, |
| n_5"  | 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 GENERAL:
Same as in expn. no. 58(SFT) type A on page 120 conducted at Kotah.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n_1</th>
<th>n_2</th>
<th>n_3</th>
<th>n_4</th>
<th>n_5</th>
<th>n_6</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>428</td>
<td>379</td>
<td>510</td>
<td>527</td>
<td>592</td>
<td>782</td>
<td>1004</td>
</tr>
</tbody>
</table>

G.M. = 596 lb./ac.; S.E. = 22.7 lb./ac. and no. of trials = 14.

Crop :- Jowar.  
Centre :- Kotah (c.f.).

Ref :- Rj. 57(SFT).  
Type :- 'M'.

Object.—To see the effect of different manurial combinations on the yield of Jowar.

1. BASAL CONDITIONS :
(i) (a) to (c) N.A. (ii) Medium black. (iii) Nil. (iv) and (v) N.A. (vi) August, 1957. (vii) to (ix) N.A. (x) November, 1957.

2. TREATMENTS:

| n_1   | 20 lb./ac. of N as A/S/N.  |
| n_1"  | 20 lb./ac. of N as A/S/N+20 lb./ac. of P_2O_5 as Super. |
| n_1"" | 20 lb./ac. of N as A/S/N+40 lb./ac. of P_2O_5 as Super. |
| n_1"""| 20 lb./ac. of N as A/S/N+20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. of Pot. |

3. DESIGN and 4. GENERAL:
Same as in expn. no. 58(SFT) type A on page 120 conducted at Kotah.
5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n&quot;</th>
<th>n&quot;p1</th>
<th>n&quot;p2</th>
<th>n&quot;p1p2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>839</td>
<td>946</td>
<td>996</td>
<td>996</td>
<td>1078</td>
</tr>
</tbody>
</table>

G.M. = 971 lb./ac., S.E. = 22.7 lb./ac. and no. of trials = 12.

Crop :- Jowar.  
Centre :- Kotah (c.f.).

Ref :- Rj. 57(SFT).  
Type :- 'M'.

Object :- To see the effect of N and P applied individually and in combinations.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A.  
   (ii) Medium black.  
   (iii) Nil.  
   (iv) and (v) N.A.  
   (vi) August, 1957.  
   (vii) to (ix) N.A.  

2. TREATMENTS:
   0 = Control (no manure).  
   n1 = 20 lb./ac. of N as A/S/N.  
   n2 = 40 lb./ac. of N as A/S/N.  
   p1 = 20 lb./ac. of P2O5 as Super.  
   n1p1 = 20 lb./ac. of N as A/S/N + 20 lb./ac. of P2O5 as Super.  
   n2p1 = 40 lb./ac. of N as A/S/N + 20 lb./ac. of P2O5 as Super.

3. DESIGN and 4. GENERAL:
   Same as in expt. no. 58(SFT) type A on page 120 conducted at Kotah.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n1</th>
<th>n2</th>
<th>p1</th>
<th>n1p1</th>
<th>n2p1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>642</td>
<td>724</td>
<td>815</td>
<td>683</td>
<td>938</td>
<td>979</td>
</tr>
</tbody>
</table>

G.M. = 797 lb./ac.; S.E. = 25.6 lb./ac. and no. of trials = 11.
5. RESULTS:

(i) 719 lb./ac. (ii) 289.8 lb./ac.  (iii) None of the effects is significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>630</td>
<td>824</td>
<td>756</td>
<td>737</td>
</tr>
<tr>
<td>S2</td>
<td>797</td>
<td>710</td>
<td>738</td>
<td>748</td>
</tr>
<tr>
<td>S3</td>
<td>631</td>
<td>707</td>
<td>680</td>
<td>673</td>
</tr>
</tbody>
</table>

Mean 686 747 725 719

S.E. of any marginal mean 68.3 lb./ac.
S.E. of body of table 118.3 lb./ac.

Crop: Jowar (Kharif).
Object: To find out optimum seed rate and spacing for Jowar under rainfed conditions.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Jowar. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) N.A. (iv) (a) 1 ploughing and 3 bakherings. (b) Behind the plough. (c) and (d) As per treatments. (e) N.A. (v) F.Y.M. at 5 C.L./ac. (vi) RS.—1. (vii) Unirrigated. (viii) 2 weedings. (ix) and (x) N.A.

2. TREATMENTS:

Same as in expt. no. 58(48) on page 123.

5. RESULTS:

(i) 871 lb./ac. (ii) 305.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>886</td>
<td>686</td>
<td>861</td>
<td>811</td>
</tr>
<tr>
<td>S2</td>
<td>689</td>
<td>1024</td>
<td>869</td>
<td>861</td>
</tr>
<tr>
<td>S3</td>
<td>1010</td>
<td>874</td>
<td>943</td>
<td>942</td>
</tr>
</tbody>
</table>

Mean 862 861 891 871

S.E. of any marginal mean 71.9 lb./ac.
S.E. of body of table 124.6 lb./ac.

Crop: Jowar (Kharif).
Site: Govt. Agri. Farm, Tabiji.
Object: To study the effect of different dates of sowing on Jowar.

1. BASAL CONDITIONS:

(i) (a) Jowar—Wheat. (b) Wheat. (c) Super, A/S and compost. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings. (b) N.A. (c) 3 yrs./ac. (d) 30' between rows. (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) 3 weedings. (ix) and (x) N.A.

2. TREATMENTS:


Ref: Rj 59(61). Type: 'C'.
Crop: Jowar (Kharif)  
Site: Govt. Agri. Exptl. Farm, Kotah.  
Object: To study the effect of Guar and Tamarined seed powder on the yield of Jowar.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Wheat. (c) N.A. ii) (a) Clay loam. (b) N.A. (iii) 15.7.1958 (iv) (a) N.A. (b) Drilling. (c) 8 lb./ac. (d) 12" between rows (e) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) 2 weedings.  
   (ix) N.A. (x) 25.11.1958.

2. TREATMENTS:
   All combinations of (1) ann (2) + one control.
   (1) 3 levels of concentrations: L₁ =0.025%, L₂ =0.05% and L₃ =0.10%.
   (2) 2 chemicals: C₁ =Guar seed powder and C₂ =Tamarined seed powder.

3. DESIGN:
   (i) R.B.D. (ii) 7. (b) N.A. (iii) 3. (iv) (a) 30'3"X18'. (b) 24'3"X12'. (v) 3'X3'. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) Nil. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
   (i) 505 lb./ac. (ii) 30.0 lb./ac. (iii) All effects are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Control = 398 lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L₁</td>
</tr>
<tr>
<td>C₁</td>
</tr>
<tr>
<td>C₂</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>S.E. of C marginal mean = 10.0 lb./ac.</td>
</tr>
<tr>
<td>S.E. of body of table = 17.3 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Jowar (Kharif)  
Site: Govt. Agri. Exptl. Farm, Kotah.  
Object: To find out the economic way of controlling weeds in Jowar.
1. BASAL CONDITIONS:
(i) (a) N.A. (b) Gram (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 17.7.1959. (iv) (a) 3 ploughings, (b) and (c) N.A. (d) 18" between rows. (e) N.A. (f) R.S.—I. (vii) Unirrigated. (viii) and (ix) N.A. (x) 9.12.1959.

2. TREATMENTS:
T1=Unweeded (Control), T2=Local method of weeding, T3=Pre-emergence application of weedicides, T4=Post-emergence application of weedicides (once), T5=Post-emergence application of weedicides (twice), T6=Combination of pre-and post-emergence (once), T7=Pre-emergence+Cultural method of weeding, T8=Post-emergence+Cultural method of weeding, and T9=Pre+Post emergence+Cultural method of weeding.

3. DESIGN:
(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 24'x18'. (b) 18'x12'. (v) 3'x3'. (vi) Yes.

4. GENERAL:
(i) and (ii) N.A. (iii) Yield of grain and fodder (iv) to (vii) N.A.

5. RESULTS:
(i) 507 lb./ac. (ii) 151.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
<th>T8</th>
<th>T9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>425</td>
<td>633</td>
<td>309</td>
<td>586</td>
<td>555</td>
<td>296</td>
<td>498</td>
<td>867</td>
<td>397</td>
</tr>
</tbody>
</table>

S.E./mean = 75.7 lb./ac.

Crop: Jowar (Kharif) Ref: Rj. 59(9)
Site: Govt. Agri. Farm, Sawai Madhopur Type: 'D'.

Object: To find out the economic way of controlling weeds in Jowar.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Fallow—Gram. (c) 10 srs./ac. of Super. (ii) Medium loam (b) N.A. (iii) 24.7.1959. (iv) (a) 3 ploughings (b) and (c) N.A. (d) 18" between rows. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) and (ix) N.A. (x) 24.11.1959.

2. TREATMENTS to 4. GENERAL:
Same as in exp. 59 (13) on page 125.

5. RESULTS:
(i) 534. lb./ac. (ii) 197.3 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
<th>T8</th>
<th>T9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>252</td>
<td>548</td>
<td>321</td>
<td>668</td>
<td>637</td>
<td>435</td>
<td>662</td>
<td>561</td>
<td>725</td>
</tr>
</tbody>
</table>

S.E./mean = 98.6 lb./ac.

Crop: Jowar (Kharif). Ref: Rj. 59(62)
Site: Govt. Agri. Exptl. Farm, Tabiji. Type: 'D'.

Object: To work out a spray schedule for the control of Chilo—Zoselius.
1. BASAL CONDITIONS:
(i) (a) Jowar - Wheat. (b) Wheat. (c) Super A/S and compost. (ii) (a) Sandy loam. (b) N.A. (iii) 10.7.1959. (iv) (a) 4 ploughings. (b) N.A. (c) 3 srs./ac. (d) 30° between rows. (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) 3 weedings. (ix) and (x) N.A.

2. TREATMENTS:
C₁₀=Control, C₁=0.05% of Endrine sprayed, C₂=0.25% of B.H.C. sprayed and C₃ =0.25% of D.D.T. sprayed.

3. DESIGN:
(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 33'×163'. (v) N.A. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) Nil. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
(i) 449 lb./ac. (ii) 60.1 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>C₀</th>
<th>C₁</th>
<th>C₂</th>
<th>C₃</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>327</td>
<td>444</td>
<td>579</td>
<td>446</td>
</tr>
</tbody>
</table>

S.E./mean = 34.7 lb./ac.

Crop :- Maize (Kharif).
Site :- Govt. Agri. Farm, Bassi.

Object :- To find out the optimum dose of N in the form of A/S for Maize crop.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Fallow (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) and (iv) N.A. (v) Nil. (vi) Local (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS:
3 manurial treatments: M₀=Control, M₁ =20 lb./ac. of N as A/S and M₂ =40 lb./ac. of N as A/S. Fertilizers sprayed at the time of cultivation before sowing.

3. DESIGN:
(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) (a) 24'3"×16'. (b) 18'3"×12'. (v) 3'×2'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—1956. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
(i) 5074 lb./ac. (ii) 395.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>4412</td>
<td>5185</td>
<td>5625</td>
</tr>
</tbody>
</table>

S.E./mean = 223.8 lb./ac.

Crop :- Maize (Kharif).
Site :- Govt. Agri. Farm, Makrera.

Object :- To find out the response of Maize to N in the form of A/S in different doses.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 16.7.1954. (iv) and (v) N.A. (vi) Local (medium). (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 15.10 1954.
2. TREATMENTS:
4 manurial treatments: \( M_0 = \text{Control}, M_1 = 20 \, \text{lb/ia. of N as A/S}, M_2 = 40 \, \text{lb/ia. of N as A/S} \) and \( M_3 = 60 \, \text{lb/ia. of N as A/S} \).
Fertilizers were applied by spraying before cultivation.

3. DESIGN:
(i) R.B.D. (ii) (a) 4, (b) N.A. (iii) 6. (iv) (a) 30'×16'. (b) 28'×15'. (v) 1'×1'. (vi) Yes.

4. GENERAL:
(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) N.A. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS:
(i) 1645 lb/ia. (ii) 837.8 lb/ia. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/ia.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>( M_0 )</th>
<th>( M_1 )</th>
<th>( M_2 )</th>
<th>( M_3 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1419</td>
<td>1760</td>
<td>1733</td>
<td>1664</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>137.9 lb/ia.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop: Maize \( (\text{Kharif}) \).
Site: Govt. Agri. Exptl. Farm, Tabiji.

Object: To see the effect of different doses of compost on the yield of Maize.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Wheat. (c) Nil. (d) (a) Sandy loam. (b) N.A. (iii) 20.7.1954. (iv) (a) to (e) N.A. (v) Nil. (vi) Local (medium). (vii) Irrigated. (viii) and (ix) N.A. (x) 15.10.1954.

2. TREATMENTS:
4 manurial treatments: \( M_4 = \text{Control}, M_5 = 20 \, \text{lb/ia. of compost}, M_6 = 40 \, \text{lb/ia. of compost} \) and \( M_7 = 60 \, \text{lb/ia. of compost} \).

3. DESIGN:
(i) R.B.D. (ii) (a) 4, (b) N.A. (iii) 6. (iv) (a) 32'×16'. (b) 30'×14'. (v) 1'×1'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
(i) 1460 lb/ia. (ii) 314.4 lb/ia. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb/ia.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>( M_0 )</th>
<th>( M_1 )</th>
<th>( M_2 )</th>
<th>( M_3 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1116</td>
<td>1635</td>
<td>1501</td>
<td>1589</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>128.3 lb/ia.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop: Maize \( (\text{Kharif}) \).
Site: Govt. Agri. Exptl. Farm, Tabiji.

Object: To study the response of Maize to different types of catalysts at different levels with and without F.Y.M.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) N.A. (c) Nil. (d) (a) Sandy loam. (b) N.A. (iii) 15.7.1958. (iv) (a) and (b) N.A. (c) 5 sm/ia. (d) 15' to 24' between rows. (e) N.A. (f) N.A. (g) Local. (h) Irrigated. (i) 2 weedings. (j) N.A. (k) 8.10.1958.
2. TREATMENTS:
All combinations of (1) and (2)
(1) 7 manural treatments : 

<table>
<thead>
<tr>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1748</td>
<td>1620</td>
<td>1970</td>
<td>1886</td>
<td>2348</td>
<td>2184</td>
</tr>
<tr>
<td>1566</td>
<td>1700</td>
<td>2299</td>
<td>2213</td>
<td>1841</td>
<td>2014</td>
<td>2476</td>
</tr>
</tbody>
</table>

Mean : 1693
S.E. of M marginal mean = 290.9 lb/ac.
S.E. of F marginal mean = 155.5 lb/ac.
S.E. of body of M×F table = 411.4 lb/ac.

3. DESIGN:
(i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 30'3"×18' (b) 24'3"×12'. (v) 3'×3'. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) Nil. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
(i) 2171 lb/ac. (ii) 325.9 lb/ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2349</td>
<td>2159</td>
<td>2313</td>
<td>2010</td>
<td>2025</td>
<td></td>
</tr>
</tbody>
</table>

Av. yield = 2349 lb/ac.
1. BASAL CONDITIONS:
(i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.7.1958. (iv) (a) and (b) N.A. (e) 5 srs./ac. (d) 18" to 24" between rows. (c) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 10.10.1958.

2. TREATMENTS:
10 manurial treatments: M<sub>0</sub> = Control, M<sub>1</sub> = 5000 lb./ac. of F.Y.M., M<sub>2</sub> = 30 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super. M<sub>3</sub> = M<sub>1</sub> + M<sub>2</sub>, M<sub>4</sub> = 20 lb./ac. of N as A/S+N, M<sub>5</sub> = 40 lb./ac. of N as A/S+N, M<sub>6</sub> = 20 lb./ac. of N as Urea+N, M<sub>7</sub> = 40 lb./ac. of N as Urea+N, M<sub>8</sub> = 20 lb./ac. of Urea+N, M<sub>9</sub> = 40 lb./ac. of N as Urea+N.

3. DESIGN:
(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 30° x 18'. (b) 24° x 12'. (v) 3' x 3'. (vi) Yes.

4. GENERAL:
(i) and (ii) N.A. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
(i) 2062 lb./ac. (ii) 538.3 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M&lt;sub&gt;0&lt;/sub&gt;</th>
<th>M&lt;sub&gt;1&lt;/sub&gt;</th>
<th>M&lt;sub&gt;2&lt;/sub&gt;</th>
<th>M&lt;sub&gt;3&lt;/sub&gt;</th>
<th>M&lt;sub&gt;4&lt;/sub&gt;</th>
<th>M&lt;sub&gt;5&lt;/sub&gt;</th>
<th>M&lt;sub&gt;6&lt;/sub&gt;</th>
<th>M&lt;sub&gt;7&lt;/sub&gt;</th>
<th>M&lt;sub&gt;8&lt;/sub&gt;</th>
<th>M&lt;sub&gt;9&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1535</td>
<td>2075</td>
<td>1872</td>
<td>2069</td>
<td>25.6</td>
<td>1925</td>
<td>2132</td>
<td>1338</td>
<td>2791</td>
<td></td>
</tr>
</tbody>
</table>

S.E./mean = 269.6 lb./ac.
5. RESULTS:

(i) 1466 lb./ac. (ii) 181.7 lb./ac. (iii) Interaction F x K is highly significant while interaction N x K is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>K₀</th>
<th>K₁</th>
<th>K₂</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>F₀</td>
<td>1320</td>
<td>1408</td>
<td>1443</td>
<td>1378</td>
<td>1336</td>
<td>1405</td>
<td>1369</td>
<td>1519</td>
<td>1282</td>
<td>1390</td>
</tr>
<tr>
<td>F₁</td>
<td>1510</td>
<td>1550</td>
<td>1565</td>
<td>1456</td>
<td>1566</td>
<td>1604</td>
<td>1513</td>
<td>1481</td>
<td>1632</td>
<td>1542</td>
</tr>
<tr>
<td>Mean</td>
<td>1415</td>
<td>1479</td>
<td>1504</td>
<td>1417</td>
<td>1476</td>
<td>1504</td>
<td>1441</td>
<td>1500</td>
<td>1457</td>
<td>1466</td>
</tr>
<tr>
<td>K₀</td>
<td>1544</td>
<td>1323</td>
<td>1455</td>
<td>1359</td>
<td>1421</td>
<td>1543</td>
<td>1441</td>
<td>1500</td>
<td>1457</td>
<td>1466</td>
</tr>
<tr>
<td>K₁</td>
<td>1313</td>
<td>1645</td>
<td>1542</td>
<td>1466</td>
<td>1503</td>
<td>1530</td>
<td>1426</td>
<td>1504</td>
<td>1440</td>
<td></td>
</tr>
<tr>
<td>K₂</td>
<td>1388</td>
<td>1469</td>
<td>1515</td>
<td>1426</td>
<td>1504</td>
<td>1440</td>
<td>1426</td>
<td>1504</td>
<td>1440</td>
<td></td>
</tr>
</tbody>
</table>

S.E. of marginal mean of N, P or K = 42.8 lb./ac.
S.E. of marginal mean of F = 35.0 lb./ac.
S.E. of body of N x P, N x K or P x K table = 74.2 lb./ac.
S.E. of body of N x F, P x F or K x F table = 60.6 lb./ac.
<table>
<thead>
<tr>
<th></th>
<th>$N_1$</th>
<th>$N_2$</th>
<th>$P_0$</th>
<th>$P_1$</th>
<th>$P_2$</th>
<th>$K_0$</th>
<th>$K_1$</th>
<th>$K_2$</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P_0$</td>
<td>617</td>
<td>601</td>
<td>757</td>
<td>741</td>
<td>594</td>
<td>683</td>
<td>601</td>
<td>691</td>
<td>658</td>
</tr>
<tr>
<td>$P_1$</td>
<td>771</td>
<td>834</td>
<td>817</td>
<td>823</td>
<td>788</td>
<td>715</td>
<td>825</td>
<td>878</td>
<td>806</td>
</tr>
<tr>
<td>Mean</td>
<td>694</td>
<td>716</td>
<td>787</td>
<td>782</td>
<td>686</td>
<td>699</td>
<td>713</td>
<td>785</td>
<td>732</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of $N$, $P$ or $K$
S.E. of marginal mean of $F$
S.E. of body of $N \times P$, $N \times K$ or $P \times K$ table
S.E. of body of $N \times F$, $P \times F$ or $K \times F$ table

---

**Crop:** Maize.  
**Centre:** Banswara (C.F.).  
**Ref:** Rj. 58(SFT).  
**Type:** 'M'.

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

1. **BASAL CONDITIONS:**
   (i) (a) to (c) N.A. (ii) Desert. (iii) Nil. (iv) and (v) N.A. (vi) July, 1958. (vii) to (ix) N.A. (x) October, 1958.

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 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 *raih* 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) 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 design. (vi) and (vii) Nil.
5. RESULTS:

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>upk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>239</td>
<td>66</td>
<td>41</td>
<td>33.7</td>
<td>—16</td>
<td>58</td>
<td>41</td>
<td>41</td>
<td>31.3</td>
</tr>
</tbody>
</table>

Control mean = 543 lb./ac. and no. of trials = 9.

---

**Crop :- Maize.**

**Centre :- Banswara (c.f.).**

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

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Desert. (iii) Nil. (iv) and (v) N.A. (vi) July, 1959. (vii) to (ix) N.A.
   (x) October, 1959.

2. TREATMENTS:

3. DESIGN and GENERAL:

   Same as in expt. no. 58(SFT) type A on Maize crop on page 132 conducted at Banswara.

4. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n₁</th>
<th>n₂</th>
<th>n₃''</th>
<th>n₄''</th>
<th>n₅''</th>
<th>n₆''</th>
<th>Av. yield</th>
<th>G.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>617</td>
<td>773</td>
<td>773</td>
<td>683</td>
<td>782</td>
<td>790</td>
<td>1020</td>
<td>777 lb./ac.</td>
<td>37.8 lb./ac. and no. of trials = 9.</td>
</tr>
</tbody>
</table>
1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) and (v) N.A. (vi) July, 1959. (vii) to (ix) N.A. (x) October, 1959.

2. TREATMENTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n₁</th>
<th>n₁'</th>
<th>n₂</th>
<th>n₂'</th>
<th>n₃</th>
<th>n₃'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>453</td>
<td>716</td>
<td>913</td>
<td>724</td>
<td>987</td>
<td>667</td>
<td>946</td>
</tr>
<tr>
<td>G.M.</td>
<td>772</td>
<td>lb./ac.; S.E. = 25.6 lb./ac. and no. of trials = 4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n₁'</th>
<th>n₂'</th>
<th>n₃</th>
<th>n₃'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>658</td>
<td>831</td>
<td>946</td>
<td>716</td>
<td>790</td>
</tr>
<tr>
<td>G.M.</td>
<td>804</td>
<td>lb./ac.; S.E. = 25.6 lb./ac. and no. of trials = 6.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. DESIGN and 4. GENERAL:
Same as in exp. no. 58(SFT) type A on Maize crop on page 132 conducted at Banswara.

5. RESULTS:

<table>
<thead>
<tr>
<th>Crop :- Maize.</th>
<th>Centre :- Banswara (c.f.).</th>
<th>Ref :- Rj. 57(SFT).</th>
<th>Type :- 'M'.</th>
</tr>
</thead>
</table>

Object :- To investigate the efficiency of N and P applied individually and in combinations.
1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) and (v) N.A. (vi) July, 1957, (vii) to (ix) N.A. (x) October, 1957.

2. TREATMENTS:
   0 = Control (no manure).
   \( n_1 = 20 \text{ lb./ac. of N as A/S/N.} \)
   \( n_2 = 40 \text{ lb./ac. of N as A/S/N.} \)
   \( p_1 = 20 \text{ lb./ac. of P}_2\text{O}_5 \text{ as Super.} \)
   \( n_1p_1 = 20 \text{ lb./ac. of N as A/S/N+20 lb./ac. of P}_2\text{O}_5 \text{ as Super.} \)
   \( n_2p_1 = 40 \text{ lb./ac. of N as A/S/N+40 lb./ac. of P}_2\text{O}_5 \text{ as Super.} \)

3. DESIGN and GENERAL:
   Same as in exp. no. 58(SFT) type A on Maize crop on page 132 conducted at Banswara.

5. RESULTS:
<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>( n_1^* )</th>
<th>( n_2^* )</th>
<th>( p_1 )</th>
<th>( n_1p_1 )</th>
<th>( n_2p_1 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>617</td>
<td>494</td>
<td>625</td>
<td>346</td>
<td>584</td>
<td>592</td>
</tr>
</tbody>
</table>

   G.M. = 543 lb./ac.; S.E. = 47.1 lb./ac. and no. of trials = 6.
1. BASAL CONDITIONS:
   (i) (a) Maize—Wheat. (b) Wheat. (c) Super, A/S and compost. (ii) (a) Sandy loam. (b) N.A. (iii)
   As per treatments. (iv) (a) 3 ploughings. (b) N.A. (c) 6 srs./ac. (d) 9' between rows. (e) N.A. (v)
   N.A. (vi) Bassi selected. (vii) Irrigated. (viii) 3 weedings. (ix) and (x) N.A.

2. TREATMENTS:
   3 dates of sowing: D1=Early sowing on 17.6.1959, D2=Normal sowing on 6.7.1959 and D3=Late sowing
   on 27.7.1959.

3. DESIGN:
   (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 33'x 16'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) and (ii) N.A. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
   (i) 1619 lb./ac. (ii) 323.4 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>1070</td>
</tr>
<tr>
<td>D2</td>
<td>2227</td>
</tr>
<tr>
<td>D3</td>
<td>1561</td>
</tr>
</tbody>
</table>

   S.E./mean = 186.7 lb./ac.

---

Crop: Maize (Kharif)
Site: Govt. Agri. Exptl. Farm, Tabiji.

Object: To study the effect of guar seed and tamarined seed powder on the yield of Maize crop.

1. BASAL CONDITIONS:
   (i) (a) No. (b) Nil. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 9.7.1958. (iv) (a) and (b) N.A. (c)
   5 srs./ac. (d) 18' to 24' between rows. (e) N.A. (vi) Local. (vii) Irrigated. (viii) 2 Weedings. (ix)
   N.A. (x) 8.10.1958.

2. TREATMENTS:
   All combinations of (1) and (2) + one control.
   (1) 2 chemicals: T1=Guar seed powder and T2=Tamarined seed powder.
   (2) 3 concentrations: C1=0.25%, C2=0.5% and C3=1.0%.

3. DESIGN:
   (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) 30'x 18'. (b) 24'x 12'. (v) 3'x3'. (vi) Yes.

4. GENERAL:
   (i) and (ii) N.A. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
   (i) 1889 lb./ac. (ii) 536.6 lb./ac. (iii) Interaction C x T and control vs rest are significant. (iv) Av. yield of
   grain lb./ac.

<table>
<thead>
<tr>
<th>Control</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>1501</td>
</tr>
<tr>
<td>C2</td>
<td>326</td>
</tr>
<tr>
<td>C3</td>
<td>3121</td>
</tr>
<tr>
<td>T1</td>
<td>2336</td>
</tr>
<tr>
<td>T2</td>
<td>778</td>
</tr>
<tr>
<td>Mean</td>
<td>1801</td>
</tr>
<tr>
<td>2061</td>
<td>2279</td>
</tr>
</tbody>
</table>

   S.E. of C marginal mean = 219.1 lb./ac.
   S.E. of T marginal mean = 178.9 lb./ac.
   S.E. of body of table or control mean = 309.8 lb./ac.
Crop :- Maize (Kharif).
Ref :- Rj. 59(59).
Site :- Govt. Agri. Farm, Tabiji.
Type :- D'.

