NATIONAL INDEX
OF
AGRICULTURAL
FIELD
EXPERIMENTS
VOL. 12 PART 1
RAJASTHAN
1948–53
PUBLISHED BY
INDIAN COUNCIL OF AGRICULTURAL RESEARCH
NEW DELHI
FOREWORD

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

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

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

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

NEW DELHI,
August 20, 1962.
A large number of agricultural field experiments on different problems is being conducted in the country by Central and State Governments, Research Institutes, Commodity Committees and other organisations engaged in agricultural research. In addition, a number of schemes involving field experimentation is sponsored by the Indian Council of Agricultural Research in different States. The absence of a unified record of the results of these various experiments has considerably handicapped planning of further research and development and has often led to duplication of efforts.

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

(i) the preparation of compendium of all the field experiments for the period 1935-53 and
(ii) the preparation of index cards for individual experiments from 1954 onwards.

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

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

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

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

This publication is the result of the co-operative endeavour of a large number of persons both at the Centre and in the States. I should particularly mention in this connection, guidance and help rendered in the formulation of the scheme by Dr. D.J. Finney F.R.S. of Aberdeen University, Scotland, during his stay at the Institute of Agricultural Research Statistics as an F.A.O. Statistical Expert in 1952-53.
At the Institute of Agricultural Research Statistics, the work under the scheme was carried out under the supervision and guidance of Shri T.P. Abraham, Assistant Statistical Adviser. Shri G.A. Kulkarni, Statistician, looked after the detailed working of the scheme. These officers have been largely responsible for the preparation of the manuscript of the compendium and it is a pleasure to thank them for the hard work they have put in for getting this compendium ready. Messrs O.P. Kathuria, B.V. Srikantiah, M.L. Sahni, B.P. Dyundi, S.D. Bal and P.K. Jain of the statistical staff of the Institute deserve special mention for their careful scrutiny of the data and preparation of the material for the compendium. Thanks are also due to Dr. Uttam Chand, Professor of Statistics, now with the Central Statistical Organisation, Shri K.S. Avadhany, Assistant Statistician, also now with the Central Statistical Organisation, and Shri K.C. Raut, Statistician in this office who were associated with the scheme in its initial stages.

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

V.G. Pande

Statistical Adviser

Institute of Agricultural Research Statistics

New Delhi,

August 16, 1962.

V.G. Pande

Statistical Adviser

Institute of Agricultural Research Statistics
### REGIONAL SUPERVISORS FOR THE NATIONAL INDEX OF FIELD EXPERIMENTS

<table>
<thead>
<tr>
<th>Region and Headquarters</th>
<th>Regional Supervisors</th>
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<tbody>
<tr>
<td><strong>1. Andhra Pradesh</strong> (Hyderabad)</td>
<td>Shri D.V.G. Krishnamoorthy, Deputy Director of Food Production, Andhra Pradesh. Shri Jagannath Rao, Joint Director of Agriculture (Research), Andhra Pradesh. Dr. Khadruddin Khan, Joint Director of Agriculture (Research), Andhra Pradesh. Dr. Wahruddin, Headquarters Deputy Director of Agriculture (Research), Andhra Pradesh.</td>
</tr>
<tr>
<td><strong>2. Assam, Manipur and Tripura (Shillong)</strong></td>
<td>Shri L.K. Handsique, Director of Agriculture, Assam. Shri S. Majid, Director of Agriculture, Assam. Dr. S.R. Barooah, Director of Agriculture, Assam.</td>
</tr>
<tr>
<td><strong>3. Bihar</strong> (Sabour)</td>
<td>Dr. R. Richaria, Principal, Agriculture College, Sabour. Shri R.S. Roy, Principal, Agriculture College, Sabour.</td>
</tr>
<tr>
<td><strong>4. Kerala</strong> (Trivandrum)</td>
<td>Shri N. Shankara Menon, Director of Agriculture, Kerala. Shri P.D. Nair, Director of Agriculture, Kerala.</td>
</tr>
<tr>
<td><strong>5. Madhya Pradesh</strong> (Gwalior)</td>
<td>Dr. T.R. Mehta, Principal, Agriculture College, Gwalior.</td>
</tr>
<tr>
<td><strong>6. Madras</strong> (Coimbatore)</td>
<td>Shri C.R. Sheshadri, Vice-Principal &amp; Secretary, Research Council, Agriculture College, Coimbatore. Shri P.A. Venkataraman, Vice-Principal &amp; Secretary, Research Council, Agriculture College, Coimbatore. Late Shri M. Bhavani Sankara Rao, Vice-Principal &amp; Secretary, Research Council, Agriculture College, Coimbatore. Shri T. Natarajan, Agronomist &amp; Secretary, Research Council, Agriculture College, Coimbatore. Shri A.H. Sarma, Extension Specialist &amp; Secretary, Research Council, Agriculture College, Coimbatore.</td>
</tr>
<tr>
<td><strong>7. Maharashtra &amp; Gujarat</strong> (Former Bombay Statistician, Department of Agriculture, State) (Poona)</td>
<td>Shri D.S. Ranga Rao, Poona.</td>
</tr>
</tbody>
</table>

Owing to transfers and other changes more than one Regional Supervisor have been shown against several states as these officers have acted as Regional Supervisors during different periods from 1955 to 1962.
<table>
<thead>
<tr>
<th>No.</th>
<th>State</th>
<th>Statistician/Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>Mysore (Bangalore)</td>
<td>Shri A. Anant Padmanabha Rau, State Statistician, Mysore State.</td>
</tr>
<tr>
<td>10.</td>
<td>Punjab, Jammu &amp; Kashmir and Himachal Pradesh (Chandigarh)</td>
<td>Shri P.S. Sahota, Statistician, Department of Agriculture, Punjab.</td>
</tr>
<tr>
<td>11.</td>
<td>Rajasthan (Jaipur)</td>
<td>Shri H.C. Kothari, Statistician, Department of Agriculture, Rajasthan.</td>
</tr>
<tr>
<td>12.</td>
<td>Uttar Pradesh (Lucknow)</td>
<td>Dr. K. Kushen, Chief Statistician to Govt. of U.P., Department of Agriculture, U.P.</td>
</tr>
<tr>
<td>13.</td>
<td>West Bengal (Calcutta)</td>
<td>Shri S.N. Mukherjee, Statistical Officer, Directorate of Agriculture, West Bengal.</td>
</tr>
</tbody>
</table>

Dr. S. Basu, Statistical Officer, Directorate of Agriculture, West Bengal.
ABBREVIATIONS COMMON TO EXPERIMENTS ON ANNUAL AND PERENNIAL CROPS AND EXPERIMENTS ON CULTIVATORS' FIELDS

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

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

Abbreviations adopted for States are as follows:

A.P. - Andhra Pradesh
As. - Assam
Bh. - Bihar
Dl. - Delhi
Gj. - Gujarat
H.P. - Himachal Pradesh
J.K. - Jammu & Kashmir
K. - Kerala
M. - Madras
Pb. - Punjab
Ph. - Punjab
Rj. - Rajasthan
Tr. - Tripura
U.P. - Uttar Pradesh
W.B. - West Bengal

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

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

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

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

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

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

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

Abbreviations used in the text of the experiments:

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

**BASAL CONDITIONS**

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

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

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

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

**DESIGN**

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

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

**B. For perennial crops**:
(i) Abbreviations for designs : C.R.D.—Completely Randomised Design ; R.B.D.—Randomised Block Design ; L. Sq.—Latin Square ; Confid.—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.
A. For annual crops:
(i) Crop conditions during growth with date of lodging, if any. 
(ii) Incidence of pests and diseases with control measures taken.
(iii) Quantitative observations taken.
(iv) In case of repetition in successive years—(a) from what year to what year, 
(b) whether treatments were assigned to the same plots in the same manner every year,
(c) reference to combined analysis, if any. 
(v) In case of repetition in other places,
(a) names of the places along with reference. 
(b) reference to combined analysis, if any. 
(vi) Abnormal occurrences like heavy rains, frost, storm etc., if any. 
(vii) Any other important information.

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

C. For experiments on cultivators' fields:
(i) Crop condition during growth. 
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(iii) Quantitative observations taken. 
(iv) In case of repetition in successive years—(a) from what year to what year, 
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(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>
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<tr>
<th>Sl No.</th>
<th>Name of Crop</th>
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<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>
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<td>Oryza sativa L.</td>
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<td>Dhan</td>
<td>Vaddu, Bhyama</td>
<td>Nel</td>
<td>Neilu</td>
<td>Bhattu</td>
<td>Bhat</td>
<td>Dangar</td>
<td>Bhat</td>
<td>Chehal</td>
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<tr>
<td>2</td>
<td>Wheat</td>
<td>Triticum Sativum</td>
<td>Gaum, Ghebu</td>
<td>Gam</td>
<td>Gaham</td>
<td>Godumalu</td>
<td>Kothumali</td>
<td>Gotta, Godumalu</td>
<td>Godhi</td>
<td>Gahu</td>
<td>Gahub</td>
<td>Gahub</td>
<td>Kani</td>
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<td>Juar</td>
<td>Jonna</td>
<td>Cholam</td>
<td>Cholam</td>
<td>Jola</td>
<td>Jowari; Jondla</td>
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<td>Sajja</td>
<td>Kambu</td>
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<td>Gom dhan</td>
<td>Bhutta</td>
<td>Marca</td>
<td>Makka</td>
<td>Cholam</td>
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<td>Chola</td>
<td>Boot</td>
<td>Sanagalu</td>
<td>Kadal Shilam</td>
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<td>Cheena</td>
<td>badam</td>
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<tr>
<td>11</td>
<td>Metha</td>
<td>Trigonella foenum-graecum</td>
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<td>Metha</td>
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</table>
RAJASTHAN STATE

1. GENERAL

Rajasthan State is located on the north-western border of India. It lies between 23°3' and 30°12' north latitudes and 69°00' and 78°17' east longitudes. The state is divided into 5 divisions and 26 districts for administrative purposes. The total area is 84.4 million acres of which the cultivated area is about 50%.

2. PHYSICAL FEATURES, CLIMATE AND SOILS

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 mere 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 shooting up to 50°C (122°F) and extremely cold in winter when at places, the temperature goes below the freezing point.

The soil of this region is 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 of pale yellow to brown in colour. The region south-east of Aravalis 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 Banas & Chambal. The climate of this region is milder in comparison to 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 Jhalwar district and parts of Udaipur division, loam in Bharatpur and Alwar districts. In parts of Udaipur division there are large forest areas in Durgapura and Banswara districts.

3. RAINFALL & IRRIGATION.

The annual rainfall varies from region to region from less than 1" to about 30". The State can be divided into 4 rainfall zones. The rainfall goes on decreasing from south-west to north-east. The normal seasonal rainfall figures for each zone are given in Table 1.

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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Jaisalmer</td>
<td>5.9</td>
<td>0.2</td>
<td>0.3</td>
<td>0.6</td>
<td>7.0</td>
</tr>
<tr>
<td>2. Barmer, Jodhpur, Bikaner, Ganganagar, Churu, Jhunjhunu, Nagaur, &amp; Pali</td>
<td>11.0</td>
<td>3.9</td>
<td>4.3</td>
<td>7.1</td>
<td>26.3</td>
</tr>
<tr>
<td>3. Jalore, Udaipur, Ajmer, Jaipur, Alwar, Sikar, Tonk, S. Madhopur, Bharatpur Bhilwara, Chittorgarh, Kotab, Bundi &amp; Durgapura.</td>
<td>20.5</td>
<td>0.8</td>
<td>0.6</td>
<td>1.0</td>
<td>22.9</td>
</tr>
<tr>
<td>4. Jhalwar, Sirohi &amp; Banswara.</td>
<td>33.1</td>
<td>1.6</td>
<td>0.3</td>
<td>0.6</td>
<td>35.6</td>
</tr>
</tbody>
</table>

State (simple average) | 17.6 | 1.6 | 1.4 | 2.3 | 22.9
Out of the total cultivated area of the State amounting to 43 million acres only 8% is irrigated through various sources. Of the total irrigated area in 1955-56, 21% was irrigated by canals, 13% by tanks and 64% by wells and 1% by other sources. Ganganagar district accounts at present for entire canal irrigated area. The districts of Jaisalmer, Bikaner, Churu and Barmer depend entirely on rainfall and have almost no sources for irrigation. The Rajasthan canal which when completed would be of great significance in changing the agricultural economy of the State.

Of the total gross irrigated area in the State, about 76% is devoted to foodgrains, 8% to cotton and the rest to others.

5. CROPPING PATTERN AND AGRICULTURAL PRODUCTION.

Almost all types of crops ranging from wet crops like Paddy, Sugarcane etc., to the dry crops like Bajra, Jowar etc. are grown in Rajasthan.

The area under different crops and the acre yields are given in Table 2 below. The distribution of crops is such that in the desert areas of Jodhpur and Bikaner division, Jhunjhunu and Sikar districts of Ajmer division Bajra is the only important crop while in the case of Kotah division Jowar is important. In Udaipur division there is preponderance of Maize. The Rabi crops are fairly well distributed throughout Rajasthan except in the desert area of Jodhpur and Bikaner divisions. The Cotton crop is concentrated in Ganganagar, Chittorgarh, Bhilwara, Udaipur and Jhalwar districts.

6. AGRICULTURAL STATIONS AND EXPERIMENTATION.

Agricultural research was organised on a proper basis only after the integration of the princely states. Research stations were established to cover the important agricultural regions in the state. A few agricultural experimental farms which had been in existence prior to the formation of the State were also utilized for the purpose of conducting research.

Tabular statement showing the details of each agricultural research station is appended.

The information on various items of the proforma prescribed by the Council were not maintained at the research stations. To meet this deficiency the State authorities have recently introduced a standardised proforma prescribed by the I.C.A.R. to include all the basic information relating to the experiments.
7. EXPERIMENTS FOR THE PERIOD 1941-53.

The total number of experiments conducted during the period 1941-53 is 116. The table below shows the break-up of the number according to crop and treatments tried.

**TABLE 3**

Distribution of experiments according to crops and type of treatments tried.

<table>
<thead>
<tr>
<th>Crops</th>
<th>M</th>
<th>MV</th>
<th>C</th>
<th>CV</th>
<th>D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Paddy</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>2. Wheat</td>
<td>41</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>7</td>
<td>56</td>
</tr>
<tr>
<td>3. Jowar</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>4. Bajra</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>5. Barley</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>6. Maize</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>7. Oilseeds</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>8. Pulses</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>9. Green Fodder</td>
<td>2</td>
<td></td>
<td>3</td>
<td>2</td>
<td>12</td>
<td>97</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>76</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>12</td>
<td>97</td>
</tr>
</tbody>
</table>

T.C.M. Trials on Cultivators' Fields

It is seen from the Table 3 above that nearly half of the experimental work was carried out on wheat which accounts for only about 8% of the area under the crop. Although Bajra and Jowar are major food crops accounting for 28% & 8% respectively of the area under crops only few experiments have been conducted on them, the amount of experimentation being less than 10% in each case. The same is true of pulses also.

Majority of the manurial experiments were planned to study the effect of nitrogen and phosphatic fertilizers. Factorial combinations of graded doses of nitrogen and phosphorous in the form of Ammonium Sulphate and Superphosphate respectively were included in these experiments.

The experimental design adopted was mostly Randomised Block design. The plot sizes generally ranged from about 1 cent to 14 cent and the number of replications varied from 3 to 6.
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of station</th>
<th>District and location</th>
<th>year of commencement</th>
<th>Major crops</th>
<th>Soil Type</th>
<th>Normal rainfall</th>
<th>Irrigation facilities</th>
<th>No. of experiments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alphanagar. (Private.)</td>
<td>Distt. Bundi.</td>
<td>N.A.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Paddy—4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total—20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total—7</td>
</tr>
<tr>
<td></td>
<td>Sri Ganganagar.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kotah</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total—13</td>
</tr>
<tr>
<td>Sl. No.</td>
<td>Name of station</td>
<td>District and location</td>
<td>Year of commencement</td>
<td>Major crops</td>
<td>Soil Type</td>
<td>Normal rainfall</td>
<td>Irrigation facilities</td>
<td>No. of experiments</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------</td>
<td>-----------------------</td>
<td>----------------------</td>
<td>------------------------------</td>
<td>---------------</td>
<td>------------------</td>
<td>-----------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 miles from Beawar Rly Stn.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total - 13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 miles from Jodhpur Rly. Stn.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total - 8</td>
</tr>
<tr>
<td>8.</td>
<td>Govt Agri. Farm, Merta. Farm</td>
<td>Nagaur (not working)</td>
<td>N.A.</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Bajra - 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 miles from Tabiji Rly. Stn.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total - 16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 miles from Rly. Stn. Udaipur.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total - 4</td>
</tr>
</tbody>
</table>
Crop: Paddy (Kharif).
Site: Cultivators' Farm, Alfanagar.

Object: To find out the effect of N and P₂O₅ applied alone and in combination.

1. BASAL CONDITIONS:

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 3 levels of N: \( N_0 = 0, N_1 = 20 \text{ lb./ac.}, \) and \( N_2 = 40 \text{ lb./ac.} \)
   (2) 3 levels of \( \text{P}_2\text{O}_5: \) \( P_0 = 0, P_1 = 20 \text{ and } P_2 = 40 \text{ lb./ac.} \)
   N as A/S and \( \text{P}_2\text{O}_5 \) as Super. Fertilizers sprayed at the time of cultivation.

3. DESIGN:
   (i) 3' Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 3'x16'. (b) 27'x10'. (v) 3' around. (vi) Yes.

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

5. RESULTS:
   (i) 1317 lb./ac.
   (ii) 174.4 lb./ac.
   (iii) None of the effects is 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>Mean.</th>
</tr>
</thead>
<tbody>
<tr>
<td>( P_0 )</td>
<td>1178</td>
<td>1368</td>
<td>1336</td>
<td>1294</td>
</tr>
<tr>
<td>( P_1 )</td>
<td>1336</td>
<td>1263</td>
<td>1475</td>
<td>1358</td>
</tr>
<tr>
<td>( P_2 )</td>
<td>1245</td>
<td>1263</td>
<td>1486</td>
<td>1298</td>
</tr>
<tr>
<td>Mean.</td>
<td>1220</td>
<td>1298</td>
<td>1432</td>
<td>1317</td>
</tr>
</tbody>
</table>

S.E. of any marginal mean = 57.3 lb./ac.
S.E. of body of table = 100.7 lb./ac.

Crop: Paddy (Kharif).
Site: Cultivators' Farm, Alfanagar.

Object: To find out the effect of N and \( \text{P}_2\text{O}_5 \) applied alone and in combination.

1. BASAL CONDITIONS:
   (i) (a) No. (b) Fallow. (c) No. (ii) (a) Medium black soil. (b) N.A. (iii) 28.8.52. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 3 levels of N: \( N_0 = 0, N_1 = 20 \text{ lb./ac.}, \) and \( N_2 = 40 \text{ lb./ac.} \)
   (2) 3 levels of \( \text{P}_2\text{O}_5: \) \( P_0 = 0, P_1 = 20 \text{ and } P_2 = 40 \text{ lb./ac.} \)
   N as A/S and \( \text{P}_2\text{O}_5 \) as Super. Fertilizers sprayed at cultivation before sowing.

3. DESIGN:
   (i) 3' Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) 36'x22'. (b) 30'x16'. (v) 3' around. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) No. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) and (vii) Nil.
5. RESULTS:
(i) 1589 lb./ac.
(ii) 139.1 lb./ac.
(iii) Only N and P₂O₅ effects are highly significant. Interaction is not significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>P₀</td>
<td>1153</td>
<td>1266</td>
<td>1446</td>
<td>1288</td>
</tr>
<tr>
<td>P₁</td>
<td>1401</td>
<td>1537</td>
<td>1831</td>
<td>1590</td>
</tr>
<tr>
<td>P₂</td>
<td>1650</td>
<td>1898</td>
<td>2124</td>
<td>1821</td>
</tr>
<tr>
<td>Mean</td>
<td>1401</td>
<td>1567</td>
<td>1800</td>
<td>1789</td>
</tr>
</tbody>
</table>

S.E. of any marginal mean = 56.6 lb./ac.
S.E. of body of table = 98.4 lb./ac.

Crop :- Paddy (Kharif).
Site :- Cultivators’ Farm, Alfanagar.
Object :- To find out the effect of N and P₂O₅ applied alone and in combination.

1. BASAL CONDITIONS:
(i) (a) No. (b) Paddy. (c) N.A. (ii) (a) Clay. (b) N.A. (iii) 4.9.53. (iv) (a) N.A. (b) Transplanted according to the Japanese method. (c)–(d) and (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 22.12.1953.

2. TREATMENTS:
All combinations of (1) and (2)
(1) 3 levels of N : N₀ = 0, N₁ = 30 and N₂ = 50 lb./ac.
(2) 3 levels of P₂O₅ : P₀ = 0, P₁ = 20 and P₂ = 40 lb./ac.
N as A/S and P₂O₅ as Super. Fertilizers were sprayed and mixed at the time of cultivation.

3. DESIGN:
(i) 3³ Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 27' x 10'6'. (v) N.A. (vi) Yes.

4. GENERAL:
(i) Germination and health of plant good. (ii) No. (iii) Yield of grain (iv) (a) No. (b) No. (e) N.A. (v) (a) Nₐ (b) N.A. (vi) and (vii) Nil.

RESULTS:
(i) 1324 lb./ac.
(ii) 150.4 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>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>P₀</td>
<td>1193</td>
<td>1387</td>
<td>1361</td>
<td>1314</td>
</tr>
<tr>
<td>P₁</td>
<td>1353</td>
<td>1281</td>
<td>1493</td>
<td>1376</td>
</tr>
<tr>
<td>P₂</td>
<td>1161</td>
<td>1281</td>
<td>1401</td>
<td>1281</td>
</tr>
<tr>
<td>Mean</td>
<td>1236</td>
<td>1317</td>
<td>1419</td>
<td>1324</td>
</tr>
</tbody>
</table>

S.E. of any marginal mean = 50.1 lb./ac.
S.E. of body of table = 86.8 lb./ac.
Crop: Paddy (Kharif).
Site: Cultivators' Farm, Alfanagar.

Object: To study the effect of N and P₂O₅ applied alone and in combination.

1. BASAL CONDITIONS:
   (i) (a) No. (b), (c) N.A. (ii) (a) Clay. (b) N.A. (iii) 10.9.1953. (iv) (a) 4 ploughings. (b) Transplanting. (c) ---. (d) & (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) Weeding five times.

2. TREATMENTS:
   All combinations of (1) & (2)
   (1) 3 levels of N: N₀ = 0 lb./ac., N₁ = 20 lb./ac. & N₂ = 40 lb./ac.
   (2) 3 levels of P₂O₅: P₀ = 0 lb./ac., P₁ = 20 lb./ac. & P₂ = 40 lb./ac.

3. DESIGN:
   (i) 3' Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 30' x 13'. (b) 27' x 10'. (v) All round. (vi) Yes.

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

5. RESULTS:
   (i) 1317 lb./ac.
   (ii) 659.9 lb./ac.
   (iii) None of the effects is significant.
   (iv) Av. yield of grain in lb./ac.

   \[
   \begin{array}{cccc}
   & N₀ & N₁ & N₂ & \text{Mean} \\
   P₀ & 1176 & 1373 & 1340 & 1296 \\
   P₁ & 1334 & 1261 & 1478 & 1338 \\
   P₂ & 1150 & 1261 & 1485 & 1299 \\
   \hline
   \text{Mean} & 1220 & 1298 & 1434 & 1317 \\
   \end{array}
   \]

   S.E. of any marginal mean = 220.0 lb./ac.
   S.E. of the body of table = 381.0 lb./ac.

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

Object: To study the effect of N and P₂O₅ applied alone and in combination.

1. BASAL CONDITIONS:
   (i) (a) Maize—Wheat. (b) Maize. (c) Manured details N.A. (ii) (a) Yellow alluvium of Gangetic plain—Sandy loam. (b) N.A. (iii) 4.12.51. (iv) (a) 4 ploughings after irrigation. (b) Drilled. (c) 1 md./ac. (d) 9" apart. (e) N.A. (v) No. (vi) C-591. (vii) Irrigated. (viii) Intercultivation and weeding on 17.1.52. (ix) N.A. (x) 23.4.1953.

2. TREATMENTS:
   All combinations of (1), (2) & (3)
   (1) 3 levels of N: N₀ = 0, N₁ = 20 and N₂ = 30 lb./ac.
   (2) 2 levels of P₂O₅: P₀ = 0 and P₁ = 40 lb./ac.
   (3) 2 sources of P₂O₅: Super & B.M.
   & 3 extra treatments: N₀P₀ = 0 lb./ac. of N; N₁P₀ = 20 lb./ac. of N; N₂P₀ = 30 lb./ac. of N.

   N as A/S. The fertilizers were applied evenly distributing in each plot by mixing with earth before sowing.
3. DESIGN:
(i) R.B.D. (Fact.) (ii) (a) 15' (b) N.A. (iii) 4. (iv) (a) 30'3"×18'. (b) 24'3"×12'. (v) 3' all round.
(vi) Yes.

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

5. RESULTS:
(i) 981 lb./ac.
(ii) 259.6 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>B.M.</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>N₀ 834</td>
<td>872</td>
<td>989</td>
<td>867</td>
<td>1022</td>
</tr>
<tr>
<td>N₁ 1088</td>
<td>1148</td>
<td>1187</td>
<td>825</td>
<td>910</td>
</tr>
<tr>
<td>N₂ 980</td>
<td>1059</td>
<td>996</td>
<td>1031</td>
<td>1115</td>
</tr>
<tr>
<td>Mean 967</td>
<td>1026</td>
<td>1022</td>
<td>908</td>
<td>982</td>
</tr>
</tbody>
</table>

S.E. of N marginal means = 57.9 lb./ac.
S.E. of P₂O₅ marginal means = 74.9 lb./ac.
S.E. of body of table = 129.8 lb./ac.

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

Ref: - Rj. 52(17).
Type: - 'M'.

Obj: 1: - To study the effect of N and P₂O₅ applied alone in different doses and in combination.

1. BASAL CONDITIONS:
(i) (a) No. (b) Wheat. (c) No. (ii) (a) Yellow alluvium of Gangetic plain—Sandy loam. (b) N.A.
(iii) 16.11.52. (iv) (a) 2 ploughings. (b) N.A. (c) 1 md./ac. (d) & (e) N.A. (v) No. (vi) C. 591 ;
(Medium), (vii) Irrigated. (viii) Weeding twice on 5.1.53 and 22.1.53. (ix) N.A. (x) 64.53.

2. TREATMENTS:
All combinations of (1), (2) & (3)
(1) 3 levels of N : N₀=0, N₁=20 and N₂=30 lb./ac.
(2) 3 levels of P₂O₅ : P₀=0, P₁=25 and P₂=40 lb./ac.
(3) 3 levels of P.Y.M. : F₀=0, F₁=20 lb. N/ac and F₂=30 lb. N/ac.
N as A/S and P₂O₅ as Super. Fertilizers sprayed at the time of cultivation before sowing.

3. DESIGN:
(i) 3° Fact. in R.B.D. (ii) (a) 27. (b) N.A. (iii) 4. (iv) (a) 22'×15'. (b) 19'×12'. (v) 14' all round.
(vi) Yes.

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

5. RESULTS:
(i) 1573 lb./ac.
(ii) 711.6 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>
<th>Mean</th>
<th>P₀</th>
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S.E. of any marginal mean = 118.6 lb/ac.
S.E. of body of table = 206.1 lb/ac.

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

Object :—To find the effect of N and P₂O₅ in different doses applied alone and in combination.

1. BASAL CONDITIONS :
(i) (a) No. (b), (c) N.A. (iii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A. (iii) N.A. (iv) (a) to (c) N.A. (v) No. (vi) C. 591. (vii) Irrigated. (viii) Nil. (ix) N.A. (x) N.A.

2. TREATMENTS :
All combinations of (1) and (2)
(1) 3 levels of N : N₀=0, N₁=20 and N₂=30 lb/ac.
(2) 2 levels of P₂O₅ : P₀=0, and P₁=40 lb/ac.
N as A/S and P₂O₅ as Super. The fertilizers were evenly distributed in each plot by mixing with earth before sowing.

3. DESIGN :
(i) 3 x 2 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 54'4" X 20'. (b) 48'4" X 15'. (v) 3' X 24'. (vi) Yes.

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

5. RESULTS :
(i) 1356 lb/ac.
(ii) 136.6 lb/ac.
(iii) Only N effect is highly significant.
(iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
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<td>Mean</td>
<td>1195</td>
<td>1483</td>
<td>1391</td>
<td>1356</td>
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S.E. of marginal mean of P = 32.2 lb/ac.
S.E. of marginal mean of N = 39.4 lb/ac.
S.E. of body of table = 55.8 lb/ac.
Object: To find out the response to B.M. and Super applied in different doses.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) Guar. (c) N.A. (ii) (a) Yellow alluvium of Gangetic Plain-Sandy loam. (b) N.A. (iii) 1.12.51. (iv) (a) Land was ploughed twice; each ploughing followed by planking. (b) Drilling. (c) N.A. (d) Distance between rows 9". (e) N.A. (v) No. (vi) C. 591. (vii) Irrigated. (viii) Interculture and weeding on 4.1.52. (ix) N.A. (x) 16.4.52.

2. TREATMENTS:
   All combinations of (1) and (2) + a Control.
   (1) 2 sources of P₂O₅: Super and B.M.
   (2) 3 levels of P₂O₅: P₁ = 50, P₂ = 100 and P₃ = 150 lb./ac.

3. DESIGN:
   (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 30'3" × 24'. (b) 24'3" × 18'. (v) 3' around. (vi) Yes.

4. GENERAL:
   (i) Germination was good, but the early growth failed. (ii) No. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) Ganganagar. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
   (i) 1685 lb./ac.
   (ii) 468.5 lb./ac.
   (iii) None of the effects is significant.
   (iv) Av. yield of grain in lb./ac.

\[\begin{array}{ccc}
\text{Control} & = & 1402 \text{ lb./ac.} \\
\text{P₁} & = & 1713 \quad 1581 \quad 1764 \\
\text{P₂} & = & 1784 \quad 1902 \quad 1652 \\
\text{P₃} & = & 1748 \quad 1741 \quad 1708 \\
\text{Mean} & = & 1732
\end{array}\]

S.E. of marginal mean of sources \(= 135.2 \text{ lb./ac.}\)
S.E. of marginal mean of levels \(= 165.6 \text{ lb./ac.}\)
S.E. of body of table \(= 234.3 \text{ lb./ac.}\)
4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1952-1953. (b) No. (c) N.A. (v) (a) No. (b) N.A. 
(vi) and (vii) Nil.

5. RESULTS:
(i) 2303 lb./ac.
(ii) 343 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

<table>
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<th>P3</th>
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<td>2340</td>
<td>2456</td>
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<td>2392</td>
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S.E. of marginal mean of sources = 99.0 lb./ac.
S.E. of marginal mean of levels = 121.3 lb./ac.
S.E. of body of table = 171.5 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Exp. Farm, Durgapura.
Ref: Rj. 51(23).
Type: 'M'.

Object: To study the residual effect of different doses of B.M. & Super on the yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) Wheat—Moong. (b) Moong. (c) As per treatments. (ii) (a) Sandy loam of Gangetic plain. (b) N.A. (iii) 4th week of Sept. 51. (iv) (a) to (e) N.A. (v) Nil. (vi) C. 591. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) Last week of March 1952.

2. TREATMENTS:
All combinations of (1) & (2) + a Control.
(1) 2 sources of P\(_2\)O\(_5\): Super & B.M.
(2) 3 levels of P\(_2\)O\(_5\): P\(_2\)=50, P\(_2\)=100 & P\(_2\)=150 lb./ac.
P\(_2\)O\(_5\) 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) 30'3"x24'. (b) 24'3"x18'. (v) 3' all round. (vi) Yes.

4. GENERAL:
(i) Average. (ii) Nil. (iii) Grain yield data. (iv) (a) No. (b) & (c)—. (v) (a) No. (b) Yes. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 1234 lb./ac.
(ii) 276.3 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

<table>
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<tr>
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<td>B.M.</td>
<td>1258</td>
<td>1451</td>
<td>1085</td>
<td>1265</td>
</tr>
<tr>
<td>Mean</td>
<td>1213</td>
<td>1354</td>
<td>1151</td>
<td>1239</td>
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</tbody>
</table>

S.E. of marginal mean of sources = 79.8 lb./ac.
S.E. of marginal mean of levels = 97.7 lb./ac.
S.E. of the body of table = 138.1 lb./ac.
Crop : Wheat (Rabi).

Site : Govt. Agri. Farm, Ganganagar.

Object : To study the effect of N and P\textsubscript{2}O\textsubscript{5} applied alone and in combination on Wheat.

1. BASAL CONDITIONS :
   (i) (a) Nil (b) Maize. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.12.51. (iv) (a) 2 ploughings & planting. (b) Drilling. (c) N.A. (d) Seed drilled in rows 9" apart. (e) N.A. (vi) Nil. (vii) Irrigated. (viii) Weeding on 17.1.52. (x) N.A. (x) 2nd week of April, 52.

2. TREATMENTS :
   All combinations of (1), (2) & (3)+3 extra treatments.
   (1) 3 levels of N : N\textsubscript{0} =0, N\textsubscript{1} =20 & N\textsubscript{2} =30 lb/ac.
   (2) 2 levels of P\textsubscript{2}O\textsubscript{5} : P\textsubscript{1} =20 & P\textsubscript{2} =40 lb/ac.
   (3) 2 sources of P\textsubscript{2}O\textsubscript{5} : Super & B.M.
   Extra treatments are :- 0, 20 and 30 lb/ac. of N at the level P\textsubscript{0} =0 lb. of P\textsubscript{2}O\textsubscript{5}.

3. DESIGN :
   (i) Fact in R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) (a) 30'3'x18' (b) 24'3'x12' (v) 3' alround (vi) Yes.

4. GENERAL :
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) Yos 1951—52 to N.A. (b) No (c) N.A. (v) (a) No (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :
   (i) 1, 000 lb/ac.
   (ii) 247.1 lb/ac.
   (iii) None of the effects is significant.
   (iv) Av. yield of grain in lb/ac.

<table>
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<tr>
<th></th>
<th>P\textsubscript{0}</th>
<th>P\textsubscript{1}</th>
<th>P\textsubscript{2}</th>
<th>P\textsubscript{0}</th>
<th>B.M.</th>
<th>P\textsubscript{0}</th>
<th>Mean</th>
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<td>1149</td>
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<td>811</td>
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<tr>
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<td>996</td>
<td>1031</td>
<td>1157</td>
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<td>Mean</td>
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<td>1045</td>
<td>908</td>
<td>1075</td>
<td>1000</td>
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</table>

S.E. of N marginal mean = 55.1 lb/ac.
S.E. of P\textsubscript{2}O\textsubscript{5} marginal mean = 71.2 lb/ac.
S.E. of the body of the table = 123.5 lb/ac.
3. DESIGN:
(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) 30'-3" x 24'. (b) 24'-3" x 18' (v) 3' around. (vi) Yes.

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

5. RESULTS:
(i) 740 lb./ac.
(ii) 99.41 lb./ac.
(iii) N effect and the interaction NP are highly significant.
(iv) Av. yield of grain in lb./ac.

<table>
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<th>B.M.</th>
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<td>807</td>
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<td>758</td>
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<tr>
<td>Mean</td>
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<td>681</td>
<td>818</td>
<td>713</td>
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S.E. of N marginal mean = 25.6 lb./ac.
S.E. of P₂O₅ marginal mean = 33.1 lb./ac.
S.E. of body of table = 57.4 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Ganganagar.
Ref: Rj. 53 (19).

Object: To find out the effect of N and P₂O₅ alone and in combination on Wheat and their residual effect on the succeeding crop.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) and (c) N.A. (ii) (a) Desert soil-sandy to sandy loam. (b) N.A. (iii) 4.11.53. (iv) (a) 4 ploughings. (b) Sowing behind the plough. (c) to (e) N.A. (v) No. (vi) C.591 (Medium). (vii) Irrigated. (viii) Nil. (a) N.A. (x) 29.4.54.

2. TREATMENTS:
All combinations of (1), (2) and (3)+3 extra treatments
(1) 3 levels of N : N₀=0, N₁=23 lb./ac. and N₂=30 lb./ac.
(2) 2 levels of P₂O₅ : P₁=20 lb./ac. and P₂=40 lb./ac.
(3) 2 sources of P₂O₅ : Super and B.M.
3 extra treatments are : 0, 20 are 30 lb/.ac. of N at the level P₀=0 lb. of P₂O₅.
N as A/S. Fertilizers mixed and sprayed at the time of cultivation.

3. DESIGN:
(i) R.B.D. Fact. (ii) (a) 15. (b) N.A. (iii) 6. (iv) (a) 30'-3" x 18'. (b) 24'-3" x 12'. (v) 3' around. (vi) Yes.

4. GENERAL:
(i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1952 to 1953. (b) No. (c) N.A. (v) (a) Basai. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 1611 lb./ac.
(ii) 571.3 lb./ac.
(iii) Only N effect is highly significant.
(iv) Av. yield of grain in lb./ac.

<table>
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<td>1966</td>
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<td>N_2</td>
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<td>Mean</td>
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<td>1603</td>
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</tbody>
</table>

S.E. of N marginal mean = 104.1 lb./ac.
S.E. of P_2O_5 marginal mean = 133.9 lb./ac.
S.E. of body of table = 233.2 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Ganganagar.
Object: To find out effect of N and P_2O_5 in different doses alone and in combination.

1. BASAL CONDITIONS:
   (i) (a) No. (b) and. (c) N.A. (ii) (a) Desert soil-sandy to sandy loam. (b) N.A. (iii) N.A. (iv) (a) to. (c) N.A. (v) No. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 3 levels of N: N_0 = 0, N_1 = 20, and N_2 = 40 lb./ac.
   (2) 2 levels of P_2O_5: P_0 = 0 and P_1 = 40 lb./ac.
   N as A/S and P_2O_5 as Super. The fertilizers were evenly distributed in each plot by mixing with earth before sowing.

3. DESIGN:
   (i) 3 x 2 fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 54'-4" x 20'. (b) 48'-4" x 15'. (v) 3' x 21'. (vi) Yes.

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

5. RESULTS:
   (i) 1154 lb./ac.
   (ii) 262.1 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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<td>P_1</td>
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<td>1142</td>
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<tr>
<td>Mean</td>
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<td>1170</td>
<td>1171</td>
<td>1154</td>
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</table>

S.E. of marginal mean of P_2O_5 = 61.8 lb./ac.
S.E. of marginal mean of N = 75.6 lb./ac.
S.E. of the body of table = 107.0 lb./ac.
Crop: Wheat (Rabi).  
Site: Govt. Agri. Farm, Ganganagar. 
Ref : Rj. 51(7)  
Type: 'M'.

Object:—To find out the effect of applying different doses of B.M. and Super on Wheat.

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

2. TREATMENTS:
   All combinations of (1) and (2) + a Control.
   (1) 2 sources of P2O5: Super and B.M. 
   (2) 3 levels of P2O5: P1 = 50, P2 = 100 and P3 = 150 lb./ac.

3. DESIGN:
   (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 30'3"×2'. (b) 24'3"×18'. (v) 3' around. (vi) Yes.

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

5. RESULTS:
   (i) 1785 lb./ac. 
   (ii) 228.0 lb./ac. 
   (iii) Only source of P2O5 effect is significant. 
   (iv) Av. yield of grain in lb./ac. 
   
<table>
<thead>
<tr>
<th>P1</th>
<th>P2</th>
<th>P3</th>
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<td>1698</td>
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<td>1912</td>
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<td>1600</td>
<td>1780</td>
<td>1696</td>
<td>1692</td>
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</tbody>
</table>

S.E. of marginal mean of sources = 65.8 lb./ac.
S.E. of marginal mean of levels = 80.6 lb./ac.
S.E. of body of table = 114.0 lb./ac.

---

Crop: Wheat (Rabi).  
Site: Govt. Agri. Farm, Ganganagar. 
Ref : Rj. 52(18).  
Type: 'M'.

Object:—To find out the effect of different trace elements in different doses on growth and germination of Wheat.

1. BASAL CONDITIONS:
   (i) (a) to (c) N.A.  (ii) (a) Desert soil-sandy to sandy loam. (b) N.A.  (iii) 24.1.52. (iv) (a) to (e) N.A.  (v) N.A.  (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A.  (ix) N.A.  (x) 17.4.53.

2. TREATMENTS:
   All combinations of (1) and (2) + a Control.
   (1) 3 levels of trace elements: T1 = 5, T2 = 10 and T3 = 25 lb./ac.

3. DESIGN:
   (i) R.B.D. (ii) (a) 22. (b) N.A.  (iii) 3. (iv) (a) 30'3"×18'. (b) 24'3"×12'. (v) 3' around. (vi) Yes.

4. GENERAL:
   (i) Normal. (ii) Nil. (iii) Yield of grain (iv) (a) 1952-—contd. (b) No. (c) N.A.  (v) (a), (b) N.A.  (vi) and (vii) Nil.
5. RESULTS:
(i) 776.0 lb./ac.  
(ii) 211.7 lb./ac.  
(iii) None of the effects is significant.  
(iv) Av. yield of grain in lb./ac.

\[
\begin{array}{cccccccc}
\hline
& 1 & 2 & 3 & 4 & 5 & 6 & 7 & \text{Mean} \\
\hline
T_1 & 726.1 & 779.8 & 900.5 & 840.0 & 996.3 & 684.0 & 1002.1 & 847.7 \\
T_2 & 607.4 & 722.3 & 689.8 & 848.8 & 760.7 & 651.4 & 664.8 & 705.5 \\
T_3 & 818.1 & 714.7 & 881.4 & 894.7 & 760.7 & 574.8 & 862.0 & 773.8 \\
\hline
\end{array}
\]

S.E. of marginal mean of levels = 46.2 lb./ac.
S.E. of marginal mean of trace elements = 70.6 lb./ac.
S.E. of the body of table = 122.2 lb./ac.

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Ganganagar.
Ref :- Rj. 53(38).
Type :- 'M'.

Object :- To study the effect of different trace elements in different doses on Wheat.

1. BASAL CONDITIONS :
(i) (a) No. (b) N.A. (c) Sandy loam. (b) N.A. (iii) Nov. 1953. (iv) (a) to (e) N.A. (v) No. (vi) C. 591 (Medium). (vii) Irrigated. (viii) Weeding four times. (ix) N.A. (x) April, 1954.

2. TREATMENTS :
All combinations of (1) and (2) + a Control.
(1) 3 levels of traces elements : T_1 = 5 lb./ac., T_2 = 10 lb./ac. and T_3 = 20 lb./ac.

3. DESIGN :
(i) R.B.D. (ii) 22. (b) N.A. (iii) 3. (iv) (a) 23' x 14'. (b) 20' x 31'. (v) 1' on each side. (vi) Yes.

4. GENERAL :
(i) Average. (ii) Nil. (iii) Grain yield. (iv) (a) 1952—contd. (b) No. (c) N.A. (v) No. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 1447 lb./ac.  
(ii) 273.9 lb./ac.  
(iii) None of the effects is significant.  
(iv) Av. yield of grain in lb./ac.

\[
\begin{array}{cccccccc}
\hline
& 1 & 2 & 3 & 4 & 5 & 6 & 7 & \text{Mean} \\
\hline
T_1 & 1771 & 1220 & 1220 & 1224 & 1220 & 1637 & 1652 & 1443 \\
T_2 & 1741 & 1369 & 1711 & 1300 & 1488 & 1488 & 1518 & 1522 \\
T_3 & 1161 & 1637 & 1414 & 1280 & 1414 & 1428 & 1443 & 1397 \\
\hline
\end{array}
\]

S.E. of marginal mean of level = 59.8 lb./ac.
S.E. of marginal mean of trace elements = 91.3 lb./ac.
S.E. of body of table = 158.1 lb./ac.
Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Kotah.

Object: To study the effect of N and P_2O_5 applied alone and in combination on Wheat.

1. BASAL CONDITIONS:
   (i) (a) No. (b) N.A. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 1st week of Nov. 1952. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 13 to 16.4 1952.

2. TREATMENTS:
   All combinations of (1), (2) and (3) + 3 extra treatments.
   (1) 3 levels of N: N_0 = 0, N_1 = 20 and N_2 = 30 lb./ac.
   (2) 2 levels of P_2O_5: P_1 = 20 and P_2 = 40 lb./ac.
   (3) 2 sources of P_2O_5: Super and B.M.
   3 extra treatments are: — N, 20 and 30 lb./ac. of N at P_0 = 0 lb./ac. of P_2O_5
   N applied as A/S. Fertilizers spread at the time of cultivation.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 4. (iv) (a) 27'-3' X 15'. (b) 24'-3' X 12'. (v) 1 f. on each side. (vi) Yes.

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

5. RESULTS:
   GRAIN
   (i) 2399 lb./ac.
   (ii) 326 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>B.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P_0</td>
<td>P_1</td>
</tr>
<tr>
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<td>2696</td>
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<tr>
<td>Mean</td>
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<td>2474</td>
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</table>

S.E. of N marginal mean = 72.9 lb./ac.
S.E. of P_2O_5 marginal mean = 94.1 lb./ac.
S.E. of body of table = 163.0 lb./ac.