Object :- To work out a spray schedule for the control of Chilo-Zouellus.

1. BASAL CONDITIONS:
   (i) (a) Maize—Wheat. (b) Wheat. (c) Super, A/S and compost. (ii) (a) Sandy loam. (b) N.A. (iii) 9.7.1959. (iv) (a) 4 ploughing. (b) N.A. (c) 6 yrs./ac. (d) 36' between rows. (e) N.A. (y) N.A. (vi) Bassi selected. (vii) Irrigated. (viii) 2 weedings. (xi) and (x) N.A.

2. TREATMENTS:
   4 insecticidal treatments: T0 = Control, T1 = Endrin 0.05% spray, T2 = D.H.C. 0.25% spray and T3 = D.D.T 0.25 % spray.

3. DESIGN:
   (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 33'X16'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) Merosmia traparelis and Athuzgo ne Zedica. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
   (i) 2324 lb./ac. (ii) 237.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.
   Treatment   T0   T1   T2   T3
   Av. yield   2153   2263   2603   2279
   S.E./mean = 137.3 lb./ac.

Crop :- Maize (Kharif).
Ref :- Rj. 59(59).
Site :- Govt. Agri. Exptl. Farm, Tabiji.
Type :- D'.

Objective :- To determine the optimum timing of insecticidal treatment for control of Chilo-Zouellus.

1. BASAL CONDITIONS:
   (i) (a) Maize—Wheat. (b) Wheat. (c) Super, A/S and compost. (ii) (a) Sandy loam. (b) N.A. (iii) 15.7.1959. (iv) (a) 3 ploughing. (b) N.A. (iii) 6 yrs./ac. (d) 36' between rows. (e) N.A. (v) N.A. (vi) Bassi selected. (vii) Unirrigated. (viii) 1 weedings. (ix) and (x) N.A.

2. TREATMENTS:
   6 times of application of spray of 0.5% B.H.C : T0 = Control (no spraying), T1 = 2 sprays at the interval of 15 days, T2 = 3 Sprays at the interval of 15 days, T3 = 2 sprays at the interval of 10 days, T4 = 3 sprays at the interval of 10 days and T5 = 2 sprays at the interval of 30 days.

3. DESIGN:
   (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 33'X16'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) Merosmia, traparelis, stem maggots and white grubs. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
   (i) 1811 lb./ac. (ii) 237.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.
   Treatment   T0   T1   T2   T3   T4   T5
   Av. yield   1577   1715   1985   1666   2026   1899
   S.E./mean = 131.7 lb./ac.
Crop: Maize (Kharif).
Site: Govt. Agri. Exptl. Farm, Tabiji.
Ref: Rj. 59(60).
Type: 'D'.

Object: To compare several insecticides as a control of Chilo-Zouellus.

1. BASAL CONDITIONS:
   (i) (a) Maize—Wheat. (b) Wheat. (c) Super, A/S and compost. (iii) 15.7.1959.
   (iv) (a) 3 ploughings. (b) N.A. (c) 6 srs./ac. (d) 36" between rows. (e) N.A.
   (vi) Basii selected. (vii) Unirrigated. (viii) 3 weekings. (ix) and (x) N.A.

2. TREATMENTS:
   8 insecticidal sprays:
   T0 = Control,
   T1 = Two sprays of Endrin 0.05% and 0.1%,
   T2 = Two sprays of B.H.C. 0.1% and 0.2%,
   T3 = Two sprays of D.D.T. 0.25% and 0.5%,
   Tc = Endrine 0.1 dust at 20 lb./ac.,
   T5 = B.H.C. 0.1% dust at 30 lb./ac.,
   T6 = D.D.T. 0.5% dust at 30 lb./ac.,
   T7 = One spray of B.H.C. 0.1%.

3. DESIGN:
   (i) R B D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 33'x16'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) Mersinia, trapaletis, stem maggets and white grubs. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
   Treatment differences are not significant.
   Treatment Av. yield
   T0 1667
   T1 1253
   T2 1165
   T3 1358
   T4 1874
   T5 1672
   T6 1641
   T7 1733
   S.E./mean = 173.6 lb./ac.

Crop: Maize (Kharif).
Site: Govt. Agri. Exptl. Farm, Tabiji.
Ref: Rj. 59(73).
Type: 'D'.

Object: To find out the effect of detasseling at different stages on the yield of Maize.

1. BASAL CONDITIONS:
   (i) (a) Wheat—Maize. (b) Wheat. (c) 60 lb./ac. of N+40 lb./ac. of P2O5. (iii) 25.7.1959.
   (iv) (a) 3 ploughings. (b) and (c) N.A. (d) 24" between rows. (e) N.A. (vi) Bassi selected. (vii) N.A. (ix) N.A. (x) Sept, 1959.

2. TREATMENTS:
   5 detasseling treatments:
   T0 = Control,
   T1 = Detasseling in alternate plants after one week,
   T2 = Detasseling in alternate plants after two weeks,
   T3 = Detasseling in alternate rows after one week,
   T4 = Detasseling in alternate rows after two weeks.

3. DESIGN:
   (i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 32'3"x20'. (b) 30'3"x16'. (v) 1'x2'. (vi) Yes.

4. GENERAL:
   (i) and (ii) N.A. (iii) Yield of grain and fodder. (iv) to (vii) N.A.

5. RESULTS:
   Treatment differences are not significant.
   Treatment Av. yield
   T0 1244
   T1 1143
   T2 1213
   T3 1348
   T4 1164
   S.E./mean = 183.5 lb./ac.
Crop: Maize (Kharif).
Site: Govt. Agri. Farm, Udaipur.

Object: To find out the economic way of controlling weeds in Maize.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Wheat. (c) 40 lb/ac. of A/S. (ii) (a) Clay loam. (b) N.A. (iii) 17.7.1959.
   (iv) (a) and (b) N.A. (c) 10 yrs/ac. (d) and (e) N.A. (v) N.A. (vi) Malan. (vii) Unirrigated. (viii) to (x) N.A.

2. TREATMENTS:
   9 methods of controlling weeds: M₀ = Unweeded control, M₁ = Local method of weeding, M₂ = Pre-emergence application of weedicides, M₃ = Post-emergence application of weedicides (once), M₄ = Post-emergence application of weedicides (twice), M₅ = Combination of pre and post-emergence (once), M₆ = Pre-emergence + Cultural method of weeding, M₇ = Post-emergence + Cultural method of weeding and M₈ = Pre and Post-emergence + Cultural method of weeding.

3. DESIGN:
   (i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) 24'x18'. (b) 18'x12'. (v) 3'x3'. (vi) Yes.

4. GENERAL:
   (i) and (ii) N.A. (iii) Yield of grain and fodder. (iv) to (vii) N.A.

5. RESULTS:
   (i) 2008 lb/ac. (ii) 523.4 lb/ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/ac.

   Treatment
<table>
<thead>
<tr>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
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S.E./mean = 261.7 lb/ac.

---

Crop: Maize (Kharif).
Site: Govt. Agri. Farm, Udaipur.

Object: To study the effect of weedicides in controlling of weeds in Maize.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Barley. (c) 40 lb/ac. of A/S. (ii) (a) Clay loam-ploughings. (b) N.A. (c) 10 yrs/ac. (d) and (e) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) to (x) N.A.

2. TREATMENTS:
   Main-plot treatments
   4 weedicides: W₁ = Sodium salt of 2, 4-D, W₂ = Ethylester of 2, 4-D, W₃ = Amine salt of 2, 4-D, W₄ = Sodium salt of M.C.P.A.

   Sub-plot treatments
   5 levels of weedicides: L₀ = 0, L₁ = 8, L₂ = 12, L₃ = 16, and L₄ = 20 oz/ac. of acid equivalent.

3. DESIGN:
   (i) Split-plot. (iv) (a) 4 main-plots/block, 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 18'x12'. (b) 12'x6'. (v) 3'x3'. (vi) Yes.

4. GENERAL:
   (i) and (ii) N.A. (iii) Yield of grain. (iv) to (vii) N.A.

5. RESULTS:
   (i) 4999 lb/ac. (ii) (a) 2145 lb/ac. (b) 1841 lb/ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb/ac.
**Crop:** Barley.  
**Site:** Govt. Agri. Farm, Bassi.  
**Object:** To find out the optimum dose of N for Barley.

1. **BASAL CONDITIONS:**
   (i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.1954. (iv) (a) to (e) N.A. (v) Nil. (vi) Local (medium) (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 5.4.1955.

2. **TREATMENTS:**
   3 levels of N as A/S: N₀ = 0, N₁ = 20 and N₂ = 40 lb./ac. of N. A/S broadcasted before cultivation.

3. **DESIGN:**
   (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) (a) 22' x 15'. (b) 19' x 12'. (v) 1' x 1'. (vi) Yes.

4. **GENERAL:**
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) N.A.—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. **RESULTS:**
   (i) 4763 lb./ac. (ii) 233.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
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<tr>
<th>Treatment</th>
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<th>N₁</th>
<th>N₂</th>
<th>Av. yield</th>
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S.E./mean = 128.9 lb./ac.

---

**Crop:** Barley.  
**Site:** Govt. Agri. Farm, Bassi.  
**Object:** To find out the optimum dose of N for Barley.

1. **BASAL CONDITIONS:**
   (i) (a) Nil. (b) N.A. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 4.12.1955. (iv) (a) to (e) N.A. (v) Nil. (vi) Local. (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 31.3.1956.

2. **TREATMENTS:**
   3 levels of N as A/S: N₀ = 0, N₁ = 20 and N₂ = 60 lb./ac. A/S broadcasted at the time of cultivation.
3. DESIGN:
   (i) R.B.D. (ii) (a) 3, (b) N.A. (iii) 3. (iv) (a) 18'×24', (b) 12'×18'). (v) 3'×3'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) N.A.—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
   (i) 3977 lb./acre. (ii) 311.8 lb./acre. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./acre.

<table>
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<tr>
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S.E./mean = 180.0 lb./acre.

**Crop:** Barley.
**Site:** Govt. Agri. Farm, Bassi.

Ref.: Rj. 56(10).
Type: -M'.

Object:—To find out the optimum dose of N for Barley.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam of Gangetic plain. (b) Nil. (iii) 10.11.1936. (iv) (a) to (e) N.A. (v) Nil. (vi) Local. (vii) to (ix) N.A. (x) 29.3.1957.

2. TREATMENTS to 4. GENERAL:
   Same as in expt. no. 55(3) on page 140.

5. RESULTS:
   (i) 6112 lb./acre. (ii) 200.6 lb./acre. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./acre.

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S.E./mean = 115.8 lb./acre.

**Crop:** Barley (Rabi).
**Site:** Govt. Agri. Farm, Bassi.

Ref.: Rj. 57(41).
Type: -M'.

Object:—To study the effect of N, P and K with F.Y.M. as basal dressing on the yield of Barley.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Barley. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.11.1957. (iv) (a) 5 ploughings. (b) N.A. (c) 60 lb./acre. (d) Row to row 9'. (e) N.A. (v) 5000 lb./acre. of F.Y.M. (vi) R.S.—17 (early). (vii) Irrigated. (viii) 4 weeding. (ix) 71'. (x) 23.3.1958.

2. TREATMENTS:
   All combinations of (1), (2) and (3)
   (1) 3 levels of N as A/S: N₀ =0, N₁ =20 and N₂ =40 lb. /acre.
   (2) 3 levels of P₂O₅ as Super: P₀ =0, P₁ =20 and P₂ =40 lb./acre.
   (3) 2 levels of K₂O as Muri. Pot: K₀ =0, and K₁ =20 lb./acre.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 18. (b) N.A. (iii) 2. (iv) (a) 18'×30', (b) 12'×24'. (v) 3'×3'. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) Aphids attack; B.H.C. sprayed. (iii) Yield of grain. (iv) to (vii) N.A.
5. RESULTS:

(i) 1563 lb./ac.  (ii) 153.6 lb./fac.  (iii) No effect is significant.  (iv) Av. yield of grain in lb./ac.

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<th>P₂</th>
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S.E. of N or P marginal mean = 44.3 lb./ac.
S.E. of K marginal mean = 36.2 lb./ac.
S.E. of body of N x P table = 76.8 lb./ac.
S.E. of body of P x K or N x K table = 62.7 lb./ac.

Crop: Barely (Rabi).
Site: Govt. Agri. Farm, Bassi.
Object: To study the effect of different nitrogeneous fertilizers with P on the yield of barley.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 19.11.1959. (iv) (a) 8 ploughings. (b) N.A. (c) 100 lb./ac. (d) Row to row 9'. (e) N.A. (v) 5000 lb./ac. of F.Y.M. (vi) R.S.—17. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 25.3.1960.

2. TREATMENTS:

All combinations of (1), (2) and (3)+3 extra treatments.

(1) 3 sources of N : S₁=A, S₂=A/S and S₃=Urea.
(2) 3 levels of N : N₀=0, N₁=20 and N₂=40 lb./ac.
(3) 3 levels of P₂O₅ as Super : P₀=0, P₁=20 and P₂=40 lb./ac.

3 extra treatments are : T₁=P₃+S₁N₂+K₁, T₂=P₃+S₂N₂+K₁ and T₃=P₃+S₃N₂+K₃.

K=20 lb./ac. of K₂O as Mur. Pot.

3. DESIGN:

(i) 3x+3 confd.  (ii) (a) 12 plots/block; 3 blocks/replication.  (b) N.A.  (iii) I.  (iv) (a) 18'x32'²; (b) 12'x24'².  (v) 3'x3'.  (vi) Yes.

4. GENERAL:

(i) N.A.  (ii) Aphids attack—B.H.C. 'prayed.  (iii) Yield of grain.  (iv) to (vii) N.A.

5. RESULTS:

(i) 2472 lb./ac.  (ii) 314.5 lb./ac.  (iii) Only main effect of N is highly significant. Other effects and interactions are not significant.  (iv) Av. yield of grain in lb./ac.

\[
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\]
Crop :- Barley.
Site :- Govt. Agri. Farm, Bassi.

Object :- To study the effect of F.Y.M. on the yield of Barley.

1. BASAL CONDITIONS :
   (i) (a) and (b) N.A. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 4.12.1955. (iv) (a) to (e) N.A. (v) Nil.
   (vi) Local. (vii) Irrigated. (viii) and (ix) N.A. (x) 31.3.1956.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 6 manures: M0 = No manure, M1 = 40 lb/ac. of catalyst, M2 = 2 times M1 M3 = 14 lb/ac. of FeSO4,
   M4 = 28 lb/ac. of FeSO4 and M5 = 16 lb/ac. of KMnO4.
   (2) 2 levels of F.Y.M.: F0 = 0 and F1 = 2 tons/ac.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 16'x10', (b) 12'x6', (v) 2'x2'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS:
   (i) None of the effects is significant. (iv) Av. yield of grain in lb/ac.

<table>
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<th>M0</th>
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S.E. of F marginal mean = 74.0 lb/ac.
S.E. of M marginal mean = 128.1 lb/ac.
S.E. of body of M x S table = 181.2 lb/ac.

Crop :- Barley.
Site :- Govt. Agri. Farm, Bassi.

Object :- To study the effect of catalyst, K and F.Y.M. on the yield of Barley.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Nil. (iii) 31.10.1956. (iv) (a) to (e) N.A. (v) Nil.
   (vi) Local. (vii) Nil. (viii) and (ix) N.A. (x) 25.3.1957.

2. TREATMENTS:
   Same as in exp. no. 55 (2) as above

3. DESIGN:
   (i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) and (b) 24'x12'. (v) Nil. (vi) Yes.
4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955-1957. (b) Nil. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
   (i) 3382 lb./ac. (ii) 424.4 lb./ac. (iii) None of the effects is significant. (iv) Yield of grain in lb./ac.

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S.E. of F marginal mean = 139.9 lb./ac.
S.E. of M marginal mean = 139.9 lb./ac.
S.E. of body of M x F table = 139.9 lb./ac.

---

Crop: Barley (Rabi).
Site: Govt. Agri. Farm, Bassi.
Ref: Rj. 57(34).
Type: M.

Object: To study the effect of catalyst, K and F.P.M. on the yield of Barley.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Barley. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 11.11.1957. (iv) (a) 5 ploughings. (b) N.A. (c) 80 lb./ac. (d) Row to row 9'. (e) N.A. (v) N.A. (vi) RS-17 (early). (vii) Irrigated. (viii) 1 weeding. (ix) 1'. (x) 21.3.1958.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 7 manures: M₀ = No manure, M₁ = 40 lb./ac. of catalyst, M₂ = 80 lb./ac. of catalyst, M₃ = 15 lb./ac. of FeSO₄, M₄ = 30 lb./ac. of FeSO₄, M₅ = 10 lb./ac. of KMnO₄ and M₆ = 15 lb./ac. of KMnO₄.
   (2) 2 levels of F.Y.M.: F₀ = 0 and F₁ = 5000 lb./ac.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 20' x 145'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) Aphids attack—dusting of B.H.C. (iii) Yield of grain. (iv) (a) 1955—1957. (b) No. (c) N.A. (v) to (vii) N.A.

5. RESULTS:
   (i) 2490 lb./ac. (ii) 521.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

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<th>M₀</th>
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<th>M₂</th>
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S.E. of M marginal mean = 260.8 lb./ac.
S.E. of F marginal mean = 139.9 lb./ac.
S.E. of body of M x F table = 368 lb./ac.
Crop: Barley.
Site: Govt. Agri. Farm, Bassi.

Object: To study the effect of different trace-elements on growth, germination and yield of Barley.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Moong. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 3.11.1954. (iv) (a) to (e) N.A. (v) Nil. (vi) Local. (vii) Irrigated. (viii) and (ix) N.A. (x) 9.4.1955.

2. TREATMENTS:
All combinations of (1) and (2)+a control
(1) 6 trace-elements: E₁ = Borax powder, E₂ = Ferrous sulphate, E₃ = Copper sulphate, E₄ = Magnesium sulphate, E₅ = Zinc sulphate and E₆ = Ammonium molybdate.
(2) 3 levels of trace-elements: L₁ = 5, L₂ = 10 and L₃ = 20 lb./ac.
Fertilizers were applied by spraying before cultivation.

3. DESIGN:
(i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 3. (iv) (a) 22' x 13'. (b) 20' x 11'. (v) 1' x 1'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
(i) 2878 lb./ac. (ii) 572.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
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Mean 2903 2878 2976 2346 3022 3047

S.E. of E marginal mean = 190.8 lb./ac.
S.E. of body of table or control mean = 330.5 lb./ac.

---

Crop: Barley.
Site: Govt. Agri. Farm, Bassi.

Object: To study the effect of different trace-elements on the yield of Barley.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) N.A. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 3.12.1955. (iv) (a) to (e) N.A. (v) Nil. (vi) Local. (vii) Irrigated. (viii) and (ix) N.A. (x) 30.3,1956.

2. TREATMENTS:
All combinations of (1) and (2)+a control
(1) 5 trace-elements: E₁ = Borax powder, E₂ = Ferrous sulphate, E₃ = Copper sulphate, E₄ = Manganese sulphate and E₅ = Zinc sulphate.
(2) 3 levels of trace-elements: L₁ = 5, L₂ = 10 and L₃ = 20 lb./ac.

3. DESIGN:
(i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 3. (iv) (a) 24' x 15'. (b) 20' x 11'. (v) 2' x 2'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain/plot. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.
5. RESULTS:
(i) 2488 lb./ac. (ii) 382.7 lb./ac. (iii) E effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 2527 lb./ac.

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Mean: 2471 2459 2547 2482 2465

S.E. of E marginal mean = 127.6 lb./ac.

S.E. of body of table or control mean = 220.9 lb./ac.

Crop = Barley.
Site = Govt. Agri. Farm, Bassi.
Object = To study the effect of various trace-elements on the yield of Barley.

1. BASAL CONDITIONS:
(i) (a) No. (b) Barley. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 10.11.1957. (iv) (a) 3 to 4 ploughings.
(b) Drilled. (c) 80 lb./ac. (d) Row to row 9". (e) N-A (v) 30 lb./ac. of N as A/S + 30 lb./ac. of P₂O₅ as Super. (vi) R.S.-17 (early). (vii) Irrigated. (viii) 1 weeding and hoeing. (ix) 111. (x) 24.3.1958.

2. TREATMENTS:
All combinations of (1) and (2)+ a control
(1) 5 trace-elements: E₁=Ferrous sulphate, E₂=Zn sulphate, E₃=Manganese sulphate and E₄=Borax.
(2) 3 levels of trace elements: L₁=5, L₂=10 and L₃=15 lb./ac.

3. DESIGN:
(i) R.B.D. (ii) 16. (b) N.A. (iii) 3. (iv) (a) 18'×30' (b) 12'×24'. (v) 3'×3'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Aphids attack controlled by dusting B.H.C. (iii) Yield of grain. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) Durgapura. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:
(i) 2733 lb./ac. (ii) 2050 lb./ac. (iii) E effect is not significant. (iv) Av. yield of grain in lb./ac.

Control = 2658 lb./ac.

<table>
<thead>
<tr>
<th></th>
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Mean: 2844 2657 2756 2574 2857

S.E. of E marginal mean = 683.3 lb./ac.

S.E. of body of table or control mean = 1184.0 lb./ac.
Crop :- Barley (Rabi).
Site :- Govt. Agri. Farm, Bassi.

Object :- To study the effect of various trace-elements on the yield of Barley.

1. BASAL CONDITIONS :
   (i) (a) No. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 5.12.1958. (iv) (a) 8 ploughings. (b) Drilling. (c) 1.25 md./ac. (d) Row to row 9°. (e) N.A. (v) 30 lb./ac. of N as A/S+30 lb./ac. of P₂O₅ as Super. (vi) R.S.—17. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 26.4.1959.

2. TREATMENTS and 3. DESIGN :
   Same as in exp. no. 57(8) on page 146.

4. GENERAL :
   (i) N.A. (ii) No. (iii) Yield of grain. (iv) (a) 1959—contd. (b) and (c) N.A. (v) to (vii) N.A.

5. RESULTS :
   (i) 3213 lb./ac. (ii) 225.4 lb./ac. (iii) E effect is not significant. (iv) Av. yield of grain in lb./ac.

\[
\begin{array}{llllll}
  & E_1 & E_2 & E_3 & E_4 & E_5 \\
 L_1 & 3156 & 3221 & 3285 & 3298 & 3298 \\
 L_2 & 3298 & 3169 & 3266 & 3156 & 3028 \\
 L_3 & 3118 & 3259 & 3400 & 3144 & 3221 \\
 Mean & 3191 & 3216 & 3317 & 3199 & 3182 \\
\end{array}
\]

S.E. of E marginal mean = 75.1 lb./ac.
S.E. of body of table or control mean = 130.1 lb./ac.

---

Crop :- Barley (Rabi).
Site :- Govt. Agri. Farm, Bassi.

Object :- To study the effect of various trace-elements on the yield of Barley.

1. BASAL CONDITIONS :
   (i) (a) No. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 8.12.1959. (iv) (a) 7 ploughings. (b) Drilling. (c) 1.25 md./ac. (d) Row to row 9°. (e) N.A. (v) 30 lb./ac. of N as A/S+30 lb./ac. of P₂O₅ as Super. (vi) R.S.—17. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 4.4.1960.

2. TREATMENTS to 4. GENERAL :
   Same as in exp. no. 57(8) on page 146.

5. RESULTS :
   (i) 3117 lb./ac. (ii) 238.4 lb./ac. (iii) E effect is not significant. (iv) Av. yield of grain in lb./ac.

\[
\begin{array}{llllll}
  & E_1 & E_2 & E_3 & E_4 & E_5 \\
 L_1 & 2978 & 2963 & 3112 & 3019 & 3019 \\
 L_2 & 3131 & 3181 & 3062 & 3150 & 3030 \\
 L_3 & 3112 & 3278 & 3415 & 3197 & 3119 \\
 Mean & 3074 & 3141 & 3196 & 3122 & 3056 \\
\end{array}
\]

S.E. of E marginal mean = 79.5 lb./ac.
S.E. of body of E×L table or control mean = 137.6 lb./ac.
Crop: Wheat (Rabi).
Centre: Bassi (c.f.).

Object: To study the effect of Gypsum on the reclamation of alkaline soil and Barley yield.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Wheat. (c) 140 mds. ac of F.Y.M. in July, 1957. (ii) (a) Alkaline soil. (b) N.A. (iii) Nil. (iv) Local. (v) (a) 7 ploughings. (b) N.A. (c) 1 mds./ac. (d) Row to row 9'. (e) N.A. (vi) 18.10.1957. (vii) Irrigated. (viii) and (ix) N.A. (x) 15.3.1958.

2. TREATMENTS:
   10 manures: 
   - M₀ = Control, M₁ = F.Y.M. at 10 tons/ac. in May, M₂ = F.Y.M. at 10 tons/ac. in October,
   - M₃ = M₂ + Gypsum at 2 tons/ac., M₄ = M₂ + Gypsum at 4 tons/ac., M₅ = M₂ + Gypsum at 6 tons/ac., M₆ = 20 lb./ac. of N as A/S + 30 lb./ac. of P₂O₅ as Super. M₇ = M₅ + M₆, M₈ = M₆ + Gypsum at 4 tons/ac. and M₉ = Gypsum at 4 tons/ac.

3. DESIGN:
   (i) R.B.D. (ii) 10 plots/block and 2 replications. (iii) (a) 30' x 24'. (b) N.A. (iv) Yes.

4. GENERAL:
   (i) N.A. (ii) Aphids attack; control measures not taken. (iii) Yield of grain. (iv) and (v) N.A. (vi) and (vii) Nil.

5. RESULTS:
   (i) 1735 lb./ac. (ii) 351.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

   Treatment  | M₀  | M₁  | M₂  | M₃  | M₄  | M₅  | M₆  | M₇  | M₈  | M₉  | Av. yield
            | 1604| 2006| 1851| 1574| 1974| 1712| 1604| 1635| 1832| 1512
   S.E./mean = 248.5 lb./ac.

Crop: Barley.
Site: Govt. Agri. Farm, Durgapura.

Object: To study the effect of catalyst, ferrous sulphate, potassium permanganate and F.Y.M. on Barley yield.

1. BASAL CONDITIONS:

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 7 manures: M₀ = Control (no manure), M₁ = 40 lb./ac. of catalyst, M₂ = 80 lb./ac. of catalyst, M₃ = 14 lb./ac. of Ferrous sulphate, M₄ = 28 lb./ac. of Ferrous sulphate, M₅ = 8 lb./ac. of Pot. permanganate and M₆ = 10 lb./ac. of Pot. permanganate.
   (2) 2 levels of F.Y.M.: F₀ = 0 and F₁ = 2 tons/ac.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 15' x 9'. (b) 12' x 6'. (v) 1½' x 1½'. (vi) Yes.

4. GENERAL:
   (i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—contd. (b) No. (e) Nil. (v) (a) Bassi. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:
   (i) 798 lb./ac. (ii) 172.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.
Object: To study the effect of catalyst, ferrous sulphate, potassium permanganate and F.Y.M. on Barley yield.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 8.11.1955. (iv) (a) to (e) N.A. (v) Nil. (vi) Local (medium). (vii) Irrigated. (viii) and (ix) N.A. (x) 15.2.1956.

2. TREATMENTS:

Same as in expt. no. 55(2) on page 143.

3. DESIGN:

(i) Fact. in R B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 14' x 8'. (b) 12' x 6'. (v) 1' x 1'. (vi) Yes.

4. GENERAL:

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

5. RESULTS:

(i) 2.4 lb./ac. (ii) 83.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

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<th></th>
<th>M₀</th>
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<th>M₂</th>
<th>M₃</th>
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<th>M₅</th>
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<td>239</td>
<td>226</td>
<td>189</td>
<td>204</td>
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S.E. of F marginal mean = 19.7 lb./ac.
S.E. of M marginal mean = 34.1 lb./ac.
S.E. of body of table = 48.2 lb./ac.
1. BASAL CONDITIONS:
   (i) (a) No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.11.1956. (iv) (a) to (e) N.A. (v)
   Nil. (vi) Local. (vii) Irrigated. (viii) and (ix) N.A. (x) 23.3.1957.

2. TREATMENTS:
   Same as in expl. no. 55(2) on page 143.
   Fertilizers sprayed at the time of cultivation.

3. DESIGN:
   (i) Fact. in R.B D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 15' x 27'\(\times\) (b) 12' x 24'. (v) 1' x 1\'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) and (b) No. (c) Nil. (v) (a) Bassi. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:
   (i) 892 lb./ac. (ii) 169.1 lb./ac. (iii) Main effect of M and interaction M \(\times\) F are highly significant. M
   effect is not significant. (iv) Av. yield of grain in lb./ac.

<table>
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<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
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<td>980</td>
<td>852</td>
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</table>

   S.E. of M marginal mean = 69.0 lb./ac.
   S.E. of F marginal mean = 39.8 lb./ac.
   S.E. of body of table = 97.6 lb./ac.

---

Crop: Barley.
Site: Govt. Agri. Farm, Durgapura.

Type: 'M'.

Object: To study the effect of various trace-elements on the yield of Barley.

1. BASAL CONDITIONS:
   (i) (a) No. (b) Gaar. (c) B.M. (ii) (a) Sandy loam. (b) N.A. (iii) 10.11.1957. (iv) (a) 4 ploughings-
   (b) Drilling. (c) 1.25 md./ac. (d) 1\' between rows. (e) N.A. (v) 30 lb./ac. of N as A/S+30 lb./ac. of

2. TREATMENTS and 3. DESIGN:
   Same as in expl. no. 57(8) on page 146.

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

5. RESULTS:
   (i) 1538 lb./ac. (ii) 325.7 lb./ac. (iii) E effect is not significant. (iv) Av. yield of grain in lb./ac.

   Control = 1528 lb./ac.

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Ref: Rj. 57(14).
Crop :- Barley (Rabi).
Site :- Govt. Agri. Farm, Bassi.

Object :- To find out the economic way of controlling weeds in Barley.

1. BASAL CONDITIONS :
   (i) (a) N.A. (b) Wheat (c) 1 § md./ac. of urea. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) 9 ploughings. (b) N.A. (c) 1 md./ac. (d) and (e) N.A. (v) N.A. (vi) R.S—17. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS :
   5 weeding treatments : M₀ = control, M₁ = Local method of weeding, M₂ = Post-emergence application of weedicides (once), M₃ = Post-emergence application of weedicides (twice) and M₄ = M₁ + M₂.

3. DESIGN :
   (i) R.R.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 24'X 18'. (b) 18'X 12'. (v) N.A. (vi) Yes.

4. GENERAL :
   (i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1958—N.A. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :
   (i) 3271 lb./ac. (ii) 342.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

   Treatment | M₀ | M₁ | M₂ | M₃ | M₄
   Treatment yield | 2287 | 2194 | 1962 | 2216 | 2240
   S.E./mean = 139.8 lb./ac.

Ref :- Rj. 58(29).
Type :- 'D'.
Barley (Rabi).

Site: Govt. Agri. Farm, Bassi.

Crop: Barley (Rabi).

Ref: Rj. 58(47).

Type: 'D'.

Object: To study the efficacy of pre-sowing and post-sowing applications of Dieldrin spray for control of termites.

1. **BAAL CONDITIONS**

   (i) (a) Nil. (b) Maize. (c) N.A.  (ii) (a) Sandy loam. (b) N.A.  (iii) 18.11.1959. (iv) (a) 7 ploughings. (b) N.A.  (c) 45 as/ac. (d) Row to row 1½'. (e) N.A.  (v) N.A.  (vi) R.S.—17. (vii) Irrigated. (viii) 2 weedings. (ix) and (x) N.A.

2. **TREATMENTS.**

   M₀ = Control, M₁ = Pre-sowing application of Dieldrin at 1 lb./ac. dissolved in 40 gallons of water  M₂ = Post sowing application of Dieldrin at 1 lb./ac. dissolved in 40 gallons of water/ac., and M₃ = M₁ + M₂.

3. **DESIGN:**

   (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 33' x 9'. (v) N.A. (vi) Yes.

4. **GENERAL:**

   (i) N.A. (ii) Aphids attack. (iii) Yield of grain. (iv) to (vii) N.A.

5. **RESULTS.**

   (i) 2064 lb./ac. (ii) 187.6 lb./ac. (iii) Treatment differences are not significant (iv) Av. yield of grain in lb/ac.

   Treatment
<table>
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<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
</tr>
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<tbody>
<tr>
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<td>2037</td>
<td>2264</td>
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</tbody>
</table>

   S.E./mean = 108.3 lb./ac.


Barley (Rabi).

Site: Govt. Agri. Farm, Bassi.

Crop: Barley (Rabi).

Ref: Rj. 58(35).

Type: 'D'.

Object: To test the relative efficacy of seed dressing fungicides on the yield of Barley.

1. **BAAL CONDITIONS**

   (i) (a) N.A. (b) Fallow. (c) N.A.  (ii) (a) Sandy loam. (b) N.A.  (iii) 26.11.1958. (iv) (a) 6 ploughings. (b) N.A.  (c) 1 md./ac. (d) Row to row 9'. (e) N.A.  (v) N.A.  (vi) R.S.—17. (vii) Irrigated. (viii) 2 weedings. (ix) and (x) N.A.

2. **TREATMENTS:**


3. **DESIGN:**

   (i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) and (b) 15' x 9'. (v) N.A.  (vi) Yes.

4. **GENERAL:**

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

5. **RESULTS:**

   (i) 265.9 lb./ac. (ii) Treatment differences are not significant. (iv) Av. yield of grain in lb/ac.

   Treatment
<table>
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<th>F₀</th>
<th>F₁</th>
<th>F₂</th>
<th>F₃</th>
<th>F₄</th>
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<th>F₇</th>
<th>F₈</th>
<th>F₉</th>
</tr>
</thead>
<tbody>
<tr>
<td>3127</td>
<td>3014</td>
<td>3333</td>
<td>3189</td>
<td>3127</td>
<td>3425</td>
<td>2973</td>
<td>3055</td>
<td>3230</td>
<td>3189</td>
</tr>
</tbody>
</table>

   S.E./mean = 131.5 lb./ac.
Crop: Barley (Rabi).  
Site: Govt. Agri. Farm, Bassi.  

Object: To test the relative efficacy of seed dressing fungicides on the yield of Barley.

1. BASAL CONDITIONS:
   (i) (a) N.A.  (b) Fallow.  (c) N.A.  (ii) (a) Sandy loam.  (b) N.A.  (iii) 7.11.1959.  (iv) (a) 8 ploughings.  (b) and (c) N.A.  (d) Row to row 9".  (e) N.A.  (v) G.M. only.  (vi) R.S.-17.  (vii) Irrigated.  (viii) and (ix) N.A.  (x) 27.3.1960.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 58(35) of page 152 except that the no. of replications is 6.

5. RESULTS:
   (i) 4592 lb./ac.  (ii) 504.1 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>F_0</th>
<th>F_1</th>
<th>F_2</th>
<th>F_3</th>
<th>F_4</th>
<th>F_5</th>
<th>F_6</th>
<th>F_7</th>
<th>F_8</th>
<th>S.E./mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>4480</td>
<td>4500</td>
<td>4512</td>
<td>4538</td>
<td>4563</td>
<td>4700</td>
<td>4747</td>
<td>4634</td>
<td>4748</td>
<td>205.8 lb/</td>
</tr>
</tbody>
</table>
S.E. of difference of two
1. W marginal means = 253.5 lb./ac.
2. L marginal means = 136.7 lb./ac.
3. L means at the same level of W = 27.4 lb./ac.
4. W means at the same level of L = 352.3 lb./ac.

Crop: Barley (Rabi).
Site: Govt. Agri. Farm, Bassi.

Object: To study the effect of weeds in the control of weeds in Barley.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 20.11.1959. (iv) (a) 8 ploughings.
   (b) to (c) N.A. (v) R.S. -17. (vi) Irrigated. (vii) and (ix) N.A. (x) 25.3.1960.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 58(37) on page 153.

5. RESULTS:
   (i) 2737 lb./ac. (ii) (a) 569.8 lb./ac. (b) 550.8 lb./ac. (iii) No effect is significant. (iv) Avg. yield of grain in lb./ac.

       \[
       \begin{array}{cccc|c}
       & L_0 & L_1 & L_2 & L_3 & \text{Mean} \\
       W_1 & 2613 & 2710 & 2956 & 2546 & 2508 & 2675 \\
       W_2 & 3164 & 2527 & 2710 & 2634 & 2842 & 2775 \\
       W_3 & 3195 & 3132 & 2269 & 2451 & 2899 & 2789 \\
       W_4 & 2773 & 2899 & 2836 & 2281 & 2760 & 2710 \\
       \text{Mean} & 2646 & 2817 & 2693 & 2678 & 2752 & 2737 \\
       \end{array}
       \]

S.E. of difference of two
1. W marginal means = 180.2 lb./ac.
2. L marginal means = 194.7 lb./ac.
3. L means at the same level of W = 389.5 lb./ac.
4. W means at the same level of L = 392.1 lb./ac.

Crop: Barley (Rabi).
Site: Govt. Agri. Farm, Sawai Madhopur.

Object: To study the efficacy of different insecticidal sprays for the control of termites under irrigated conditions.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Chari. (c) N.A. (ii) (a) Loam. (b) N.A. (iii) 28.11.1959. (iv) (a) 12 ploughings.
   (b) N.A. (c) 1 row. (d) Row to row 1'. (e) N.A. (v) R.S. -17. (vi) Irrigated. (vii) 1 weeding. (ix) and (x) N.A.

2. TREATMENTS:
   13 insecticidal treatments: T_0 = Control (4 plots), T_1 = 1 lb. of Aldrin, T_2 = 1 lb. of Dieldrin, T_3 = 2.5 lb. of B.H.C., T_4 = 2.5 lb. of D.D.T., T_5 = 1.25 lb. of Aldrin, T_6 = 1.25 lb. of Dieldrin,
   T_7 = 3.0 lb. of B.H.C., T_8 = 3 lb. of D.D.T., T_9 = 1.5 lb. of Aldrin, T_10 = 1.5 lb. of Dieldrin, T_11 = 3.0 lb. of B.H.C. and T_12 = 3.0 lb. of D.D.T.

Chemicals applied in 40 gallons of water/ac.
3. DESIGN:
   (i) R.B.D.  (ii) (a) 16,  (b) N.A.  (iii) 4.  (iv) (a) N.A.  (b) 19″×16.5″.  (v) N.A.  (vi) Yes.

4. GENERAL:
   (i) N.A.  (ii) Aphids attack.  (iii) Yield of grain.  (iv) to (vii) N.A.

5. RESULTS:
   (i) 4150 lb./ac.  (ii) 301.4 lb./ac.  (iii) Treatment differences are significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
<th>T₅</th>
<th>T₆</th>
<th>T₇</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>4106</td>
<td>4145</td>
<td>4331</td>
<td>4418</td>
<td>3955</td>
<td>4233</td>
<td>4135</td>
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</tr>
<tr>
<td>Treatment</td>
<td>T₇</td>
<td>T₈</td>
<td>T₉</td>
<td>T₁₀</td>
<td>T₁₁</td>
<td>T₁₂</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Av. yield</td>
<td>4382</td>
<td>4058</td>
<td>4289</td>
<td>4084</td>
<td>4557</td>
<td>3868</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

S.E. of control mean = 75.4 lb./ac.
S.E./mean (other than control) = 150.7 lb./ac.

Crop ⇒ Bajra (Kharif).
Site ⇒ Govt. Agri. Farm, Bassi.
Ref ⇒ Rj. 54(19).
Type ⇒ ‘M’.

Object:—To study the response of Bajra to A/S and F.Y.M. in different doses.

1. BASAL CONDITIONS:

2. TREATMENTS:
   10 manurial treatments: M₀=Control, M₁=10 lb./ac. of N as A/S, M₂=20 lb./ac. of N as A/S, M₃=30 lb./ac. of N as A/S, M₄=10 lb./ac. of N as F.Y.M., M₅=20 lb./ac. of N as F.Y.M., M₆=30 lb./ac. of N as F.Y.M., M₇=M₁+M₄, M₈=M₁+M₅ and M₉=M₂+M₄.

3. DESIGN:
   (i) R.B.D.  (ii) (a) 10.  (b) N.A.  (iii) 3.  (iv) (a) 21″×15″.  (b) 18″×12″.  (v) 1½×1½”.  (vi) Yes.

4. GENERAL:
   (i) Good.  (ii) Nil.  (iii) Yield of grain.  (iv) (a) 1954—contd.  (b) No.  (c) Nil.  (v) A/Durgapura.  (b) N.A.

5. RESULTS:
   (i) 269 lb./ac.  (ii) 39.7 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
<th>M₇</th>
<th>M₈</th>
<th>M₉</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>278</td>
<td>239</td>
<td>257</td>
<td>301</td>
<td>313</td>
<td>278</td>
<td>239</td>
<td>278</td>
<td>249</td>
<td>257</td>
</tr>
</tbody>
</table>

S.E./mean = 22.9 lb./ac.

Crop ⇒ Bajra (Kharif).
Site ⇒ Govt. Agri. Farm, Bassi.
Ref ⇒ Rj. 55(8).
Type ⇒ ‘M’.

Object:—To study the response of Bajra to A/S and F.Y.M. in different doses.
1. **BASAL CONDITIONS**
   (i) (a) Nil. (b) N.A. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 9.7.1955. (iv) (a) to (e) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) and (ix) N.A. (x) 2.11.1955.

2. **TREATMENTS**
   Same as in exp. no 51(19) on page 155.

3. **DESIGN**
   (i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 3. (iv) (a) 29'2" x 17". (b) 24'2" x 12". (v) 2' x 2'. (vi) Yes.

4. **GENERAL**
   (i) Good. (ii) No. (iii) Yield of grain/plot. (iv) (a) 1954—contd. (b) No. (c) Nil. (iv) (a) Durgapura. (b) N.A. (v) and (vi) Nil.

5. **RESULTS**
   (i) 712 lb./ac. (ii) 109.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M4</th>
<th>M1</th>
<th>M3</th>
<th>M2</th>
<th>M5</th>
<th>M6</th>
<th>M7</th>
<th>M8</th>
<th>M9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yeild</td>
<td>582</td>
<td>659</td>
<td>749</td>
<td>7.0</td>
<td>672</td>
<td>664</td>
<td>716</td>
<td>659</td>
<td>837</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>63.3 lb./ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Crop:** Bajra (*Kharif*).
**Site:** Govt. Agri. Farm, Bassi.

Object: —To study the effect of N on Bajra under unirrigated conditions.

1. **BASAL CONDITIONS**

2. **TREATMENTS**
   All combinations of (1), (2) + 3 extra treatments
   (1) 3 sources of N: S1 = A/S, S2 = Urea and S3 = F.Y.M.
   (2) 3 levels of N: N4 = 10, N5 = 15, and N6 = 20 lb./ac.
   Extra treatments: E0 = Control, E1 = 10 lb./ac. of N as A/S + 10 lb./ac. of N as F.Y.M. + 20 lb./ac. of N as Urea and E2 = 10 lb./ac. of N as A/S + 20 lb./ac. of N as F.Y.M. + 20 lb./ac. of N as Urea.

3. **DESIGN**
   (i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) and (b) 24'3" x 18". (v) Nil. (vi) Yes.

4. **GENERAL**
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) and (b) N.A. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. **RESULTS**
   (i) 567 lb./ac. (ii) 73.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N1</th>
<th>N2</th>
<th>N3</th>
<th>Mean</th>
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<tbody>
<tr>
<td>S1</td>
<td>533</td>
<td>552</td>
<td>661</td>
<td>582</td>
</tr>
<tr>
<td>S2</td>
<td>565</td>
<td>572</td>
<td>603</td>
<td>580</td>
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<td>S0</td>
<td>539</td>
<td>565</td>
<td>565</td>
<td>556</td>
</tr>
<tr>
<td>Mean</td>
<td>546</td>
<td>563</td>
<td>610</td>
<td>573</td>
</tr>
</tbody>
</table>

S.E. of N or S marginal mean = 24.4 lb./ac.
S.E. of body of table or E mean = 42.3 lb./ac.
Crop :- Bajra (Kharif).
Site :- Govt. Agri. Farm, Bassi.

Object :- To study the response of Bajra to N from different sources.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) Wheat. (c) N.A. (iii) (a) Clay loam. (b) N.A. (v) N.A.
   (vi) Local (medium). (vii) Unirrigated. (viii) and (ix) N.A. (x) 12.11.1957.

2. TREATMENTS
   All combinations of (1), (2) and (3)+2 extra treatments.
   (1) 3 sources of N : S₁ = A/S, S₂ = Urea and S₃ = A/S/N.
   (2) 3 levels of N : N₁ = 10, N₂ = 15 and N₃ = 20 lb./ac.
   (3) 2 levels of F.Y.M. : F₀ = 0 and F₁ = 15 lb./ac. of N as F.Y.M.
   Extra treatments : E₀ = Control and E₁ = 15 lb./ac. of N as F.Y.M.
   Fertilizers sprayed at the time of cultivation before sowing.

3. DESIGN :
   (i) R.B.D. (ii) (a) 20. (b) N.A. (iii) 3. (iv) (a) 30'3''x18'. (b) 24'3''x12'. (v) 3 x 3'. (vi) Yes.

4. GENERAL :
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) Durgapur and
   Mandore. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :
   (i) 482 lb./ac.  (ii) 169 lb./ac.  (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac
   $E₀ = 540$ and $E₁ = 341$ lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
<th>F₀</th>
<th>F₁</th>
<th>Mean</th>
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<tbody>
<tr>
<td>S₁</td>
<td>397</td>
<td>566</td>
<td>411</td>
<td>465</td>
<td>452</td>
<td>458</td>
</tr>
<tr>
<td>S₂</td>
<td>600</td>
<td>402</td>
<td>492</td>
<td>529</td>
<td>467</td>
<td>504</td>
</tr>
<tr>
<td>S₃</td>
<td>535</td>
<td>530</td>
<td>447</td>
<td>497</td>
<td>512</td>
<td>504</td>
</tr>
<tr>
<td>Mean</td>
<td>511</td>
<td>499</td>
<td>450</td>
<td>497</td>
<td>477</td>
<td>487</td>
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<table>
<thead>
<tr>
<th></th>
<th>F₀</th>
<th>F₁</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$F₀$</td>
<td>571</td>
<td>435</td>
<td>484</td>
</tr>
<tr>
<td>$F₁$</td>
<td>452</td>
<td>563</td>
<td>415</td>
</tr>
</tbody>
</table>

S.E. of S or N marginal mean = 40.0 lb./ac.
S.E. of F marginal mean = 32.6 lb./ac.
S.E. of body of N x S table = 69.2 lb./ac.
S.E. of body of F x S or F x N table = 56.5 lb./ac.
S.E. of E mean = 97.8 lb./ac.

Crop :- Bajra (Kharif).
Site :- Govt. Agri. Farm, Bassi.

Object :- To study the response of Bajra to N from different sources.

1. BASAL CONDITIONS :
   (i) (a) N.A. (b) Moong. (c) N.A. (iii) (a) Clay loam. (b) N.A. (iii) 12.7.1958. (iv) (a) 4 ploughings.
   (b) N.A. (c) 4 lb./ac. (d) 12" between rows. (e) N.A. (v) N.A. (vi) T=5. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 7.11.1958.

2. TREATMENTS to 4. GENERAL :
   Same as in expt. no. 57(3) above.
5. RESULTS:

(i) 752 lb./ac. (ii) 102.0 lb./ac. (iii) Only control vs. rest is highly significant. (iv) Av. yield of grain in lb./ac.

\[ E_0 = 478 \text{ and } E_1 = 699 \text{ lb./ac.} \]

<table>
<thead>
<tr>
<th></th>
<th>N₁</th>
<th>N₂</th>
<th>N₃</th>
<th>F₀</th>
<th>F₁</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>S₁</td>
<td>744</td>
<td>783</td>
<td>788</td>
<td>733</td>
<td>855</td>
<td>794</td>
</tr>
<tr>
<td>S₂</td>
<td>768</td>
<td>763</td>
<td>779</td>
<td>760</td>
<td>760</td>
<td>770</td>
</tr>
<tr>
<td>S₃</td>
<td>701</td>
<td>788</td>
<td>752</td>
<td>728</td>
<td>766</td>
<td>747</td>
</tr>
<tr>
<td>Mean</td>
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<td>800</td>
<td>773</td>
<td>740</td>
<td>800</td>
<td>770</td>
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<tr>
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<td>784</td>
<td>760</td>
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<tr>
<td>F₁</td>
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<td>816</td>
<td>796</td>
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</tbody>
</table>

S.E. of N or S marginal mean = 24.0 lb./ac.
S.E. of F marginal mean = 19.6 lb./ac.
S.E. of body of N X S table = 41.6 lb./ac.
S.E. of body of N X F or N X S table = 34.0 lb./ac.
S.E. of E mean = 38.8 lb./ac.

Crop :- Bajra (Kharif).
Site :- Govt. Agri. Farm, Durgapura.
Object :- To study the response of Bajra to A/S and F.Y.M.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Wheat (c) Nil. (d) (i) Sandy loam. (b) N.A. (iii) 10.7.1954, (iv) (a) 5 ploughings. (b) 10 (c) N.A. (v) Nil. (vi) Local (medium). (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 24.10.1954.

2. TREATMENTS:
10 manural treatments : M₁ = Control, M₂ = 10 lb./ac. of N as A/S, M₃ = 20 lb./ac. of N as A/S, M₄ = 30 lb./ac. of N as A/S, M₅ = 10 lb./ac. of N as A/S, M₆ = 20 lb./ac. of N as F.Y.M., M₇ = 30 lb./ac. of N as F.Y.M., M₈ = M₁+M₄, M₉ = M₁+M₅, and M₊ = M₂+M₆.

3. DESIGN:

(i) R.B.D. (ii) 10. (b) N.A. (iii) 3. (iv) (a) 27'x15'. (b) 27`x12'. (v) 1'x1'. (vi) Yes.

4. GENERAL:

(i) Poor. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954-1955. (b) No. (c) Nil. (v) (a) Bassi and Mandore. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:

(i) 103 lb./ac. (ii) 42.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
<th>M₇</th>
<th>M₈</th>
<th>M₉</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>101</td>
<td>122</td>
<td>144</td>
<td>95</td>
<td>91</td>
<td>91</td>
<td>42</td>
<td>132</td>
<td>91</td>
</tr>
</tbody>
</table>

S.E./mean = 24.5 lb./ac.
Crop: Bajra (Kharif).
Site: Govt. Agri. Farm, Durgapura.
Object: To study the response of Bajra to A/S and F.Y.M.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Barley. (c) G.M. (ii) (a) Sandy loam. (b) N.A. (iii) 15.7.1955. (iv) (a) to (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 30.10.1955.

2. TREATMENTS and DESIGN:
   Same as in exp. no. 54(21) on page 158.

3. GENERAL:
   (i) Normal. (ii) Slight smut infection. Control measures—N.A. (iii) Yield of grain. (iv) (a) 1954—1955. (b) Yes. (c) Nil. (v) (a) Bassi and Mandore. (b) N.A. (vi) and (vii) Nil.

4. RESULTS:
   (i) 228 lb./ac. (ii) 47.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
<th>M₇</th>
<th>M₈</th>
<th>M₉</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>79</td>
<td>236</td>
<td>338</td>
<td>426</td>
<td>168</td>
<td>100</td>
<td>225</td>
<td>278</td>
<td>347</td>
<td></td>
</tr>
</tbody>
</table>
   | S.E./mean = 27.4 lb./ac.

Crop: Bajra (Kharif).
Site: Govt. Agri. Farm, Durgapura.
Object: To study the effect of N from different sources alone and in combination on the yield of Bajra.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 6.7.1957. (iv) (a) to (e) N.A. (v) Nil. (vi) Local (medium). (vii) Unirrigated. (viii) and (ix) N.A. (x) 2.11.1957.

2. TREATMENTS:
   All combinations of (1), (2) and (3) + 2 extra treatments
   (1) 3 sources of N: S₁ = A/S, S₂ = Urea and S₃ = A/S/N.
   (2) 3 levels of N: N₁ = 10, N₂ = 15 and N₃ = 20 lb./ac.
   (3) 2 levels of F.Y.M.: F₀ = 0 and F₁ = 15 lb./ac. of N as F.Y.M.
   The extra treatments are: E₀ = Control and E₁ = 15 lb./ac. of N as F.Y.M.
   Fertilizers sprayed at the time of cultivation before sowing.

3. DESIGN:
   (i) R.B.D. (ii) (a) 20. (b) N.A. (iii) 3. (iv) (a) 30’3’x18’. (b) 24’3’x12’. (v) 3’x3’. (vi) Yes.

4. GENERAL:
   (i) Poor. (ii) Slight smut infection. (iii) Yield of grain. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) Bassi and Mandore. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:
   (i) 68 lb./ac. (ii) 84.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.
Crop: Bajra (Kharif).
Site: Govt. Agri. Farm, Durgapura.

Object: To study the effect of N on the yield of Bajra.

1. BASAL CONDITIONS:
   (i) (a) No. (b) Fallow. (c) N.A. (ii) Sandy loam. (b) N.A. (iii) 11, 12, 13, 15, 1958. (iv) (a) 4 ploughings. (b) N.A. (c) 2 yrs./ac. (d) 9" between rows. (e) N.A. (v) N.A. (vi) R.S.J. (vii) Unirrigated. (viii) (a) (b) (c) (d) (e) N.A. (i) (ii) N.A. (iii) Yield of grain. (iv) (a) 1957 - contd. (b) and (c) N.A. (v) to (vii) N.A.