FODDER
   (i) 7783 lb./ac.
   (ii) 326 lb./ac.
   (iii) Only N effect is highly significant.
   (iv) Av. yield of fodder in lb./ac.

<table>
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<tr>
<th></th>
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<th>B.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>8628</td>
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<td>7353</td>
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</table>

S.E. of N marginal mean = 324.1 lb./ac.
S.E. of P_2O_5 marginal mean = 441.6 lb./ac.
S.E. of body of table = 765.0 lb./ac.
Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Kotah.

Object :- To study the effect of N and P2O5 alone and in combination on germination and yield of crop.

1. BASAL CONDITIONS:
   (i) (a) No. (b) Fallow. (c) Nil. (ii) (a) Medium black soil. (b) N.A. (iii) 3.11.52. (iv) (a) Ploughing. (b) N.A. (c) one t. and. (d) N.A. (e) N.A. (v) Nil. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 28.3.53.

2. TREATMENTS:
   All combinations of (1), (2) and (3)+3 extra treatments.
   (1) 3 levels of N : N0 =0, N1 =15 and N2 =25 lb./ac.
   (2) 2 levels of P2O5 : P1 =20 and P2 =40 lb./ac.
   (3) 2 sources of P2O5 : Super and B.M.
   Extra treatments are :-
   0, 20 and 30 lb./ac. of N at P0 =0 of P2O5
   N applied as A/S. Fertilizers spread at the time of cultivation before sowing.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 15. (b) N.A. (iii) 4 (iv) (a) 30-3' × 18'. (b) 24-3' ×12'. (v) 3' on each side. (vi) Yes.

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

5. RESULTS:
   (i) 1798 lb./ac.
   (ii) 281.3 lb./ac.
   (iii) None of the effects is significant.
   (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
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</tr>
</thead>
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</tr>
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<td>1754</td>
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<tr>
<td>N2</td>
<td>1716</td>
<td>2023</td>
</tr>
<tr>
<td>Mean</td>
<td>1846</td>
<td>1846</td>
</tr>
</tbody>
</table>

   S.E. of N marginal mean =63.6 lb./ac.
   S.E. of P2O5 marginal mean =80.9 lb./ac.
   S.E. of body of table =140.7 lb./ac.

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

Object :- To find out the effect of N and P2O5 applied in different doses, alone and in combination.

1. BASAL CONDITIONS:
   (i) (a) No. (b) & (c) N.A. (ii) (a) Medium black soil of trap or gneiss origin-clay loam. (b) N.A. (iii) 6.11.50. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium) (vii) Rainfed. (viii) N.A. (ix) 1st on 6.1.51. (x) N.A.

2. TREATMENTS:
   All combinations of (1) & (2)
   (1) 3 levels of N : N0 =0, N1 =15 and N2 =25 lb./ac.
   (2) 3 levels of P2O5 : P0 =0, P1 =25 and P2 =40 lb./ac.
   N applied as A/S and P2O5 as Super. The fertilizers were evenly distributed in each plot by mixing with earth before sowing.
3. DESIGN:
(i) 3 x 3 Fac. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 20' x 54.5'. (v) N.A. (vi) Yes.

4. GENERAL:

5. RESULTS:
(i) 459.5 lb/acre.
(ii) 57.1 lb/acre.
(iii) Only N effect is highly significant.
(iv) Av. yield of grain in lb/acre.

<table>
<thead>
<tr>
<th></th>
<th>N₀</th>
<th>N₁</th>
<th>N₂</th>
<th>Mean</th>
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<td>479.7</td>
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<td>P₂</td>
<td>419.3</td>
<td>440.9</td>
<td>469.5</td>
<td>459.6</td>
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</tbody>
</table>

S.E. of any marginal mean = 13.45 lb/acre.
S.E. of body of table = 23.30 lb/acre.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Kotah.
Object: To study the effect of N and P₂O₅ alone and in combination.

1. BASAL CONDITIONS:
(i) (a) No. (b) Fallow. (c) No. (ii) (a) Medium black soil of trap or gneiss origin - clay loam. (b) N.A.
(iii) 3.11.52. (iv) (a) Ploughing. (b) N.A. (c) 1 md/ac. (d) & (e) N.A. (v) N.A. (vi) C. 591 (Medium) (vii) Rainfed. (viii) N.A. (ix) N.A. (x) 7.4.53.

2. TREATMENTS:
All combinations of (1) and (2)
(1) 3 levels of N: N₀ = 0, N₁ = 15 and N₂ = 25 lb/acre.
(2) 3 levels of P₂O₅: P₀ = 0, P₁ = 25 and P₂ = 40 lb/acre.

3. DESIGN:
(i) 3 x 3 Fac. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 60' - 5' x 26'. (b) 54' - 5' x 20'. (v) 3' on each side. (vi) N.A. (vii) N.A.

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

5. RESULTS:
(i) 381.9 lb/acre.
(ii) 111.0 lb/acre.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb/acre.
Crop :- Wheat (Rabi).

Site :- Govt. Agri. Farm, Kotah.

Object :- To study the effect of N and P\textsubscript{2}O\textsubscript{5} applied alone and in combination.

1. BASAL CONDITIONS:
   (i) (a) No. (b) Fallow. (c) No. (ii) (a) Medium black soil of trap or gneiss origin—clay loam. (b) N.A.
   (iii) 4.11.53. (iv) (a) 4 Ploughings. (b) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) Rainfed.
   (viii) No. (ix) N.A. (x) 24.3.54.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 3 levels of N : N\textsubscript{0}=0, N\textsubscript{1}=15 & N\textsubscript{2}=25 lb./ac.
   (2) 3 levels of P\textsubscript{2}O\textsubscript{5} : P\textsubscript{0}=0, P\textsubscript{1}=25 & P\textsubscript{2}=40 lb./ac.
   N applied as A/S and P\textsubscript{2}O\textsubscript{5} as Super mixed and spread at the time of cultivation.

3. DESIGN:
   i) 3 x 3 Fact. in R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 30'. 3'' x 18'. (b) 24'. 3'' x 18'. (v) 3' on each side. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1952 to 1953. (b) No. (c) N.A. (v) (a) No. (b) N.A.
   (vi) Nil. (vii) Nil.

5. RESULTS:
   (i) 529.3 lb./ac.
   (ii) 117.3 lb./ac.
   (iii) N effect and interaction are significant. P\textsubscript{2}O\textsubscript{5} effect is not significant.
   (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>N_0</th>
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<th>N_2</th>
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<td>499.9</td>
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<td>Mean</td>
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<td>442.5</td>
<td>524.3</td>
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S.E. of any marginal mean = 39.2 lb./ac.
S.E. of body of table = 68.1 lb./ac.

Crop :- Wheat (Rabi).

Site :- Govt. Agri. Farm, Kotah.

Object :- To study the effect of trace elements with & without F.Y.M. on the yield of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Fallow. (c) No. (ii) (a) Medium black soil. (b) N.A. (iii) 15.11.52. (iv) (a) to (e) N.A.

2. TREATMENTS:
   All combinations of (1) & (2)
   (1) 2 levels of F.Y.M. : F\textsubscript{0}=0 & F\textsubscript{1}=2 ton/ac.
   (2) 7 doses of trace elements, \( \rightarrow M_4=\text{Control (Nil) } , M_5=40 \text{ lb/ac. of catalyst} , M_6=80 \text{ lb/ac. of catalyst} \),
   \( M_7=14 \text{ lb/ac. of Fe.Sul.} , M_8=28 \text{ lb/ac. of Fe. Sul.} , M_9=8 \text{ lb/ac. of Pot. Permanganate} \ & M_4=16 \text{ lb/ac. of Pot. Permanganate} \).
3. **DESIGN:**

(i) 7 x 2 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 16' x 10'. (b) 12' x 6'. (v) 2' round the net plot. (vi) Yes.

4. **GENERAL:**

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

5. **RESULTS:**

(i) 2156 lb/ac.

(ii) 390.4 lb/ac.

(iii) None of the effects is significant.

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

<table>
<thead>
<tr>
<th></th>
<th>M4</th>
<th>M3</th>
<th>M2</th>
<th>M1</th>
<th>F1</th>
<th>F0</th>
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<td>2115</td>
<td>1998</td>
<td>2156</td>
<td>2153</td>
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</table>

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

S.E. of M marginal mean = 159.4 lb/ac.

S.E. of body of table = 225.4 lb/ac.

**Crop:** Wheat (Rabi).

**Site:** Govt. Agri. Farm, Kotah.

**Object:** To study the effect of trace elements with & without F.Y.M. on growth, germination & yield of Wheat.

1. **BASAL CONDITIONS:**

(i) (a) No. (b) Wheat. (c) No. (ii) (a) Medium black soil of trap or gneiss origin-clay loam. (b) N.A.

(ii) 29.11.53. (iv) (a) 4 ploughings. (b) to (e) N.A. (v) 2 ton/ac. F.Y.M. (vi) C. 591. (vii) Rainfed.


2. **TREATMENTS:**

All combinations of (1) and (2)

(1) 2 levels of F.Y.M. := F0 = 0 & F1 = 2 tons/ac.

(2) 7 doses of trace elements := M0 = Control (Nil). M1 = 40 lb/ac. of catalyst. M2 = 80 lb/ac. of catalyst, M3 = 48 lb/ac. of Fe. Sul., M4 = 28 lb/ac. of Fe. Sul., M5 = 8 lb/ac. of Pot. Permanganate & M6 = 16 lb/ac. of Pot. Permanganate.

3. **DESIGN:**

(i) 2 x 7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 14' x 8'. (b) 12' x 6'. (v) 1' round the net plot. (vi) Yes.

4. **DESIGN:**

(i) Good. (ii) No. (iii) Grain yield. (iv) (a) 1952—53. (b) No. (c) N.A. (v) (a) Mandore. (b) N.A. (vi) and (vii) Nil.

5. **RESULTS:**

(i) 751.2 lb/ac.

(ii) 171.2 lb/ac.

(iii) None of the effects is significant.
Object: To study the effect of different minor elements in different doses on growth, germination and yield of crop.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) (a) Medium black soil of trap or gneiss origin—loam. (b) N.A. (iii) 28.10.52. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 20.3.1953.

2. TREATMENTS:
All combinations of (1) and (2) + a Control.
(1) 3 levels of trace elements: T1 = 5 lb./ac., T2 = 10 lb./ac. and T3 = 20 lb./ac.

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

4. GENERAL:
(i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) 1952—not known. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 1098 lb./ac. 
(ii) 222.6 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 the marginal mean of levels = 48.6 lb./ac.
S.E. of the marginal mean of trace elements = 71.5 lb./ac.
S.E. of body of table = 128.5 lb./ac.
Crop : Wheat (Rabi).
Site : Govt. Agri. Farm, Kotah.

Object : To study the effect of different minor elements in different doses on growth, germination and yield of crop.

1. BASAL CONDITIONS:
   (i) No. (b) and (c) N.A. (ii) (a) Medium black soil of trap or gneiss origin—clay loam. (b) N.A. (iii) Oct. 1953. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) N.A. (ix) N.A. (x) April, 1954.

2. TREATMENTS:
   All combinations of (1) and (2) + a Control.
   (1) 3 levels of trace elements: T1 = 5 lb./ac., T2 = 10 lb./ac. and T3 = 20 lb./ac.

3. DESIGN:
   (i) R.B.D. (ii) (a) 22. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 20'x11'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) No. (iii) Grain yield. (iv) (a) 1952—not known. (b) N.A. (c) No. (b) N.A. (c) No. (vi) Nil. (vii) Nil.

5. RESULTS:
   (i) 817.4 lb./ac.
   (ii) 113.8 lb./ac.
   (iii) None of the effects is significant.
   (iv) Av. yield of grain in lb./ac.

<p>| Control = 635.7 lb./ac. |</p>
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>720.7</td>
<td>722.2</td>
<td>728.4</td>
<td>875.1</td>
<td>823.6</td>
<td>823.6</td>
<td>815.9</td>
</tr>
<tr>
<td>T2</td>
<td>772.2</td>
<td>900.9</td>
<td>875.1</td>
<td>790.2</td>
<td>867.4</td>
<td>893.1</td>
<td>831.4</td>
</tr>
<tr>
<td>T3</td>
<td>944.6</td>
<td>893.1</td>
<td>812.8</td>
<td>857.1</td>
<td>746.4</td>
<td>702.7</td>
<td>831.4</td>
</tr>
<tr>
<td>Mean</td>
<td>812.5</td>
<td>855.4</td>
<td>828.8</td>
<td>840.8</td>
<td>812.5</td>
<td>808.5</td>
<td>826.2</td>
</tr>
</tbody>
</table>

   S.E. of marginal mean of levels = 24.8 lb./ac.
   S.E. of marginal mean of trace elements = 37.9 lb./ac.
   S.E. of body of table = 65.7 lb./ac.

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

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

1. BASAL CONDITIONS:
   (i) (a) No. (b) & (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 6.12.49. (iv) (a) 4 times ploughing. (b) Drilling. (c) 1 md.ac. (d) Row to row spacing 9". (e) N.A. (v) Nil. (vi) C-591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 4.4.50.

2. TREATMENTS:
   All combinations of (1) & (2) + a Control.
   (1) 4 sources of N : A.S., Oil cake, F.Y.M. & M.C.
   (2) 2 levels of N : N1 = 30 & N2 = 40 lb./ac.
3. DESIGN:
(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 14’x30’. (b) 10’x26’. (v) 2’ around (vi) Yes.

4. GENERAL:
(i) NA (ii) Nil. (iii) Grain Yield. (iv) (a) (b), (c) N.A. (v) (a) No. (b) N.A. (vi) (vii) Nil.

5. RESULTS:
(i) 621 lb./ac.
(ii) 151.9 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>A/S Oilcake</th>
<th>F.Y.M.</th>
<th>M.C.</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>N₁</td>
<td>654</td>
<td>633</td>
<td>543</td>
<td>586</td>
</tr>
<tr>
<td>N₂</td>
<td>719</td>
<td>680</td>
<td>682</td>
<td>618</td>
</tr>
<tr>
<td>Mean</td>
<td>686</td>
<td>656</td>
<td>612</td>
<td>602</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of source of N = 43.8 lb./ac.
S.E. of marginal mean of levels of N = 31.0 lb./ac.
S.E. of body of table = 62.4 lb./ac.

Crop :- Wheat (Rabi).
Site :- Govt. Agri. Res. Farm, Makrera.
Ref :- R.I. 51(20)
Type :- ‘M’.

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

1. BASAL CONDITIONS:
(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.12.51. (iv) (a) N.A. (b) N.A. (c) N.A.
(d) N.A. (e) N.A. (f) N.A. (v) C-591. Medium (vi) Irrigated. (vii) Nil. (ix) N.A. (x) 2.4.52.

2. TREATMENTS:
All combinations of (1) & (2)+ Control.
(1) 4 sources of N : A/S, Oilcake. F.Y.M. & M.C.
(2) 2 levels of N : N₁=30 & N₂=40 lb./ac.

3. DESIGN:
(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 18’x34’. (b) 14’x30’. (v) 2’ around (vi) Yes.

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

5. RESULTS:
(i) 911 lb./ac.
(ii) 154.5 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>A/S Oilcake</th>
<th>F.Y.M.</th>
<th>M.C.</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>N₁</td>
<td>1006</td>
<td>1058</td>
<td>985</td>
<td>1006</td>
</tr>
<tr>
<td>N₂</td>
<td>798</td>
<td>881</td>
<td>643</td>
<td>913</td>
</tr>
<tr>
<td>Mean</td>
<td>902</td>
<td>969</td>
<td>814</td>
<td>959</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of source of N = 44.6 lb./ac.
S.E. of marginal mean of level of N = 31.5 lb./ac.
S.E. of body of table = 63.2 lb./ac.
Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Makrera.
Object: To study the effect of organic manures on the yield of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.12.49. (iv) (a) Ploughing 4 times. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) Nil. (vi) C. 591. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 5.4.50.

2. TREATMENTS:
   All combinations of (1) and (2) + a Control.
   (1) 3 manures: M.C.: Farm Compost and F.Y.M.
   (2) 4 levels of manures: M1 = 50, M2 = 100, M3 = 150 and M4 = 200 lb/ac.

3. DESIGN:
   (i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 6. (iv) (a) 28' x 15'. (b) 25' x 12' (v) 1' around (vi) Yes.

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

5. RESULTS:
   (i) 191.7 lb/ac.
   (ii) 81.97 lb/ac.
   (iii) None of the effects is significant.
   (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>Control</th>
<th>149.0 lb/ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>M2</td>
</tr>
<tr>
<td>M.C.</td>
<td>152.8</td>
</tr>
<tr>
<td>Farm Compost</td>
<td>173.3</td>
</tr>
<tr>
<td>F.Y.M.</td>
<td>223.6</td>
</tr>
<tr>
<td>Mean</td>
<td>183.2</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of M = 19.32 lb/ac.
S.E. of marginal mean of manures = 16.73 lb/ac.
S.E. of the body of table = 33.45 lb/ac.

---

Crop: Wheat (Rabi).
Site: Govt. Agri. Res. Farm, Makrera.
Object: To find out the effect of N and P2O5 applied alone and in combinations on Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.11.52. (iv) (a) to (e) N.A. (v) Nil. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 23.3.53.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 3 sources of N at 50 lb/ac. of N: A/S, Bloodmeal and Compost.
   (2) 2 levels of P2O5: P0 = 0 and P1 = 120 lb/ac.
   P2O5 as Super. Fertilizers applied at the time of cultivation before sowing.

3. DESIGN:
   (i) R.B.D. Pact. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 14' x 32'. (b) 12' x 10'. (v) 1' around (vi) Yes.
4. GENERAL:
(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) Tabiji. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 1457 lb./ac.
(ii) 284.0 lb./ac.
(iii) Only the effect of 'source of N' is highly significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>A/S Bloodmeal Compost</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>P&lt;sub&gt;1&lt;/sub&gt;</td>
<td>2043</td>
<td>1274</td>
</tr>
<tr>
<td>P&lt;sub&gt;2&lt;/sub&gt;</td>
<td>1471</td>
<td>1324</td>
</tr>
<tr>
<td>Mean</td>
<td>1757</td>
<td>1259</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of source of N
S.E. of marginal mean of P
S.E. of body of table

Crop :-Wheat (Rabi).
Site :-Govt. Agril. Res. Farm, Makrera.
Object :-To study the effect of organic and inorganic sources of N applied alone and in combination on Wheat.

1. BASAL CONDITIONS:
(i) (a) No. (b) Jowar. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 29.11.53. (iv) (a) 4 ploughings. (b) to (e) N.A. (v) Nil. (vi) C. 591. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 3.4.54.

2. TREATMENTS:
1. Control.
2. 50 lb./ac. of N as A/S.
3. 50 lb./ac. of N as Compost.
4. 50 lb./ac. of N as S=20 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.
5. 50 lb./ac. of N as Compost+12 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.
6. 50 lb./ac. of N as Compost+20 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.
Fertilizers were mixed and sprayed at the time of cultivation.

3. DESIGN:
(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 34'×20'. (b) 32'×18'. (v) 1' around. (vi) Yes.

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

5. RESULTS:
(i) 778 lb./ac.
(ii) 711.5 lb./ac.
(iii) The 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>1.</td>
<td>763</td>
</tr>
<tr>
<td>2.</td>
<td>792</td>
</tr>
<tr>
<td>3.</td>
<td>662</td>
</tr>
<tr>
<td>4.</td>
<td>960</td>
</tr>
<tr>
<td>5.</td>
<td>713</td>
</tr>
<tr>
<td>6.</td>
<td>781</td>
</tr>
</tbody>
</table>
S.E./mean = 105.7 lb./ac.
Crop :- Wheat (Rabi).  

Object :- To find out the optimum dose of N for obtaining higher yield of Wheat.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.11.52. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) Irrigated. (viii) 1'. A. (ix) N.A. (x) 27.3.53.

2. TREATMENTS:
   1. Control.
   2. 20 lb./ac. of N.
   3. 40 lb./ac. of N.
   4. 60 lb./ac. of N.
   5. 80 lb./ac. of N.

   N applied as A/S.

3. DESIGN:
   (i) R.B.D. (ii) 5 (b) N.A. (iii) 6. (iv) (a) 27' x 18'. (b) 25' x 16'. (v) 1' around. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1952-1954. (b) No. (c) N.A. (v) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
   (i) 935.0 lb./ac.
   (ii) 198.8 lb./ac.
   (iii) The treatment differences are highly significant.
   (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>455</td>
</tr>
<tr>
<td>2.</td>
<td>750</td>
</tr>
<tr>
<td>3.</td>
<td>1041</td>
</tr>
<tr>
<td>4.</td>
<td>1189</td>
</tr>
<tr>
<td>5.</td>
<td>1239</td>
</tr>
</tbody>
</table>

S E./mean = 87.2 lb./ac.
5. RESULTS:
(i) 547 lb./ac.
(ii) 271.4 lb./ac.
(iii) The 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>1.</td>
<td>458</td>
</tr>
<tr>
<td>2.</td>
<td>528</td>
</tr>
<tr>
<td>3.</td>
<td>528</td>
</tr>
<tr>
<td>4.</td>
<td>641</td>
</tr>
<tr>
<td>5.</td>
<td>581</td>
</tr>
</tbody>
</table>
S.E./mean = 133.7 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Res. Farm, Makrera.
Ref: Rj. 52(43).
Type: 'M'.

Object: To find out the optimum dose of N for obtaining high yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.11.52. (iv) (a) to (c) N.A. (v) Nil. (vi) Pb. 591 (Medium). (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 27.3.53.

2. TREATMENTS:
1. Control.
2. 20 lb./ac. of N.
3. 40 lb./ac. of N.
4. 60 lb./ac. of N.
5. 80 lb./ac. of N.
N applied as A/S.

3. DESIGN:
(i) R.B.D. (ii) 5. (b) N.A. (iii) 6. (iv) (a) 29'X20'. (b) 25'X16'. (v) 2' around. (vi) Yes.

4. GENERAL:
(i) Good. (ii) No. (iii) Fodder yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) Tabiji. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS
(i) 7206 lb./ac.
(ii) 1627.5 lb./ac.
(iii) The 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>1.</td>
<td>3521</td>
</tr>
<tr>
<td>2.</td>
<td>5790</td>
</tr>
<tr>
<td>3.</td>
<td>8040</td>
</tr>
<tr>
<td>4.</td>
<td>9184</td>
</tr>
<tr>
<td>5.</td>
<td>9565</td>
</tr>
</tbody>
</table>
S.E./mean = 664.3 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Exp. Farm, Mandore.
Ref: Rj. 50(5).
Type: 'M'.

Object: To find the effect of N and P2O5 alone and in combination on the yield of crop.

1. BASAL CONDITIONS:
(i) (a) No. (b), (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) N.A. (iv) (a) to (c) N.A. (v) Nil. (vi) C, 591 (Medium). (vii) to (ix) N.A. (x) 16.4.51.
2. TREATMENTS:
All combinations of (1) and (2)
(1) 3 levels of N as ammonia: \(N_0 = 0, N_1 = 2\) lb. 6 oz./plot and \(N_2 = 3\) lb. 12 oz./plot.
(2) 2 levels of Super:
\(P_0 = 0\) and \(P_1 = 3\) lb./plot.
The fertilizers were evenly distributed in each plot by mixing with earth before sowing.

4. DESIGN:
(i) 3 x 2 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 48.4"x15". (v) N.A. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) Block No. 5 affected by rust and also lodging etc. in half the area. (iii) Grain yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 1168.0 lb./ac.
(ii) 206.2 lb./ac.
(iii) None of the effects is 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>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>(P_0)</td>
<td>10/12</td>
<td>12/55</td>
<td>13/36</td>
<td>12/11</td>
</tr>
<tr>
<td>(P_1)</td>
<td>10/00</td>
<td>11/20</td>
<td>11/59</td>
<td>11/26</td>
</tr>
<tr>
<td>Mean</td>
<td>10/56</td>
<td>12/03</td>
<td>12/48</td>
<td>11/69</td>
</tr>
</tbody>
</table>

S.E. of N marginal mean = 59.5 lb./ac.
S.E. of Super marginal mean = 48.6 lb./ac.
S.E. of body of table = 84.1 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Expt., Farm, Mandore.
Object: To find out the effect of minor elements with and without F.Y.M., on germination and yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Desert soil-Sandy. (b) N.A. (iii) 1.11.52. (iv) (a) Agricultural operations according to local practices. (b) N.A. (c) 1 md/ac. (d), (e) N.A. (v) N.A. (vi) C-591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) April 1953.

2. TREATMENTS:
All combinations of (1) and (2)
(1) 2 doses of F.Y.M.: \(F_0 = 0\) and \(F_1 = 2\) ton/ac.
(2) 7 doses of minor elements:
\(M_0 = 0, M_1 = 40\) lb./ac. of Catalyst, \(M_2 = 80\) lb./ac. of Catalyst, \(M_3 = 14\) lb./ac. of Fe. Sul., \(M_4 = 28\) lb./ac. of Fe. Sul., \(M_5 = 8\) lb./ac. of Pot. Permanganate and \(M_6 = 16\) lb./ac. of Pot. Permanganate.

3. DESIGN:
(i) 2 x 7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12'x6'. (v) N.A. (vi) Yes.

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

5. RESULTS:
(i) 269.1 lb./ac.
(ii) 106.7 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>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>F₀</td>
<td>292.5</td>
<td>239.8</td>
<td>319.7</td>
<td>292.5</td>
<td>266.2</td>
<td>183.8</td>
<td>183.8</td>
<td>254.0</td>
</tr>
<tr>
<td>F₁</td>
<td>266.2</td>
<td>319.7</td>
<td>183.8</td>
<td>319.0</td>
<td>292.5</td>
<td>319.7</td>
<td>292.0</td>
<td>284.7</td>
</tr>
<tr>
<td>Mean</td>
<td>279.3</td>
<td>279.7</td>
<td>251.7</td>
<td>305.7</td>
<td>279.3</td>
<td>251.7</td>
<td>237.9</td>
<td>268.3</td>
</tr>
</tbody>
</table>

S.E. of F marginal mean =-23.3 lb./ac.
S.E. of M marginal mean =-45.7 lb./ac.
S.E. of body of table =-61.6 lb./ac.

Crop :- Wheat (Rabi).

Site :- Govt. Agri. Expt. Farm, Mandore.

Object :- To study the effect of minor elements with and without F.Y.M. on germination, growth and yield of Wheat.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) Wheat. (c) Green manure guara. (ii) (a) Sandy loam. (b) N.A.  
   (iii) 2nd week of Nov. 1953. (iv) (a) to (e) N.A.  
   (v) No. (vi) N.A.  
   (vii) Irrigated on 16.1.54.  
   (viii) Hoeing on 6.3.54. (ix) N.A.  
   (x) 9.5.54.

2. TREATMENTS :
   All combinations of (1) and (2)
   (1) 2 doses of F.Y.M. : F₀=0 and F₁=2 ton/ac.
   (2) 7 doses of minor elements : M₀=0, M₁=40 lb./ac. of Catalyst, M₂=80 lb./ac. of Catalyst, M₃=14 lb./ac. of Fe. Sui., M₄=28 lb./ac. of Fe. Sui., M₅=8 lb./ac. of Pot. Permanganate and M₆=16 lb./ac. of Pot. Permanganate.

3. DESIGN :
   (i) 2×7 Fact. in R.B.D. (ii) (a) 14. (b) N.A.  
   (iii) 3. (iv) (a) 15'×9'. (b) 12'×6'. (v) 1' around.  
   (vi) Yes.

4. GENERAL :
   (i) Good. (ii) N.A.  
   (iii) Yield of grain. (iv) (a) 1952-53—N.A. (b) Yes. (c) N.A.  
   (v) (a) Kotah. (b) N.A.  
   (vi) Nil. (vii) Nil.

5. RESULTS :
   (i) 1262 lb./ac.  
   (ii) 230.9 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>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>N₀</td>
<td>1114</td>
<td>1166</td>
<td>1373</td>
<td>1088</td>
<td>1244</td>
<td>1192</td>
<td>1244</td>
<td>1203</td>
</tr>
<tr>
<td>N₁</td>
<td>1425</td>
<td>1425</td>
<td>1321</td>
<td>1321</td>
<td>1192</td>
<td>1192</td>
<td>1373</td>
<td>1321</td>
</tr>
<tr>
<td>Mean</td>
<td>1269</td>
<td>1295</td>
<td>1347</td>
<td>1204</td>
<td>1218</td>
<td>1192</td>
<td>1308</td>
<td>1262</td>
</tr>
</tbody>
</table>

S.E. of F marginal mean =-50.4 lb./ac.
S.E. of M marginal mean =-94.3 lb./ac.
S.E. of body of table =-133.3 lb./ac.
Crop :- Wheat (Rabi).  
Ref :- Rj. 58(20).  
Type :- 'M'.

Object :- To study the effect of minor elements with and without F.Y.M. on the growth, germination & yield of Wheat.

1. BASAL CONDITIONS :
   (i) (a) to (c) N.A.  
   (ii) (a) Desert soils sandy. (b) N.A.  
   (iii) 11.11.53.  
   (iv) (a) to (c) N.A.  
   (v) N.A.  
   (vi) C---591.  
   (vii) Irrigated.  
   (viii) Weeding on 6.3.54.  
   (ix) N.A.  
   (x) 12.4.54.

2. TREATMENTS :
   All combinations of (1) and (2)
   (1) 2 doses of F.Y.M. : F0 =0 and F1 =2 ton./ac.
   (2) 7 doses of minor elements : M0 =0, M1 =40 lb./ac. of Catalyst, M2 =80 lb./ac. of Catalyst, M3 =14 lb./ac. of Fe. Sul., M4 =28 lb./ac. of Fe. Sul., M5 =8 lb./ac. of Pot. Permanganate & M6 =16 lb./ac. of Pot. Permanganate.

3. DESIGN : 
   (i) 2 x 7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 14' x 8'. (b) 12' x 6'. (v) 1' all round.  
   (vi) Yes.

4. GENERAL : 
   (i) Good.  
   (ii) No.  
   (iii) Yield of grain.  
   (iv) (a) 1952--N.A.  
   (b) No.  
   (c) N.A.  
   (d) Kota. (b) N.A.  
   (e) Nil.  
   (f) Nil.

5. RESULTS :
   (f) 1316 lb./ac.  
   (ii) 171.2 lb./ac.  
   (iii) None of the effects is significant.  
   (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>M4</th>
<th>M5</th>
<th>M6</th>
<th>M7</th>
<th>M8</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>F0</td>
<td>1175</td>
<td>1234</td>
<td>1456</td>
<td>1151</td>
<td>1340</td>
<td>1258</td>
</tr>
<tr>
<td>F1</td>
<td>1505</td>
<td>1538</td>
<td>1423</td>
<td>1398</td>
<td>1238</td>
<td>1316</td>
</tr>
<tr>
<td>Mean</td>
<td>1341</td>
<td>1336</td>
<td>1449</td>
<td>1275</td>
<td>1299</td>
<td>1287</td>
</tr>
</tbody>
</table>

S.E. of F marginal mean = 37.3 lb./ac.
S.E. of M marginal mean = 69.9 lb./ac.
S.E. of body of table = 98.9 lb./ac.

Crop :- Wheat (Rabi).  
Ref :- Rj. 50(21).  
Type :- 'M'.

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

1. BASAL CONDITIONS :
   (i) (a) No. (b) N.A.  
   (c) N.A.  
   (ii) (a) Sandy loam. (b) N.A.  
   (iii) 4.12.50.  
   (iv) (a) Ploughing 5 times. (b) N.A.  
   (c) N.A.  
   (d) N.A.  
   (e) N.A.  
   (f) Nil.  
   (g) C---591.  
   (h) Irrigated.  
   (i) N.A.  
   (j) N.A. (x) 12.4.51.

2. TREATMENTS :
   All combinations of (1) and (2)+ a Control
   (1) 4 sources of N : A/S, Oil cake, F.Y.M. and M.C.
   (2) 2 levels of N : N1 =30 and N2 =40 lb./ac.

3. DESIGN :
   (i) R.B.D.  
   (ii) (a) 9. (b) N.A.  
   (iii) 6. (iv) (a) 16' x 32'. (b) 14' x 30'. (v) 1' all around.  
   (vi) Yes.
4. GENERAL:
(i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1949-50 to 1950-51. (b) No. (c) No. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 647 lb./ac.
(ii) 104.7 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Control = 603 lb./ac.</th>
<th>A/S Oilcake</th>
<th>F.Y.M.</th>
<th>M.C.</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>654</td>
<td>657</td>
<td>591</td>
<td>602</td>
</tr>
<tr>
<td>N2</td>
<td>697</td>
<td>734</td>
<td>717</td>
<td>784</td>
</tr>
<tr>
<td>Mean</td>
<td>655</td>
<td>695</td>
<td>654</td>
<td>593</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of source = 39.2 lb./ac.
S.E. of marginal mean of N level = 21.4 lb./ac.
S.E. of body of table = 42.7 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Res. Farm, Tabijli.
Ref.: Rij. 51(18).
Object: To study the effect of organic manures on the yield of Wheat.
Type: 'M'.

1. BASAL CONDITIONS:
(i) (a) No. (b), (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.11.51. (iv) (a) Ploughed 4 times with irrigation. (b) Drilled. (c) 1 md./ac. (d) rows 9" apart. (e) N.A. (v) No. (vi) N.F. 718.
(vii) Irrigated. (viii) N.A. (ix) N.A. (x) 4.3.52.

2. TREATMENTS:
All combinations of (1) and (2) + a Control
(1) 3 manures viz. M.C., Farm Compost & F.Y.M.
(2) 4 levels of manures viz. M1 =50, M2 =100, M3 =150 & M4 =200 md./ac.

3. DESIGN:
(i) R.B.D. (ii) 13. (b) N.A. (iii) 6. (iv) (a) 20'x12'. (b) 18'x10'. (v) 1' around. (vi) Yes.

4. GENERAL:
(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) Same experiment repeated in different fields at the same farm. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 1390 lb./ac.
(ii) 297.9 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Control = 1556 lb./ac.</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.C.</td>
<td>1264</td>
<td>1440</td>
<td>1264</td>
<td>1409</td>
<td>1344</td>
</tr>
<tr>
<td>Farm Compost</td>
<td>1388</td>
<td>1368</td>
<td>1409</td>
<td>1375</td>
<td>1435</td>
</tr>
<tr>
<td>F.Y.M.</td>
<td>1471</td>
<td>1326</td>
<td>1409</td>
<td>1422</td>
<td>1407</td>
</tr>
<tr>
<td>Mean</td>
<td>1374</td>
<td>1378</td>
<td>1361</td>
<td>1469</td>
<td>1395</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of M = 70.2 lb./ac.
S.E. of marginal mean of "Footnotes" = 62.3 lb./ac.
S.E. of body of table = 121.7 lb./ac.
Crop: Wheat (Rabi).
Site: Govt. Agri. Res. Farm, Tabiji.

Object: To study the effect of organic manures on the yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) No (b) (c) N.A. (ii) (a) Sandy loam (b) N.A. (iii) 20.11.51 (iv) (a) Ploughing 4 times with irrigation (b) Drilled (c) 1 md./ac. (d) rows 9' apart. (e) N.A. (v) Nil. (vi) N.P. 721 (vii) Irrigated (viii) N.A. (ix) N.A. (x) 31.3.52.

2. TREATMENTS:
All combinations of (1) & (2) + a Control.
(1) 3 manures viz. M.C., Farm Compost & F.Y.M.
(2) 4 doses of manures viz. M_1=50, M_2=100, M_3=150 & M_4=200 mds./ac.

3. DESIGN:
(i) R.B.D. (ii) (a) 13 (b) N.A. (iii) 4 (iv) (a) 12'x20' (b) 10'x18' (v) 1' around. (vi) Yes.

4. GENERAL:
(i) No. (ii) Yield of grain (iii) No (a) No (b) No (c) N.A. (v) (a) The same experiment was repeated at different fields of the same farm (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 781.7 lb./ac.
(ii) 273.6 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>M_1</th>
<th>M_2</th>
<th>M_3</th>
<th>M_4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.C.</td>
<td>600.9</td>
<td>728.2</td>
<td>922.0</td>
<td>891.0</td>
<td>785.5</td>
</tr>
<tr>
<td>Farm Compost</td>
<td>891.0</td>
<td>683.8</td>
<td>891.0</td>
<td>953.1</td>
<td>854.7</td>
</tr>
<tr>
<td>F.Y.M.</td>
<td>828.8</td>
<td>849.5</td>
<td>808.1</td>
<td>642.3</td>
<td>782.2</td>
</tr>
<tr>
<td>Mean</td>
<td>773.6</td>
<td>753.8</td>
<td>873.7</td>
<td>828.8</td>
<td>807.5</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of M = 79.0 lb./ac.
S.E. of marginal mean of Manures = 68.4 lb./ac.
S.E. of body of table = 136.8 lb./ac.

---

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

Object: To study the effect of organic manures on the yield of Wheat.

1. BASAL CONDITIONS:
(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.11.52. (iv) (a) Ploughing 4 times (b) N.A. (c) 1 md./ac. (d) N.A. (e) N.A. (v) Nil. (vi) C, 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) 1.05" (15.11.52 to 26.3.53). (x) 26.3.53.

2. TREATMENTS:
All combinations of (1) & (2)
(1) 3 sources of N each at 50 lb./ac. := A/S, Blood meal & Compost.
(2) 2 levels of Super := 0 & 100 lb./ac.
Fertilizers sprayed at the time of cultivation before sowing.

3. DESIGN:
(i) 2 x 3 Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 32'x18'. (b) 30'x16' (v) 1' around (vi) Yes.

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

5. RESULTS:
(i) 1715 lb./ac.
(ii) 135.7 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Source of 50 N</th>
<th>A/S Bloodmeal</th>
<th>compost</th>
<th>Mean.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super 0</td>
<td>1814</td>
<td>1634</td>
<td>1688</td>
</tr>
<tr>
<td>100</td>
<td>1723</td>
<td>1700</td>
<td>1732</td>
</tr>
<tr>
<td>Mean.</td>
<td>1767</td>
<td>1667</td>
<td>1710</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of sources = 48.00 lb./ac.
S.E. of marginal mean of super = 39.2 lb./ac.
S.E. of body of table = 67.8 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Res. Farm, Tabiji.
Ref: Rj. 52 (39).
Type: 'M'.

Object: To study the optimum dose of N on the yield of Wheat.

1. BASAL CONDITIONS:
(a) (A) No. (b) N.A. (c) N.A. (d) N.A. (e) Sandy loam. (f) N.A. (g) 29.10.52. (h) 5 ploughings. (i) N.A.
(j) 1 md./ac. (k) N.A. (l) Nil. (m) C. 591 (Medium) (n) Irrigated. (o) N.A. (p) N.A. (q) 21.3.53.

2. TREATMENTS:
1. Control
2. 20 lb./ac. of N.
3. 40 lb./ac. of N.
4. 60 lb./ac. of N.
5. 80 lb./ac. of N.
N as A/S sprayed at the time of cultivation before sowing.

3. DESIGN:
(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6 (iv) (a) 32'x18'. (b) 30'x16'. (v) 1' around. (vi) Yes.

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

5. RESULTS:
(i) 1324 lb./ac.
(ii) 123.4 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1120</td>
</tr>
<tr>
<td>2.</td>
<td>1472</td>
</tr>
<tr>
<td>3.</td>
<td>1550</td>
</tr>
<tr>
<td>4.</td>
<td>1281</td>
</tr>
<tr>
<td>5.</td>
<td>1197</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>50.3 lb./ac.</td>
</tr>
</tbody>
</table>
Crop : Wheat (Rabi).
Site : Govt. Agric. Res. Farm, Tabijji.

Object :- To study the effect of N and P₂O₅ in different doses applied alone and in combination.

1. BASAL CONDITIONS :
   (i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 31.10.52 (iv) (a) Ploughing 4 times. (b) N.A. (c) 1 md./ac. (d) and (e) N.A. (v) Nil. (vi) C. 591 (Medium). (vii) Irrigated. (viii) Nil. (ix) N.A. (e) 19.3.53.

2. TREATMENTS :
   All combinations of (1) and (2)
   (1) 2 levels of N : N₀=0 and N₁=40 lb./ac.
   (2) 2 levels of P₂O₅ : P₀=0 and P₁=40 lb./ac.
   N applied as A/S and P₂O₅ as Super sprayed before sowing.

3. DESIGN :
   (i) 2x2 Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 40’ x 27’. (b) 38’ x 25’. (v) 1’ around. (vi) Yes.

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

5. RESULTS :
   (i) 1584 lb./ac.
   (ii) 85.3 lb./ac.
   (iii) Only interaction N × P is significant.
   (iv) Av. yield of grain in lb./ac.

   ![Table Image]

   S.E. of any marginal mean = 30.5 lb./ac.
   S.E. of body of table = 43.1 lb./ac.

---

Crop : Wheat (Rabi).
Site : Govt. Agric. Farm, Udaipur.

Object :- To find out the effect of A/S and F.Y.M. on the yield of Wheat.

1. BASAL CONDITIONS :
   (i) (a) Wheat in rotation with maize. (b) Maize. (c) As per treatments. (ii) (a) Clay (b) N.A. (iii) 4.11.51 (iv) (a) Two ploughings. One pre-sowing irrigation and four ploughings to make the soil pulverised. (b) N.A. (c) 1 md./ac. (d) Distance between each line 9”. (e) N.A. (v) Maize crop grown and taken as base manure. (vi) C. 591. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 13.3.1952.

2. TREATMENTS :
   1. Control.
   2. 20 lb./ac of N as A/S.
   3. 30 lb./ac of N as A/S.
   4. 40 lb./ac of N as A/S.
   5. 20 lb./ac of N as F.Y.M.

3. DESIGN :
   (i) R.B.D. (ii) (a) S. (b) N.A. (iii) 6. (iv) (a) 303’ x 24’. (b) 24’3” x 18’. (v) 3’ around (vi) Yes.
4. GENERAL:
(i) Normal (ii) N.A. (iii) Yield of grain. (iv) (a) Yes 1950-51. (b) Yes. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Too high yields.

5. RESULTS:
(i) 3399 lb./ac.
(ii) 609 lb./ac.
(iii) The 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>1.</td>
<td>3092</td>
</tr>
<tr>
<td>2.</td>
<td>3570</td>
</tr>
<tr>
<td>3.</td>
<td>3354</td>
</tr>
<tr>
<td>4.</td>
<td>3701</td>
</tr>
<tr>
<td>5.</td>
<td>3281</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>-218.6 lb./ac.</td>
</tr>
</tbody>
</table>

Crop :- Wheat.  Ref :- Simple trials on cultivators' fields (T.C.M.) 1953.
Centre :- Pisangunj (Rajasthan).  Type :- 'M'.
Object :- 1 (b) :ii) To study different levels and types of N and P₂O₅

1. BASAL CONDITIONS :

2. TREATMENTS :

<table>
<thead>
<tr>
<th>Treatment</th>
<th>0</th>
<th>P as 20 lb/ac. P₂O₅ as Super.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>5N₂P = A/S at 50 lb/ac. of N+20 lb/ac. of P₂O₅ as Super.</td>
<td></td>
</tr>
<tr>
<td>P + N₂P</td>
<td>5N₂P = A/S at 50 lb/ac. of N+20 lb/ac. of P₂O₅ as Super.</td>
<td></td>
</tr>
<tr>
<td>P + N₂P</td>
<td>5N₂P = Urea at 50 lb/ac. of N+20 lb/ac. of P₂O₅ as Super.</td>
<td></td>
</tr>
<tr>
<td>P + N₂P</td>
<td>5N₂P = Urea at 50 lb/ac. of N+20 lb/ac. of P₂O₅ as Super.</td>
<td></td>
</tr>
</tbody>
</table>

Fertilizers broadcast before sowing.

3. DESIGN :
(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

4. GENERAL :
(i) Normal (ii) Some damage to the crop was caused by frost and rot attack (iii) Yield of grain. (iv) (a) 1953—56. (b) No. (c) N.A. (v) N.A. (vi) Nil (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb/ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1158</td>
</tr>
<tr>
<td>P</td>
<td>1276</td>
</tr>
<tr>
<td>N₂P</td>
<td>1595</td>
</tr>
<tr>
<td>N₂P</td>
<td>1691</td>
</tr>
<tr>
<td>N₂P</td>
<td>1497</td>
</tr>
<tr>
<td>N₂P</td>
<td>1627</td>
</tr>
<tr>
<td>G.M.</td>
<td>1474</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>48.9 lb/ac.</td>
</tr>
<tr>
<td>No. of exps.</td>
<td>28</td>
</tr>
</tbody>
</table>
Centre: Pisangunj (Rajasthan). Type: ‘M’.

Object: (i) To study the effect of N and P manures.

1. BASAL CONDITIONS:

2. TREATMENTS:
   0 = Control.
   N = A/S at 20 lb./ac. of N
   NP = A/S at 20 lb./ac. of N + Super at 20 lb./ac. of P₂O₅
   N'P = A/N at 20 lb./ac. of N + Super at 20 lb./ac. of P₂O₅
   N'P' = Urea at 20 lb./ac. of N + Super at 20 lb./ac. of P₂O₅

   Fertilizers broadcast before sowing.