2. TREATMENTS and DESIGN:
   Same as in exp. no. 57(7) on page 159.

3. GENERAL:
   (i) and (ii) N.A. (iii) Yield of grain. (iv) (a) 1957 - contd. (b) and (c) N.A. (v) to (vii) N.A.

4. RESULTS:
   (i) 758 lb./ac. (ii) 215.0 lb./ac. (iii) Only 'control vs rest' is significant. (iv) Av. yield of grain in lb./ac.

\[
\begin{array}{ccc|cc|c}
F_0 & F_1 & \text{Mean} \\
\hline
S_1 & 69 & 35 & 75 & 68 & 52 & 60 \\
S_2 & 55 & 78 & 78 & 60 & 81 & 70 \\
S_3 & 77 & 117 & 54 & 77 & 90 & 83 \\
\hline
\text{Mean} & 67 & 77 & 69 & 68 & 74 & 71 \\
F_0 & 57 & 69 & 79 & \\
F_1 & 78 & 85 & 59 & \\
\end{array}
\]

S.E. of S or N marginal mean = 20.0 lb./ac.
S.E. of F marginal mean = 16.3 lb./ac.
S.E. of body of N x S table = 34.6 lb./ac.
S.E. of body of F x S or N table = 28.2 lb./ac.
S.E. of E mean = 48.9 lb./ac.

\[
\begin{array}{ccc|cc|c}
N_1 & N_2 & N_3 & F_0 & F_1 & \text{Mean} \\
\hline
S_1 & 543 & 729 & 105 & 627 & 757 & 692 \\
S_2 & 776 & 837 & 763 & 789 & 772 & 780 \\
S_3 & 721 & 837 & 1012 & 802 & 939 & 870 \\
\hline
\text{Mean} & 640 & 789 & 873 & 739 & 823 & 781 \\
F_0 & 613 & 787 & 508 & \\
F_1 & 738 & 791 & 939 & \\
\end{array}
\]

S.E. of S or N marginal mean = 50.7 lb./ac.
S.E. of F marginal mean = 41.4 lb./ac.
S.E. of body of N x S table = 87.8 lb./ac.
S.E. of body of F x S or N table = 71.7 lb./ac.
S.E. of E mean = 124.2 lb./ac.

Ref: Rj. 58(5).
Type: 'M'.
Crop :- Bajra (Kharif).
Site :- Govt. Agri. Farm, Durgapura.

Object :- To study the effect of catalysts on the yield of Bajra.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) Wheat. (c) 2 tons/ac. of compost. (ii) (a) Sandy loam. (b) N.A. (iii) 3.7.1954. (iv) (a) to (e) N.A. (v) Nil. (vi) Local (late). (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 29.10.1954.

2. TREATMENTS :
   All combinations of (1) and (2)
   (1) 6 manurial treatments : 
         M₀=Control, M₁=40 lb./ac. of catalyst, M₂=80 lb./ac. of catalyst, M₃=14 lb./ac. of ferrous sulphate, M₄=28 lb./ac. of ferrous sulphate, M₅=8 lb./ac. of Pot. Permanganate and M₆=16 lb./ac. of Pot. permanganate.
   (2) 2 levels of F.Y.M : F₀=0 and F₁=2 tons/ac. of F.Y.M.

3. DESIGN :
   (i) Fact. in R.B.D. (ii) (a) 14 (b) N.A. (iii) 3. (iv) (a) 15'x9'. (b) 12'x6'. (v) (a) H'x H'. (vi) Yes.

4. GENERAL :
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) Bassi. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :
   (i) 234 lb./ac. (ii) 137.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
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<td>310</td>
<td>193</td>
<td>249</td>
<td>272</td>
<td>117</td>
<td>242</td>
<td>234</td>
</tr>
</tbody>
</table>

S.E. of M marginal mean = 55.9 lb./ac.
S.E. of F marginal mean = 29.9 lb./ac.
S.E. of body of table = 79.1 lb./ac.

---

Crop :- Bajra (Kharif).
Site :- Govt. Agri. Farm, Durgapura.

Object :- To study the effect of catalysts on the yield of Bajra.

1. BASAL CONDITIONS :

2. TREATMENTS :
   All combinations of (1) and (2)
   (1) 6 manurial treatments : 
         M₀=Control, M₁=40 lb./ac. of catalyst, M₂=80 lb./ac. of catalyst, M₃=14 lb./ac. of ferrous sulphate, M₄=28 lb./ac. of ferrous sulphate and M₅=16 lb./ac. of Pot. permanganate.
   (2) 2 levels of F.Y.M : F₀=0 and F₁=2 tons/ac.

3. DESIGN :
   (i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 15'x9'. (b) 12'x6'. (v) 1'x1'. (vi) Yes.

4. GENERAL :
   Same as in exp. no. 54(22) above.
5. RESULTS:
(i) 208 lb./ac.  (ii) 150.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>$M_0$</th>
<th>$M_1$</th>
<th>$M_2$</th>
<th>$M_3$</th>
<th>$M_4$</th>
<th>$M_5$</th>
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<td>206</td>
<td>271</td>
<td>206</td>
<td>194</td>
<td>85</td>
<td>129</td>
<td>182</td>
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<tr>
<td>$F_1$</td>
<td>220</td>
<td>233</td>
<td>65</td>
<td>414</td>
<td>129</td>
<td>349</td>
<td>233</td>
</tr>
<tr>
<td>Mean</td>
<td>213</td>
<td>252</td>
<td>135</td>
<td>304</td>
<td>107</td>
<td>239</td>
<td>208</td>
</tr>
</tbody>
</table>

S.E. of $M$ marginal mean $= 61.4$ lb./ac.
S.E. of $F$ marginal mean $= 35.4$ lb./ac.
S.E. of $F \times M$ marginal mean $= 66.8$ lb./ac.

---

Crop :- Bajra  
Site :- Govt. Agri. Exptl. Farm, Durgapur.  
Ref :- Rj. 57(6).  
Type :- 'M'.

Object :- To study the effect of catalyst, Ferrous Sulphate and Pot. Permanganate with and without F.Y.M. on Bajra.

1. BASAL CONDITIONS :
(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 11.7.1957. (iv) (a) to (e) N.A. (v) Nil. (vi) Local (medium). (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 29.10.1957.

2. TREATMENTS :
All combinations of (1) and (2)
(1) 7 manurial treatments : $M_0$=Control, $M_1$=40 lb./ac. of catalyst, $M_2$=80 lb./ac. of catalyst, $M_3$=15 lb./ac. of ferrous sulphate, $M_4$=30 lb./ac. of ferrous sulphate, $M_5$=10 lb./ac. of pot. permanganate, and $M_7$=15 lb./ac. pot. permanganate,
(2) 2 leves of F.Y.M. : $F_0$=0 and $F_1$=50000 lb./ac. of F.Y.M.

3. DESIGN :
(i) Fact in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 30'3''X18'. (b) 24'3''X12'. (v) 3'X3'. (vi) Yes.

4. GENERAL :
(i) Good. (ii) Infection of stigma. (iii) Yield of grain. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :
(i) 386 lb./ac.  (ii) 54.0 lb./ac. (iii) Main effect of $M$ and interaction $F \times M$ are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>$M_0$</th>
<th>$M_1$</th>
<th>$M_2$</th>
<th>$M_3$</th>
<th>$M_4$</th>
<th>$M_5$</th>
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<tbody>
<tr>
<td>$F_0$</td>
<td>395</td>
<td>405</td>
<td>395</td>
<td>434</td>
<td>318</td>
<td>395</td>
<td>472</td>
</tr>
<tr>
<td>$F_1$</td>
<td>482</td>
<td>540</td>
<td>405</td>
<td>318</td>
<td>482</td>
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<td>196</td>
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<tr>
<td>Mean</td>
<td>439</td>
<td>473</td>
<td>400</td>
<td>376</td>
<td>400</td>
<td>281</td>
<td>334</td>
</tr>
</tbody>
</table>

S.E. of $M$ marginal mean $= 22.0$ lb./ac.
S.E. of $F$ marginal mean $= 11.8$ lb./ac.
S.E. of body of $F \times M$ table $= 31.2$ lb./ac.
Crop: Bajra (Kharif).
Site: Govt. Agri. Farm, Durgapura.
Object: To study the effect of different trace elements at different levels on the yield of Bajra.

1. BASAL CONDITIONS:
(i) (a) No. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.7.1958. (iv) (a) 4 ploughings.
(b) N.A. (c) 2 yrs. (d) 9' between rows. (e) N.A. (v) N.A. (vi) R.S.J. (vii) Unirrigated. (viii) 2 weeding.

2. TREATMENTS:
All combinations of (1) and (2) + one control.
(1) 5 trace elements: E1 = Copper sulphate, E2 = Zinc sulphate, E3 = Borax powder, E4 = Magnesium sulphate, and E5 = Ferrous sulphate.
(2) 3 levels of trace element: L1 = 5, L2 = 10 and L3 = 15 lb./ac.

3. DESIGN:
(i) R.B.D. (ii) (a) 16 (b) N.A. (iii) 3. (iv) (a) 30' x 18'. (b) 24' x 12'. (v) 3' around the plot.
(vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) Nil. (v) to (vii) Nil.

5. RESULTS:
(i) 603.0 lb./ac. (ii) 193.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>E1</th>
<th>E2</th>
<th>E3</th>
<th>E4</th>
<th>E5</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>507</td>
<td>642</td>
<td>452</td>
<td>577</td>
</tr>
<tr>
<td>L2</td>
<td>603</td>
<td>600</td>
<td>548</td>
<td>597</td>
</tr>
<tr>
<td>L3</td>
<td>660</td>
<td>629</td>
<td>686</td>
<td>430</td>
</tr>
<tr>
<td>Mean</td>
<td>597</td>
<td>624</td>
<td>562</td>
<td>535</td>
</tr>
</tbody>
</table>

S.E. of E marginal mean = 64.4 lb./ac.

Crop: Bajra (Kharif).
Site: Govt. Agri. Farm, Mandore.
Object: To find out the effect of N on Bajra.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy. (d) N.A. (iii) 13.8.1955. (iv) (a) and (b) N.A. (c) 3 yrs./ac. (d) 12' between rows. (e) N.A. (v) N.A. (vi) Local (medium). (vii) Unirrigated. (viii) and (ix) N.A. (x) 18.11.1955.

2. TREATMENTS:
10 manurial treatments: M0 = Control, M1 = 10 lb./ac. of N as A/S, M2 = 20 lb./ac. of N as A/S, M3 = 30 lb./ac. of N as A/S, M4 = 10 lb./ac. of N as F.Y.M., M5 = 20 lb./ac. of N as F.Y.M., M6 = 30 lb./ac. of N as F.Y.M., M7 = M1 + M4, M8 = M1 + M5, and M9 = M1 + M6.

3. DESIGN:
(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 3. (iv) (a) 29' x 17'. (b) 24' x 12'. (v) 2' x 2'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) N.A. (b) No. (c) Nil. (v) to (vii) Nil.
5. RESULTS:
   (i) 154 lb./ac.  (ii) 181.2 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
<th>M6</th>
<th>M7</th>
<th>M8</th>
<th>M9</th>
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<tbody>
<tr>
<td>Av. yield</td>
<td>139</td>
<td>112</td>
<td>177</td>
<td>220</td>
<td>145</td>
<td>154</td>
<td>119</td>
<td>139</td>
<td>166</td>
</tr>
</tbody>
</table>

S.E./mean = 104.6 lb./ac.

---

Crop: Bajra.
Site: Govt. Agri. Farm, Mandore.
Object: To study the effect of N from different sources on the yield of Bajra.

1. BASAL CONDITIONS:
   (i) (a) Nil.  (b) Wheat.  (c) N.A.  (ii) (a) Sandy desert.  (b) N.A.  (iii) 8.7.1957.  (iv) (a) to (c) N.A.  (v) Nil.  (vi) Local (medium).  (vii) Unirrigated.  (viii) and (ix) N.A.  (x) 1.11.1957.

2. TREATMENTS:
   All combinations of (1), (2) and (3) + 2 extra treatments:
   (1) 3 sources of N: S1 = A/S, S2 = Urea and S3 = A/S/N.
   (2) 3 levels of N: N1 = 10, N2 = 15 and N3 = 20 lb./ac.
   (3) 2 levels of F.Y.M.: F0 = 0 and F1 = 15 lb./ac. of N as F.Y.M.

Extra treatments: E0 = control and E1 = 15 lb./ac. of N as F.Y.M.
Fertilizers sprayed at the time of cultivation before sowing.

3. DESIGN:
   (i) R.B.D.  (ii) (a) and (b) N.A.  (iii) 3.  (iv) (a) 30'3" x 18'.  (b) 24'3" x 12'.  (v) 3' x 3'.  (vi) Yes.

4. GENERAL:
   (i) Good  (ii) Nil.  (iii) Yield of grain.  (iv) (a) 1957—contd.  (b) No.  (c) Nil.  (v) (a) Durgapura and Bassi.  (b) N.A.  (vi) and (vii) Nil.

5. RESULTS:
   (i) 287 lb./ac.  (ii) 135.9 lb./ac.  (iii) Main effects of F, F X S and N X S interactions are significant (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N1</th>
<th>N2</th>
<th>N3</th>
<th>F0</th>
<th>F1</th>
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<td>S2</td>
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</tr>
<tr>
<td>F1</td>
<td>190</td>
<td>317</td>
<td>258</td>
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</tbody>
</table>

S.E. of N or S marginal mean = 32.0 lb./ac.
S.E. of F marginal mean = 26.2 lb./ac.
S.E. of body of N X S table = 55.2 lb./ac.
S.E. of body of N X F or F X S table = 45.3 lb./ac.
Crop :- Bajra (Kharif).

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

1. BASAL CONDITIONS :
   (i) (a) N.A. (b) Bajra. (c) Nil. (d) Sandy loam. (e) N.A. (f) 2 trs./ac. (g) 12 in. between rows. (h) N.A. (i) N.A. (j) N.A. (k) 3.7.1958. (l) 3 ploughings. (m) N.A. (n) 26.10.1958.

2. TREATMENTS and 3. DESIGN :
   Same as in expt. no. 57(4) on page 164.

4. GENERAL :
   (i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1957-contd. (b) and (c) N.A. (v) to (vii) N.A.

5. RESULTS :
   (i) 433 lb./ac. (ii) 118.4 lb./ac. (iii) Only control vs. rest is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N1</th>
<th>N2</th>
<th>F0</th>
<th>F1</th>
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<td>462</td>
<td>415</td>
<td>443</td>
</tr>
<tr>
<td>S2</td>
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<td>462</td>
<td>558</td>
<td>522</td>
<td>455</td>
</tr>
<tr>
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<td>436</td>
<td>430</td>
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<td>426</td>
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</table>

   S.E. of N or S marginal mean = 27.0 lb./ac.
   S.E. of P marginal mean = 22.8 lb./ac.
   S.E. of body of N×S table = 48.3 lb./ac.
   S.E. of body of F×N or F×S table = 39.5 lb./ac.

Crop :- Bajra.
Centre :- Pali (c.f.).

Ref :- Rj. 59(SFT).
Type :- 'M'.

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

1. BASAL CONDITIONS :
   (i) (a) to (c) N.A. (ii) Desert. (iii) Nil. (iv) and (v) N.A. (vi) July, 1959. (vii) Unirrigated. (viii) and (ix) N.A. (x) October, 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 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 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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL:
(i) Satisfactory. (ii) N.A. (iii) Grain yield. (iv) (a) 1959—consnd. (b) and (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>453</td>
<td>272</td>
<td>436</td>
<td>100.4</td>
<td>66</td>
<td>16</td>
<td>44</td>
<td>444</td>
<td>65.8</td>
</tr>
</tbody>
</table>

Control mean = 1029 lb./ac. and no. trials = 4.

Crop = Bajra.
Centre = Pali (c.f.).

Ref :- Rj. 59(14).
Type = 'C'.

Object =—Type B—To investigate the relative efficiency of different nitrogenuous fertilizers, at different doses,

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) Desert soil. (iii) Nil. (iv) and (v) N.A. (vi) Juty, 1959. (vii) Unirrigated. (viii) and (ix) N.A. (x) October, 1959.

2. TREATMENTS:

| n | =Control (no manure). | n1 | =20 lb./ac. of N as Urea. | n2 | =40 lb./ac of N as A/S/N. | n3 | =20 lb./ac. of N as A/S/N. | n4 | =40 lb./ac. of N as C/A/N. | n5 | =20 lb./ac. of N as C/A/N. |

3. DESIGN and 4. GENERAL:
Same as in expt. no. 59(SFT) type A on page 165.

5. RESULTS:

| Treatment | 0 | n1 | n2 | n3 | n4 | n5 | n6 | Av. yield | 773 | 1168 | 1308 | 938 | 1218 | 1218 | 1400 |

G.M. = 1152 lb./ac.; S.E. = 89.6 lb./ac., and n.s. of trials = 8.

Crop = Bajra (Kharif).
Site = Govt. Agri. Farm, Bassi.

Ref :- Rj. 59(14).
Type = 'D'.

Object =—To determine the relative efficacy of seed dressing fungicides against smut on the yield of Baira crop.

1. BASIAL CONDITIONS:
(i) (a) Moong—Bajra. (b) Moong. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 22.7.1959. (iv) (a) 3 ploughings. (b) and (c) N.A. (d) 12' between rows. (e) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) and (ix) N.A. (x) 13.11.1959.

2. TREATMENTS:

8 fungicidal treatments: F0=Control F1=Agrotan G.M. at 12 tolas/md. of seed, F2=Creresan at 9 tolas/md. of seed, F3=Tillex at 9 tolas/md. of seed, F4=Lunasan at 9 tolas/md. of seed,
3. DESIGN:

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) and (b) 15'x6'. (v) Nil. (vi) Yes.

4. GENERAL:

(i) and (ii) N.A. (iii) Yield of grain and fodder. (iv) to (vi) N.A.

5. RESULTS:

(i) 538 lb/ac. (ii) 114.0 lb/ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>F_0</th>
<th>F_1</th>
<th>F_2</th>
<th>F_3</th>
<th>F_4</th>
<th>F_5</th>
<th>F_6</th>
<th>F_7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>514</td>
<td>565</td>
<td>605</td>
<td>499</td>
<td>504</td>
<td>524</td>
<td>565</td>
<td>529</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>46.5 lb/ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop: Bajra (*Kharif*).

Site: Govt. Agri. Farm, Durgapura.

Object: To determine the relative efficacy of seed dressing fungicides against smut on the yield of Bajra.

1. BASAL CONDITIONS:

(i) (a) N.A. (b) Moong—Zeera. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 7.7.1959. (iv) (a) 4 ploughings. (b) Drilling. (c) N.A. (d) 12' between rows. (e) N.A. (v) N.A. (vi) T—S. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 27.10.1959.

2. TREATMENTS to 4. GENERAL:

Same as in exp. no. 59(14) on page 165.

5. RESULTS:

(i) 210 lb/ac. (ii) 77.7 lb/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>F_0</th>
<th>F_1</th>
<th>F_2</th>
<th>F_3</th>
<th>F_4</th>
<th>F_5</th>
<th>F_6</th>
<th>F_7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>111</td>
<td>187</td>
<td>232</td>
<td>76</td>
<td>121</td>
<td>292</td>
<td>373</td>
<td>287</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>31.7 lb/ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop: Bajra (*Kharif*).

Site: Govt. Agri. Farm, Tabiji.

Object: To find out the economic way of controlling weeds in Bajra.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) to (x) N.A.

2. TREATMENTS:

8 manual treatments: M_0 = Control (no weeding), M_1 = Local method of weeding, M_2 = Pre-emergence application of weedicides, M_3 = Post-emergence application of weedicides, (once), M_4 = Post-emergence application of weedicides (twice), M_5 = Combination of Pre and Post emergence application each (once), M_6 = Pre-emergence application + Cultural method of weeding, M_7 = Post-emergence application + Cultural method of weeding, M_8 = Pre + Post-emergence application + Cultural method of weeding.

3. DESIGN:

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 24'x18'. (b) 18'x12'. (x) 3'x3'. (vi) Yes.

4. GENERAL:

(i) and (ii) N.A. (iii) Yield of grain and fodder. (iv) to (vi) N.A.
5. RESULTS:
(i) 631 lb./ac. (ii) 90.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>M₆</th>
<th>M₇</th>
<th>M₈</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>262</td>
<td>772</td>
<td>473</td>
<td>381</td>
<td>366</td>
<td>514</td>
<td>775</td>
<td>873</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>45.4 lb./ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop :- Bajra (Kharif),
Site :- Govt. Agri. Farm, Tabiji.

Object :- To study the effect of weedicides in controlling of weeds in Bajra.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) (a) Sandy loam, (b) N.A. (iii) to (x) N.A.

2. TREATMENTS:
Main-plot treatments:
4 weedicides: W₁=Sodium salt of 2, 4-D, W₂=Ethylester of 2, 4-D, W₃=Amine salt of 2, 4-D and W₄=Sodium salt of M.C.P.A.

Sub-plot treatments:
5 levels of weedicides: L₀=Control, L₁=8 ozs. acid equivalent per acre, L₂=12 ozs. acid equivalent per acre, L₃=16 ozs. acid equivalent per acre and L₄=20 ozs. acid equivalent per acre.

3. DESIGN:
(i) Split-plot, (ii) (a) 4 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 24'x18'. (b) 18'x12'. (c) 3'x3'. (v) Yes.

4. GENERAL:
(i) and (ii) N.A. (iii) Yield of grain. (iv) (a) to (c) N.A. (v) (a) Durgapura. (b) N.A. (vi) and (vii) N.A.

5. RESULTS:
(i) 431 lb./ac. (ii) (a) 166.7 lb./ac. (b) 159.3 lb./ac. (ii) Interaction WXL alone is highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>L₀</th>
<th>L₁</th>
<th>L₂</th>
<th>L₃</th>
<th>L₄</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>W₁</td>
<td>227</td>
<td>532</td>
<td>444</td>
<td>369</td>
<td>334</td>
</tr>
<tr>
<td>W₂</td>
<td>195</td>
<td>728</td>
<td>986</td>
<td>274</td>
<td>581</td>
</tr>
<tr>
<td>W₃</td>
<td>315</td>
<td>583</td>
<td>652</td>
<td>214</td>
<td>309</td>
</tr>
<tr>
<td>W₄</td>
<td>362</td>
<td>545</td>
<td>520</td>
<td>413</td>
<td>246</td>
</tr>
</tbody>
</table>

S.E. of difference of two
1. W marginal means = 52.7 lb./ac.
2. L means at the same level of W = 112.6 lb./ac.
3. W means at the same level of L = 113.7 lb./ac.

Crop :- Potato (Rabi),
Site :- Govt. Agri. Farm, Durgapura.

Object :- To study the effect of various fertilizers at different levels on the yield of Potato.

1. BASAL CONDITIONS:
(i) (a) No. (b) Moong. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 22.11.1958. (iv) (a) 4 ploughings (b) N.A. (c) 10 mds./ac. (d) 2' between row. (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) and (ix) N.A. (x) 18 to 22.3.1959.
2. TREATMENTS:
All combinations of (1), (2) and (3)
(1) 3 levels of N as A/S: N₀ = 0, N₁ = 45 and N₂ = 90 lb./ac.
(2) 3 levels of P₂O₅ as Super: P₀ = 0, P₁ = 45 and P₂ = 90 lb./ac.
(3) 3 levels of K₂O as Mur. Pot.: K₀ = 0, K₁ = 45 and K₂ = 90 lb./ac.

3. DESIGN:
(i) 30 confd. (ii) 9 plots/block ; 3 blocks/replication, (b) N.A. (iii) 2. (iv) (a) and (b) 30' × 18'.
(v) Nil. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) Mosaic and heavy frost attack ; Brodeaux mixture sprayed. (iii) Yield of tuber. (iv) to (vii) N.A.

5. RESULTS:
(i) 5269 lb./ac. (ii) 3791 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of tuber in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>Mean</th>
<th>K₀</th>
<th>K₁</th>
<th>K₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>P₀</td>
<td>2450</td>
<td>5653</td>
<td>6931</td>
<td>5011</td>
<td>4785</td>
<td>4553</td>
<td>5691</td>
</tr>
<tr>
<td>P₁</td>
<td>3643</td>
<td>5650</td>
<td>7265</td>
<td>5519</td>
<td>5390</td>
<td>5506</td>
<td>5662</td>
</tr>
<tr>
<td>P₂</td>
<td>2955</td>
<td>6077</td>
<td>6795</td>
<td>5276</td>
<td>5283</td>
<td>5407</td>
<td>5138</td>
</tr>
<tr>
<td>Mean</td>
<td>3016</td>
<td>5793</td>
<td>6997</td>
<td>5269</td>
<td>5133</td>
<td>5157</td>
<td>5497</td>
</tr>
</tbody>
</table>

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

Crop :- Potato (Rabi).
Site :- Govt. Agri. Farm, Kota.
Ref :- Rj. 58(29).
Type :- D'.

Object:- To test the relative efficacy of spraying the different fungicides on the control of early Blight of Potato.

1. BASAL CONDITIONS:
(i) N.A. (b) Fallow. (c) N.A. (ii) (a) Black cotton soil. (b) N.A. (iii) 22.11.1958, (iv) (a) 3 ploughings.
(b) N.A. (c) 20 md./ac. (d) 1' between rows. (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) N.A.
(ix) 3.7'.

2. TREATMENTS:
8 fungicidal sprayings : F₀ = Control, F₁ = Spraying with shell copper fungicides at 3.5 lb./ac., F₂ = Spraying with shell copper fungicides at 3.5 lb./ac., F₃ = Spraying with shell cuprous at 3.5 lb./ac., F₄ = Spraying with shell Cuprasoo at 3.5 lb./ac., F₅ = Spraying with shell Dithane 778 at 3.5 lb./ac., and F₆ = Spraying with shell Dithane D-14 at 3.5 lb./ac.
Each fungicide has been dissolved in 100 gallons of water.

3. DESIGN:
(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 18' × 12'. (b) 12' × 6'. (v) 3' × 3'. (vi) Yes.

4. GENERAL:
(i) and (ii) N.A. (iii) Yield of tuber. (iv) to (vii) N.A.
5. RESULTS:

(i) 9178 lb./ac.  (ii) 3161 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of tuber in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>F0</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
<th>F5</th>
<th>F6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>5786</td>
<td>10260</td>
<td>9720</td>
<td>10414</td>
<td>10339</td>
<td>8312</td>
<td>7136</td>
</tr>
</tbody>
</table>

S.E./mean = 1580 lb./ac.

Crop: Potato (Rabi).
Site: Agri. College Farm, Udaipur.
Object: To study the comparative toxicity of Toxaphene, Endrin and Aldrex against Potato cut worm.

1. BASAL CONDITIONS:

(i) (a) N.A.  (b) Jowar.  (c) A/S at 100 mds./ac. and G.M. cowpea.  (ii) (a) Clay loam.  (b) N.A.  (iii) 10.11.1959.  (iv) (a) 3 ploughings.  (b) N.A.  (c) 15 mds./ac.  (d) 2' between rows.  (e) N.A.  (v) N.A.  (vi) Rhusoa.  (vi') Irrigated.  (vii) Weeding twice.  (ix) and (x) N.A.

2. TREATMENTS:

6 insecticidal treatments:  T_0 = Control,  T_1 = Toxaphene 10% dust at 20 lb./ac.,  T_2 = Endrex 1% dust at 20 lb./ac.,  T_3 = Aldrex 5% dust at 20 lb./ac.,  T_4 = Aldrex 30 E.C. 4 pint in 40 gallons of water per acre and  T_5 = Endrex 20 E.C. 4 pint in 40 gallons of water per acre.

3. RESULTS:

(i) 6035 lb./ac.  (ii) 966.1 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of tuber in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T0</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>5593</td>
<td>5676</td>
<td>6262</td>
<td>5807</td>
<td>5807</td>
<td>7065</td>
</tr>
</tbody>
</table>

S.E./mean = 557.8 lb./ac.