3. DESIGN:
   (i) & (ii) Eleven community project centres, representing the entire wheat-growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL:
   (i) Normal. (ii) Some damage to the crop was caused by frost and rot attack. (iii) Yield of grain. (iv) a 1953–56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>1122</td>
</tr>
<tr>
<td>N</td>
<td>1372</td>
</tr>
<tr>
<td>NP</td>
<td>1476</td>
</tr>
<tr>
<td>N'P</td>
<td>1443</td>
</tr>
<tr>
<td>N'P'</td>
<td>1457</td>
</tr>
<tr>
<td>G.M.</td>
<td>1374</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>48.9 lb./ac.</td>
</tr>
<tr>
<td>No. of expts.</td>
<td>36</td>
</tr>
</tbody>
</table>

Centre: Pisangunj (Rajasthan). Type: ‘M’.

Object: (i) To study the effects of types and levels of N and P₂O₅.

1. BASAL CONDITIONS:

2. TREATMENTS:
   0 = Control.
   N = A/S at 20 lb./ac. of N
   NP₁ = A/S at 40 lb./ac. of N + Super at 20 lb./ac. of P₂O₅
   NP₂ = A/S at 40 lb./ac. of N + Super at 40 lb./ac. of P₂O₅
   NP₁' = A/S at 40 lb./ac. of N + Nitro. Phos at 20 lb./ac. of P₂O₅
   NP₂' = A/S at 40 lb./ac. of N + Nitro. Phos at 40 lb./ac. of P₂O₅

   Fertilizers broadcast before sowing.
3. DESIGN:
(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL:
(i) Normal. (ii) Some damage to the crop was caused by frost and rot attack. (iii) Yield of grain. (iv) (a) 1953–56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>1134</td>
</tr>
<tr>
<td>N</td>
<td>1348</td>
</tr>
<tr>
<td>NP₁</td>
<td>1419</td>
</tr>
<tr>
<td>NP₂</td>
<td>1535</td>
</tr>
<tr>
<td>NP₃</td>
<td>1665</td>
</tr>
<tr>
<td>NP₄</td>
<td>1601</td>
</tr>
<tr>
<td>G.M.</td>
<td>1454</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>127.5 lb./ac.</td>
</tr>
</tbody>
</table>
| No. of expts. | 10.          


Object:— IV (ii) To study the effects of types and levels of N and P.

1. BASAL CONDITIONS:

2. TREATMENTS:
O = Control.
N = A/S at 40 lb./ac. of N.
NP₁ = A/S at 40 lb./ac. of N+Super at 20 lb./ac. of P₂O₅.
NP₂ = A/S at 40 lb./ac. of N+Super at 40 lb./ac. of P₂O₅.
NP₃ = A/S at 40 lb./ac. N+Ammo. Phos at 20 lb./ac. of P₂O₅.
NP₄ = A/S at 40 lb./ac. N+Ammo. Phos at 40 lb./ac. of P₂O₅.
Fertilizers broadcast before sowing.

3. DESIGN:
(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL:
(i) Normal. (ii) Some damage to the crop was caused by frost and rot attack. (iii) Yield of grain. (iv) (a) 1953–56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>842</td>
</tr>
<tr>
<td>N</td>
<td>1123</td>
</tr>
<tr>
<td>NP₁</td>
<td>1282</td>
</tr>
<tr>
<td>NP₂</td>
<td>1341</td>
</tr>
<tr>
<td>NP₃</td>
<td>1343</td>
</tr>
<tr>
<td>NP₄</td>
<td>1273</td>
</tr>
<tr>
<td>G.M.</td>
<td>1200</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>96.7 lb./ac.</td>
</tr>
<tr>
<td>No. of Expts.</td>
<td>9.</td>
</tr>
</tbody>
</table>
Centre: Pisangunj (Rajasthan).  Type: ‘M’.

Object: – IV (v) To study the effect of types and levels of N and P.

1. BASAL CONDITIONS:


2. TREATMENTS:

0 = Control.  
N = A/S at 40 lb./ac. of N.  
NP'1 = A/S at 40 lb./ac. of N + Nitro. Phos. at 40 lb./ac. of P2O5.  
NP'2 = A/S at 40 lb./ac. of N + Nitro. Phos. at 40 lb./ac. of P2O5.  
P = A/S at 40 lb./ac. of N + Amm. Phos. at 40 lb./ac. of P2O5.  
Fertilizers broadcast before sowing.

3. DESIGN:

(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL:

(i) Normal. (ii) Some damage to the crop was caused by frost and rot attack. (iii) Yield of grain. (iv) (a) 1953—56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1131</td>
</tr>
<tr>
<td>N</td>
<td>1265</td>
</tr>
<tr>
<td>NP'1</td>
<td>1286</td>
</tr>
<tr>
<td>NP'2</td>
<td>1251</td>
</tr>
<tr>
<td>N</td>
<td>1573</td>
</tr>
<tr>
<td>NP'1</td>
<td>1481</td>
</tr>
<tr>
<td>P</td>
<td>1331</td>
</tr>
<tr>
<td>S.E. mean</td>
<td>82.3 lb./ac.</td>
</tr>
<tr>
<td>No. of Expts.</td>
<td>11</td>
</tr>
</tbody>
</table>

---

Crop: Wheat  Ref.: Simple trials on cultivator’s fields (T.C.M.), 1953.  
Centre: Raisingnagar (Rajasthan)  Type ‘M’

Object: – I (b) (ii) To study the effect of different levels and types of N and P2O5.

1. BASAL CONDITIONS:


2. TREATMENTS:

0 = Control.  
N = 20 lb. P2O5/ac. as Super.  
NP'1 = A/S at 40 lb. N/ac + 20 lb. P2O5/ac. as Super.  
NP'2 = Urea at 20 lb. N/ac + 20 lb. P2O5/ac. as Super.  
NP'3 = Urea at 40 lb. N/ac + 20 lb. P2O5/ac. as Super.  
Fertilizers drilled at the time of sowing.
3. **DESIGN:**

(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

4. **GENERAL:**

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953-56, (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. **RESULTS:**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>2200</td>
</tr>
<tr>
<td>P</td>
<td>2487</td>
</tr>
<tr>
<td>N&lt;sub&gt;1&lt;/sub&gt;P</td>
<td>2136</td>
</tr>
<tr>
<td>N&lt;sub&gt;2&lt;/sub&gt;P</td>
<td>2617</td>
</tr>
<tr>
<td>N&lt;sub&gt;1&lt;/sub&gt;'P</td>
<td>2667</td>
</tr>
<tr>
<td>N&lt;sub&gt;2&lt;/sub&gt;'P</td>
<td>2794</td>
</tr>
<tr>
<td>G.M.</td>
<td>2584</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>69.2 lb./ac.</td>
</tr>
<tr>
<td>No. of expts.</td>
<td>43</td>
</tr>
</tbody>
</table>

Crop: Wheat  
Ref.: Simple trials on cultivators’ fields (T.C.M.), 1953.  
Centre: Raisingnagar (Rajasthan)  
Type: ‘M’  
Object: To study the effect of N, P & K manures

1. **BASAL CONDITIONS:**

(i) (a) N.A. (b) N.A.  
(c) N.A. (ii) Desert soil-fine sandy soil—pH 7.8 (iii) Nil. (iv) N.A. (v) N.A.  

2. **TREATMENTS:**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>Control</td>
</tr>
<tr>
<td>N</td>
<td>A/S at 20 lb. N/ac.</td>
</tr>
<tr>
<td>N&lt;sub&gt;P&lt;/sub&gt;</td>
<td>A/S at 20 lb. N/ac.+Super at 20 lb. P&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;5&lt;/sub&gt;/ac.</td>
</tr>
<tr>
<td>N&lt;sub&gt;1&lt;/sub&gt;'P</td>
<td>A/N at 20 lb. N/ac.+Super at 20 lb. P&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;5&lt;/sub&gt;/ac.</td>
</tr>
<tr>
<td>N&lt;sub&gt;2&lt;/sub&gt;'P</td>
<td>Urea at 20 lb. N/ac.+Super at 20 lb. P&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;5&lt;/sub&gt;/ac.</td>
</tr>
</tbody>
</table>

3. **DESIGN:**

(i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out (iii) N.A. (iv) Yes.

4. **GENERAL:**

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953-56 (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. **RESULTS:**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>2099</td>
</tr>
<tr>
<td>N</td>
<td>2264</td>
</tr>
<tr>
<td>N&lt;sub&gt;P&lt;/sub&gt;</td>
<td>2660</td>
</tr>
<tr>
<td>N&lt;sub&gt;1&lt;/sub&gt;'P</td>
<td>2697</td>
</tr>
<tr>
<td>N&lt;sub&gt;2&lt;/sub&gt;'P</td>
<td>2736</td>
</tr>
<tr>
<td>NPK</td>
<td>2697</td>
</tr>
<tr>
<td>G.M.</td>
<td>2562</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>66.6 lb./ac.</td>
</tr>
<tr>
<td>No. of expts.</td>
<td>56</td>
</tr>
</tbody>
</table>
Crop :- Wheat.  Ref :- Simple trials on cultivators' fields (T.C.M.), 1953.
Centre :- Raisingnagar (Rajasthan)  Type :- 'M'.

Object :- IV (i) To study the effects of types and levels of N and P.

1. BASAL CONDITIONS :
   (i) (a) N.A. (b) N.A. (c) N.A. (ii) Desert soil — fine sandy soil & p.H. 7.8 (iii) Nil. (iv) N.A. (v)

2. TREATMENTS :
   O = Control
   N = A/S at 40 lb. N/ac.
   NP1 = A/S at 40 lb. N/ac. + Super at 20 lb. P2O5/ac.
Fertilizers drilled at the time of sowing.

3. DESIGN:
   (i) & (ii) Eleven community project centres, representing the entire wheat growing tract of the country,
   were selected. From each community project centre, one development block was selected. Villages were
   selected at random from the selected block and a list of cultivators growing wheat for each selected
   village was prepared. From this list, two cultivators were selected at random and one field each
   belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A.
   (iv) Yes.

4. GENERAL:
   (i) Normal. (ii) Nil. (iii) Yield of grain (iv) (a) 1953 - 56 (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:

   Treatment  | Av. yield in lb/ac.
   -----------|-------------------
   O          | 1730
   N          | 2169
   NP1        | 2510
   NP2        | 2322
   NP'1       | 2246
   G.M.       | 2323
   S.E./mean  | 108.3 lb./ac.
   No. of expts. | 14

---

Crop :- Wheat.  Ref :- Simple trials on cultivators' fields (T.C.M.), 1953.
Centre :- Raisingnagar (Rajasthan)  Type :- 'M'.

Object :- IV (i) To study the effects of types and levels of N and P.

1. BASAL CONDITIONS :
   (i) (a) N.A. (b) N.A. (c) N.A. (ii) Desert soil — fine sandy soil & p.H. 7.8. (iii) Nil. (iv) N.A. (v)

2. TREATMENTS :
   O = Control.
   N = A/S at 40 lb. N/ac.
Fertilizers drilled at the time of sowing.
3. DESIGN:
(i) and (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL:
(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—56. (b) No. (c) N.A. (v) N.A. (vi) N.A. (vii) Nil. (viii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>2059</td>
</tr>
<tr>
<td>N</td>
<td>2366</td>
</tr>
<tr>
<td>NP₁</td>
<td>2439</td>
</tr>
<tr>
<td>NP₂</td>
<td>2491</td>
</tr>
<tr>
<td>G.M.</td>
<td>2417</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>153.9 lb./ac.</td>
</tr>
</tbody>
</table>

Centre: Raisingnagar (Rajasthan). Type: 'M'.

Object: To study the effects of types and levels of N and P.

1. BASAL CONDITIONS:

2. TREATMENTS:
O = Control.
N = A/S at 40 lb. N/ac.
NP₂ = A/S at 40 lb. N/ac. + Nitro phos. at 40 lb. P₂O₅/ac.
NP₂₋ = A/S at 40 lb. N/ac. + Ammo. phos. at 40 lb. P₂O₅/ac.
Fertilizers drilled at the time of sowing.

3. DESIGN:
(i) and (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL:
(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>2523</td>
</tr>
<tr>
<td>N</td>
<td>2704</td>
</tr>
<tr>
<td>NP₁</td>
<td>2471</td>
</tr>
<tr>
<td>NP₂</td>
<td>2760</td>
</tr>
<tr>
<td>NP₁₋</td>
<td>2299</td>
</tr>
<tr>
<td>NP₂₋</td>
<td>2533</td>
</tr>
<tr>
<td>G.M.</td>
<td>2556</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>166.6 lb./ac.</td>
</tr>
</tbody>
</table>

No. of experiments 12

Site: Sumerpur (Rajasthan). Type: 'M'.

Object: I (b) (iii) To study different levels and types of N and P.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) N.A. (c) N.A. (ii) Clay loam pH 8.2. (iii) Nil. (iv) N.A. (v) N.A. (vi) November.

2. TREATMENTS:
O = Control.
N = A/S at 20 lb. N/ac. as Super.
NP = A/S at 20 lb. N/ac. + 20 lb. P₂O₅/ac. as Super.
N₅P = A/N at 20 lb. N/ac. + 20 lb. P₂O₅/ac. as Super.
N₇P = Urea at 20 lb. N/ac. + 20 lb. P₂O₅/ac. as Super.
N₉P = A/N at 20 lb. N/ac. + 20 lb. P₂O₅/ac. as Super.

Fertilizers broadcast before sowing.

3. DESIGN:
(i) and (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL:
(i) Normal. (ii) "Piazi" a serious weed in the area affected the crop very badly. (iii) Yield of grain. (iv) (a) 1953-56. (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>602</td>
</tr>
<tr>
<td>P</td>
<td>743</td>
</tr>
<tr>
<td>N₂P</td>
<td>809</td>
</tr>
<tr>
<td>N₅P</td>
<td>917</td>
</tr>
<tr>
<td>N₇P</td>
<td>860</td>
</tr>
<tr>
<td>N₉P</td>
<td>877</td>
</tr>
<tr>
<td>G.M.</td>
<td>895</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>55.3 lb./ac.</td>
</tr>
<tr>
<td>No. of experiments</td>
<td>20</td>
</tr>
</tbody>
</table>


Centre: Sumerpur (Rajasthan). Type: 'M'.

Object: I (b) (iii) To study the effect of N and P manures.
3. DESIGN:
(i) and (ii) Eleven community project centres representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL:
(i) Normal. (ii) “Piazi” a serious weed in the area affected the crop very badly. (iii) Yield of grain. (iv) (a) 1953-56. (b) No. (c) N.A. (e) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>678</td>
</tr>
<tr>
<td>N</td>
<td>914</td>
</tr>
<tr>
<td>NP</td>
<td>852</td>
</tr>
<tr>
<td>N'P</td>
<td>965</td>
</tr>
<tr>
<td>N'P''</td>
<td>875</td>
</tr>
<tr>
<td>G.M.</td>
<td>857</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

No. of experiments 14

Crop: Wheat.
Ref: Simple trials on cultivators' fields (T.C.M.), 1953.
Centre: Sumerpur (Rajasthan). Type: ‘M’.

Object:—IV (i) To study the effects of types and levels of N and P.

1. BASAL CONDITIONS:

2. TREATMENTS:
O =Control.
N =A/S at 40 lb. N/ac.
N’P 1 =A/S at 40 lb. N/ac. + Nitro. phos. at 20 lb. P2O5/ac.
NP’ 1 =A/S at 40 lb. N/ac. + Nitro. phos. at 40 lb. P2O5/ac.
Fertilizers broadcast before sowing.

3. DESIGN:
(i) and (ii) Eleven community project centres, representing the entire wheat growing tract of the country, were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL:
(i) Normal. (ii) “Piazi” a serious weed in the area affected the crop very badly. (iii) Yield of grain. (iv) (a) 1953-56. (b) No. (c) N.A. (e) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>489</td>
</tr>
<tr>
<td>N</td>
<td>365</td>
</tr>
<tr>
<td>NP</td>
<td>555</td>
</tr>
<tr>
<td>N’P</td>
<td>510</td>
</tr>
<tr>
<td>N’P’</td>
<td>498</td>
</tr>
<tr>
<td>N’P’’</td>
<td>577</td>
</tr>
<tr>
<td>G.M.</td>
<td>499</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>69.5 lb./ac.</td>
</tr>
</tbody>
</table>

No. of experiments 5
Centre: Sumerpur (Rajasthan). Type: 'M'.

Object: IV (ii) To study the effects of types and levels of N and P.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) N.A. (c) N.A. (ii) Clay loam pH 8.2. (iii) Nil. (iv) N.A. (v) N.A. (vi) November.

2. TREATMENTS:
   O = Control.
   \( N = \text{A/S at 40 lb. N/ac.} \)
   \( NP_1 = \text{A/S at 40 lb. N/ac. + Super at 20 lb. P}_{2}O_{5}/ac. \)
   \( NP_2 = \text{A/S at 40 lb. N/ac. + Super at 40 lb. P}_{2}O_{5}/ac. \)
   \( NP^*_1 = \text{A/S at 40 lb. N/ac. + Ammo. phos at 20 lb. P}_{2}O_{5}/ac. \)
   \( NP^*_2 = \text{A/S at 40 lb. N/ac. + Ammo. phos at 40 lb. P}_{2}O_{5}/ac. \)
   Fertilizers broadcast before sowing.

3. DESIGN:
   (i) and (ii) Eleven community project centres, representing the entire wheat growing tract of the country,
   were selected. From each community project centre, one development block was selected. Villages
   were selected at random from the selected block and a list of cultivators growing wheat for each selected
   village was prepared. From this list, two cultivators were selected at random and one field each
   belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A.
   (iv) Yes.

4. GENERAL:
   (i) Normal. (ii) "Piazi" a serious weed in the area affected the crop very badly. (iii) Yield of grain. (iv)
   (a) 1953-56 (b) No. (c) N.A. (v) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield in lb./ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>782</td>
</tr>
<tr>
<td>N</td>
<td>1018</td>
</tr>
<tr>
<td>NP_1</td>
<td>907</td>
</tr>
<tr>
<td>NP_2</td>
<td>1111</td>
</tr>
<tr>
<td>NP^*_1</td>
<td>1377</td>
</tr>
<tr>
<td>NP^*_2</td>
<td>1035</td>
</tr>
<tr>
<td>G.M.</td>
<td>1010</td>
</tr>
<tr>
<td>S.E./mean.</td>
<td>164.6 lb./ac.</td>
</tr>
<tr>
<td>No. of exps</td>
<td>8</td>
</tr>
</tbody>
</table>

Crop: Wheat. Ref: Complex experiments (T.C.M.), 1953.
Centre: Kotah (Rajasthan). Type: 'M'.

Object: I (a) To study the effect of levels and types of N and P on non-acid soils.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Rich in lime. (iii) 19.11.53. (iv) N.A.
   (v) Pb-591 (vi) Irrigated. (vii) One weeding (ix) 31.04*. (x) 11.4.54.

2. TREATMENTS:
   All combinations of (1), (2), (3) + 3 extra treatments.
   (1) 3 levels of N : \( N_0 = 0, N_1 = 20 \) and \( N_2 = 40 \) lb./ac.
   (2) 3 sources of N : A/S, A/N and Urea.
   (3) 3 levels of \( P_{2}O_{5} \) as Super : \( P_0 = 0, P_1 = 20 \) and \( P_2 = 40 \) lb./ac.
   and 3 extra treatments as:
   \( T_1 = 60 \) lb. N/ac as A/S+40 lb. P_{2}O_{5}/ac. as Super.
   \( T_2 = 40 \) lb. N/ac as A/S+80 lb. P_{2}O_{5}/ac. as Super.
   \( T_3 = 60 \) lb. N/ac as A/S+80 lb. P_{2}O_{5}/ac. as Super.

3. DESIGN:
(i) R.B.D. Fact. (ii) (a) 12 plots/block and 3 blocks/repliication. (3 plots for extra treatments in each block),
(iii) 1 (iv) (a) N.A. (b) 48'5" x 15". (v) N.A. (vi) Yes.

4. GENERAL:
(i) Normal, no lodging. (ii) Damage to crop by rats and stray cattle  
(iii) Yield of grain. (iv) (a) 1953-56
(b) No. (c) N.A. (v) (a) Niphad, Obdullaganj. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 677 lb./ac.
(ii) 301.1 lb./ac.
(iii) All effects and interactions are not significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>N_1</th>
<th>N_2</th>
<th>N_3</th>
<th>Mean</th>
<th>A/S</th>
<th>A/N</th>
<th>Urea</th>
</tr>
</thead>
<tbody>
<tr>
<td>P_0</td>
<td>652</td>
<td>626</td>
<td>867</td>
<td>715</td>
<td>849</td>
<td>634</td>
</tr>
<tr>
<td>P_1</td>
<td>552</td>
<td>750</td>
<td>642</td>
<td>648</td>
<td>847</td>
<td>647</td>
</tr>
<tr>
<td>P_2</td>
<td>722</td>
<td>680</td>
<td>515</td>
<td>652</td>
<td>719</td>
<td>717</td>
</tr>
<tr>
<td>Mean</td>
<td>642</td>
<td>685</td>
<td>688</td>
<td>672</td>
<td>805</td>
<td>666</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A/S</th>
<th>765</th>
<th>708</th>
<th>737</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/N</td>
<td>596</td>
<td>770</td>
<td>683</td>
</tr>
<tr>
<td>Urea</td>
<td>695</td>
<td>586</td>
<td>640</td>
</tr>
</tbody>
</table>

Mean yield of 3 extra treatments.
T_1 = 619 lb./ac.
T_2 = 565 lb./ac.
T_3 = 698 lb./ac.
Mean = 694 lb./ac.
S.E. of marginal mean of levels of N = 100.4 lb./ac.
S.E. of marginal mean of sources of N = 122.9 lb./ac.
S.E. of marginal mean of levels of P = 100.4 lb./ac.
S.E. of body of table level of N x P 'or' source of N x P = 173.6 lb./ac.
S.E. of body of table 'level x source' = 173.6 lb./ac.

Crop: - Wheat. 
Ref: - Complex experiments (T.C.M.), 1983.
Centre: - Kotah (Rajasthan). Type: - ‘M’.
Object: - II To study the best time of application of N.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Rich in lime. (iii) 30.11.53. (iv) N.A. (v) N.A.
(vi) P: 591 (vii) Irrigated. (viii) One weeding. (ix) 31.04.54. (x) 13, 16.4.54.

2. TREATMENTS:
All combinations of (1) and (2)+one Control (no manure).
(1) 2 times of application : D_1 = at sowing and D_2 = at first irrigation.
(2) 3 sources of N : A/S, A/N and Urea.
‘N’ applied at 20 lb./ac.

3. DESIGN:
(i) R.B.D. Fact. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 36.25' x 20'. (v) N.A. (vi) Yes.
4. GENERAL:
(i) Normal, no lodging. (ii) Considerable damage to crop by rats and stray cattle. (iii) Yield of grain. (iv)
(a) 1953-56. (b) No. (c) N.A. (v) (a) Banaras, Pura, Niphad, Satna, Paliad. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 2024 lb./ac.
(ii) 449.7 lb./ac.
(iii) Time of application, source of N and their interaction, and control vs. others are not significant.
(iv) Av. yield of grain in lb./ac.

Control=1752 lb./ac.

<table>
<thead>
<tr>
<th>Source</th>
<th>D1</th>
<th>D2</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/S</td>
<td>2354</td>
<td>2180</td>
<td>2267</td>
</tr>
<tr>
<td>Urea</td>
<td>1872</td>
<td>1970</td>
<td>1921</td>
</tr>
<tr>
<td>A/N</td>
<td>1937</td>
<td>2109</td>
<td>2033</td>
</tr>
</tbody>
</table>

Mean       2054  2086  2070

S.E. of marginal mean of time of application = 129.8 lb./ac.
S.E. of marginal mean of source of N = 139.0 lb./ac.
S.E. of body of table = 224.9 lb./ac.

Crop:- Wheat. Ref:- Complex experiments (T.C.M.), 1953.
Centre:- Kotah (Rajasthan). Type:- 'M'.
Object:- IV To study the effect of types, levels and methods of application of P.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) N.A. (c) N.A. (ii) (a) Medium black. (b) Rich in lime. (iii) 24.11.53. (iv) N.A. (v) N.A.
(vi) Pb-591. (vii) Irrigated. (viii) One weeding. (ix) 31.04". (x) 6.4.54.

2. TREATMENTS:
All combinations of (1), (2) and (3)+ one Control.
(1) 2 levels of P₂O₅ : P₁=15 lb./ac. and P₂=30 lb./ac.
(2) 3 sources of P₂O₅ : S₁=Super, S₃=Nitro. phos. and S₃=Ammo. phos.
(3) 2 methods of application : M₁=Broadcast before final cultivation and M₂=2" below seed.

3. DESIGN:
(i) R.B.D. (ii) (a) 14; 2 control plots/block. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 48°5' × 15°. (v) N.A. (vi) Yes.

4. GENERAL:
(i) Normal, no lodging. (ii) Crop slightly damaged by rats. (iii) Yield of grain. (iv)(a) 1953-56. (b) No
(c) N.A. (v) (a) Banaras, Pura, Paliad. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 1394 lb./ac.
(ii) 250.2 lb./ac.
(iii) Main effects, interactions and control vs. others are not significant.
Crop: \( \text{Wheat} \)
Site: Govt. Agri. Farm, Makrera.
Ref: \( \text{Rj. S3 (30)} \)
Type: \( \text{‘MV’} \)

Object: To find out the effect of different sources of ‘N’ on the yield of different varieties of Wheat.

1. BASAL CONDITIONS:
   (1) (a) No. (b) N.A. (c) N.A. (i) (a) Sandy Loam. (b) N.A. (ii) 10.11.53. (iv) (a) 4 ploughings. (b) N.A.
   (c) 1 md./ac. (d) Rows 9’ apart. (e) Nil. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 31.3.54.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 2 varieties: \( V_1 = \text{C. 591} \) and \( V_2 = \text{Local} \).
   (2) 5 Manures: \( M_0 = \text{0 lb./ac.} \), \( M_1 = \text{A/S at 50 lb./ac. of N} \), \( M_2 = \text{Compost at 50 lb./ac. of N} \), \( M_3 = \text{F.Y. M. at 50 lb./ac. of N} \), \( M_4 = \text{Oilcake at 50 lb./ac. of N} \).

3. DESIGN:
   (i) \( 2 \times 5 \) Pact. in R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 32’ \times 18’. (b) 30’ \times 16’ (v) 1’ on each side. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) No. (iii) Grain yield. (iv) (a) 1952 to 1954. (b) No. (c) Nil. (v) (a) No. (b) No. (vi) and (vii) Nil.

5. RESULTS:
   (i) 816.0 lb./ac.
   (ii) 271.4 lb./ac.
   (iii) Only manures effect is significant.
   (iv) Av. yield of grain in lb./ac.

\[
\begin{array}{|c|c|c|c|}
\hline
\text{Varieties} & M_0 & M_1 & M_2 & M_3 & M_4 & \text{Mean} \\
\hline
V_1 & 723 & 1181 & 875 & 612 & 775 & \text{833} \\
V_2 & 571 & 1288 & 525 & 875 & 735 & \text{799} \\
\hline
\text{Mean} & 647 & 1234 & 700 & 783 & 755 & \text{816} \\
\hline
\end{array}
\]

S.E. of marginal means of varieties = 60.6 lb./ac.
S.E. of marginal means of manures = 96.0 lb./ac.
S.E. of the body of table = 135.7 lb./ac.
Crop : Wheat (Rabi).
Site : Govt. Agri. Farm, Makrera.

Object : To find the effect of different forms of N on two varieties of Wheat.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5.11.52. (iv) (a) 4 ploughings.
   (b) N.A. (c) 1 md./ac. (d) 9" between rows. (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated.
   (viii) N.A. (ix) N.A. (x) 27.3.53.

2. TREATMENTS :
   Main-plot treatments :
   2 varieties viz. V₁ = C. 591 and V₂ = Local.
   Sub-plot treatments :

3. DESIGN :
   (i) Split plot. (ii) (a) 2 main-plots/block; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 34' x 20'.
   (b) 30' x 16'. (v) 2' around. (vi) Yes.

4. GENERAL :
   (i) Good. (ii) No. (iii) Yield of grain. (iv) (a) Yes, 1952 to 1954. (b) No. (c) N.A. (v) (a) No.
   (b) No. (vi) & (vii) Nil.

5. RESULTS :
   (i) 859 lb./ac.
   (ii) (a) 505.3 lb./ac. (b) 325.2 lb./ac.
   (iii) Only sources of N effect is highly significant.
   (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th></th>
<th>A/S</th>
<th>Bloodmeal</th>
<th>Compost</th>
<th>F.Y.M.</th>
<th>Oilcake</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>V₁</td>
<td>1509</td>
<td>103</td>
<td>942</td>
<td>529</td>
<td>889</td>
<td>875</td>
</tr>
<tr>
<td>V₂</td>
<td>1334</td>
<td>410</td>
<td>653</td>
<td>611</td>
<td>1147</td>
<td>844</td>
</tr>
<tr>
<td>Mean</td>
<td>1421</td>
<td>491</td>
<td>797</td>
<td>570</td>
<td>1018</td>
<td>859</td>
</tr>
</tbody>
</table>

S.E. of the difference of two
V means = 157.9 lb./ac.
Sources of N means = 102.6 lb./ac.
N means at the same level of V = 230.5 lb./ac.
V means at the same level of N = 260.5 lb./ac.

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

Object : To study the response to N obtained from different sources on two varieties of Wheat.

1. BASAL CONDITIONS :
   (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30.10.52. (iv) (a) to (e) N.A.
   (v) N.A. (vi) C. 591 (Medium), Local. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 31.3.53.

2. TREATMENTS :
   All combinations of (1) and (2)
   (1) 2 varieties viz. V₁ = C. 591 and V₂ = Local.
   (2) 5 sources of 60 lb./ac. of N viz. A/S, Bloodmeal, M.C., F.Y.M., and Oilcake.
3. DESIGN:
(i) 2x5 Fact. in R.B.D. (ii) 10. (b) N.A. (iii) 4. (iv) (a) 32'x18'. (b) 39'x16'. (v) [il'] on each side. (vi) Yes.

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

5. RESULTS:
(i) 1598 lb/ac. (ii) 198.3 lb/ac. (iii) Varieties & N effects are highly significant. (iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th>A/S Bloodmeal</th>
<th>M.C. F.Y.M.</th>
<th>Oilcake</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>V₁</td>
<td>1791</td>
<td>1528</td>
<td>1466</td>
</tr>
<tr>
<td>V₂</td>
<td>1913</td>
<td>1896</td>
<td>1607</td>
</tr>
<tr>
<td>Mean</td>
<td>1854</td>
<td>1712</td>
<td>1536</td>
</tr>
</tbody>
</table>

S.E. of variety marginal mean = 43.9 lb/ac.
S.E. of source marginal mean = 69.6 lb/ac.
S.E. of body of table = 99.1 lb/ac.

Crop: Wheat. Ref: Complex experiments (T.C.M.), 1953. Centre: Kotah (Rajasthan). Type: 'MV'.

Object:—VIII To study the effect of N & P₂O₅ along with varieties.

1. BASAL CONDITIONS:

2. TREATMENTS:
All combinations of (1), (2) & (3)
(1) 3 levels of N: N₀ = 0, N₁ = 20 and N₂ = 40 lb/ac.
(2) 3 levels of P₂O₅: P₀ = 0, P₁ = 20 and P₂ = 40 lb/ac.
(3) 3 varieties: V₁ = Pb 591, V₂ = 31-1 and V₃ = Malvi Local.
N as A/S applied by broadcast after final preparation of land.
P₂O₅ as triple super drilled along with seed.

3. DESIGN:
(i) 3² Fact. Conf. (ii) (a) 3 blocks/replication and 9 plots/block. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 36.25'x20'. (v) N.A. (vi) Yes.

4. GENERAL:
(i) Normal, no lodging. (ii) Slight rust attack was noted on Malvi wheat. Rat and cattle damage was considerable. (iii) Yield of grain. (iv) (a) 1953-56. (b) No. (c) N.A. (v) (a) Banaras, Pura, Niphad. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 849 lb/ac. (ii) 153.8 lb/ac. (iii) Main effect of V is highly significant. Main effects of N & P, and interaction N x P are significant. Others are not significant.
Crop: Wheat (Rabi).
Site: Govt. Agr. Farm, Makrera.
Ref: Rj. 52(54).
Type: 'C'.

Object: To find out the effect of different sowing dates on Wheat.

1. **BASAL CONDITIONS:**
   (i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) to (e) N.A. (v) Nil. (vi) C. 591 (Medium). (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 26.3.53.

2. **TREATMENTS:**
3. Sown on 1st Nov.
4. Sown on 28th Nov.
5. Sown on 14th Dec.

3. **DESIGN:**
   (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 35' x 15'. (b) 30' x 10'. (v) Yes.

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

5. **RESULTS:**
   (i) 867 lb./ac.
   (ii) 272.3 lb./ac.
   (iii) The treatment differences are highly significant.
   (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1743</td>
</tr>
<tr>
<td>2.</td>
<td>1505</td>
</tr>
<tr>
<td>3.</td>
<td>955</td>
</tr>
<tr>
<td>4.</td>
<td>876</td>
</tr>
<tr>
<td>5.</td>
<td>88</td>
</tr>
<tr>
<td>6.</td>
<td>37</td>
</tr>
</tbody>
</table>

S.E./mean = 136.1 lb./ac.

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

<table>
<thead>
<tr>
<th>Treatment</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>
<th>Mean</th>
<th>V&lt;sub&gt;1&lt;/sub&gt;</th>
<th>V&lt;sub&gt;2&lt;/sub&gt;</th>
<th>V&lt;sub&gt;3&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>P&lt;sub&gt;0&lt;/sub&gt;</td>
<td>675</td>
<td>1163</td>
<td>1066</td>
<td>968</td>
<td>757</td>
<td>1499</td>
<td>649</td>
</tr>
<tr>
<td>P&lt;sub&gt;1&lt;/sub&gt;</td>
<td>793</td>
<td>654</td>
<td>1237</td>
<td>895</td>
<td>937</td>
<td>1251</td>
<td>495</td>
</tr>
<tr>
<td>P&lt;sub&gt;2&lt;/sub&gt;</td>
<td>821</td>
<td>536</td>
<td>693</td>
<td>683</td>
<td>626</td>
<td>1024</td>
<td>399</td>
</tr>
<tr>
<td>Mean</td>
<td>763</td>
<td>784</td>
<td>999</td>
<td>849</td>
<td>773</td>
<td>1258</td>
<td>514</td>
</tr>
</tbody>
</table>

S.E. of any marginal mean = 50.0 lb./ac.
S.E. of any mean in the body of table = 89.7 lb./ac.
Crop : Wheat (Rabi).
Site : Govt. Agri. Farm, Tabiji.

Object :- To study the effect of different sowing dates on the yield of Wheat.

1. BASAL CONDITIONS :
   (i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30th Sept. 1952. (iv) (a) to (c) N.A. (v) Nil. (vi) C-591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 26.3.53.

2. TREATMENTS :
   1. Sown on 30th Sept.
   4. Sown on 14th Nov.
   5. Sown on 28th Nov.
   7. Sown on 29th Dec.

3. DESIGN :
   (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 35’X20’. (b) 30’X16’. (v) 2’ along breadth, 2’ along length. (vi) Yes.

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

5. RESULTS :
   (i) 899.0 lb./ac.
   (ii) 315.6 lb./ac.
   (iii) The treatment differences are highly significant.
   (iv) Av. yield of grain in lb./ac.

   Treatment   Av. yield.
   1.       1116
   2.       1613
   3.       1382
   4.       1032
   5.        809
   6.        240
   7.        35
   S.E./mean = 157.8 lb./ac.

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

Object :- To find out the effect of different methods of sowing on the yield of Wheat.

1. BASAL CONDITIONS :
   (i) (a) No. (b)&(c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.11.51. (iv) (a) 4 ploughings with irrigation. (b) Drilled. (c) 1 md/ac. (d) 9’ apart. (e) N.A. (v) No. (vi) C-591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 18.3.52.

2. TREATMENTS :
   1. Sowing in straight lines.
   2. Cross-wise sowing.
   3. Sowing after Palata.

3. DESIGN :
   (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 30’X30’. (b) 26’X26’. (v) 2’ on both sides. (vi) Yes.
4. GENERAL:
(i) Good. (ii) No. (iii) Grain yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 1592 lb./ac.
(ii) 189.6 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1457</td>
</tr>
<tr>
<td>2.</td>
<td>1884</td>
</tr>
<tr>
<td>3.</td>
<td>1434</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 94.8 lb./ac.</td>
</tr>
</tbody>
</table>

Crop :- Wheat (Rabi).  Ref :- Rj. 53(33).
Site :- Govt.'Agri. Farm, Makrera. Type :- 'CV'.

Object :- To find out the optimum seed rate for C-591 and country varieties of Wheat.

1. BASAL CONDITIONS:
(i) (a) Nil. (b), (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 1.12.53. (iv) (a), (b) N.A. (c) As per treatments.
(d), (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Nil. (ix) N.A. (x) 3.4.54.

2. TREATMENTS:
All combinations of (1) & (2)
(1) 2 varieties : \( V_1 = \) Country local & \( V_2 = \) C-591.
(2) 3 seedrates : \( R_1 = 30 \) lb./ac., \( R_2 = 40 \) lb./ac. & \( R_3 = 50 \) lb./ac.

3. DESIGN:
(i) 2x3 Fact. in R.B.D. (ii) 6. (b) N.A. (iii) 4. (iv) (a) 32\' x 14\'. (b) 30\' x 12\'. (v) 1' on each side. (vi) Yes.

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

5. RESULTS:
(i) 1313 lb./ac.
(ii) 209.0 lb./ac.
(iii) None of the effects 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>( V_1 )</td>
<td>1299</td>
<td>1338</td>
<td>1299</td>
<td>1312</td>
</tr>
<tr>
<td>( V_2 )</td>
<td>1268</td>
<td>1332</td>
<td>1342</td>
<td>1314</td>
</tr>
<tr>
<td>Mean</td>
<td>1283</td>
<td>1335</td>
<td>1320</td>
<td>1313</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of variety = 60.3 lb./ac.
S.E. of marginal mean of seed rate = 73.9 lb./ac.
S.E. of body of table = 104.5 lb./ac.
Crop :- Wheat (Rabi).  
Site :- Govt. Agri. Farm, Tabiji. 
Object :- To find out the optimum seed rate for C-591 and country varieties of Wheat.

1. BASAL CONDITIONS:
(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.52. (iv) (a) 4 ploughings. (b) N.A. (c) As per treatments. (d) N.A. (e) N.A. (f) Nil. (vii) C. 591 and country wheat local. (viii) Irrigated.

2. TREATMENTS:
All combinations of (1) & (2)
(1) 2 varieties : V₁=Country local & V₂=C-591.
(2) 3 seedrates : R₁=30 lb./ac., R₂=40 lb./ac. & R₃=50 lb./ac.

3. DESIGN:
(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 32'x18'. (b) 30'x16'. (v) 1' on each side. (vi) Yes.

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

5. RESULTS:
(i) 1532 lb./ac.  
(ii) 250.3 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>
<th>S.E. marg. mean of variety</th>
<th>S.E. marg. mean of seedrate</th>
<th>S.E. body of table</th>
</tr>
</thead>
<tbody>
<tr>
<td>V₁</td>
<td>1650</td>
<td>1299</td>
<td>1439</td>
<td>1463</td>
<td>= 72.3 lb./ac.</td>
<td>= 88.5 lb./ac.</td>
<td>=125.2 lb./ac.</td>
</tr>
<tr>
<td>V₂</td>
<td>1580</td>
<td>1679</td>
<td>1544</td>
<td>1601</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1615</td>
<td>1489</td>
<td>1491</td>
<td>1532</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop :- Wheat.  
Ref :- Complex experiments (T.C.M.), 1953.  
Centre :- Kotah (Rajasthan).  
Object :- VII-To study the effect of irrigation along with manures.

1. BASAL CONDITIONS:

2. TREATMENTS:
All combinations of (1), (2) & (3)
(1) 3 levels of N : N₀=0, N₁=20 & N₂=40 lb./ac.  
(2) 3 levels of P₀₂ : P₀=0, P₁=20 and P₂=40 lb./ac.  
(3) 3 irrigations : I₁=2, I₂=3 & I₃= 4 irrigations.
A/S was broadcast after the final preparation of land. Triple super was placed 24" below soil by bamboo drill with seed.

DESIGN:
(1) 3² Fact. Conf. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 36.25°X 20°. (v) N.A. (vi) Yes.
4. **GENERAL**

(i) Normal, no lodging. (ii) Crop slightly damaged by rats. (iii) Yield of grain. (iv) (a) 1955—56. (b) No. (c) N.A. (v) (a) Banaras, Pura, Satna, Paliad and Obedullaganj. (b) N.A. (vi) Nil. (vii) Nil.

5. **RESULTS**

(i) 1410 lb./ac.
(ii) 233.2 lb./ac.
(iii) Main effect of N alone is 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>Mean</th>
<th>$I_1$</th>
<th>$I_2$</th>
<th>$I_3$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P_0$</td>
<td>1344</td>
<td>1012</td>
<td>1730</td>
<td>1362</td>
<td>1648</td>
<td>1251</td>
<td>1186</td>
</tr>
<tr>
<td>$P_1$</td>
<td>1474</td>
<td>1100</td>
<td>1740</td>
<td>1438</td>
<td>1396</td>
<td>1424</td>
<td>1494</td>
</tr>
<tr>
<td>$P_2$</td>
<td>1540</td>
<td>1133</td>
<td>1618</td>
<td>1430</td>
<td>1028</td>
<td>1640</td>
<td>1623</td>
</tr>
<tr>
<td>Mean</td>
<td>1452</td>
<td>1082</td>
<td>1696</td>
<td>1410</td>
<td>1358</td>
<td>1438</td>
<td>1434</td>
</tr>
</tbody>
</table>

S.E. of any marginal mean = 119.8 lb./ac.
S.E. of body of table = 207.6 lb./ac.

---

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

Ref: Rj. 52 (12).
Type: ‘D’.

Object: To test the relative efficacy of colloidal sulphur spraying and sulphur dusting on Wheat for control of rust under normal conditions.

1. **BASAL CONDITIONS**

(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A. (iii) 29.10.52. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) N.A. (viii) N.A. (ix) N.A. (x) 23.3.53.

2. **TREATMENTS**

1. Dusting with sulphur 25 lb./ac.
2. Spraying with colloidal sulphur (1:1000).
3. Control.

Fertilizers spread at the time of cultivation before sowing.

3. **DESIGN**

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 18’ x 30’ 3”. (v) N.A. (vi) Yes.

4. **GENERAL**

(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) Kotah 52 (3), Mandore 52 (9). (b) N.A. (vi) Nil. (vii) Nil.

5. **RESULTS**

(i) 1191.0 lb./ac.
(ii) 233.2 lb./ac.
(iii) The 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>1.</td>
<td>1173</td>
</tr>
<tr>
<td>2.</td>
<td>1173</td>
</tr>
<tr>
<td>3.</td>
<td>1225</td>
</tr>
</tbody>
</table>

S.E./mean = 95.2 lb./ac.
Crop :- Wheat (Rabi).
Site :- Govt. Agri. Farm, Ganganagar.

Object :- To test the relative efficacy of colloidal sulphur spray and sulphur dusting for the control of rust
under natural conditions.

1. BASAL CONDITIONS:
   (i) (a) No. (b) N.A. (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) N.A. (iv) (a) N.A. (b) Broadcast
   sowing. (c) N.A. (d) N.A. (e) N.A. (v) N.A. (vi) C. 391. (vii) N.A. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS:
   1. Sulphur dusting.
   2. Colloidal sulphur spray.
   3. Control.

3. DESIGN:
   (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 20' x 32' 3" (b) 24' x 30' 3". (v) 1' on each side of
   the plot. (vi) Yes.

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

5. RESULTS:
   (i) 2043 lb./ac.
   (ii) 207 lb./ac.
   (iii) The treatment differences are not significant.
   (iv) Av. yield of grain in lb./ac.
   Treatment          Av. yield.
   1.                  2198
   2.                  2048
   3.                  1883
   S.E./mean          84.7 lb./ac.

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

Object :- To study the effect of Fernoxone to control rabi weeds.

1. BASAL CONDITIONS:
   (i) (a) No. (b) N.A. (c) N.A. (ii) (a) Desert soil. (b) N.A. (iii) N.A. (iv) (a) N.A. (b) N.A. (c)

2. TREATMENTS:
   Spraying with :-
   1. 1/2 lb. of Fernoxone.
   2. 2 lb of Fernoxone.
   3. 2 1/2 lb of Fernoxone.
   4. Control.
   Fernoxone dissolved in 180 gallons of water sprayed over an acre.

3. DESIGN:
   (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 40' x 30'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) N.A. (iii) Grain yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil
   (vii) Originally the experiment was given 3 replications but the results for one of them were not available;
   so the analysis has been done for two replications only.
5. RESULTS:

(i) 1119 lb./ac.
(ii) 231.5 lb./ac.
(iii) The 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>1.</td>
<td>1090</td>
</tr>
<tr>
<td>2.</td>
<td>942</td>
</tr>
<tr>
<td>3.</td>
<td>1137</td>
</tr>
<tr>
<td>4.</td>
<td>1307</td>
</tr>
</tbody>
</table>
S.E./mean = 163.7 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Ganganagar.
Ref: Rj. 52 (52).
Type: 'D'

Object:—To study the effect of guar seed powder on Wheat grain.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) N.A. (c) N.A. (iii) (a) Sandy loam. (b) N.A. (iii) Nov. 1952. (iv) (a) to (e) N.A. (v) Nil. (vi) C. 591 (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) April 1953.