Crop: Cauliflower (Rabi).
Site: Abu Road (c.f.).
Object: To study the comparative toxicity of B.H.C., D.D.T., Dieldrin against cauliflower cutworm.

1. BASAL CONDITIONS:

(i) (a) Cauliflower.  (b) A/S at 60 lb./ac. and compost at 100 lb./ac.  (iii) N.A.  (iv) Local.  (v) (a) 4

2. TREATMENTS:

4 insecticidal treatments:  T_0 = Control,  T_1 = Dieldrin (w.p.) 1% at 20 lb./ac.,  T_2 = B.H.C. (w.p.) .25% at 20 lb./ac. and  T_3 = D.D.T. (w.p.) .25% .25% at 20 lb./ac.

3. DESIGN:

(i) R.B.D.  (ii) (a) and (b) 4 plots/block; 3 replications.  (iii) (a) 36'X18'.  (b) 33'X16'.
4. GENERAL:
(i) N.A. (ii) Nil. (iii) Yield of cauliflower. (iv) (a) to (c) N.A. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS:
(i) 592 lb./acre. (ii) 212.1 lb./acre. (iii) Treatment differences are highly significant. (iv) Av. yield of cauliflower in lb./acre.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>$T_0$</th>
<th>$T_1$</th>
<th>$T_2$</th>
<th>$T_3$</th>
<th>S.E./mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>3085</td>
<td>5129</td>
<td>3950</td>
<td>3442</td>
<td>122.6 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Pea (Rebi).
Site: Govt. Agri. Farm, Durgapura.
Reference: Rj. 59(42).
Type: D'.

Object: To study the efficacy of different insecticides for control of termites under irrigated conditions.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 15.11.1959. (iv) (a) 4 ploughings. (b) N.A. (c) 50 srs./ac. (d) Row to row 1'. (e) N.A. (f) N.A. (g) Local. (h) Irrigated. (i) Two weedings. (j) and (k) N.A.

2. TREATMENTS:
13 insecticidal treatments: $T_0$ = Control (4 plots), $T_1$ = 1 lb./acre of Aldrin, $T_2$ = 1.25 lb./acre of Aldrin, $T_3$ = 1.5 lb./acre of Aldrin, $T_4$ = 1 lb./acre of Dieldrin, $T_5$ = 1.25 lb./acre of Dieldrin, $T_6$ = 2.5 lb./acre of B.H.C., $T_7$ = 3 lb./acre of B.H.C., $T_8$ = 2.5 lb./acre of D.D.T., $T_9$ = 3 lb./acre of D.D.T., and $T_{10}$ = 2.5 lb./acre of D.D.T.

Each insecticide is dissolved in 40 gallons of water/acre.

3. DESIGN:
(i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 33'x16'. (v) N.A. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) Mild attack of pea pod borers and cut worms. (iii) Yield of pea. (iv) to (vii) N.A.

5. RESULTS:
(i) 739 lb./acre. (ii) 257.4 lb./acre. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./acre.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>$T_0$</th>
<th>$T_1$</th>
<th>$T_2$</th>
<th>$T_3$</th>
<th>$T_4$</th>
<th>$T_6$</th>
<th>$T_8$</th>
<th>S.E./treatment mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>578</td>
<td>707</td>
<td>936</td>
<td>715</td>
<td>591</td>
<td>831</td>
<td>586</td>
<td>133.7 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Cow Pea (Khairif).
Site: Govt. Agri. Farm, Durgapura.
Reference: Rj. 59(64).
Type: D'.

Object: To study the efficacy of different insecticides for control of red hairy caterpillars.

1. BASAL CONDITIONS:
(i) (a) Cow pea—Wheat—Cow pea. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30.6.1959. (iv) (a) 3 ploughings. (b) N.A. (c) 6 srs./ac. (d) Row to row 1'. (e) N.A. (f) N.A. (g) N.A. (h) N.A. (i) N.A. (j) N.A. (k) Unirrigated. (l) One weeding. (m) and (n) N.A.
2. TREATMENTS:

17 insecticidal sprayings: T0 = Control (4 plots), T1 = Aldrin 0.004%, T2 = Aldrin 0.008%, T3 = Aldrin 0.012%, T4 = Aldrin 0.02%, T5 = B.H.C. 0.1%, T6 = B.H.C. 0.2%, T7 = B.H.C. 0.3%, T8 = D.D.T. 0.04%, T9 = D.D.T. 0.08%, T10 = D.D.T. 0.12%, T11 = D.D.T. 0.20%, T12 = Folidol 0.3%, T13 = Folidol 0.4%, T14 = Folidol 0.5% and T15 = Folidol 0.6%.

3. DESIGN:

(i) R.B.D. (ii) (a) 20. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 33'X16'1. (v) N.A. (vi) Yes.

4. GENERAL:

(i) N.A. (ii) Nil. (iii) Yield of cowpea. (iv) to (vii) N.A.

5. RESULTS:

(i) 286 lb./ac. (ii) 85.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of cowpea in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T0</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
<th>T7</th>
<th>T8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>286</td>
<td>315</td>
<td>319</td>
<td>360</td>
<td>285</td>
<td>199</td>
<td>237</td>
<td>305</td>
<td>336</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T0</th>
<th>T10</th>
<th>T11</th>
<th>T12</th>
<th>T13</th>
<th>T14</th>
<th>T15</th>
<th>T16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>285</td>
<td>237</td>
<td>291</td>
<td>309</td>
<td>336</td>
<td>243</td>
<td>243</td>
<td>271</td>
</tr>
</tbody>
</table>

S.E.(treatment mean) = 49.4 lb./ac.
S.E.(control mean) = 24.7 lb./ac.

Crop = Chilli.
Centre = Kotah. (c.f.).
Object = Type A—To study the response of Chilli to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) Medium black soil. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS:

0 = Control (no manure).
N = 50 lb./ac. of N as A/S.
P = 25 lb./ac. of P2O5 as Super.
np = 50 lb./ac. of N as A/S+25 lb./ac. of P2O5 as Super.
K = 50 lb./ac. of K2O as Mur. Pot.
NK = 50 lb./ac. of N as A/S+50 lb./ac. of K2O as Mur. Pot.
PK = 25 lb./ac. of P2O5 as Super+50 lb./ac. of K2O as Mur. Pot.
npk = 50 lb./ac. of N as A/S+25 lb./ac. of P2O5 as Super+50 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 an arabi 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) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL:

(i) Good. (ii) N.A. (iii) Chilli yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

Ref = Rj. 58(SFT).
Type = Om'.
5. RESULTS:

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>280</td>
<td>41</td>
<td>-41</td>
<td>64.2</td>
<td>416</td>
<td>0</td>
<td>41</td>
<td>66.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Control mean = 1621 lb./ac. and no. of trials = 4.

Crop :- Chilli.
Centre :- Kotah. (c.f.).

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) Medium black soil.  (iii) Nil.  (iv) to (x) N.A.

2. TREATMENTS:

0 = Control (no manure).

\[ n_1 = 50 \text{ lb./ac. of } N \text{ as Urea.} \]
\[ n_2 = 50 \text{ lb./ac. of } N \text{ as A/S/N.} \]
\[ n_3 = 100 \text{ lb./ac. of } N \text{ as A/S/N.} \]
\[ n_4 = 50 \text{ lb./ac. of } N \text{ as C/A/N.} \]
\[ n_5 = 100 \text{ lb./ac. of } N \text{ as C/A/N.} \]

3. DESIGN:
Same as in expt. no. 55(SFT) type A conducted on Kotah on page 172.

4. GENERAL:
(i) Poor.  (ii) N.A.  (iii) Chilli yield.  (iv) (a) 1958—contd.  (b) No.  (c) N.A.  (v) As per design.  (vi) and (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n_1</th>
<th>n_2</th>
<th>n_3</th>
<th>n_4</th>
<th>n_5</th>
<th>n_6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>378.5</td>
<td>362.1</td>
<td>493.7</td>
<td>485.5</td>
<td>493.7</td>
<td>501.9</td>
<td>469.0</td>
</tr>
</tbody>
</table>

G.M. = 455 lb./ac.; S.E. = 71.6 lb./ac. and no of trials = 3.

Crop :- Mustard.
Centre :- Sriganganagar (c.f.).

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) Desert.  (iii) Nil.  (iv) and (v) N.A.  (vi) October 1959.  (vii) Unirrigated.  (viii) and (ix) N.A.  (x) April, 1960.

2. TREATMENTS:

0 = Control (no manure).

\[ n = 20 \text{ lb./ac. of } N \text{ as A/S.} \]
\[ p = 20 \text{ lb./ac. of } P_2O_5 \text{ as Super.} \]
\[ np = 20 \text{ lb./ac. of } N \text{ as A/S+20 lb./ac. of } P_2O_5 \text{ as Super.} \]
\[ k = 20 \text{ lb./ac. of } K_2O \text{ as Mur. Pot.} \]
\[ nk = 20 \text{ lb./ac. of } N \text{ as A/S+20 lb./ac. of } K_2O \text{ as Mur. Pot.} \]
\[ pk = 20 \text{ lb./ac. of } P_2O_5 \text{ as Super+20 lb./ac. of } K_2O \text{ as Mur. Pot.} \]
\[ npk = 20 \text{ lb./ac. of } N \text{ as A/S+20 lb./ac. of } P_2O_5 \text{ as Super+20 lb./ac. of } K_2O \text{ as Mur. Pot.} \]

Ref :- Rj. 59(SFT).
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 village or thana in the zone and the village or 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. 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 acre (iv) Yes.

4. GENERAL:

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

5. RESULTS:

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>epk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response</td>
<td>214</td>
<td>148</td>
<td>41</td>
<td>14.0</td>
<td>33</td>
<td>-49</td>
<td>33</td>
<td>16</td>
<td>15.6</td>
</tr>
</tbody>
</table>

Control mean = 724 lb/ac. and no. of trials = 6.

---

**Crop -> Mustard.**

**Centre -> Sriganganagar (c.f.).**

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

1. **BASAL CONDITIONS:**

(i) (a) to (c) N.A. (ii) Desert. (iii) Nil. (iv) and (v) N.A. (vi) October, 1959. (vii) Unirrigated. (viii) and (ix) N.A. (x) April, 1960.

2. **TREATMENTS:**

0 = Control (no manure),

\( n_1 = 20 \text{ lb./ac. of N as A/S.} \)

\( n_2 = 40 \text{ lb./ac. of N as A/S.} \)

\( n_1' = 20 \text{ lb./ac. of N as Urea.} \)

\( n_2' = 40 \text{ lb./ac. of N as Urea.} \)

\( n_1'' = 20 \text{ lb./ac. of N as C/A/N.} \)

\( n_2'' = 40 \text{ lb./ac. of N as C/A/N.} \)

3. **DESIGN** and 4. **GENERAL:**

Same as in expt. no. 59(SFT) type A on page 173.

5. **RESULTS:**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>( n_1 )</th>
<th>( n_2 )</th>
<th>( n_1' )</th>
<th>( n_2' )</th>
<th>( n_1'' )</th>
<th>( n_2'' )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>708</td>
<td>905</td>
<td>1251</td>
<td>971</td>
<td>1119</td>
<td>1086</td>
<td>1349</td>
</tr>
</tbody>
</table>

G.M. = 1056 lb./ac.; S.E. = N.A. and no. of trials = 3,

---

**Crop -> Gram.**

**Site -> Govt. Agri. Farm, Bassi.**

Object: To find out the effect of different doses of P on Gram.

1. **BASAL CONDITIONS:**

(i) (a) No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 27.10.1956. (iv) and (v) N.A. (vi) Local. (vii) Irrigated. (viii) and (ix) N.A. (x) 2.4.1957.

---

**Ref: -> Rj. 59(SFT).**

**Type: -> 'M'.**
2. TREATMENTS:
3 doses of P as Super: P₀ = 0, P₁ = 20 and P₂ = 40 lb./ac.

3. DESIGN:
(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 3. (iv) (a) 30'3''×18'. (b) 24'3''×12'. (v) 3'×3'. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) and (b) No. (c) Nil. (v) to (vi) Nil.

5. RESULTS:
(i) 981 lb./ac. (ii) 376 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>823</td>
<td>784</td>
<td>1337</td>
</tr>
<tr>
<td>S.E./mean</td>
<td></td>
<td></td>
<td>217.1 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Gram.  
Site: Govt. Agri. Farm, Bassi.

Object: To study the effect of catalyst, FeSO₄ and KMNO₄ with and without F.Y.M. on the yield of Gram.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) and (c) N.A. (ii) (a) Yellow alluvium soil. (b) N.A. (iii) 27.10.1956 (iv) (a) to (e) N.A. (v) Nil. (vi) Local (medium). (vii) to (ix) N.A. (x) 3.4.1957.

2. TREATMENTS:
All combinations of (1) and (2)
(1) 6 manurial treatments: M₀ = Control, M₁ = Catalyst at 40 lb./ac., M₂ = Catalyst at 80 lb./ac., M₃ = 14 lb./ac. of FeSO₄, M₄ = 28 lb./ac. of FeSO₄ and M₅ = 15 lb./ac. of KMNO₄.
(2) 2 levels of F.Y.M.: F₀ = 0 and F₁ = 2 tons/ac.

3. DESIGN:
(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) and (b) 24'3''×12'. (v) Nil. (vi) Yes.

4. GENERAL:
(i) Good (ii) Nil. (iii) Grain yield. (iv) (a) and (b) N.A. (c) Nil. (v) to (vi) Nil.

5. RESULTS:
(i) 1244 lb./ac. (ii) 307.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>F₀</td>
<td>1297</td>
<td>1117</td>
<td>1001</td>
<td>1212</td>
<td>1079</td>
<td>1303</td>
<td>1168</td>
</tr>
<tr>
<td>F₁</td>
<td>1316</td>
<td>1425</td>
<td>1194</td>
<td>1457</td>
<td>1316</td>
<td>1213</td>
<td>1319</td>
</tr>
<tr>
<td>Mean</td>
<td>1304</td>
<td>1271</td>
<td>1098</td>
<td>1335</td>
<td>1198</td>
<td>1258</td>
<td>1244</td>
</tr>
</tbody>
</table>

S.E. of M marginal mean = 125.5 lb./ac.
S.E. of F marginal mean = 72.4 lb./ac.
S.E. of body of table = 177.5 lb./ac.
Object:—To study the effect of catalyst, FeSO₄ and KMnO₄ with and without F.Y.M. on the yield of Gram.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Bajra. (c) Nil. (v) (a) Black soil. (b) N.A. (iii) 14.10.1954. (iv) (a) 4 ploughings. (b) N.A. (v) Nil. (vi) Local (medium). (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 10.3.1955.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 7 manurial treatments: M₀=Control, M₁=40 lb/ac. of catalyst, M₂=80 lb/ac. of catalyst, M₃=14 lb/ac. of FeSO₄, M₄=28 lb/ac. of FeSO₄, M₅=8 lb/ac. of KMnO₄ and M₆=16 lb/ac.
   (2) 2 levels of F.Y.M.: F₀=0 and F₁=2 tons/ac.
   Fertilizers applied by spraying before cultivation.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 15'×9'. (b) 12'×6'. (v) 1½'×1½'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
   (i) 649 lb/ac. (ii) 105.5 lb/ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th></th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>F₀</td>
<td>605</td>
<td>605</td>
<td>627</td>
<td>680</td>
<td>605</td>
<td>658</td>
<td>680</td>
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<tr>
<td>F₁</td>
<td>658</td>
<td>660</td>
<td>703</td>
<td>627</td>
<td>703</td>
<td>605</td>
<td>658</td>
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<tr>
<td>Mean</td>
<td>631</td>
<td>612</td>
<td>665</td>
<td>653</td>
<td>654</td>
<td>631</td>
<td>669</td>
</tr>
</tbody>
</table>

   S.E. of M marginal mean = 43.1 lb/ac.
   S.E. of F marginal mean = 23.0 lb/ac.
   S.E. of body of table = 60.9 lb/ac.

Crop :- Gram  
Ref. :- Rj. 54(23).  
Type :- 'M'.

Site :- Govt. Agri. Farm, Kotah.

Object:—To study the effect of catalyst, FeSO₄ and KMnO₄ with and without F.Y.M. on the yield of Gram.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Jowar. (c) Nil. (ii) (a) Black soil (b) N.A. (iii) 14.11.1955. (iv) (a) to (e) N.A. (v) Nil. (vi) Local. (vii) N.A. (viii) Nil. (ix) N.A. (x) 5.4.1956.

2. TREATMENTS:
   Same as in expt. no. 56:8) on page 175.
   Fertilizers sprayed at the time of cultivation.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 27'3"×15'. (b) 24'3"×12'. (v) 1½'×1½'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1955-contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
   (i) 147 lb/ac. (ii) 146.6 lb/ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb/ac.
### Crop: Gram.  
**Object:** To study the effect of catalyst, FeSO₄ and KMnO₄ with and without F.Y.M. on the yield of Gram.

#### 1. BASAL CONDITIONS:
- (i) (a) Nil. (b) Bajra. (c) Nil.  
- (ii) (a) Black soil. (b) N.A. (c) Nil.  
- (iii) 7, 8, 11, 1956. (iv) (a) to (e) N.A. (v) Nil.  

#### 2. TREATMENTS:
- All combinations of (1) and (2) + Control.
  - (1): 5 trace elements: E₁ = Borax, E₂ = FeSO₄, E₃ = Cr₂O₃, E₄ = MgSO₄ and E₅ = ZnSO₄.
  - (2): 3 levels of trace elements: L₁ = 5, L₂ = 10 and L₃ = 20 lb./ac.

**Fertilizers sprayed before sowing.**

#### 3. RESULTS:
- (i) 1307 lb./ac.  
- (ii) 34.7 lb./ac.  
- (iii) All the effects are highly significant.  
- (iv) Av. yield of grain in lb./ac.

---

**Crop:** Gram.  
**Site:** Govt. Agri. Farm, Kotah.  
**Object:** To study the effect of catalyst, FeSO₄ and KMnO₄ with and without F.Y.M. on the yield of Gram.

**Ref:** Rj. 56(13).  
**Type:** 'M'.

<table>
<thead>
<tr>
<th></th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>F₀</td>
<td>1183</td>
<td>1273</td>
<td>1414</td>
<td>1266</td>
<td>1311</td>
<td>1234</td>
<td>1280</td>
</tr>
<tr>
<td>F₁</td>
<td>1247</td>
<td>1344</td>
<td>1305</td>
<td>1337</td>
<td>1337</td>
<td>1440</td>
<td>1335</td>
</tr>
<tr>
<td>Mean</td>
<td>1215</td>
<td>1308</td>
<td>1359</td>
<td>1301</td>
<td>1324</td>
<td>1337</td>
<td>1307</td>
</tr>
</tbody>
</table>

S.E. of M marginal mean = 14.17 lb./ac.  
S.E. of F marginal mean = 8.18 lb./ac.  
S.E. of body of table = 20.03 lb./ac.

---

**Crop:** Gram.  
**Site:** Govt. Agri. Farm, Kotah.  
**Object:** To study the effect of trace elements on Gram.

**Ref:** Rj. 55(35).  
**Type:** 'M'.

<table>
<thead>
<tr>
<th></th>
<th>M₀</th>
<th>M₁</th>
<th>M₂</th>
<th>M₃</th>
<th>M₄</th>
<th>M₅</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>F₀</td>
<td>1183</td>
<td>1273</td>
<td>1414</td>
<td>1266</td>
<td>1311</td>
<td>1234</td>
<td>1280</td>
</tr>
<tr>
<td>F₁</td>
<td>1247</td>
<td>1344</td>
<td>1305</td>
<td>1337</td>
<td>1337</td>
<td>1440</td>
<td>1335</td>
</tr>
<tr>
<td>Mean</td>
<td>1215</td>
<td>1308</td>
<td>1359</td>
<td>1301</td>
<td>1324</td>
<td>1337</td>
<td>1307</td>
</tr>
</tbody>
</table>

S.E. of M marginal mean = 14.17 lb./ac.  
S.E. of F marginal mean = 8.18 lb./ac.  
S.E. of body of table = 20.03 lb./ac.
Crop :- Gram.
Site :- Govt. Agri. Farm, Kotah.

Object :- To study the effect of various trace elements on the yield of Gram.

1. **BASAL CONDITIONS** :
   (i) (a) Nil. (b) Nil. (c) Nil. (d) (i) Black soil. (ii) N.A. (iii) 3.10.1957. (iv) (a) 3 ploughings. (b) N.A. (c) 60 lb./ac. (d) 1' between rows. (e) N.A. (v) 20 lb./ac. of N as A/S + 20 lb./ac. of P2O5 as S/P. (vi) RS-10 (early). (vii) Unirrigated. (viii) One weeding. (ix) N.A. (x) 12.3.1958.

2. **TREATMENTS** :
   Same as in exp. no. 55(35) on page 177.

3. **DESIGN** :
   (i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 22'×15'. (b) 20'×11'. (v) 1'×1'. (vi) Yes.

4. **GENERAL** :
   (i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Durgapura. (b) N.A. (vi) and (vii) Nil.

5. **RESULTS** :
   (i) 823 lb./ac. (ii) 104.3 lb./ac. (iii) E effect is not significant. (iv) Av. yield of grain in lb./ac.

   Control = 755 lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>E1</th>
<th>E2</th>
<th>E3</th>
<th>E4</th>
<th>E5</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>797</td>
<td>806</td>
<td>781</td>
<td>763</td>
<td>780</td>
</tr>
<tr>
<td>L2</td>
<td>941</td>
<td>907</td>
<td>806</td>
<td>924</td>
<td>797</td>
</tr>
<tr>
<td>L3</td>
<td>839</td>
<td>823</td>
<td>873</td>
<td>729</td>
<td>848</td>
</tr>
<tr>
<td>Mean</td>
<td>859</td>
<td>845</td>
<td>820</td>
<td>805</td>
<td>808</td>
</tr>
</tbody>
</table>

   S.E. of E marginal mean = 30.08 lb./ac.
   S.E. of body of table = 52.1 lb./ac.

---

Ref :- Rj. 57(17).
Type :- 'M'.

---
Crop: Gram (Rabi).
Site: Govt. Agri. Farm, Sriganganagar.

Object: To study the effect of different levels of N, P and K on the yield of Gram.

1. BASAL CONDITIONS:
   (i) A. (b) Cotton. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 17.11.1958. (iv) (a) 4 ploughings. (b) Drilled. (c) 24 sq. ac. (d) Row to row 1'. (e) N.A. (v) N.A. (vi) R.S.—10. (vii) Irrigated. (viii) Weeding and hoeing. (ix) N.A. (x) 25.4.1959.

2. TREATMENTS:
   All combinations of (1), (2) and (3)
   (1) 2 levels of N as A/S: N₀ = 0 and N₁ = 20 lb./ac.
   (2) 2 levels of K₂O as Mur Pot.: K₀ = 0 and K₁ = 20 lb./ac.
   (3) 3 levels of P₂O₅ as Super: P₀ = 0, P₁ = 20 and P₂ = 40 lb./ac.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 3. (iv) (a) 30' × 18'. (b) 30' × 16'. (v) 1' on either side length wise. (vi) Yes.

4. GENERAL:
   (i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) and (c) N.A. (v) to (vii) N.A.

5. RESULTS:
   (i) 2001 lb./ac. (ii) 283.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>Mean</th>
<th>K₀</th>
<th>K₁</th>
</tr>
</thead>
<tbody>
<tr>
<td>N₀</td>
<td>2090</td>
<td>2090</td>
<td>2028</td>
<td>2107</td>
<td>1950</td>
</tr>
<tr>
<td>N₁</td>
<td>1911</td>
<td>1911</td>
<td>1974</td>
<td>1919</td>
<td>2029</td>
</tr>
<tr>
<td>Mean</td>
<td>2000</td>
<td>1960</td>
<td>2042</td>
<td>2001</td>
<td>2013</td>
</tr>
<tr>
<td>K₀</td>
<td>2008</td>
<td>2018</td>
<td>1989</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K₁</td>
<td>1929</td>
<td>1940</td>
<td>1936</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

S.E. of N or K marginal mean = 66.89 lb./ac.
S.E. of P marginal mean = 81.93 lb./ac.
S.E. of body of N×K table = 115.9 lb./ac.
S.E. of body of N×K or P×K table = 94.6 lb./ac.

Crop: Gram (Rabi).
Site: Govt. Agri. Farm, Sriganganagar.

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

1. BASAL CONDITIONS:
   (i) Nil. (b) Sugarcane. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 27.10.1959. (iv) (a) 4 ploughings. (b) Behind the plough. (c) N.A. (d) Row to row 1'. (e) N.A. (v) N.A. (vi) R.S.—10. (vii) Irrigated. (viii) One weeding. (ix) N.A. (x) 15, 16 and 17.4.1960.

2. TREATMENTS and 3. DESIGN:
   Same as exp. no. 58(12) above.

4. GENERAL:
   (i) Normal. (ii) No. (iii) Yield of grain and fodder. (iv) (a) 1958—contd. (b) and (c) N.A. (v) to (vii) N.A.
5. RESULTS:

(i) 1977 lb./ac. (ii) 237.5 lb./ac. (iii) Interaction K×N alone is significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>Mean</th>
<th>K₀</th>
<th>K₁</th>
</tr>
</thead>
<tbody>
<tr>
<td>N₀</td>
<td>1971</td>
<td>1814</td>
<td>2013</td>
<td>1933</td>
<td>1830</td>
<td>2035</td>
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<td>K₀</td>
<td>2006</td>
<td>1912</td>
<td>1946</td>
<td></td>
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</tr>
<tr>
<td>K₁</td>
<td>1964</td>
<td>1998</td>
<td>2036</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

S.E. of N or K marginal mean = 55.98 lb./ac.
S.E. of P marginal mean = 68.56 lb./ac.
S.E. of body of N×K table = 79.17 lb./ac.
S.E. of body of N×P or P×K table = 96.56 lb./ac.

Crop: Gram (Rabi).
Site: Govt. Agri. Farm, Seiganganagar.
Ref: Rj. 58(13).
Type: 'M'.

Object: To study the effect of different trace elements on the yield of Gram.

1. BASAL CONDITIONS:
(i) No. (b) Cotton. (c) Nil. (a) Sandy loam. (b) N.A. (iii) 19.11.1958. (iv) (a) 5 ploughings.
(b) Drilled. (c) 24 srs./ac. (d) Row to row 1'. (e) N.A. (v) 15 lb./ac. of N as A/S+30 lb./ac. of P₂O₅ as Super.

2. TREATMENTS:
All combinations of (1) and (2)+Control.
(1) 5 trace elements: E₁=FeSO₄, E₂=C/S, E₃=ZnSO₄, E₄=MgSO₄ and E₅=Borax powder.
(2) 3 levels of trace elements: L₁=5, L₂=10 and L₃=15 lb./ac.

3. DESIGN:
(i) R.B.D. (ii) 16. (b) N.A. (iii) 3. (iv) (a) 24"×3"×12". (b) 24"×3"×10". (v) 1' on either side length wise. (vi) Yes.

4. GENERAL:
(i) Normal. (ii) No. (iii) Grain yield. (iv) (a) to (e) N.A. (v) (a) Kotah. (b) N.A. (vi) and (vii) N.A.

5. RESULTS:
(ii) 2064 lb./ac. (ii) 200.0 lb./ac. (iii) E effect is not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>E₁</th>
<th>E₂</th>
<th>E₃</th>
<th>E₄</th>
<th>E₅</th>
</tr>
</thead>
<tbody>
<tr>
<td>L₁</td>
<td>1965</td>
<td>1968</td>
<td>2107</td>
<td>1987</td>
<td>2129</td>
</tr>
<tr>
<td>L₂</td>
<td>2171</td>
<td>2092</td>
<td>2036</td>
<td>2197</td>
<td>2096</td>
</tr>
<tr>
<td>L₃</td>
<td>1931</td>
<td>2013</td>
<td>2159</td>
<td>2069</td>
<td>1910</td>
</tr>
<tr>
<td>Mean</td>
<td>2022</td>
<td>2024</td>
<td>2101</td>
<td>2084</td>
<td>2058</td>
</tr>
</tbody>
</table>

S.E. of E marginal mean = 66.65 lb./ac.
S.E. of body of table = 115.44 lb./ac.
Crop :- Gram.
Center :- Kotah (c.f.).

Object:-- Type C : - To compare the responses of leguminous crops to different levels of \( P_2O_5 \).

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Medium black soil. (iii) Nil. (iv) and (v) N.A. (vi) October-November 1957.
   (vii) to (ix) N.A. (x) April-March 1958.

2. TREATMENTS:
   3 levels of \( P_2O_5 \) as Super : O=Control (no manure), \( P_1=30 \text{ lb./ac.} \) and \( P_2=60 \text{ lb./ac.} \).

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 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 of the rate of one experiment per village (iii) (a) N.A. (b) 180 acres. (iv) Yes.

4. GENERAL:
   (i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1957-contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS:
   Treatment 0  \( P_1 \)  \( P_2 \)
   Av. yield 485 617 568
   G.M. = 557 lb./ac.; S.E. = 23.9 lb./ac. and no of trials=11.

---

Crop :- Bengal Gram.
Center :- Banswara (c.f.).

Object:-- Type C :-- To compare the responses of leguminous crops to alternative sources and levels of \( P_2O_5 \).

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A. (ii) Red and black soil. (iii) Nil. (iv) and (v) N.A. (vi) October-November, 1958.
   (vii) to (ix) N.A. (x) March -April 1959.

2. TREATMENTS:
   0 =Control.
   \( P_1 =30 \text{ lb./ac.} \) of \( P_2O_5 \) as Super.
   \( P_1' =60 \text{ lb./ac.} \) of \( P_2O_5 \) as Super.
   \( P_2' =30 \text{ lb./ac.} \) of Dicalcium phosphate
   \( P_2' =60 \text{ lb./ac.} \) of Dicalcium phosphate.

3. DESIGN and 4. GENERAL:
   Same as in expt. 57(SFT) type C above conducted at Kotah.

5. RESULTS:
   Treatment 0  \( P_1 \)  \( P_1' \)  \( P_2' \)
   Av. yield 724 856 971 848 1094
   G.M. = 899 lb./ac.; S.E. = 20.4 lb./ac. and no. of trials=10.
Object:—Type C—To compare the responses of leguminous crops to alternative sources and levels of $P_2O_5$.

1. **BASEL CONDITIONS**:
   (i) (a) to (c) N.A. (ii) Desert. (iii) Nil. (iv) and (v) N.A. (vi) October—November, 1958. (vii) to (ix) N.A. (x) March—April, 1959.

2. **TREATMENTS**:
   0 = Control. 
   $p_1 = 30$ lb./ac. of $P_2O_5$ as Diammonium Phosphate. 
   $p_2' = 60$ lb./ac. of $P_2O_5$ as Super. 
   $p_2 = 60$ lb./ac. of $P_2O_5$ as Dicalcium Phosphate. 
   $p_2' = 60$ lb./ac. of $P_2O_5$ as Dicalcium Phosphate.

3. **DESIGN and GENERAL**:
   Same as in expt. no. 57(SFT) type C on page 181 conducted at Kotah.

5. **RESULTS**:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>$p_1$</th>
<th>$p_2$</th>
<th>$p_2'$</th>
<th>$p_2''$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>500</td>
<td>658</td>
<td>749</td>
<td>625</td>
<td>675</td>
</tr>
</tbody>
</table>

G.M. = 653 lb./ac., S.E. = 15.7 lb./ac. and no. of trials = 8.

---

Object:—Type C—To compare the responses of leguminous crops to alternative sources and levels of $P_2O_5$.

1. **BASEL CONDITIONS**:
   (i) (a) to (c) N.A. (ii) Medium black soil. (iii) Nil. (iv) and (v) N.A. (vi) October—November, 1958.

2. **TREATMENTS**:
   0 = Control. 
   $p_1 = 30$ lb./ac. of $P_2O_5$ as Super. 
   $p_2 = 60$ lb./ac. of $P_2O_5$ as Super. 
   $p_2' = 30$ lb./ac. of $P_2O_5$ as Dicalcium Phosphate. 
   $p_2'' = 60$ lb./ac. of $P_2O_5$ as Dicalcium Phosphate.

3. **DESIGN and GENERAL**:
   Same as in expt. no. 57(SFT) type C on page 181 conducted at Kotah.

5. **RESULTS**:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>$p_1$</th>
<th>$p_2$</th>
<th>$p_2'$</th>
<th>$p_2''$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1029</td>
<td>1794</td>
<td>2890</td>
<td>1399</td>
<td>1769</td>
</tr>
</tbody>
</table>

G.M. = 1616 lb./ac., S.E. = 78.0 lb./ac. and no. of trials = 3.
1. BASAL CONDITIONS:
(i) (a) to (c) N.A.  (ii) Red and black soil.  (iii) Nil.  (iv) and (v) N.A.  (vi) October—November, 1959.  (vii) to (ix) N.A.  (x) March—April, 1960.

2. TREATMENTS:
0 = Control (no manure).
p1 = 30 lb./ac. of P₂O₅ as Single Super.
p2 = 60 lb./ac. of P₂O₅ as Single Super.
p1p2 = 30 lb./ac. of P₂O₅ as Single Super + Nitrogen present in treatment p1.
p2p1 = 60 lb./ac. of P₂O₅ as Single Super + Nitrogen present in p2.
p' = 30 lb./ac. of P₂O₅ as Mono Ammo. Phos.
p" = 60 lb./ac. of P₂O₅ as Mono Ammo. Phos.

3. DESIGN and 4. GENERAL:
Same as in expt. no. 57(SFT) type C on page 181 conducted at Kotah.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>p1</th>
<th>p2</th>
<th>p1p2</th>
<th>p2p1</th>
<th>p'</th>
<th>p&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>691</td>
<td>905</td>
<td>1029</td>
<td>996</td>
<td>1103</td>
<td>946</td>
<td>1086</td>
</tr>
</tbody>
</table>

G.M = 965 lb./ac.; S.E. = 36.7 lb./ac. and no. of trials = 10.

**Crop**: Bengal Gram.  
**Centre**: Kotah (c.f.).  
**Ref**: Rj. 59(SFT).  
**Type**: 'M'.

Object:—Type C—To compare the responses of leguminous crops to alternative sources and levels of P₂O₅.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A.  (ii) Medium black.  (iii) Nil.  (iv) and (v) N.A.  (vi) October—November, 1959.  (vii) to (ix) N.A.  (x) March—April, 1960.

2. TREATMENTS:
Same as in expt. no. 59(SFT) type C on page 182 conducted at Banswara.

3. DESIGN and 4. GENERAL:
Same as in expt. no. 57(SFT) type C on page 181 conducted at Kotah.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>p1</th>
<th>p2</th>
<th>p1p2</th>
<th>p2p1</th>
<th>p'</th>
<th>p&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>625</td>
<td>683</td>
<td>806</td>
<td>806</td>
<td>913</td>
<td>675</td>
<td>749</td>
</tr>
</tbody>
</table>

G.M. = 751 lb./ac.; S.E. = 26.8 lb./ac. and no. of trails = 6.

**Crop**: Bengal Gram.  
**Centre**: Pali (c.f.).  
**Ref**: Rj. 59(SFT).  
**Type**: 'M'.

Object:—Type C—To compare the responses of leguminous crops to alternative sources and levels of P₂O₅.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A.  (ii) Desert.  (iii) Nil.  (iv) and (v) N.A.  (vi) October—November, 1919.  (vii) to (ix) N.A.  (x) March—April, 1960.

2. TREATMENTS:
Same as in expt. no. 59(SFT) type C on page 182 conducted at Banswara.

3. DESIGN and 4. GENERAL:
Same as in expt. no. 57(SFT) type C on page 181 conducted at Kotah.
5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>p₁</th>
<th>p₂</th>
<th>p₁p₂</th>
<th>p₁p₂</th>
<th>p₁'</th>
<th>p₁'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>757</td>
<td>1037</td>
<td>1004</td>
<td>1037</td>
<td>1218</td>
<td>1103</td>
<td>1012</td>
</tr>
</tbody>
</table>

G.M. = 1024 lb./ac.; S.E. = 72.1 lb./ac. and no. of trials = 4.

**Crop:** Bengal Gram.  
**Centre:** Sriganganagar (c.f.).  
**Ref:** Rj. 59(SFT).  
**Type:** ‘M’.

Object:—Type C—to compare the responses of leguminous crops to alternative sources and levels of $P_2O_5$.

1. BASAL CONDITIONS:
   (i) (a) to N.A.  
   (ii) Desert.  
   (iii) Nil.  
   (iv) and (v) N.A.  
   (vi) October—November, 1959.  
   (vii) to (ix) N.A.  
   (x) March—April, 1960.

2. TREATMENTS:
   Same as in expt. no. 59(SFT) type C on page 182 conducted at Banswara.

3. DESIGN and 4. GENERAL:
   Same as in expt. no. 57(SFT) type C on page 181 conducted at Kotah.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>p₁</th>
<th>p₂</th>
<th>p₁p₂</th>
<th>p₁p₂</th>
<th>p₁'</th>
<th>p₁'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1020</td>
<td>1152</td>
<td>1481</td>
<td>1234</td>
<td>1300</td>
<td>1168</td>
<td>1325</td>
</tr>
</tbody>
</table>

G.M. = 1240 lb./ac.; S.E. = 51.1 lb./ac. and no. of trials = 8.

**Crop:** Gram (Rabi).  
**Site:** Govt. Agri. Farm, Kotah.  
**Ref:** Rj. 59(49).  
**Type:** ‘D’.

Object:—To study the effect of insecticides for the control of Gram pod borer.

1. BASAL CONDITIONS:
   (i) (a) No.  
   (b) Fallow.  
   (c) Nil.  
   (ii) (a) and (b) N.A.  
   (iii) 27.10.1959.  
   (iv) (a) 5 ploughings.  
   (b) N.A.  
   (c) 38 yrs./ac.  
   (d) Row to row 10'.  
   (e) N.A.  
   (v) N.A.  
   (vi) RS—10.  
   (vii) Unirrigated.  
   (viii) Weeding and thriving once.  
   (ix) and (x) N.A.

2. TREATMENTS:
   5 insecticidal treatments: $T_0$=Control, $T_1$=Endrex 1% dust, $T_2$=Dieldrex 1.5% dust, $T_3$=Aidrex 2% dust, and $T_4$=Parathion 1% dust.
   Each insecticide is applied at 20 lb./ac.

3. DESIGN:
   (i) R B.D.  
   (ii) 5.  
   (b) N.A.  
   (iii) 3.  
   (iv) (a) 36' x 19½'.  
   (b) 33' x 16½'.  
   (v) 1½' x 1½'.  
   (vi) Yes.

4. GENERAL:
   (i) Weak flowering.  
   (ii) Nil—except pod borer.  
   (iii) Yield of grain.  
   (iv) to (vii) N.A.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>$T_0$</th>
<th>$T_1$</th>
<th>$T_2$</th>
<th>$T_3$</th>
<th>$T_4$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>271</td>
<td>391</td>
<td>281</td>
<td>321</td>
<td>385</td>
</tr>
</tbody>
</table>

S.E./mean = 55.12 lb./ac.
Crop: Gram (Rabi)
Site: Govt. Agri. Farm, Padasaali

Object: To find out the optimum timing for spraying B.H.C., D.D.T. and Endrin to control Gram Plo' borer.

BASAL CONDITIONS:
(i) (a) Nil. (b) Gower. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 29.10.1959. (v) (a) I ploughing. (b) N.A. (c) 35 asn/ac. (d) Row to row 1'2. (e) N.A. (v) N.A. (vi) RS-10. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS:
Main-plot treatments:
3 insecticides: W1 = B.H.C. 25%, W2 = D.D.T. 25%, W3 = Endrin 05%.
Sub-plots treatments:
5 Times of application: T0 = No application, T1 = Before flowering and after 3 weeks, T2 = Immediately after setting pods, T3 = 2 weeks after setting pods, and T4 = 4 weeks after setting pods.

3. DESIGN:
(i) Split-plct. (ii) (a) 3 main-plots/block; 5 sub-plots/main-plct. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 37 x 16'. (v) N.A. (vi) Yet.

4. GENERAL:
(i) N.A. (ii) Nil. (iii) Grain yield. (iv) to (vii) N.A.

5. RESULTS:
(i) 600 lb/ac. (ii) (a) 199.1 lb/ac. (b) 128.4 lb/ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th></th>
<th>T0</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1</td>
<td>600</td>
<td>614</td>
<td>540</td>
<td>793</td>
<td>583</td>
<td>630</td>
</tr>
<tr>
<td>W2</td>
<td>652</td>
<td>538</td>
<td>673</td>
<td>654</td>
<td>744</td>
<td>658</td>
</tr>
<tr>
<td>W3</td>
<td>540</td>
<td>463</td>
<td>436</td>
<td>552</td>
<td>563</td>
<td>511</td>
</tr>
</tbody>
</table>

Mean: 597 515 550 676 610 600

S.E. of difference of two:
1. W marginal means = 72.72 lb/ac.
2. T marginal means = 60.71 lb/ac.
3. T means at the same level of W = 104.81 lb/ac.
4. W means at the same level of T = 118.71 lb/ac.

Crop: Urid (Kharif)
Site: Govt. Agri. Farm, Sriganagar

Object: To determine the relative efficacy of seed dressing fungicides on the yield of Urid under field conditions.

1. BASAL CONDITIONS:
(i) (a) No. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) to (c) N.A. (d) Row to row 1'2. (e) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) to (x) N.A.

2. TREATMENTS:
8 fungicidal treatments: F0=Control, F1=Agroasan G.N. at 9 tolas/md., F2=Ceresan at 6 tolas/md., F3=Tillix at 6 tolas/md., F4=Sumasan at 6 tolas/md., F5=Henasan at 6 tolas/md., F6=Fernasan at 9 tolas/md., and F7=Sulphur at 12 tolas/md.
3. DESIGN:
(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) and (b) 20'x6'. (v) Nil. (vi) Yes.

4. GENERAL:
(i) to (vi) N.A.

5. RESULTS:
(i) 365 lb./ac. (ii) 122 3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>$F_0$</th>
<th>$F_1$</th>
<th>$F_2$</th>
<th>$F_3$</th>
<th>$F_4$</th>
<th>$F_5$</th>
<th>$F_6$</th>
<th>$F_7$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>178</td>
<td>378</td>
<td>423</td>
<td>427</td>
<td>397</td>
<td>359</td>
<td>223</td>
<td>537</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>49.9</td>
<td>lb./ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop: Urid (Kharif).
Site: Govt. Agri. Farm, Kotah.
Object: To determine the relative efficacy of different fungicide:seed treatments on the yield of Urid under field conditions.

Ref: Rj. 59(11).
Type: D'.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Linseed. (c) N.A. (ii) Black cotton soil. (b) N.A. (iii) 18.7.1959. (iv) (a) 3 ploughings. (b) and (c) N.A. (d) Row to row 1 foot (e) 3 seeds/hill. (v) N.A. (vi) Local. (vii) to (ix) N.A. (x) 28.11.1959.

2. TREATMENTS to 4. GENERAL:
Same as in expt. 59(4) on page 185.

3. RESULTS:
(i) 219 lb./ac. (ii) 152.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>$F_0$</th>
<th>$F_1$</th>
<th>$F_2$</th>
<th>$F_3$</th>
<th>$F_4$</th>
<th>$F_5$</th>
<th>$F_6$</th>
<th>$F_7$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>246</td>
<td>234</td>
<td>204</td>
<td>197</td>
<td>193</td>
<td>219</td>
<td>197</td>
<td>261</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>62.3</td>
<td>lb./ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop: Moong.
Site: Govt. Agri. Farm, Sriganganagar.
Object: To study the effect of G M. guar on wheat in Rabi and then Moong in Kharif.

Ref: Rj. 55(50).
Type: M'.

1. BASAL CONDITIONS:
(i) (a) Wheat—Moong. (b) Wheat. (c) Guar was grown in the previous season. (ii) (a) Sandy desert. (iii) 1.8.1-55. (iv) (a) to (e) N.A. (v) Nil. (vi) Local (medium). (vii) Irrigated. (viii) and (ix) N.A. (x) 29.10.1955.

2. TREATMENTS:
All combinations of (1) and (2)
(1) 4 levels of $P_2O_5$ as Super : $P_0=0, P_1=50, P_2=100$ and $P_3=150$ lb./ac.
(2) 4 ages of Guar plants at the time of application: $T_0=Nil, T_1=45, T_2=60$ and $T_3=75$ days.

3. DESIGN:
(i) Fact. in R B D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 20'x24'. (b) 24'x18'. (v) 3'x3'. (vi) Yes,

4. GENERAL:
(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1955. (b) Yes. (c) Nil. (i) to (vii) Nil.
5. RESULTS:

(i) 282 lb./ac. (ii) 42.0 lb./ac. (iii) Main effect of T and interaction TXP are significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>P₀</th>
<th>P₁</th>
<th>P₂</th>
<th>P₃</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>T₀</td>
<td>282</td>
<td>268</td>
<td>294</td>
<td>276</td>
<td>280</td>
</tr>
<tr>
<td>T₁</td>
<td>253</td>
<td>279</td>
<td>265</td>
<td>201</td>
<td>249</td>
</tr>
<tr>
<td>T₂</td>
<td>244</td>
<td>279</td>
<td>318</td>
<td>340</td>
<td>300</td>
</tr>
<tr>
<td>T₃</td>
<td>372</td>
<td>250</td>
<td>268</td>
<td>311</td>
<td>300</td>
</tr>
<tr>
<td>Mean</td>
<td>288</td>
<td>269</td>
<td>291</td>
<td>282</td>
<td>282</td>
</tr>
</tbody>
</table>

S.E. of any marginal mean = 10.5 lb./ac,
S.E. of body of table = 21.0 lb./ac.

Crop :- Moong (Kharif).
Ref :- Rj. 59(5).
Type :- 'M'.

Site :- Govt. Agri. Farm, Bassi.

Object :-To determine the relative efficacy of seed dressing fungicides in relation to germination and yield of Moong.

1. BASAL CONDITIONS:

(i) (a) N.A. (b) Fallow. (c) N.A. (ii) (a) Sandy loam (b) N.A. (iii) 23.7.1959. (iv) (a) to (c) N.A. (d) Row to row 1 ft. (e) 3 seeds/shill. (v) N.A. (vi) R.S. = 4. (vii) Unirrigated. (viii) and (ix) N.A. (x) 6.11.1959.

2. TREATMENTS:

8 fungicidal treatments : F₀ = Control, F₁ = Agrosan G.N. at 9 tolas/md., F₂ = Cersan at 6 tolas/md., F₃ = Tillea at 6 tolas/md., F₄ = Lunaran at 6 tolas/md., F₅ = Hervasan at 6 tolas/md., F₆ = Fernasan at 9 total/mdl. and F₇ = Sulphur at 12 tolas/mdl.

3. DESIGN:

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) and (b) 20' x 6'. (v) Nil. (vi) Yes.

4. GENERAL:

(i) and (ii) N.A. (iii) Grain yield. (iv) (a) 1959 - N.A. (b) to (c) N.A. (v) to (vii) N.A.

5. RESULTS:

(i) 672 lb./ac. (ii) 141.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>F₀</th>
<th>F₁</th>
<th>F₂</th>
<th>F₃</th>
<th>F₄</th>
<th>F₅</th>
<th>F₆</th>
<th>F₇</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>582</td>
<td>643</td>
<td>703</td>
<td>643</td>
<td>734</td>
<td>665</td>
<td>711</td>
<td>696</td>
</tr>
</tbody>
</table>

S.E./Mean = 57.9 lb./ac.

Crop :- Moong (Kharif).
Ref :- Rj. 59(6).
Type :- 'D'.

Site :- Govt. Agri. Farm, Durgapura.

Object :- To determine the relative efficacy of seed dressing fungicides in relation to germination and yield of Moong.
1. **BASAL CONDITIONS:**
   (i) (a) Moong–Potato. (b) Potato. (c) Ar/S, Super and F.Y.M. (ii) (a) Sandy loam. (b) N.A. (iii) 7.7.1959 (iv) (a) 4 ploughings. (b) Dibbling. (c) N.A. (d) Row to row 1'. (e) N.A. (v) N.A. (vi) R.S.—4. (vii) to (ix) N.A. (x) 16.10.1959.

2. **TREATMENTS to 4. GENERAL:**
   Same as in exp. no. 59(5) on page 187.

3. **RESULTS:**
   (i) 79 lb./ac. (ii) 57.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain
   
<table>
<thead>
<tr>
<th>Treatment</th>
<th>F_1</th>
<th>F_2</th>
<th>F_3</th>
<th>F_4</th>
<th>F_5</th>
<th>F_6</th>
<th>F_7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>58</td>
<td>117</td>
<td>113</td>
<td>70</td>
<td>43</td>
<td>74</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.E./mean</td>
<td>21.53 lb./ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

   Crop :- Sugarcane.
   Site :- Govt. Agri. Farm, Sriganganagar.

   Object :- To find out the economic way of controlling weeds in Sugarcane.

4. **BASAL CONDITIONS:**
   (i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) to (c) N.A. (v) Row to row 3'. (c) N.A. (v) to (x) N.A.

5. **TREATMENTS:**
   10 methods of controlling weeds: M_0 = Control, M_1 = Local method of weeding, M_2 = Pre-emergence application (once), M_3 = Post emergence application (once), M_4 = Post emergence application (twice), M_5 = Combination of Pre and Post emergence application (once), M_6 = Pre-emergence application + Cultural method of weeding, M_7 = Post-emergence application + Cultural method of weeding, M_8 = Combination of Pre and Post application emergence (once) + Cultural method of weeding, M_9 = Combination of Pre and Post emergence application (twice) + Cultural method of weeding.

6. **DESIGN:**
   (i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 24' x 18'. (b) 18' x 12'. (c) 5' x 3'. (vi) Yes.

7. **GENERAL:**
   (i) to (vii) N.A.

8. **RESULTS:**
   (i) 22.44 tons/ac. (ii) 3.76 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane
   
<table>
<thead>
<tr>
<th>Treatment</th>
<th>M_0</th>
<th>M_1</th>
<th>M_2</th>
<th>M_3</th>
<th>M_4</th>
<th>M_5</th>
<th>M_6</th>
<th>M_7</th>
<th>M_8</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.E./mean</td>
<td>18.78 tons/ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Crop :- Sugarcane (Kharif).
   Site :- Govt. Agri. Farm, Sriganganagar.

   Object:- To work out a spray schedule for the control of Sugarcane borers.
1. BASAL CONDITIONS:
   (i) (a) Wheat—Cottor—Fallow—Sugarcane. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 9.4.1959. (iv) (a) 5 ploughings. (b) N.A. (c) 64 mds./ac. (d) and (e) N.A. (v) N.A. (vi) CO—312. (vii) Irrigated. (viii) 3 hoeings and 2 weedings. (ix) and (x) N.A.

2. TREATMENTS:
   4 fungicidal treatments: F₀ = Control, F₁ = B.H.C. 0.25%, F₂ = D.D.T. 0.25% and F₃ = Endrin 0.05%.

3. DESIGN:
   (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) and (v) N.A. (vi) Yes.

4. GENERAL:
   (i) Very poor. (ii) Minor pests of sugarcane. (iii) Yield of cane. (iv) to (vii) N.A.

5. RESULTS:
   (i) 7.66 tons/ac. (ii) 2.23 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

- Treatment | Av. yield | S.E./mean
- F₀ | 7.25 | 1.29
- F₁ | 7.37 |
- F₂ | 7.26 |
- F₃ | 8.74 |

Crop :- Sugarcane.
Centre :- Banswara (c.f.).
Ref :- Rj. 59(SFT).
Type :- 'M'.

Object :- Type A — To study the responses 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 black soil. (iii) Nil. (iv) to (a) N.A.

3. 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+ 20 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.

- DESIGN:
   (i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant has been posted in each zone. The field assistant conducts the trials in one revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on a kharif cereal, 8 on a rabi cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The above experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) N.A. (b) 1;800 ac. (iv) Yer.

4. GENERAL:
   (i) (a) to (c) N.A. (ii) Nil. (iii) Cane yield. (iv) (a) 1957—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 in tons/ac. | 2.76 | 0.63 | 0.78 | 0.194 | — | 0.249 | 0.11 | 0.91 | 0.97 | 0.170

Control mean = 19.94 tons/ac. and no. of trials = 4.
Crop: Sugarcane.  
Centre: Kotah (c.f.).  
Ref: Rj. 58(SFT).  
Type: 'M'.  

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

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A.  (ii) Desert.  (iii) Nil.  (iv) to (x) N.A.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 59(SFT) type A sugarcane crop on page 189.

5. RESULTS:

Effect | n | p | k | S.E. | np | nk | pk | npk | S.E.
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---
Av. response in tons/ac. | 5.18 | 2.30 | 1.29 | 1.135 | 0.18 | —0.13 | 0.11 | —0.04 | 0.433

Control mean = 12.09 tons/ac and no. of trials = 4.

Crop: Sugarcane.  
Centre: Sriganganagar (c.f.).  
Ref: Rj. 59(SFT).  
Type: 'M'.  

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

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A.  (ii) Medium black soil.  (iii) Nil.  (iv) to (x) N.A.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 59(SFT) type A sugarcane crop on page 189.

5. RESULTS:

Effect | n | p | k | S.E. | np | nk | pk | npk | S.E.
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---
Av. response in tons/ac. | 3.88 | 3.74 | 2.41 | 0.342 | 0.72 | 0.44 | 0.57 | 0.19 | 0.439

Control mean = 15.81 tons/ac and no. of trials = 9.

Crop: Sugarcane.  
Centre: Sriganganagar (c.f.).  
Ref: Rj. 59(SFT).  
Type: 'M'.  

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

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A.  (ii) Desert.  (iii) Nil.  (iv) to (x) N.A.

2. TREATMENTS to 4. GENERAL:
   Same as in exp. no. 59(SFT) type A sugarcane crop on page 189.

5. RESULTS:

Effect | n | p | k | S.E. | np | nk | pk | npk | S.E.
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---
Av. response in tons/ac. | 5.94 | 0.51 | 1.75 | 1.308 | —0.51 | 0.68 | —0.49 | 1.86 | 0.655

Control mean = 26.47 tons/ac and no. of trials = 5.
Object:—To study the effect of N and P applied individually and in combinations on Sugarcane crop.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A.  (ii) Medium black soil. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS:
   0 = Control (no manure).
   n1" = 20 lb./ac. of N as A/S/N.
   n2" = 40 lb./ac. of N as A/S/N.
   p1 = 20 lb./ac. of P2O5 as Super.
   n1'p1 = 20 lb./ac. of N as A/S/N+20 lb./ac. of P2O5 as Super.
   n2'p1 = 40 lb./ac. of N as A/S/N+20 lb./ac. of P2O5 as Super.