2. TREATMENTS:

1. Guar seed powder at .02%
2. Guar seed powder at .05%
3. Guar seed powder at .10%
4. Control.

3. DESIGN:

(i) R.B.D. (ii) 4. (iii) 4. (iv) (a) 36' x 26'. (b) 30' x 20'. (v) 3' on each side. (vi) Yes.

4 GENERAL:

(i) Average. (ii) Nil. (iii) Yield of grain and fodder. (iv) (a) 1952-54. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:

GRAIN

(i) 3702 lb./ac.
(ii) 355.6 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>3279</td>
</tr>
<tr>
<td>2.</td>
<td>3548</td>
</tr>
<tr>
<td>3.</td>
<td>4029</td>
</tr>
<tr>
<td>4.</td>
<td>3952</td>
</tr>
</tbody>
</table>
S.E./mean = 177.8 lb./ac.

FODDER

(i) 11377 lb./ac.
(ii) 807.8 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of fodder in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>10835</td>
</tr>
<tr>
<td>2.</td>
<td>12672</td>
</tr>
<tr>
<td>3.</td>
<td>13638</td>
</tr>
<tr>
<td>4.</td>
<td>8364</td>
</tr>
</tbody>
</table>
S.E./mean = 403.9 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Ganganagar.
Ref: Rj. 53(37).
Type: 'D'

Object:—To study the effect of guar seed powder on Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) Nov. 1953. (iv) (a) to (e) N.A. (v) Nil. (vi) C. 591 ; (Medium). (vii) Irrigated. (viii) N.A. (ix) N.A. (x) April 1954.
2. TREATMENTS:
   1. Guar seed powder at 0.02%.
   2. Guar seed powder at 0.05%.
   3. Guar seed powder at 0.10%.
   4. Control.
   Method of application N.A.

3. DESIGN:
   (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 36' x 26'. (b) 30' x 20'. (v) 3' on each side. (vi) Yes.

4. GENERAL:
   (i) Average. (ii) Nil. (iii) Yield of grain. (iv) (a) 1952-1954. (b) No. (c) N.A. (v) (a) No. (b) N.A.
   (vi) Nil. (vii) Nil.

5. RESULTS:
   (i) 1354 lb./ac.
   (ii) 153 lb./ac.
   (iii) The treatment differences are highly significant.
   (iv) Av. yield of grain in lb./ac.
   Treatment | Av. yield
   1. | 1204
   2. | 1426
   3. | 1886
   4. | 898
   S.E./mean = 76.5 lb./ac.

Crop: Wheat (Rabi).
Site: Govt. Agri. Farm, Kotah.
Object: To test the relative efficacy of colloidal sulphur spraying and sulphur dusting on Wheat for control of rust under natural conditions.

1. BASAL CONDITIONS:
   (i) (a) No. (b) N.A. (c) N.A. (ii) (a) Medium black soil of trap or gneiss origin clay loam. (b) N.A.

2. TREATMENTS:
   1. Dusting with sulphur at 25 lb./ac.
   2. Spraying with colloidal sulphur (1 : 1000).
   3. Control.

3. DESIGN:
   (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 24' x 30'3'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) Mandore 52(9). Durgapur 52(12). (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
   (i) 1246 lb./ac.
   (ii) 168.2 lb./ac.
   (iii) The treatment differences are not significant.
   (iv) Av. yield of grain in lb./ac.
   Treatment | Av. yield
   1. | 1218
   2. | 1180
   3. | 1341
   S.E./mean = 687 lb./ac.
Crop : Wheat (Rabi).
Site : Govt. Agri. Farm, Mandore.

Object—To test the relative efficacy of colloidal sulphur spraying and sulphur dusting on Wheat for control of rust under natural conditions.

1. BASAL CONDITIONS:
   (i) (a) No. (b) N.A. (c) N.A. (ii) (a) Desert soil, sandy. (b) N.A. (iii) N.A. (iv) (a) to (e) N.A. (v) N.A. (vi) C. 591 (Medium). (vii) N.A. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS:
   1. Dusting with sulphur at 25 lb./ac.
   2. Spraying with colloidal sulphur (1: 1000).
   3. Control.

3. DESIGN:
   (i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 24'x30' 3'. (v) N.A. (vi) Yes.

4. GENERAL:

5. RESULTS:
   (i) 1285.0 lb./ac.
   (ii) 291.9 lb./ac.
   (iii) The treatment differences are not significant.
   (iv) Av. yield of grain in lb./ac.
   Treatment  |  Av. yield
   1.        | 1162
   2.        | 1208
   3.        | 1465
   S.E./mean | 119 lb./ac.

Crop :- Jowar (Kharif).
Site :- Govt. Agri. Farm, Kotah.

Object —To determine the effect of A/S and F.Y.M. on the yield of Jowar.

1. BASAL CONDITIONS:
   (i) (a) No (b), (c) N.A. (ii) (a) Medium black soil of trap or gneiss origin—clay loam. (b) N.A. (iii) 14.8.52. (iv) (a) to (e) N.A. (v) Nil. (vi) Local. (vii) Rainfed. (viii) Nil. (ix) N.A. (x) Last week of Nov. 1952.

2. TREATMENTS:
   1. 10 lb./ac. of N as A/S.
   2. 20 lb./ac. of N as A/S.
   3. 35 lb./ac. of N as A/S.
   4. 20 lb./ac. of N as F.Y.M.
   5. Control.
   Fertilizers spread at the time of cultivation before sowing.

3. DESIGN:
   (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 36'x24'. (b) 30'x18'. (v) 3' on either side. (vi) Yes.

4. GENERAL:
   (i) Average. No lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) One missing plot of Treatment 2.
5. RESULTS:
(i) 872 lb./ac.
(ii) 420.4 lb./ac.
(iii) The 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>1.</td>
<td>912</td>
</tr>
<tr>
<td>2.</td>
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</tr>
<tr>
<td>3.</td>
<td>1480</td>
</tr>
<tr>
<td>4.</td>
<td>686</td>
</tr>
<tr>
<td>5.</td>
<td>671</td>
</tr>
</tbody>
</table>

S.E. of difference of two treatments not containing missing plot = 242.6 lb./ac.
S.E. of difference of missing plot treatment and any other treatment = 258.0 lb./ac.

Crop: Jowar (Kharif).
Site: Govt. Agri. Farm, Bassi.
Object: To test the relative efficacy of different dosages of Agrosan ON & Sulphur etc. as seed treatments for control of loose and grain smut of Jowar.

1. BASAL CONDITIONS:
(i) (a) No. (b) Cotton. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain—Sandy loam. (b) N.A.
(iii) N.A. (iv) (a) 2 Ploughings. (b) Seed drilled and then mixed. (c) N.A. (d) Six lines in each plot at a distance of 1.5'. (e) N.A. (f) Local variety. (g) Rainfed. (h) N.A. (i) N.A.

2. TREATMENTS:
3. Agrosan GN (2 : 1000).
5. Mercuric bichloride 1 : 1000 solution for two mixtures.
6. Control.

3. DESIGN:
(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 9' x 100'. (v) N.A. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) N.A. (iii) Yield of grain and no. of germinated plants. (iv) (a) No. (b) No. (c) N.A.
(v) (a) Durgapura. (b) N.A. (vi) Nil. (vii) Seed was not free from smut balls. 15—20 smut balls were present in 40 tolas of seed.

5. RESULTS:
Grain yield.
(i) 2001 lb./ac.
(ii) 250.5 lb./ac.
(iii) The 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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</tr>
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<tbody>
<tr>
<td>1.</td>
<td>1933</td>
</tr>
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<td>2.</td>
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<td>3.</td>
<td>2177</td>
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<td>4.</td>
<td>1942</td>
</tr>
<tr>
<td>5.</td>
<td>1932</td>
</tr>
<tr>
<td>6.</td>
<td>1839</td>
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</tbody>
</table>

S.E./mean = 112.0 lb./ac.

No. of plants germinated.
(i) 2186 plants/ac.
(ii) 638.5 plants/ac.
(iii) The treatment differences are not significant.
(iv) Av. number of plants germinated/ac.

<table>
<thead>
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<th>Treatment</th>
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</tr>
</thead>
<tbody>
<tr>
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<td>2.</td>
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<tr>
<td>4.</td>
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<tr>
<td>5.</td>
<td>1733</td>
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<tr>
<td>6.</td>
<td>2168</td>
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</table>

S.E./mean = 284.7 plants/ac.
Crop: Jowar (Kharif).
Site: Govt. Agri. Farm, Durgapura.

Object: To test the relative efficacy of different dosages of Agrosan GN & Sulphur as seed treatments on loose and grain smut of Jowar.

1. BASAL CONDITIONS:
   (i) (a) No. (b) Cotton. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A.
   (iii) N.A. (iv) (a) 2 ploughings. (b) Seed drilled & then thinned. (c) N.A. (d) Six lines sown in each plot at a distance of 1.5'.

2. TREATMENTS:
   3. Agrosan GN (2 : 1030).
   5. Mercuric bi-chloride 1 : 1000 solution for two mixtures.
   6. Control.

3. DESIGN:
   (i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 9'. (iv) (a) N.A. (b) 9'x100'. (v) N.A. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) Bassi. (b) N.A.
   (vi) Nil. (vii) Seed was not free from smut balls. 15-20 smut balls were present in 40 tolas of seed.

5. RESULTS:
   Grain yield. No. of plants germinated.
   (i) 605.9 lb./ac. (ii) 324 plants/ac.
   (iii) The treatment differences are not significant. (iii) The treatment differences are highly significant.
   (iv) Av. yield of grain in lb./ac. (iv) Av. no. of plants germinated/ac.

<table>
<thead>
<tr>
<th>Treatment</th>
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<th>Treatment</th>
<th>Av. no.</th>
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<td>1.</td>
<td>3282</td>
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<td>2.</td>
<td>629</td>
<td>2.</td>
<td>3513</td>
</tr>
<tr>
<td>3.</td>
<td>607</td>
<td>3.</td>
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<td>4.</td>
<td>634</td>
<td>4.</td>
<td>3427</td>
</tr>
<tr>
<td>5.</td>
<td>591</td>
<td>5.</td>
<td>2633</td>
</tr>
<tr>
<td>6.</td>
<td>587</td>
<td>6.</td>
<td>3494</td>
</tr>
<tr>
<td>S.E./mean = 113.2 lb./ac.</td>
<td>S.E./mean = 125.4 plants/ac.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crop: Barley (Rabi).
Site: Govt. Agri. Farm, Bassi.

Object: To study the effect of different trace elements in different doses on growth, germination and yield of Barley.

1. BASAL CONDITIONS:
   (i) (a) No. (b) Barley in Rabi, 1951 and fallow in Kharif, 1952. (c) Nil. (ii) (a) Yellow alluvium of Gangetic plain-Sandy loam.
   (b) N.A. (iii) 9.11.1952. (iv) (a) N.A. (b) N.A. (c) 1 md./ac. (d) and (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) Weeding and hoeing on 30.12.1952. (ix) N.A. (x) 23rd March, 1953.

2. TREATMENTS:
   All combinations of (1) and (2) + a Control.
   1. 3 levels of trace elements: - T1 = 5 lb./ac. T2 = 10 lb./ac. and T3 = 20 lb./ac.

3. DESIGN:
   (i) Fact. in R.B.D. (ii) (a) 22. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 20' x 11'. (v) No. (vi) Yes.
4. GENERAL:
(i) N.A. (ii) No. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 2893 lb/ac.
(ii) 403 lb/ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb/ac.

<table>
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<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<td>3391</td>
<td>2442</td>
<td>2857</td>
<td>2816</td>
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<td>T2</td>
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<td>2756</td>
<td>2719</td>
<td>2790</td>
<td>2830</td>
<td>2773</td>
<td>2904</td>
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</tbody>
</table>

S.E. of marginal mean of levels = 87.7 lb/ac.
S.E. of marginal mean of trace elements = 134.0 lb/ac.
S.E. of body of table = 232.1 lb/ac.

Crop :- Barley (Rabi).
Site :- Govt. Agri. Farm, Bassi.
Object :- To study the effect of different trace elements in different doses on growth, germination and yield of crop.

Ref : Rj. 53(1).
Type :- 'M'.

Object :- To study the effect of different trace elements in different doses on growth, germination and yield of crop.

1. BASAL CONDITIONS:
(i) (a) No. (b) Oats in Rabi and Fallow. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain—sandy loam. (b) N.A. (iii) 20.11.53. (iv) (a) to (e) N.A. (v) N.A. (vi) N.A. (vii) Irrigated. (viii) One weeding and hoeing on 28.12.53. (ix) N.A. (x) 10.4.54.

2. TREATMENTS:
All combinations of (1) and (2) + a Control.
(1) 3 levels of trace elements: T1=5 lb/ac., T2=10 lb/ac. and T3=20 lb/ac.

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

4. GENERAL:
(i) N.A. (ii) N.A. (iii) Yield of grain. (iv) (a) 1952-1953. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 3272 lb/ac.
(ii) 333.4 lb/ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb/ac.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<td>3354</td>
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<td>3377</td>
<td>3301</td>
<td>3312</td>
<td>3243</td>
<td>3149</td>
<td>3233</td>
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</tbody>
</table>

S.E. of marginal mean of levels = 27.3 lb/ac.
S.E. of marginal mean of trace elements = 111.1 lb/ac.
S.E. of the body of table = 192.5 lb/ac.
Crop :- Barley (Rabi).
Site :- Govt. Agri. Farm, Bassi.

Object :- To study the effect of Catalyst with and without F.Y.M. on germination, growth and yield of Barley.

1. BASAL CONDITIONS :
((i) (a) No. (b) Fallow. (c) Nil. (ii) (a) Yellow alluvium of Ganges plain—sandy loam. (b) N.A. (iii) 10.11.52. (iv) (a) to. (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 23.3.53.

2. TREATMENTS :
All combinations of (1) and (2)
(1) 2 doses of F.Y.M. : F₀ = 0 and F₁ = 2 ton/ac.

3. DESIGN :
(i) 2 x 7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12' x 6'. (v) N.A. (vi) Yes.

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

5. RESULTS :
(i) 3195.0 lb/acre.
(ii) 430.8 lb/acre.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb/acre.

<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>3197</td>
<td>3330</td>
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<td>3090</td>
<td>2994</td>
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<td>F₁</td>
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<td>3357</td>
<td>3304</td>
<td>3064</td>
<td>3010</td>
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<td>3117</td>
<td>3050</td>
<td>3210</td>
<td>3357</td>
<td>3195</td>
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</table>

S.E. of F marginal mean = 94.1 lb/acre.
S.E. of M marginal mean = 170.9 lb/acre.
S.E. of body of table = 248.7 lb/acre.

Crop :- Barley (Rabi).
Site :- Govt. Agri. Farm, Bassi.

Object :- To study the effect of Catalyst with and without F.Y.M. on germination, growth and yield of Barley.

1. BASAL CONDITIONS :
((i) (a) No. (b) Fallow. (c) Nil. (ii) (a) Yellow alluvium of Ganges plain—sandy loam. (b) N.A. (iii) 20.11.53. (iv) (a) to. (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 23.3.53.

2. TREATMENTS :
All combinations of (1) and (2)
(1) 2 doses of F.Y.M. : F₀ = 0 and F₁ = 2 ton/ac.
3. DESIGN:
(i) 2 x 7 Fact in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12' x 6'. (v) N.A. (vi) Yes.

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

5. RESULTS:
(i) 4214 lb./ac.
(ii) 275.1 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

<table>
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</tbody>
</table>

S.E. of F marginal mean = 40.1 lb./ac.
S.E. of M marginal mean = 112.7 lb./ac.
S.E. of body of table = 159.4 lb./ac.

Crop: Bajra (Kharif).
Site: Govt. Agri. Farm, Bassi.

Object: To study the effect of A/S and F.Y.M. on the yield of Bajra.

1. BASAL CONDITIONS:
(i) (a) to (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A. (iii) 16.7.50. (iv) (a) to (e) N.A. (v) N.A. (vi) Local. (vii) Rainfed. (viii) N.A. (ix) N.A. (x) 20.10.50.

2. TREATMENTS:
1. 10 lb./ac. of N as A/S.
2. 15 lb./ac. of N as A/S.
3. 20 lb./ac. of N as A/S.
4. 15 lb./ac. of N as A/S + 3000 lb./ac. of F.Y.M.
5. Control.
The fertilizers were evenly distributed in each plot by mixing with earth before sowing.

3. DESIGN:
(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 36'-3' x 24'. (b) 30'-3' x 18'. (v) 3' all round. (vi) Yes.

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

5. RESULTS:
(i) 380.8 lb./ac.
(ii) 43.1 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
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<td>1.</td>
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<td>409.1</td>
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<td>4.</td>
<td>380.4</td>
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<td>5.</td>
<td>322.8</td>
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<tr>
<td>S.E./mean</td>
<td>=19.24 lb./ac.</td>
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</table>
Crop :- Bajra (Kharif).
Site :- Govt. Agri. Farm, Bassi.

Object :- To study the effect of A/S and F.Y.M. on the yield of Bajra.

1. BASAL CONDITIONS:
   (i) (a) N.A. (b) N.A. (c) N.A. (iii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A. (iii) N.A. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) N.A. (vii) Rainfed. (viii) N.A. (ix) N.A. (x) N.A.

2. TREATMENTS:
   1. 10 lb./ac. of N as A/S.
   2. 15 lb./ac. of N as A/S.
   3. 20 lb./ac. of N as A/S.
   4. 15 lb./ac. of N as F.Y.M.
   5. Control.

3. DESIGN:
   (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 36'-3''x24'. (b) 30'-3''x18'. (v) 3' all round. (vi) Yes.

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

5. RESULTS:
   (i) 192.3 lb./ac.
   (ii) 43.7 lb./ac.
   (iii) The treatment differences are highly significant.
   (iv) Av. yield of grain in lb./ac.

   Treatment | Av. yield
   ===========|==========
   1.         | 314.6    
   2.         | 355.7    
   3.         | 294.0    
   4.         | 292.0    
   5.         | 238.5    
   S.E./mean  | 18.83 lb./ac.

Crop :- Bajra (Kharif).
Site :- Govt. Agri. Farm, Bassi.

Object :- To find out the effect of A/S and F.Y.M. on the yield of Bajra.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Bajra. (c) No. (ii) (a) Yellow alluvium soils of Gangetic plain-Sandy loam. (b) N.A. (iii) 29.5.52. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) No. (vi) Local. (vii) Rainfed. (viii) Weeding on 16.7.52. (ix) N.A. (x) Nov. 52.

2. TREATMENTS:
   1. 10 lb./ac. of N as A/S.
   2. 15 lb./ac. of N as A/S.
   3. 20 lb./ac. of N as A/S.
   4. 15 lb./ac. of N as F.Y.M.
   5. Control.

3. DESIGN:
   (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 36'-3''x24'. (b) 30'-3''x18'. (v) 3' all round. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1951-1952. (b) No. (c) N.A. (v) (a) Durgapur. (b) N.A. (vi) Nil. (vii) Nil.
R.S.

RESULTS:
(i) 464.6 lb./ac.
(ii) 52.24 lb./ac.
(iii) The 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>1.</td>
<td>417.3</td>
</tr>
<tr>
<td>2.</td>
<td>530.4</td>
</tr>
<tr>
<td>3.</td>
<td>474.9</td>
</tr>
<tr>
<td>4.</td>
<td>491.4</td>
</tr>
<tr>
<td>5.</td>
<td>407.1</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>-23.32 lb./ac.</td>
</tr>
</tbody>
</table>

Crop :- Bajra (Kharif).
Site :- Govt. Agri. Farm, Durgapur.

Object :- To study the effect of A/S and F.Y.M. on the yield of Bajra.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) N.A. (iii) 5. (iv) (a) 30'-6" x 36'. (b) 30'-3" x 18'. (v) All round. (vi) Yes.

2. TREATMENTS:
   1. 10 lb./ac. of N as A/S.
   2. 15 lb./ac. of N as A/S.
   3. 20 lb./ac. of N as A/S.
   4. 15 lb./ac. of N as F.Y.M.
   5. Control.

   Fertilizers broadcast at cultivation before sowing.

3. DESIGN:
   (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 30'-3" x 36'. (b) 30'-3" x 18'. (v) All round. (vi) Yes.

4. GENERAL:
   (i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) Yes. N.A. (b) No. (c) N.A. (v) (a) Bassi. (b) N.A. (vi) Nil.
   (vii) Nil.

5. RESULTS:
   (i) 357.7 lb./ac.
   (ii) 75.5 lb./ac.
   (iii) The treatment differences are highly significant.
   (iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>359.8</td>
</tr>
<tr>
<td>2.</td>
<td>462.6</td>
</tr>
<tr>
<td>3.</td>
<td>429.7</td>
</tr>
<tr>
<td>4.</td>
<td>273.4</td>
</tr>
<tr>
<td>5.</td>
<td>263.2</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>-33.5 lb./ac.</td>
</tr>
</tbody>
</table>

Crop :- Bajra (Kharif).
Site :- Govt. Agri. Farm, Durgapur.

Object :- To study the effect of A/S and F.Y.M. on the yield of Bajra.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) N.A. (c) Nil. (d) (i) (a) Sandy loam of Gangetic plain. (b) N.A. (ii) 8.3.53. (iv) (a) to (e) N.A.
2. TREATMENTS:
1. 10 lb./ac. of N as A/S.
2. 15 lb./ac. of N as A/S.
3. 20 lb./ac. of N as A/S.
4. 15 lb./ac. of N as F.Y.M.
5. Control.
Fertilizers broadcast at the time of cultivation.

3. DESIGN:
(i) R.B.D. (ii) (a) S. (b) N.A. (iii) 5. (iv) (a) 32′–3′×20′. (b) 30′–3′×18′. (v) 1′ all round. (vi) Yes.

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

5. RESULTS:
(i) 500.2 lb./ac.
(ii) 170.7 lb./ac.
(iii) The 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>1.</td>
<td>527</td>
</tr>
<tr>
<td>2.</td>
<td>522</td>
</tr>
<tr>
<td>3.</td>
<td>602</td>
</tr>
<tr>
<td>4.</td>
<td>428</td>
</tr>
<tr>
<td>5.</td>
<td>392</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>=76.2 lb./ac.</td>
</tr>
</tbody>
</table>

Crop : Bajra (Kharif). Site: Govt. Agri. Farm, Durgapura.
Object : To find out the effect of Catalyst with and without F.Y.M., on germination and yield of Bajra.