3. DESIGN and 4. GENERAL:
   Same as in expt. no. 59(SFT) type A Sugarcane crop on page 189.

5. RESULTS:
   Treatment 0 n1" n2" p1 n1'p1 n2'p1
   Av. yield 12.26 15.76 16.64 13.97 17.89 16.49
   G.M. = 15.50 tons/ac.; S.E. = 0.744 tons/ac, and no. of trials = 6.

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

1. BASAL CONDITIONS:
   (i) (a) to c) N.A.  (ii) Desert. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS:
   0 = Control.
   n1" = 20 lb./ac. of N as Urea.
   n2" = 40 lb./ac. of N as Urea.
   n1" = 20 lb./ac. of N as A/S/N.
   n2" = 40 lb./ac. of N as A/S/N.

3. DESIGN and 4. GENERAL:
   Same as in expt. no. no. 59(SFT) type A on page 190 conducted at Kotah.

5. RESULTS:
   Treatment 0 n1" n2" n1" n2"
   G.M. = 17.53 tons/ac.; S.E. = 0.663 tons/ac. and no. of trials = 4

Object:—To determine the optimum dose of N and P alone and in combinations on the yield of Cotton.
2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 5 nitrogenous treatments: N₀=No nitrogen, N₁=30 lb./ac. of N as A/S, N₂=60 lb./ac. of N as A/S, N₃=30 lb./ac. of N as A/N, and N₄=60 lb./ac. of N as A/N.
   (2) 3 levels of P₂O₅ as Super: P₀=0, P₁=20 and P₂=60 lb./ac.
   Fertilizers sprayed at the time of cultivation.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) (a) 24' x 20'. (b) 19' x 15'. (v) 2' x 2'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Kapas yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
   (i) 966 lb./ac. (ii) 225 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of kapas in lb./ac.

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S.E. of N marginal mean = 65.07 lb./ac.
S.E. of P marginal mean = 50.40 lb./ac.
S.E. of body of table = 112.7 lb./ac.

Crop :- Cotton.
Site :- Govt. Agri. Farm, Ganganagar.
Object :- To study the effect of N and P on the yield of Cotton.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) and (c) N.A. (ii) Sandy loam. (b) N.A. (iii) 21.7.1954. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) 3 weedings. (ix) N.A. (x) 13.4.1955.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 3 levels of N as A/S: N₀=0, N₁=30 and N₂=60 lb./ac.
   (2) 3 levels of P₂O₅ as Super: P₀=0, P₁=30 and P₂=60 lb./ac.
   Fertilizers sprayed before cultivation.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 22' x 15'. (b) 19' x 15'. (v) 1' x 1'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) No. (iii) Kapas yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
   (i) 1170 lb./ac. (ii) 241 lb./ac. (iii) N effect alone is significant. (iv) Av. yield of kapas in lb./ac.

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</table>
Crop :- Cotton.  
Site :- Agri. Res. Farm, Makrera. 

Object :- To study the effect of different doses of N as A/S on the yield of Cotton.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 22.6.1954. (iv) (a) to (e) N.A. (v) Nil (vi) Desi. (vii) Irrigated. (viii) 3 weedings. (ix) N.A. (x) 2 pickings on 15.11.1954 and 9.12.1954.

2. TREATMENTS:
   4 levels of N as A/S: N₀ =0, N₁ =20, N₂ =40 and N₃ =60 lb./ac.

3. DESIGN:
   (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 35'X25'. (b) 30'X20'. (v) 2'X2'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Kupas yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
   (i) 450 lb./ac. (ii) 111.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of Kupas in lb./ac.

   Treatment | N₀ | N₁ | N₂ | N₃ | Av. yield 456 440 440 466
   S.E./mean  = 45.6 lb./ac.

---

Crop :- Cotton.  
Site :- Govt. Agri. Res. Farm, Makrera. 

Object :- To see the effect of different doses of N as A/S on the yield of Cotton.

1. BASAL CONDITIONS:
   (i) (a) No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.6.1954. (iv) (a) to (e) N.A. (v) Nil. (vi) Rajasthan American Cotton. (vii) Irrigated. (viii) 4 weedings. (ix) N.A. (x) Pickings on 13.11.1954 and 12.12.1954.

2. TREATMENTS:
   Same as in expt. no. 54(13) above.

3. DESIGN:
   (i) R.B.D. (ii) (a) 4. (b) N.A. ' (iii) 6. (iv) (a) 32'X19'. (b) 28'X15'. (v) 2'X2'. (vi) Yes.

4. GENERAL:
   Same as in expt. no. 54(13) above.

5. RESULTS:
   (i) 493 lb./ac. (ii) 67 6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of Kupas in lb./ac.

   Treatment | N₀ | N₁ | N₂ | N₃ | Av. yield 482 502 478 509
   S.E./mean  = 67.6 lb./ac.
Crop :- Cotton.  
Site :- Govt. Agri. Farm, Makrera.  
Object :- To study the effect of different doses of N separately and in combination with P on Cotton.

1. BASAL CONDITIONS :
   (i) No. (b) and (c) N.A.  (ii) (a) Sandy loam. (b) N.A.  (iii) 27.5.1955.  (iv) (a) to (e) N.A.  (v) Nil.  (vi) Rajasthan American Cotton (medium).  (vii) Irrigated.  (viii) and (ix) N.A.  (x) Pickings in January, 1956.

2. TREATMENTS :
   5 manurial treatments : M₀ = Control, M₁ = 20 lb./ac. of N, M₂ = 40 lb./ac. of N, M₃ = M₁ + 10 lb./ac. of P₂O₅ and M₄ = M₂ + 20 lb./ac. of P₂O₅.
   N as A/S and P₂O₅ as Super sprayed at the; of sowing.

3. DESIGN :
   (i) R.B.D.  (ii) (a) 5 (b) N.A.  (iii) 6.  (iv) (a) 34'X18' (b) 30'X16'.  (v) 2'X1'.  (vi) Yes.

4. GENERAL :
   (i) Normal.  (ii) Nil.  (iii) Kapas yield.  (iv) (a) and (b) No (c) Nil.  (v) to (vii) Nil.

5. RESULTS :
   (i) 545 lb./ac.  (ii) 105.5 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of Kapas in lb./ac.
   Treatment  
   Treatment  
<table>
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<td>594</td>
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</table>
   
   S.E./mean = 43.1 lb./ac.
Crop: Cotton (Kharif).

Site: Govt. Agri. Farm, Sriganganagar.

Ref: Rj. 58(23).

Type: 'M'.

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

1. BASAL CONDITIONS:
   (i) (a) No. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 3.7.1958. (iv) (a) 3 ploughings. (b) N.A. (c) 6 yrs. (d) Row to row 3'. (e) N.A. (f) Irrigated. (v) 2 weedings. (vi) N.A. (vii) Pickings on 30.11.1958 and 3.2.1959.

2. TREATMENTS:
   All combinations of (1), (2) and (3)+control (2 plots)
   (1) 3 sources of N: $S_1=\text{A/S}, S_2=\text{A/S/N}$ and $S_3=\text{Urea}$. (2) 2 manural treatments: $M_1=30 \text{ lb.}/\text{ac. of N}+30 \text{ lb.}/\text{ac. of P}_2\text{O}_5 \text{ as Super}$ and $M_2=60 \text{ lb.}/\text{ac. of N}+60 \text{ lb.}/\text{ac. of P}_2\text{O}_5 \text{ as Super}$. (3) 2 levels of K as Muri. Pot: $K_1=20$ and $K_2=40 \text{ lb.}/\text{ac.}$

3. DESIGN:
   (i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 30'3'x18'. (b) 30'3'x12'. (v) 3' on either side lengthwise. (vi) Yes.

4. GENERAL:
   Same as in expt. no. 58(22) on page 194.

5. RESULTS:
   (i) 276 lb./ac. (ii) 71.4 lb./ac. (iii) 'Control vs. rest' alone is significant. (iv) Av. yield of kapas in lb./ac.

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S.E. of K or M marginal mean = 17.3 lb./ac.
S.E. of S marginal mean = 21.2 lb./ac.
S.E. of body of M x S or K x S table = 30.0 lb./ac.
S.E. of body of M x K table = 24.5 lb./ac.
S.E. of control mean = 30.0 lb./ac.
Crop :- Cotton (Kharif).

Site :- Govt. Agri. Farm, Sriganganagar.

Object :- To study the effect of different types of catalysts with and without basal dose of F.Y.M.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of P₂O₅ as Super+30 lb./ac. of N as urea+20 lb./ac. of N as oilcake+F.Y.M. one trolley per acre. (ii) (a) Sandy loam. (b) N.A. (iii) 27.6.1958. (iv) (a) 2 ploughings. (b) N.A. (c) 6 ses./acre. (d) Row to row 3'. (e) N.A. (v) 320-F (American). (vi) Irrigated. (vii) 2 weedings and hoeing. (viii) N.A. (ix) Pickings on 1.12.1958 and 3.2.1959.

2. TREATMENTS :
   All combinations of (1) and (2)
   (1) 7 manurial treatments : M₁=Control, M₂=40 lb./ac. of catalyst, M₃=80 lb./ac. of catalyst, M₄=15 lb./ac. of FeSO₄, M₅=30 lb./ac. of FeSO₄, M₆=10 lb./ac. of K₂MnO₄ and M₇=15 lb./ac. of K₂MnO₄.
   (2) 2 levels of F.Y.M. : F₀=0 and F₁=5000 lb./ac.

3. DESIGN and 4. GENERAL:
   Same as in expt. no. 58(23) on page 195.

5. RESULTS :
   (i) 275 lb./ac. (ii) 54.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of kapas in lb./ac.

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<tr>
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<th>M₂</th>
<th>M₃</th>
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</table>

S.E. of M marginal mean = 22.4 lb./ac.
S.E. of F marginal mean = 12.0 lb./ac.
S.E. of body of table = 31.7 lb./ac.
Crop: Cotton (Kharif).

Site: M.A.E. Farm, Sripaganagar.

Object: Type II-To study the effect of N, P, K and FYM on Cotton.

1. BASAL CONDITIONS:
   (i) (a) Cotton - Sunji - Maize - Wheat. (b) and (c) N.A.
   (ii) (a) Desert soil. (b) N.A. (iii) 19.6.1957.
   (iv) (a) 2 harrowings, double discing cross wise and beaming twice. (b) By dibbling. (c) 12 lb./ac. 
   (d) 27' x 12' to 18'. (e) N.A. (v) Nil. (vi) 320-F (late). (vii) Irrigated. (viii) 3 hoeings, 1 weeding and
   2 thinning. (ix) 3' . (x) 4, 5 and 29.11.1957.

2. TREATMENTS:
   All combinations of (1), (2), (3) and (4)
   (1) 3 levels of N as A/S: N₀ =0, N₁ =30 and N₂ =60 lb./ac.
   (2) 3 levels of P₂ O₅ as Super: P₀ =0, P₁ =30 and P₂ =60 lb./ac.
   (3) 3 levels of K₂ O as Pot. Sul.: K₀ =0, K₁ =30 and K₂ =60 lb./ac.
   (4) 2 levels of FYM: F₀ =0 and F₁ =5000 lb./ac.

3. DESIGN:
   (i) 3³ x 2 Fact. confd. (ii) (a) 9 plots/block; 3 blocks for F₀ and 3 blocks for F₁/replication. (b) N.A.
   (iii) 2. (iv) (a) 1/80 ac. (b) 1/119.7 ac. (v) N.A. (vi) Yes.

4. GENERAL:
   cond. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS:
   (i) 1096 lb./ac. (ii) 287.5 lb./ac. (iii) Main effect of N and K are [highly] significant. (iv) Av. yield of
   kapas in lb./ac.

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S.E. of marginal mean of N, P or K = 47.9 lb./ac.
S.E. of marginal mean of F = 39.1 lb./ac.
S.E. of body of N x P, N x K or P x K table = 83.0 lb./ac.
S.E. of body of N x P, P x F or K x F table = 67.8 lb./ac.
Crop: Cotton (Kharif).
Site: M.A.E. Farm, Sriganganagar.

Object: Type II—To study the effect of N, P, K and F.Y.M. on Cotton.

1. BASAL CONDITIONS:
   (i) (a) Cotton—Senji—Maize—Wheat. (b) Wheat. (c) As per treatments. (ii) (a) Desert soil. (b) N.A. (iii) 2nd week of June, 1959. (iv) (a) N.A. (b) By dibbling. (c) 16 lb./ac. (d) 28" x 18". (e) N.A. (v) Nil. (vi) 320°F (late). (vii) Irrigated. (viii) 2 hoeings and 3 weedings. (ix) 17". (x) 3rd week of January, 1960.

2. TREATMENTS:
   Same as in exp. no. 57(MAE) type II on page 197.

3. DESIGN:
   (i) 3 x 2 Fact. confd. (ii) (a) 9 plots/block ; 6 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 33" x 16.5", (b) 29" x 11.3". (v) 2' x 2.5'. (vi) Yes.

4. GENERAL:
   (i) Normal. (ii) Nil. (iii) Kapas yield. (iv) (a) 1957—contd. (not conducted in 1958). (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS:
   (i) 1153 lb./ac. (ii) 161.7 lb./ac. (iii) Main effect of P is highly significant and effect of N is significant. (iv) Av. yield of kapas in lb./ac.

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<tr>
<td>K&lt;sub&gt;1&lt;/sub&gt;</td>
<td>1086</td>
<td>1168</td>
<td>1103</td>
<td>938</td>
<td>1119</td>
<td>1300</td>
<td>1119</td>
</tr>
<tr>
<td>K&lt;sub&gt;2&lt;/sub&gt;</td>
<td>1054</td>
<td>1161</td>
<td>1284</td>
<td>1085</td>
<td>1137</td>
<td>1276</td>
<td>1153</td>
</tr>
<tr>
<td>P&lt;sub&gt;0&lt;/sub&gt;</td>
<td>102</td>
<td>1053</td>
<td>1119</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P&lt;sub&gt;1&lt;/sub&gt;</td>
<td>1152</td>
<td>1078</td>
<td>1210</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P&lt;sub&gt;2&lt;/sub&gt;</td>
<td>1037</td>
<td>1325</td>
<td>1391</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

S.E. of marginal mean of N, P or K = 38.1 lb./ac.
S.E. of marginal mean of P = 31.1 lb./ac.
S.E. of body of N x P, N x K or P x K table = 66.0 lb./ac.
S.E. of body of N x F, P x F or K x F table = 55.5 lb./ac.

Crop: Cotton (Kharif).
Site: M.A.E. Farm, Sriganganagar.

Object: Type II—To study the effect of N and P on Cotton.

1. BASAL CONDITIONS:
   (i) (a) Cotton—Wheat—Gram. (b) and (c) N.A. (iii) (b) Desert soil. (b) N.A. (iii) 18.7.1957. (iv) (a) 2 harrowings, double discing cross wise and beaming twice. (b) By dibbling. (c) 12 lb./ac. (d) 27" x 12" to 18". (e) N.A. (v) Nil. (vi) 320°F (medium). (vii) Irrigated. (viii) 3 hoeings, 1 weeding and 2 thinnings. (ix) 3'. (x) 3.1.1958.
TREATMENTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>2nd year</td>
<td>M</td>
<td>M</td>
<td>O</td>
<td>O</td>
<td>M</td>
<td>M</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>3rd year</td>
<td>M</td>
<td>O</td>
<td>M</td>
<td>M</td>
<td>O</td>
<td>M</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

Notation used: O=Control, M=30 lb./ac. of N as A/S+30 lb./ac. of P₂O₅ as Super.

3. DESIGN:
(i) R.B.D.  (ii) (a) 8. (b) N.A.  (iii) 2.  (iv) (a) N.A.  (b) 1/III.4 ac.  (v) N.A.  (vi) Yes.

4. GENERAL:
(i) Very poor. (ii) Nil.  (iii) Kapas yield. (iv) (a) 1957—contd.  (b) Yes.  (c) N.A.  (v) to (vii) Nil.

5. RESULTS:
(i) 156 lb./ac.  (ii) 30.7 lb./ac.  (iii) Treatment difference is not significant. (iv) Av. yield of kapas in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>M</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>188</td>
<td>123</td>
</tr>
</tbody>
</table>

S.E./mean = 10.9 lb./ac.

Crop = Cotton.  
Centre = Banswara (c.f.).  
Ref = Rj. 58(SFT).  
Type = ‘M’.

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

1. BASAL CONDITIONS:
(i) (a) to (c) N.A.  (ii) Desert.  (iii) Nil.  (iv) and (v) N.A.  (vi) July, 1958.  (vii) Unirrigated.  (viii) and (ix) N.A.  (x) November—December, 1958.

2. TREATMENTS:
0 =Control (no manure).  
n =25 lb./ac. of N as A/S.  
p =25 lb./ac. of P₂O₅ as Super.  
np =25 lb./ac. of N as A/S+25 lb./ac. of P₂O₅ as Super.  
k =25 lb./ac. of K₂O as Mur. Pot.  
nk =25 lb./ac. of N as A/S+25 lb./ac. of K₂O as Mur. Pot.  
npk =25 lb./ac. of N as A/S+25 lb./ac. of P₂O₅ as Super+25 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 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 acre.  (iv) Yes.

GENERAL:
(i) Satisfactory.  (ii) N.A.  (iii) Cotton yield.  (iv) (a) 1958—contd.  (b) N.A.  (v) As per design.  (vi) 98 (ii) Nil.
RESULTS:

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>91</td>
<td>58</td>
<td>-16</td>
<td>27.2</td>
<td>25</td>
<td>8</td>
<td>-16</td>
<td>25</td>
<td>27.2</td>
</tr>
</tbody>
</table>

No. of trials = 4.

Crop = Cotton.
Centre = Banswara (c.f.).

Ref. = Rj. 59(SFT).
Type = 'M'.

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

1. BASAL CONDITIONS:
   (i) (a) to (e) N.A. (ii) Red and black soil. (iii) Nil. (iv) and (v) N.A. (vi) July, 1959. (vii) Unirrigated. (viii) and (ix) N.A. (x) November—December, 1959.

2. TREATMENTS:
   0 = Control (no manure).
   n = 25 lb./ac. of N as A/S.
   p = 20 lb./ac. of P\textsubscript{2}O\textsubscript{5} as Super.
   np = 25 lb./ac. of N as A/S + 20 lb./ac. of P\textsubscript{2}O\textsubscript{5} as Super.
   k = 20 lb./ac. of K\textsubscript{2}O as Muri. Pot.
   nk = 25 lb./ac. of N as A/S + 20 lb./ac. of K\textsubscript{2}O as Muri. Pot.
   pk = 20 lb./ac. of P\textsubscript{2}O\textsubscript{5} as Super + 20 lb./ac. of K\textsubscript{2}O as Muri. Pot.
   npk = 25 lb./ac. of N as A/S + 20 lb./ac. of P\textsubscript{2}O\textsubscript{5} as Super + 20 lb./ac. of K\textsubscript{2}O as Muri. Pot.

3. DESIGN and 4. GENERAL:
   Same as in expt. no. 58(SFT) type A cotton crop on page 199.

RESULTS:

<table>
<thead>
<tr>
<th>Effect</th>
<th>n</th>
<th>p</th>
<th>k</th>
<th>S.E.</th>
<th>np</th>
<th>nk</th>
<th>pk</th>
<th>npk</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. response in lb./ac.</td>
<td>107</td>
<td>41</td>
<td>33</td>
<td>17.3</td>
<td>0</td>
<td>16</td>
<td>-8</td>
<td>-8</td>
<td>14.8</td>
</tr>
</tbody>
</table>

Control mean = 379 lb./ac. and no. of trials = 6.

Crop = Cotton.
Centre = Banswara (c.f.).

Ref. = Rj. 58(SFT).
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 and black soil. (iii) Nil. (iv) and (v) N.A. (vi) July—1958. (vii) Unirrigated. (viii) and (ix) N.A. (x) November and December, 1958.

2. TREATMENTS:
   0 = Control (no manure).
   n\textsubscript{1} = 25 lb./ac. of N as A/S.
   n\textsubscript{2} = 50 lb./ac. of N as A/S.
   n\textsubscript{3} = 25 lb./ac. of N as Urea.
   n\textsubscript{4} = 50 lb./ac. of N as Urea.
   n\textsubscript{5} = 25 lb./ac. of N as C/A/N.
   n\textsubscript{6} = 50 lb./ac. of N as C/A/N.

3. DESIGN and 4. GENERAL:
   Same as in expt. no. 58(SFT) type A on cotton crop on page 199.
5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n₁</th>
<th>n₂</th>
<th>n₁'</th>
<th>n₂'</th>
<th>n₁''</th>
<th>n₂''</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>346</td>
<td>411</td>
<td>510</td>
<td>428</td>
<td>535</td>
<td>420</td>
<td>527</td>
</tr>
</tbody>
</table>

G.M. = 454 lb./ac.; S.E. = 18.0 lb./ac. and no. of trials = 6.

Crop :- Cotton.
Centre :- Banswara (C.F.).
Object :- To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A.  (ii) Red and black soil.  (iii) Nil.  (iv) and (v) N.A.  (vi) July, 1959.  (vii) Unirrigated.
   (viii) and (ix) N.A.  (x) November—December, 1959.

2. TREATMENTS:
   0 = Control (no manure).
   n₁ = 40 lb./ac. of N as A/S.
   n₂ = 80 lb./ac. of N as A/S.
   n₁' = 40 lb./ac. of N as Urea.
   n₂' = 80 lb./ac. of N as Urea.
   n₁'' = 40 lb./ac. of N as C/A/N.
   n₂'' = 80 lb./ac. of N as C/A/N.

3. DESIGN and 4. GENERAL:
   Same as in exp. no. 58(SFT) type A cotton crop on page 199.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n₁</th>
<th>n₂</th>
<th>n₁'</th>
<th>n₂'</th>
<th>n₁''</th>
<th>n₂''</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>321</td>
<td>387</td>
<td>444</td>
<td>420</td>
<td>453</td>
<td>387</td>
<td>502</td>
</tr>
</tbody>
</table>

G.M. = 416 lb./ac.; S.E. = 12.2 lb./ac. and no. of trials = 6.

Crop :- Cotton (Kharif).
Site :- Govt. Agri. Farm, Sriganganagar.
Object :- To study the beneficial effect of mixed cropping of cotton and Moth in the control of 'Root rot' disease of Cotton.

1. BASAL CONDITIONS:
   (i) (a) N.A.  (b) Cotton.  (c) N.A.  (ii) (a) Sandy loam.  (b) N.A.  (iii) to (v) N.A.  (vi) local.  (vii) to (x) N.A.

2. TREATMENTS:
   T₁ = Cotton only and T₂ = Moth sown between cotton rows.

3. DESIGN:
   (i) R.B D.  (ii) (a) 2.  (b) N.A.  (iii) 12.  (iv) (a) and (b) 18'×12'.  (v) Nil.  (vi) Yes.

4. GENERAL:
   (i) and (ii) N.A.  (iii) Kupas yield.  (iv) to (vii) N.A.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>n₁</th>
<th>n₂</th>
<th>n₁'</th>
<th>n₂'</th>
<th>n₁''</th>
<th>n₂''</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>742</td>
<td>200.8</td>
<td>200.8</td>
<td>200.8</td>
<td>200.8</td>
<td>200.8</td>
<td>200.8</td>
</tr>
</tbody>
</table>

G.M. = 742 lb./ac.; S.E. = 200.8 lb./ac. and no. of trials = 6.

Crop :- Cotton (Kharif).
Site :- Govt. Agri. Farm, Sriganganagar.
Object :- To study the beneficial effect of mixed cropping of cotton and Moth in the control of 'Root rot' disease of Cotton.
Crop: Cotton.  
Site: Govt. Agri. Farm, Tabiji.  
Ref: Rj. 55(20).  
Type: 'C'.

Object:—To study the effect of different cultural practices on the yield of Cotton.

1. BASAL CONDITIONS:
   (i) (a) Nil.  (b) and (c) N.A.  (ii) (a) Sandy loam.  (b) N.A.  (iii) 29.6.1955.  (iv) (a) N.A.  (b) As per treatments.  (c) N.A.  (d) As per treatments.  (e) N.A.  (v) N.A.  (vi) Desi.  (vii) Irrigated.  (viii) and (ix) N.A.  (x) 25.5.1956.

2. TREATMENTS:
   3 cultural practices: $G_1$ = Broad cast, $G_2$ = Lines 1' apart, and $G_3$ = Lines 1½' apart.

3. DESIGN:
   (i) R.B.D.  (ii) (a) 3.  (b) N.A.  (iii) 4.  (iv) (a) 36'×19'.  (b) 33'×16½'.  (v) 1½'×11½'.  (vi) Yes.

4. GENERAL:
   (i) N.A.  (ii) Nil.  (iii) Kapas yield.  (iv) (a) and (b) Nil.  (c) Nil  (v) to (vii) Nil.

5. RESULTS:
   (i) 97 lb./ac.  (ii) 61·6 lb./ac.  (iii) Treatment differences are not signficant.  (iv) Av. yield of kapas in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>870</td>
<td>613</td>
<td>613</td>
</tr>
</tbody>
</table>

S.E./mean = 30.8 lb./ac.

Crop: Cotton.  
Site: Govt. Agri. Farm, Tabiji.  
Ref: Rj. 55(24).  
Type: 'C'.

Object:—To study the effect of different spacings on the yield of Cotton.

1. BASAL CONDITION:
   (i) (a) No.  (b) and (c) N.A.  (ii) (a) Sandy loam.  (b) N.A.  (iii) 28.6.1955.  (iv) (a) to (c) N.A.  (d) As per treatments.  (v) N.A.  (vi) American (late).  (vii) Unirrigated.  (viii) Nil.  (ix) N.A.  (x) 21,22.7.1956.

2. TREATMENTS:
   4 spacings: $S_1$ = 2'×1½', $S_2$ = 2'×2', $S_3$ = 2½'×2', and $S_4$ = 2½'×2½'.

3. DESIGN:
   (i) R.B.D.  (ii) (a) 4.  (b) N.A.  (iii) 6.  (iv) (a) and (b) 30'×16½'.  (v) Nil.  (vi) Yes.

1. GENERAL:
   (i) Good.  (ii) N.A.  (iii) Kapas yield.  (iv) (a) and (b) Nil.  (c) Nil  (v) to (vii) Nil.

5. RESULTS:
   (i) 96 lb./ac.  (ii) 41.0 lb./ac.  (iii) Treatment differences are not significant.  (iv) Av. yield of kapas in lb./ac.
Crop: Cotton (Kharif).

Site: Govt. Agri. Farm, Srigaonagar.

Object: To work out spray schedule for the control of Cotton jassids.

1. BASAL CONDITIONS:
   (i) (a) Nil (b) Sugarcane (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 25.5.1959. (iv) (a) 4 ploughings. (b) N.A. (c) 6 to 7 lb/ac. (d) Row to row 3'. (e) N.A. (v) N.A. (vi) 320-F. (vii) Irrigated. (viii) 2 hoeings and weedings. (ix) and (x) N.A.

2. TREATMENTS:
   4 fungicidal treatments: F₀ = Control, F₁ = B.H.C. 0.25% spray, F₂ = D.D.T 0.25% spray and F₃ = Endrin 0.05% spray.

3. DESIGN:
   (i) R.B.D. (ii) 4. (b) N.A. (iii) 3. (iv) and (v) N.A. (vi) Yes.

4. GENERAL:
   (i) Satisfactory. (ii) Root rot and other minor pests of cotton. (iii) Yield of cotton. (iv) to (vii) N.A.

5. RESULTS:
   (i) 97.9 lb/ac. (ii) 114.4 lb/ac. (iii) Treatment differences are not significant. (iv) Av. yield of kapas in lb/ac.

   Treatment
   Av. yield 922 1066 943 984

   S.E./mean = 66.05 lb/ac.

Crop: Cotton (Kharif).

Site: Govt. Agri. Farm, Srigaonagar.

Object: To work out a spray schedule for the control of Cotton boll worm.

1. BASAL CONDITIONS:
   (i) (a) Sugarcane—Cotton. (b) Sugarcane. (c) 40 lb/ac. of N. (ii) (a) Sandy loam. (b) N.A. (iii) 25.5.1959. (iv) (a) 4 ploughings. (b) N.A. (c) 6 to 7 lb/ac. (d) Row to row 3'. (e) N.A. (v) N.A. (vi) 3.0—F. (vii) Irrigated. (viii) 3 weedings. (ix) and (x) N.A.

2. TREATMENTS and 3. DESIGN:
   Same as in expt. no. 59 (55) above.

4. GENERAL:
   (i) Lack of proper moisture at the time of sowing. Heterogeneity of soil. (ii) Root rot disease of cotton. (iii) Yield of kapas. (iv) to (vii) N.A.

5. RESULTS:
   (i) 654 lb/ac. (ii) 148.9 lb/ac. (iii) Treatment differences are not significant. (iv) Av. yield of kapas in lb/ac.

   Treatment
   Av. yield 638 631 706 641

   S.E./mean = 85.9 lb/ac.
Crop - Groundnut.

Site - Govt. Agri. Farm, Bassi.

Object: - To study the effect of different sources and levels of P on the yield of Groundnut.

1. BASAL CONDITIONS:

   (i) (a) No. (b) Wheat. (c) Nil. (ii) (a) Yellow gray soils of Gangetic plain, alluvium sandy loam. (b) N.A. (iii) 22.7.1954. (iv) (a) to (e) N.A. (v) N.A. (vi) Local (medium). (vii) Unirrigated. (viii) and (ix) N.A. (x) 20.11.1954.

2. TREATMENTS:

   All combinations of (1) and (2)+a control.
   (I) 2 sources of P₂O₅: S₁=Super and S₂=B.M.
   (2) 3 levels of P₂O₅: P₁=50, P₂=100 and P₃=150 lb./ac.

3. DESIGN:

   (i) R.B.D. (ii) 7. (b) N.A. (iii) 4. (iv) (a) 30'x24'. (b) 24'x18'. (v) 3'x3'. (vi) Yes.

4. GENERAL:

   (i) Good. (ii) Nil. (iii) Yield data per plot. (iv) (a) 1952—contd. (b) No. (c) Nil. (v) (a) Durgapur. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

   (i) 2272 lb./ac. (ii) 439.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pod in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>F₁</th>
<th>F₂</th>
<th>F₃</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>S₁</td>
<td>2107</td>
<td>2200</td>
<td>2390</td>
<td>2231</td>
</tr>
<tr>
<td>S₂</td>
<td>2422</td>
<td>2229</td>
<td>2512</td>
<td>2388</td>
</tr>
<tr>
<td>Mean</td>
<td>2264</td>
<td>2214</td>
<td>2451</td>
<td>2310</td>
</tr>
</tbody>
</table>

S.E. of S marginal mean = 126.8 lb./ac.
S.E. of P marginal mean = 155.3 lb./ac.
S.E. of body of table or control mean = 219.7 lb./ac.
Crop: Groundnut.  
Site: Govt. Agri. Farm, Bassi.

Object: To study the effect of different sources and levels of P on the yield of Groundnut.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Wheat. (c) No. (ii) (a) Sandy loam of Gangetic plain. (b) N.A. (iii) 12.7.1956. (iv) (a) 4 to 5 ploughings. (b) N.A. (c) 1 md./ac. (d) 9' between rows. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) 12.11.1956.

2. TREATMENTS:
   Same as in exp. no. 54(11) on page 204.

3. DESIGN:
   (i) R.B.D. (ii) 7. (b) N.A. (iii) 30’x21’. (b) 24’x15’. (v) 3’x3’. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of pod. (iv) (a) 1952—contd. (b) N.A. (c) Nil. (d) Durgapur. (b) N.A. (v) and (vi) Nil.

5. RESULTS:
   (i) 2965 lb./ac  (ii) 159.7 lb./ac.  (iii) None of the effects is significant. (iv) Av. yield of pod in lb./ac.

   Control = 3096 lb./ac.

<table>
<thead>
<tr>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>2989</td>
<td>3155</td>
<td>3015</td>
</tr>
<tr>
<td>S2</td>
<td>3132</td>
<td>2514</td>
<td>2792</td>
</tr>
<tr>
<td>Mean</td>
<td>3061</td>
<td>2835</td>
<td>2936</td>
</tr>
</tbody>
</table>

S.E. of S marginal mean = 242.4 lb./ac.
S.E. of P marginal mean = 29.6 lb./ac.
S.E. of body of P x S table or control mean = 419.9 lb./ac.

Crop: Groundnut.  
Site: Govt. Agri. Farm, Bassi.

Object: To study the effect of different sources and levels of P on the yield Groundnut.
1. **BASAL CONDITIONS**

   (i) (a) Groundnut—Wheat. (b) and (c) N.A.  (ii) (a) Yellow alluvium soil of Gangetic plain; sandy loam. (b) N.A.  (iii) 25.7.1955. (iv) (a) to (c) N.A.  (v) Nil.  (vi) Local (medium).  (vii) Unirrigated.  (viii) Nil.  (ix) N.A.  (x) 31.10.1955.

2. **TREATMENTS**

   Same as in expt. no. 54(11) on page 205.

   Fertilizers applied by spraying before sowing.

3. **DESIGN**

   (i) R.B.D.  
   (ii) (a) 7.  
   (b) N.A.  
   (iii) 4.  
   (iv) (a) 26'x22'.  
   (b) 24'x20'.  
   (v) 1'x1'.  
   (vi) Yes.

4. **GENERAL**

   Same as in expt. no. 56(18) on page 205.

5. **RESULTS**

   (i) 2157 lb./ac.  
   (ii) 662.2 lb./ac.  
   (iii) None of the effects is significant.  
   (iv) Av. yield of pod in lb./ac.

   \[
   \text{Control} = 2212 \text{ lb./ac.}
   \]

   \[
   \begin{array}{cccc|c}
   & P_1 & P_2 & P_3 & \text{Mean} \\
   S_1 & 2089 & 2607 & 2734 & 2477 \\
   S_2 & 2250 & 1803 & 2102 & 2052 \\
   \text{Mean} & 2169 & 2205 & 2418 & 2264 \\
   \end{array}
   \]

   S.E. of P marginal mean = 234.1 lb./ac.

   S.E. of S marginal mean = 191.2 lb./ac.

   S.E. of body of table = 351.1 lb./ac.

**Crop:** Groundnut.

**Ref:** Rj. 56(12).

**Site:** Govt. Agri. Farm, Bassi.

**Type:** 'M'.

Object:—To study the effect of different sources and levels of P on the yield of Groundnut.

1. **BASAL CONDITIONS**

   (i) (a) No.  
   (b) and (c) N.A.  
   (ii) (a) Sandy loam of Gangetic plain.  
   (b) N.A.  
   (iii) 12.7.1956.  
   (iv) (a) to (e) N.A.  
   (v) Nil.  
   (vi) Local.  
   (vii) Unirrigated.  
   (viii) Nil.  
   (ix) N.A.  
   (x) 13.11.1956.

2. **TREATMENTS**

   Same as in expt. no. 54(11) on page 204.

   Fertilizers sprayed at the time of cultivation.

3. **DESIGN**

   (i) R.B.D.  
   (ii) (a) 7.  
   (b) N.A.  
   (iii) 4.  
   (iv) (a) 24'x15'.  
   (b) 22'x13'.  
   (v) 1'x1'.  
   (vi) Yes.

4. **GENERAL**

   Same as in expt. no. 56(18) on page 205.

5. **RESULTS**

   (i) 1871 lb./ac.  
   (ii) 42.0 lb./ac.  
   (iii) Main effect of P, interaction P×S and 'control vs. rest' are highly significant.  
   (iv) Av. yield of pod in lb./ac.
Crop :- Groundnut.  
Site :- Govt. Agri. Farm, Durgapura.

Object :- To study the effect of different sources and levels of P on the yield of Groundnut.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy loam of Gangetic plain. (b) N.A. (iii) 10.7.1956. (iv) (a) 4 to 5 ploughings. (b) N.A. (c) 1 md./ac. (d) 9' between rows. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) and (ix) N.A. (x) 13.11.1956.

2. TREATMENTS:
   Same as in expt. no. 54(11) on page 204.

3. DESIGN:
   (i) R.B.D. (ii) 7. (b) N.A. (iii) 4. (iv) (a) 30'X24'. (b) 24'X18'. (v) 3'X3'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of pod. (iv) (a) 1951—contd. (b) N. (c) Nil. (v) (a) Bassi. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:
   (i) 421 lb./ac. (ii) 99.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pod in lb./ac.

    Control = 421 lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>P_1</th>
<th>P_2</th>
<th>P_3</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>S_1</td>
<td>408</td>
<td>434</td>
<td>421</td>
<td>421</td>
</tr>
<tr>
<td>S_2</td>
<td>424</td>
<td>418</td>
<td>424</td>
<td>422</td>
</tr>
<tr>
<td>Mean</td>
<td>416</td>
<td>426</td>
<td>422</td>
<td>421</td>
</tr>
</tbody>
</table>

S.E. of P marginal mean = 35.1 lb./ac.
S.E. of S marginal mean = 28.6 lb./ac.
S.E. of body of P×S table or control mean = 49.6 lb./ac.

Crop :- Groundnut (Kharif).
Site :- Govt. Agri. Farm, Durgapura.

Object :- To study the efficacy of Aldrin for control of termites.
1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Bajra. (c) A/S. (ii) (a) Sandy loam. (b) N.A. (iii) 15.7.1959. (iv) (a) 4 ploughings. (b) N.A. (c) 1.25 md/ac. (d) and (e) N.A. (v) and (vi) N.A. (vii) Unirrigated. (viii) to (x) N.A.

2. TREATMENTS:
   Two insecticidal treatments: T₀ = Control (8 plots) and T₁ = Aldrin at 1.5 lb/ac.

3. DESIGN:
   (i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 33' X 16'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) N.A. (b) Nil. (iii) Yield of pod. (iv) to (vii) N.A.

5. RESULTS:
   (i) 138 lb/ac. (ii) 213 lb/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of pod in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1447</td>
<td>985</td>
</tr>
</tbody>
</table>

S.E./mean T₀ = 123 lb/ac.
S.E./mean T₁ = 43.5 lb/ac.

---

Crop: Groundnut (Kharif).
Site: Govt. Agri. Farm, Durgapura.

Object: To determine the relative efficacy of seed dressing fungicides in relation to germination and yield of Groundnut.

1. BASAL CONDITIONS:
   (i) (a) and (b) Moong—Potato. (c) 50 lb/ac. of A/S. (ii) (a) Sandy loam. (b) N.A. (iii) 26.7.1959. (iv) (a) 4 ploughings. (b) N.A. (c) N.A. (d) Row to row H'. (e) N.A. (v) N.A. (vi) R.S.—1. (vii) Unirrigated. (viii) to (x) N.A.

2. TREATMENTS:
   8 fungicidal treatments: T₀ = Control, T₁ = Agrosan G.N. at 9 tolas/md., T₂ = Ceresan at 6 tolas/md., T₃ = Tylus at 6 tolas/md., T₄ = Lunasan at 6 tolas/md., T₅ = Hervasan at 6 tolas/md., T₆ = Ceresan at 9 tolas/md. and T₇ = Sulphur at 12 tolas/md.

3. DESIGN:
   (i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) and (b) 20' X 6'. (v) Nil. (vi) Yes.

4. GENERAL:
   (i) and (ii) N.A. (iii) Yield of pod. (iv) to (vii) N.A.

5. RESULTS:
   (i) 837 lb/ac. (ii) 207.4 lb/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of pod in lb/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T₀</th>
<th>T₁</th>
<th>T₂</th>
<th>T₃</th>
<th>T₄</th>
<th>T₅</th>
<th>T₆</th>
<th>T₇</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>469</td>
<td>855</td>
<td>1119</td>
<td>734</td>
<td>628</td>
<td>734</td>
<td>1444</td>
<td>711</td>
</tr>
</tbody>
</table>

S.E./mean = 84.7 lb/ac.

---

Crop: Groundnut (Kharif).
Site: Govt. Agri. Farm, Sawai Madhopur.

Object: To determine the relative efficacy of seed dressing fungicides in relation to germination and yield of Groundnut.

---

Crop: Groundnut (Kharif).
Site: Govt. Agri. Farm, Durgapura.

Ref: Rj. 59(3).
Type: 'D'.

Ref: Rj. 59(2).
Type: 'D'.

Object: To determine the relative efficacy of seed dressing fungicides in relation to germination and yield of Groundnut.
1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 27.7.1959. (j) (a) 3 ploughings. (b) N.A. (c) N.A. (d) Row to row 1½'. (e) N.A. (f) N.A. (vi) Local. (vii) Unirrigated. (viii) and (ix) N.A. (x) 24.11.1959.

2. TREATMENTS:
   8 fungicidal treatments: $T_0$ - Control, $T_1$ = Agroasan G.N. at 9 tolas/md., $T_2$ = Geresan at 6 tolas/md., $T_3$ = Tilor at 6 tolas/md., $T_4$ = Lipasan at 6 tolas/md., $T_5$ = Harvasep at 6 tolas/md., $T_6$ = Fomasan at 9 tolas/md., and $T_7$ = Sulphur at 12 tolas/md.

3. DESIGN and 4. GENERAL:
   Same as in exp. no. 59(3) on page 208.

5. RESULTS:
   (i) 1777 lb./ac. (ii) 474.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of pod in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>$T_0$</th>
<th>$T_1$</th>
<th>$T_2$</th>
<th>$T_3$</th>
<th>$T_4$</th>
<th>$T_5$</th>
<th>$T_6$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>1225</td>
<td>1898</td>
<td>2049</td>
<td>2027</td>
<td>1739</td>
<td>1785</td>
<td>1724</td>
</tr>
<tr>
<td>S.E./mean =</td>
<td>193.6 lb./ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

1. BASAL CONDITIONS:
   (i) (a) No. (b) and (c) N.A. (ii) (a) Sandy desert soil. (b) N.A. (iii) Last week of July, 1954. (iv) (a) to (e) N.A. (v) Nil. (vi) Local (medium). (vii) Unirrigated. (viii) and (ix) N.A. (x) 10.11.1954.

2. TREATMENTS:
   16 manurial treatments: $M_0$ = Control, $M_1$ = 10 lb./ac. of N as A, $M_2$ = 20 lb./ac. of N as A/S, $M_3$ = 30 lb./ac. of N as A/S, $M_4$ = 10 lb./ac. of N as oil cake, $M_5$ = 20 lb./ac. of N as oil cake, $M_6$ = 30 lb./ac. of N as oil cake, $M_7$ = 10 lb./ac. of N as P.Y.M., $M_8$ = 20 lb./ac. of N as P.Y.M., $M_9$ = 30 lb./ac. of N as E.Y.R., $M_{10}$ = 30 lb./ac. of N as E.Y.R., $M_{11}$ = 11.2 lb./ac. of N as E.Y.R., $M_{12}$ = 11.2 lb./ac. of N as E.Y.R., $M_{13}$ = 11.2 lb./ac. of N as E.Y.R., and $M_{14}$ = 11.2 lb./ac. of N as E.Y.R.

Fertilizers applied by spraying before sowing.

3. DESIGN:
   (i) R.B.D. (ii) (b) N.A. (iii) 3. (iv) (a) 15’3” × 21”. (b) 12’3” × 18”. (v) 1½’ × 1½’. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) No. (v) and (vi) Nil.

5. RESULTS:
   (i) 77 lb./ac. (ii) 33.7 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>$M_0$</th>
<th>$M_1$</th>
<th>$M_2$</th>
<th>$M_3$</th>
<th>$M_4$</th>
<th>$M_5$</th>
<th>$M_6$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>47</td>
<td>50</td>
<td>56</td>
<td>72</td>
<td>55</td>
<td>83</td>
<td>141</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>19.5 lb./ac.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment</th>
<th>$M_7$</th>
<th>$M_8$</th>
<th>$M_9$</th>
<th>$M_{10}$</th>
<th>$M_{11}$</th>
<th>$M_{12}$</th>
<th>$M_{13}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>83</td>
<td>119</td>
<td>83</td>
<td>63</td>
<td>106</td>
<td>45</td>
<td>111</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>-------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Crop: Linseed.  
Object: To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASEL CONDITIONS:
   (i) (a) to (c) N.A.  (ii) Medium black soil.  (iii) Nil.  (iv) and (v) N.A.  (vi) October 1957.  (vii) Unirrigated.  (viii) and (ix) N.A.  (x) April 1958.

2. TREATMENTS:
   \( O = \) Control (no manure).
   \( n_1' = 20 \text{ lb./ac. of N as Urea.} \)
   \( n_2' = 40 \text{ lb./ac. of N as Urea.} \)
   \( n_1'' = 20 \text{ lb./ac. of N as A/S/N.} \)
   \( n_2'' = 40 \text{ lb./ac. of N as A/S/N.} \)
   \( n_3''' = 20 \text{ lb./ac. of N as C/A/N.} \)
   \( n_4''' = 40 \text{ lb./ac. of N as C/A/N.} \)

3. DESIGN and GENERAL:
   Same as in exp. no. 59(SFT) type A Mustard crop on page 173.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>( n_1' )</th>
<th>( n_2' )</th>
<th>( n_1'' )</th>
<th>( n_2'' )</th>
<th>( n_3''' )</th>
<th>( n_4''' )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>263</td>
<td>395</td>
<td>370</td>
<td>329</td>
<td>387</td>
<td>362</td>
</tr>
</tbody>
</table>

\[ G.M. = 353 \text{ lb./ac.} \]
\[ S.E. = 1.75 \text{ lb./ac. and no. of trials} = 11. \]

Crop: Linseed (Rabi).  
Ref: Rj. 59(52).  
Object: To study the efficacy of different insecticides for control of termites in Linseed.

1. BASEL CONDITIONS:
   (i) (a) Fallow—Linseed—Fallow—Gram.  (b) Gram.  (c) Nil.  (ii) (a) and (b) N.A.  (iii) 21.10.1959.  (iv) (a) 4 ploughings.  (b) N.A.  (c) 21 spr./ac.  (d) Row to row 11'.  (e) N.A.  (f) N.A.  (vi) T=65.  (vii) Unirrigated.  (viii) Weeding and thinning once.  (ix) and (x) N.A.

2. TREATMENTS:
   5 Insecticidal treatments: \( T_0 = \) Control, \( T_1 = \) B.H.C. spray at 3 lb./ac., \( T_2 = \) D.D.T. spray at 3 lb./ac., \( T_3 = \) Aldrin spray at 1 lb./ac., and \( T_4 = \) Dieldrin spray at 1 lb./ac. Each insecticide is dissolved in 40 gallons of water/ac.

3. DESIGN:
   (i) R.B.D.  (ii) (a) 5.  (b) N.A.  (iii) 3.  (iv) (a) 36'x191'.  (b) 33'x161'.  (v) 14'x111'.  (vi) Yes.

4. GENERAL:
   (i) N.A.  (ii) Wilt disease.  (iii) Yield of seed.  (iv) to (vii) N.A.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>( T_0 )</th>
<th>( T_1 )</th>
<th>( T_2 )</th>
<th>( T_3 )</th>
<th>( T_4 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Av. yield</td>
<td>595</td>
<td>6007</td>
<td>9628</td>
<td>7324</td>
<td>8229</td>
</tr>
</tbody>
</table>

\[ S.E./mean = 16.6 \text{ lb./ac.} \]
Crop: Fodder Jowar (Kharif).
Site: Govt. Agri. Farm, Mandore.
Ref: Rj. 56(11).
Type: 'M'.

Object: To study the effect of Non Jowar Fodder.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Guar. (c) Nil. (ii) (a) Sandy desert. (b) N.A. (iii) 16.7.1956. (iv) (a) 2 ploughings.
   (b) N.A. (c) 8 to 10 Ins./ac. (d) 9' x 6'. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Weeding.
   (ix) N.A. (x) 20.10.1956.

2. TREATMENTS:
   M_0 = Control, M_1 = 1 ton/ac. of F.Y.M., M_2 = M_1 + 20 lb./ac. of N as A/S, M_3 = M_1 + 30 lb./ac. of N as A/S,
   M_4 = M_1 + 40 lb./ac. of N as A/S, M_5 = M_1 + 20 lb./ac. of N as Urea, M_6 = M_1 + 30 lb./ac. of N as Urea,
   M_7 = M_1 + 40 lb./ac. of N as Urea. Fertilizers sprayed at the time of cultivation.

3. DESIGN:
   (i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) 27'3" x 21'. (b) 24'3" x 18'. (v) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of fodder. (iv) (a) N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS:
   (i) 4817 lb./ac. (ii) 2520 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of fodder
   in lb./ac.
   Treatment: M_0 M_1 M_2 M_3 M_4 M_5 M_6 M_7
   Av. yield: 2572 3223 5777 4765 6857 4492 5143 569
   S.E./mean = 146.0 lb./ac.

---

Crop: Fodder Jowar (Kharif).
Site: Govt. Agri. Exptl. Farm, Mandore
Ref: Rj. 57(1).
Type: 'M'.

Object: To study the effect of different doses of N on the yield of Jowar Fodder.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy desert. (b) N.A. (iii) 9.7.1957. (iv) (a) to (e) N.A.

2. TREATMENTS:
   All combinations of (1) and (2) + 2 extra treatments.
   (1) 3 sources of N: S_1 = A/S, S_2 = A/S/N and S_3 = Urea.
   (2) 2 levels of N: N_1 = 20 and N_2 = 40 lb./ac.
   2 extra treatments: T_0 = Control and T_1 = 5000 lb./ac. of F.Y.M.
   Fertilisers were sprayed at the time of cultivation.

3. DESIGN:
   (i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 30'3" x 18'. (b) 24'3" x 12'. (v) 3' x 3'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of fodder. (iv) (a) 1957—N.A. (b) No. (c) Nil. (iv) to (vii) Nil.

5. RESULTS:
   (i) 4817 lb./ac. (ii) 2520 lb./ac. (iii) Only interaction M x N is highly significant. (iv) Av. yield of
   fodder in lb./ac.
212

\[ T_0 = 3235 \text{ lb./ac. and } T_1 = 3107 \text{ lb./ac.} \]

<table>
<thead>
<tr>
<th></th>
<th>( S_1 )</th>
<th>( S_2 )</th>
<th>( S_3 )</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>( N_1 )</td>
<td>5084</td>
<td>2670</td>
<td>3338</td>
<td>3697</td>
</tr>
<tr>
<td>( N_2 )</td>
<td>3384</td>
<td>6445</td>
<td>2816</td>
<td>4208</td>
</tr>
<tr>
<td>Mean</td>
<td>4224</td>
<td>4658</td>
<td>3077</td>
<td>3953</td>
</tr>
</tbody>
</table>

S.E. of S marginal mean = 548.1 lb./ac.
S.E. of N marginal mean = 447.4 lb./ac.
S.E. of body of table or T mean = 775.0 lb./ac.

Crop: Fodder Jowar (Khainj)
Site: Govt. Agri. Expt. Farm, Mandore.

Ref: Rj. 57 (2).
Type: *M*.

Object: To study the response of N in different forms on Jowar fodder.

1. BASAL CONDITIONS:

2. TREATMENTS:
   All combinations of (1) and (2) + 2 extra treatments.
   (1) 3 sources of N: \( S_1 = A/S, S_2 = A/S/N \) and \( S_3 = \text{Urea} \).
   (2) 2 levels of N: \( N_1 = 20 \) and \( N_2 = 40 \) lb./ac.
   Extra Treatment: T0=Control and \( T_1 = 5000 \) lb./ac. of F.Y.M.
   Treatments were mixed with earth and applied before sowing.

3. DESIGN:
   (i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 27'3''x15'. (b) 24'3''x12'. (v) 1'x1'. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of fodder. (iv) (a) 1957—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:
   (i) 3551 lb./ac. (ii) 1343 lb./ac. (iii) Only interaction M\( \times N \) is highly significant. (iv) Av. yield of fodder in lb./ac.

\[ T_0 = 2933 \text{ lb./ac. } T_1 = 3817 \text{ lb./ac.} \]

<table>
<thead>
<tr>
<th></th>
<th>( S_1 )</th>
<th>( S_2 )</th>
<th>( S_3 )</th>
<th>Mean</th>
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<tr>
<td>( N_1 )</td>
<td>4609</td>
<td>2421</td>
<td>3026</td>
<td>3352</td>
</tr>
<tr>
<td>( N_2 )</td>
<td>3154</td>
<td>5843</td>
<td>2607</td>
<td>3868</td>
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<tr>
<td>Mean</td>
<td>3882</td>
<td>4132</td>
<td>2816</td>
<td>3610</td>
</tr>
</tbody>
</table>

S.E. of S marginal mean = 474.9 lb./ac.
S.E. of N marginal mean = 367.7 lb./ac.
S.E. of body of table or control mean = 671.5 lb./ac.
Crop = Mustard + Wheat (Rabi).

Site = Govt. Agri. Farm, Bharatpur.

Ref = RJ. 59 (74).

Type = 'X'.

Object: To find out the most suitable mixture of Mustard and Wheat.

1. BASAL CONDITIONS:
   (i) (a) Fallow - Wheat + Mustard. (b) Fallow. (c) Nil. (d) N.A. (e) N.A. (f) 10.9.1959. (g) (h) 2 ploughings. (i) N.A. (j) 40 hrs/ha for wheat. (k) Wheat 9" and mustard 18" apart. (l) N.A. in mustard. (m) Wheat R.S.31-1; Mustard yellow. (n) Unirrigated. (o) One weeding and hoeing. (p) N.A. (q) 10.4.1960.

2. TREATMENTS:
   5 mixed cropping treatments: C1 = Mustard alone, C2 = Wheat alone, C3 = Mustard+Wheat (5% mixture of mustard), C4 = Mustard+Wheat (10% mixture of mustard) and C5 = Mustard+Wheat (20% mixture of mustard).

3. DESIGN:
   (i) L. Sq. (ii) S. (iii) 3. (iv) (a) 31½ × 91'. (b) 30' × 18'. (v) 9' × 9'. (vi) Yes.

4. GENERAL:
   (i) and (ii) N.A. (iii) Yield of grain and fodder. (iv) Yes.

5. RESULTS:
   (i) 458 lb./ac. (ii) 184.1 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

   Treatment   C1   C2   C3   C4   C5
   Av. yield 330  458  586
   S.E./mean = 65.1 lb./ac.