1. BASAL CONDITIONS:
(i) (a) No. (b) (c) N.A. (ii) (a) Yellow alluvium of Ganga plain. Sandy loam. (b) N.A. (iii) July. 53. (iv) (a) to (e) N.A. (v) No; (vi) Local. (vii) Rainfed. (viii) N.A. (b) N.A. (a) Oct. 53.

2. TREATMENTS:
All combinations of (1) & (2)
(1) 2 doses of F.Y.M. :— F₁ =0 and F₂ =2 ton/ac.
(2) 7 manures :— M₁ =0, M₂ =40 lb./ac. of Catalyst, M₃ =80 lb./ac. of Catalyst, M₄ =14 lb./ac. of Fe. Sul. M₅ =28 lb./ac. of Fe.Sul. M₆ =8 lb./ac. of Pot. Permanganate & M₇ =16 lb./ac. of Pot. Permanganate.

3. DESIGN:
(i) 2 x 7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12′×6′. (v) N.A. (vi) Yes.

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

5. RESULTS:
(i) 852 lb./ac.
(ii) 295.1 lb./ac.
(iii) None of the effects is significant.
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>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>F₀</td>
<td>707.8</td>
<td>855.2</td>
<td>786.5</td>
<td>550.6</td>
<td>786.5</td>
<td>865.2</td>
<td>786.6</td>
<td>764.0</td>
</tr>
<tr>
<td>F₁</td>
<td>1258.4</td>
<td>841.8</td>
<td>1022.5</td>
<td>865.2</td>
<td>943.8</td>
<td>865.2</td>
<td>786.5</td>
<td>940.1</td>
</tr>
<tr>
<td>Mean</td>
<td>983.1</td>
<td>853.4</td>
<td>904.5</td>
<td>707.9</td>
<td>865.2</td>
<td>865.2</td>
<td>786.0</td>
<td>852.0</td>
</tr>
</tbody>
</table>

S.E. of F marginal mean = 64.3 lb./ac.
S.E. of M marginal mean = 120.3 lb./ac.
S.E. of body of table = 170.4 lb./ac.

Crop: Bajra (Kharif).

Site: Govt. Agri. Farm, Merta.

Object: To study the effect of A/S and F.Y.M on Bajra under sāraṇi conditions.

1. BASAL CONDITIONS:
   (i) (a) No. (b) N.A. (c) N.A. (ii) (a) N.A. (b) N.A. (iii) 10.7.50. (iv) (k) N.A. (b) Seed broadcast. (c) N.A. (d) N.A. (e) N.A. (vi) N.A. (vi) Local. (vii) Rainfed. (viii) Weeding once on 16.8.50. (ix) N.A. (x) 2.10.5.

2. TREATMENTS:
   1. 10 lb./ac. of N as A/S.
   2. 15 lb./ac. of N as A/S.
   3. 20 lb./ac. of N as A/S.
   4. 15 lb./ac. of N as F.Y.M.
   5. Control.

3. DESIGN:
   (i) L. Sq. (ii) 5 (b) N.A. (iii) 5 (iv) (a) 36' - 3' x 24' . (b) 30' - 3' x 18'. (v) 3' all round. (vi) Yes.

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

5. RESULTS:
   (i) 220.8 lb./ac.
   (ii) 69.7 lb./ac.
   (iii) The 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>1.</td>
<td>189.9</td>
</tr>
<tr>
<td>2.</td>
<td>203.5</td>
</tr>
<tr>
<td>3.</td>
<td>254.9</td>
</tr>
<tr>
<td>4.</td>
<td>254.9</td>
</tr>
<tr>
<td>5.</td>
<td>209.7</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>31.17 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Bajra (Kharif).

Site: Govt. Agri. Farm, Bassi.

Object: To determine the relative effectiveness of dressing with different doses of Agrosan GN and Sulphur on the emergence & yield of Bajra for seed purposes.

1. BASAL CONDITIONS:
   (i) (a) No. (b) N.A. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain ; sandy loam. (b) N.A. (iii) N.A. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (f) No manuring given. (vi) Local. (vii) N.A. (viii) N.A. (ix) N.A. (x) N.A.
2. TREATMENTS:
1. Agrosan GN (2 : 1000).
3. Agrosan GN (4 : 1000).
6. Control.

3. DESIGN:
(i) R.B.D. (ii) 6. (b) N.A. (iii) 5. (iv) (a) 20'×32'-3". (b) 24'×30'-3". (v) 1' around. (vi) Yes.

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

5. RESULTS:
(i) 403.9 lb./ac.
(ii) 32.2 lb./ac.
(iii) The 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>1.</td>
<td>471.8</td>
</tr>
<tr>
<td>2.</td>
<td>404.0</td>
</tr>
<tr>
<td>3.</td>
<td>380.8</td>
</tr>
<tr>
<td>4.</td>
<td>433.3</td>
</tr>
<tr>
<td>5.</td>
<td>447.2</td>
</tr>
<tr>
<td>6.</td>
<td>340.7</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>23.34 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Maize (Kharif).
Site: Govt. Agri. Farm, Makrera.

Ref: Rj. 48(2).
Type: 'M'.

Object: To study the effect of organic manures on the yield of Maize.

1. BASAL CONDITIONS:
(i) (a) Nil. (b) Wheat. (c) A/S at 20 lb./ac. (ii) (a) Sandy loam. (b) N.A. (iii) 20.7.49. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (f) N.A. (g) Local Sathi. (h) Irrigated. (i) Weeding on 14.8.49. (ix) N.A. (x) 10.10.49.

2. TREATMENTS:
All combinations of (1) and (2)+ a Control.
(1) 3 manures viz. M.C., Farm Compost & F.Y.M.
(2) 4 doses of manures viz. 50, 100, 150 and 200 md./ac.

3. DESIGN:
(i) R.B.D. (ii) 13. (b) N.A. (iii) 6. (iv) (a) 30'×17'. (b) 25'×12'. (v) 2' around. (vi) Yes.

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

5. RESULTS:
(i) 117.9 lb./ac.
(ii) 80.1 lb./ac.
(iii) None of the effects is significant.
Crop: Maize (Kharif).

Site: Govt. Agri. Farm, Tabiji

Object: To study the effect of organic manures on the yield of Maize.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.7.49. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (f) Nil. (g) Local Sathi. (h) Rainfed. (i) Nil. (j) N.A. (k) 9.10.49.

2. TREATMENTS:

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

(1) 3 manures viz. M.C., Farm compost & F.Y.M.

(2) 4 doses of manure viz. 50, 100, 150, 200 lb./ac.

Fertilizers applied by broadcasting before cultivation.

3. DESIGN:

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 6. (iv) (a) 20’x12’. (b) 18’x10’. (v) 1’ all round. (vi) Yes.

4. GENERAL:

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

5. RESULTS:

(i) 196.6 lb./ac.

(ii) 88.7 lb./ac.

(iii) None of the effects is significant.

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

Control = 233.4 lb./ac.
Crop : Maize (Kharif).

Site : Govt. Agri. Farm, Tabiji.

Ref : Bj. 51(17).

Object : To study the effect of different organic manures on the yield of Maize.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 1.8.51. (iv) (a) to (e) N.A. (v) Nil. (vi) Maize Desi. (vii) Irrigated. (viii) N.A. (ix) N.A. (x) 13.10.51.

2. TREATMENTS:
   All combinations of (1) and (2) + a Control.
   (1) 3 manures viz. M.C., Farm Compost and F.Y.M.
   (2) 4 doses of manures viz. 50, 100, 150 and 200 md./ac.

3. DESIGN:
   (i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 6. (iv) (a) 20' X 12'. (b) 18' X 10'. (v) 1' around. (vi) Yes.

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

5. RESULTS:
   (i) 457 lb./ac.
   (ii) 144.8 lb./ac.
   (iii) None of the effects is significant.
   (iv) Av. yield of maize in lb./ac.

<table>
<thead>
<tr>
<th>Manure</th>
<th>Level</th>
<th>50</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.C.</td>
<td></td>
<td>556</td>
<td>382</td>
<td>411</td>
<td>476</td>
<td>459</td>
</tr>
<tr>
<td>Farm Compost</td>
<td></td>
<td>513</td>
<td>389</td>
<td>504</td>
<td>373</td>
<td>445</td>
</tr>
<tr>
<td>F.Y.M.</td>
<td></td>
<td>342</td>
<td>445</td>
<td>575</td>
<td>513</td>
<td>469</td>
</tr>
</tbody>
</table>

Mean: 474 405 497 454 458

S.E. of marginal mean of manures = 34.1 lb./ac.
S.E. of marginal mean of levels = 29.6 lb./ac.
S.E. of body of table = 59.1 lb./ac.

Crop : Maize (Kharif).

Site : Govt. Agri. Farm, Tabiji.

Ref : Bj. 48(7).

Object : To study the effect of N and P2O5 in different doses on Maize crop.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.7.49. (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) Nil. (vi) Local Sath. (vii) Rainfed. (viii) Nil. (ix) N.A. (x) 2.10.49.

2. TREATMENTS:
   1. 40 lb./ac. of N as A/S.
   2. 120 lb./ac. of P2O5 as Super.
   3. 40 lb./ac. of N as A/S + 20 lb./ac. of P2O5 as Super.
   4. 40 lb./ac. of N as O/S.
   5. Control.
   Fertilizers applied by broadcast before cultivation.

3. DESIGN:
   (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 20' X 12'. (b) 18' X 10'. (v) 1' on each side. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Nil. (vii) Nil.
5. RESULTS:
(i) 820.3 lb./ac.
(ii) 317.4 lb./ac.
(iii) The 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>1.</td>
<td>871.4</td>
</tr>
<tr>
<td>2.</td>
<td>715.8</td>
</tr>
<tr>
<td>3.</td>
<td>896.2</td>
</tr>
<tr>
<td>4.</td>
<td>778.0</td>
</tr>
<tr>
<td>5.</td>
<td>840.2</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>158.7 lb./ac.</td>
</tr>
</tbody>
</table>

Crop : Maize (Kharif).
Site : Govt. Agri. Farm, Tabiji.
Ref : Rj. 51(16).
Type : 'M'.

Object: To study the effect of different sources of N and P<sub>2</sub>O<sub>5</sub> on Maize.

1. BASAL CONDITIONS:
(i) (c) N.A. (b) Wheat. (c) N.A. (ii) Sandy loam. (b) N.A. (iii) 9.8.51. (iv) (a) to (e) N.A. (v) Nil. (vi) Irrigated. (vii) N.A. (ix) N.A. (x) 13-10.51.

2. TREATMENTS:
1. 50 lb./ac. of N as A/S.
2. 50 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.
3. 50 lb./ac. of N as A/S + 50 lb./ac. of P<sub>2</sub>O<sub>5</sub> as Super.
4. 50 lb./ac. of N as Oilcake.
5. Control.
Fertilizers were evenly distributed in each plot by mixing with earth before sowing.

3. DESIGN:
(i) R.B.D. (ii) (a) 20' x 12'. (b) 18' x 10'. (v) 1' on each side. (vi) Yes.

4. GENERAL:
(i) Good. (ii) No. (iii) Grain yield. (iv) (a), (b) No. (c) Nil. (v) Nil. (vi) Nil.

5. RESULTS:
(i) 514.8 lb./ac.
(ii) 192.8 lb./ac.
(iii) The 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>1.</td>
<td>412</td>
</tr>
<tr>
<td>2.</td>
<td>560</td>
</tr>
<tr>
<td>3.</td>
<td>591</td>
</tr>
<tr>
<td>4.</td>
<td>630</td>
</tr>
<tr>
<td>5.</td>
<td>381</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>96.4 lb./ac.</td>
</tr>
</tbody>
</table>

Crop : Maize (Kharif).
Site : Govt. Agri. Farm, Udaipur.
Ref : Rj. 53(4).
Type : 'M'.

Object: To find out the effect of A/S and PlMyb on the yield of Maize.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Cotton. (c) No. (i) (a) Clay. (b) N.A. (iii) 10.7.52. (iv) (a) Two cultivations were done by Desi plough and one after rains. (b) Desi way. (c) 20 lb./ac. (d) N.A. (e) N.A. (v) N.A. (vi) Jamipur White Makki. (vii) Rainfed. (viii) Weeding on 13th, 14th August; Interculture on 15th August. (ix) 27-53. (x) 27.9.52.
2. TREATMENTS:
   1. 20 lb./ac. of N as A/S.
   2. 30 lb./ac. of N as A/S.
   3. 40 lb./ac. of N as A/S.
   4. 20 lb./ac. of N as F.Y.M.
   5. Control.
      Fertilizers broadcast before sowing at the time of cultivation.

3. DESIGN:
   (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 30'-3"x24'. (b) 24'-3"x18'. (v) 3' on either side. (vi) Yes.

4. GENERAL:
   (i) Lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) Rains above normal, hence damage to crop. (vii) Nil.

5. RESULTS:
   (i) 1263 lb./ac.
   (ii) 163.1 lb./ac.
   (iii) The treatment differences are not significant.
   (iv) Av. yield of grain in lb./ac.
      Treatment | Av. yield
      1.        | 1245
      2.        | 1266
      3.        | 1356
      4.        | 1237
      5.        | 1208
      S.E./mean = 66.6 lb./ac.

Crop :-Maize (Kharif).
Site :- Govt. Agri. Farm, Udaipur.
Object :-To study the effect of A/S and F.Y.M. on the yield of Maize.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) Cotton. (c) M.C. at 5 C.L./bigha. (ii) (a) Black soil clay. (b) N.A. (iii) 21.6.51. (iv) 4 ploughings with desi plough at sowing time. (b) N.A. (c) 20 lb./ac. (d) N.A. (e) N.A. (f) Nil. (vi) Local. (vii) Irrigated. (viii) Weeding with hand hoe on 3rd to 5th July 1951, cultivation with kurpa on 9th July.

2. TREATMENTS:
   1. 20 lb./ac. of N as A/S.
   2. 30 lb./ac. of N as A/S.
   3. 40 lb./ac. of N as A/S.
   4. 20 lb./ac. of N as F.Y.M.
   5. Control.
      Fertilizers broadcast at the time of cultivation.

3. DESIGN:
   (i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 30'-3"x24'. (b) 24'-3"x18'. (v) 3' on each side. (vi) Yes.

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

5. RESULTS:
   (i) 2395 lb./ac.
   (ii) 45.9 lb./ac.
   (iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2340</td>
</tr>
<tr>
<td>2.</td>
<td>2349</td>
</tr>
<tr>
<td>3.</td>
<td>2267</td>
</tr>
<tr>
<td>4.</td>
<td>2417</td>
</tr>
<tr>
<td>5.</td>
<td>2601</td>
</tr>
</tbody>
</table>

S.E./mean = 18.70 lb./ac.

Crop :- Maize (Kharif).
Site :- Govt. Agri. Farm, Udaipur.
Ref :- Rj. 51(27).
Type :- 'D'.

Object :- To test the relative effectiveness of seed dressing with Agrosan GN on the emergence of Maize.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) N.A. (c) N.A. (i) (a) Clay. (b) N.A. (iii) 2nd week of July 1951. (iv) (a) N.A. (b) N.A. (c) N.A. (d) Rows 2' apart, plants 9" apart. (e) N.A. (v) No. (vi) Sathi Local. (vii) N.A. (viii) N.A. (ix) N.A. (x) Last week of Sept. 1951.

2. TREATMENTS:
1. Agrosan GN (1 : 1000).
3. Agrosan GN (3 : 1000).
5. Control.
   Chemical solution sprayed before cultivation.

3. DESIGN:
(i) R.B.D. (ii) (a) S. (b) N.A. (iii) 4. (iv) (a) 30'x24'. (b) 24'-3'x18'. (v) 3' on each side. (vi) Yes.

4. GENERAL:
(i) N.A. (ii) Nil. (iii) Number of seeds germinated per plot. (iv) (a) No. (b) No. (c) N.A. (v) (a) No. (b) No. (c) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
No. of seeds germinated/plot.
(i) 23079 seeds/plot.
(ii) 17160 "...
(iii) The treatment differences are not significant.
(iv) Av. yield of seeds germinated/plot.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>23745</td>
</tr>
<tr>
<td>2.</td>
<td>21165</td>
</tr>
<tr>
<td>3.</td>
<td>24945</td>
</tr>
<tr>
<td>4.</td>
<td>22830</td>
</tr>
<tr>
<td>5.</td>
<td>22710</td>
</tr>
</tbody>
</table>

S.E./mean = 8580

Crop :- Gram. (Rabi).
Site :- Govt. Agri. Farm, Balsi.
Ref :- Rj. 52(7).
Type :- 'M'.

Object :- To study the effect of catalyst with and without F.Y.M on growth, germination & yield of Gram.

1. BASAL CONDITIONS:
(i) (a) N.A. (b) Zera. (c) Nil. (ii) (a) Yellow alluvium of Gangetic plain; Sandy loam (b) N.A. (iii) 2.11.52 (iv) (a) N.A. (b) N.A. (c) N.A. (d) N.A. (e) N.A. (v) No. (vi) Local (vii) N.A. (viii) N.A. (ix) N.A. (x) 29.3.53,
2. **TREATMENTS:**

All combinations of (1) & (2):
(1) 2 doses of F.Y.M. — F; =0, & F; =2 ton/ac.
(2) 7 manures: — M; =0, M; =40 lb/ac. of Catalyst, M; =80 lb/ac. of Catalyst, M; =14 lb/ac. of Fe.

3. **DESIGN:**

(i) 2x7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12’x6’ (v) N.A. (vi) Yes.

4. **GENERAL:**

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

5. **RESULTS:**

(i) 325.6 lb/ac.
(ii) 95.93 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>452.3</td>
<td>372.4</td>
<td>239.8</td>
<td>266.2</td>
<td>292.5</td>
<td>239.8</td>
<td>239.8</td>
</tr>
<tr>
<td>F₁</td>
<td>392.5</td>
<td>392.5</td>
<td>239.8</td>
<td>239.0</td>
<td>319.7</td>
<td>319.7</td>
<td>399.6</td>
</tr>
<tr>
<td>Mean</td>
<td>422.4</td>
<td>382.4</td>
<td>316.1</td>
<td>252.6</td>
<td>306.4</td>
<td>319.7</td>
<td>297.7</td>
</tr>
</tbody>
</table>

S.E. of F marginal mean = 20.9 lb/ac.
S.E. of M marginal mean = 39.2 lb/ac.
S.E. of the body of table = 55.9 lb/ac.

_Crop:_ Gram (Rabi).
_Site:_ Govt. Agril. Farm, Kotah.

Object: To study the effect of different trace elements in different doses on Gram.
(iv) Av. yield of grain in lb/ac.

Control=695 lb/ac.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>$T_1$</td>
<td>712</td>
<td>763</td>
<td>721</td>
<td>865</td>
<td>814</td>
<td>814</td>
<td>806</td>
<td>785</td>
</tr>
<tr>
<td>$T_2$</td>
<td>763</td>
<td>890</td>
<td>865</td>
<td>780</td>
<td>763</td>
<td>882</td>
<td>822</td>
<td>824</td>
</tr>
<tr>
<td>$T_3$</td>
<td>933</td>
<td>882</td>
<td>873</td>
<td>848</td>
<td>983</td>
<td>695</td>
<td>822</td>
<td>855</td>
</tr>
<tr>
<td>Mean</td>
<td>803</td>
<td>845</td>
<td>820</td>
<td>831</td>
<td>837</td>
<td>797</td>
<td>817</td>
<td>821</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of levels = 35.1 lb/ac.
S.E. of marginal mean of rows means = 81.7 lb/ac.
S.E. of body of table = 93.0 lb/ac.

---

Crop : Gram (Rabi).
Site : Govt. Agri. Farm, Kotah.
Type : 'M'.
Ref : Rj. 52(53)

Object : To study the effect of catalyst with and without F.Y.M. on germination, growth and yield of Gram.

1. BASAL CONDITIONS:
   (i) (a) Nil. (b) N.A. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) Nov. 52 (iv) (a) to (c) N.A. (v) No. (vi) N.A. (vii) Rainfed. (viii) N.A. (ix) N.A. (x) April 1953.

2. TREATMENTS:
   All combinations of (1) & (2)
   (1) 2 doses of F.Y.M. : $F_0=0$ and $F_1=2$ ton/ac.
   (2) 7 manures : $M_1=0$, $M_2=40$ lb/ac. of Catalyst, $M_3=80$ lb/ac. of Catalyst, $M_4=14$ lb/ac. of Fe. Sul., $M_5=28$ lb/ac. of Fe. Sul., $M_6=8$ lb/ac. of Pot. Permanganate & $M_7=16$ lb/ac. of Pot. Permanganate.

3. DESIGN:
   (i) $2 \times 7$ Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3 (iv) (a) 15'x9' (b) 12'x6' (v) $\frac{1}{2}$' on each side. (vii) Yes.

4. GENERAL:
   (i) Average. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953-54 to N.A. (b) No. (c) N.A. (v) (a) No. (b) N.A. (vi) N.A. (vii) Nil.

5. RESULTS:
   (i) 638 lb/ac.
   (ii) 141.5 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>
<th>$M_6$</th>
<th>$M_7$</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>$F_0$</td>
<td>596</td>
<td>570</td>
<td>751</td>
<td>596</td>
<td>622</td>
<td>544</td>
<td>648</td>
<td>603</td>
<td></td>
</tr>
<tr>
<td>$F_1$</td>
<td>596</td>
<td>777</td>
<td>777</td>
<td>803</td>
<td>544</td>
<td>570</td>
<td>648</td>
<td>674</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>596</td>
<td>673</td>
<td>764</td>
<td>699</td>
<td>583</td>
<td>557</td>
<td>596</td>
<td>638</td>
<td></td>
</tr>
</tbody>
</table>

S.E. of F marginal mean = 33.9 lb/ac.
S.E. of M marginal mean = 57.8 lb/ac.
S.E. of body of table = 81.7 lb/ac.
Crop: Moong (Kharif).
Site: Govt. Agri. Farm, Bassi.

Object: To study the effect of catalyst with and without F.Y.M. on germination and yield of Moong.

1. BASAL CONDITIONS:
   (i) (a) No. (b) Bajra. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-sandy loam. (b) N.A. (iii) 10.7.52. (iv) (a) N.A. (b) N.A. (c) 8 Sc/ac. (d) N.A. (e) N.A. (v) N.A. (vi) Local. (vii) No. (viii) 2 weedings, hoeing and thinning on 5.8.52 and 6.8.52. (ix) N.A. (x) 1.11.52.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 2 doses of F.Y.M.: F₀=0 and F₁=2 ton/ac.
   (2) 7 manures: M₀=0, M₁=40 lb/ac. of Catalyst, M₂=80 lb/ac. of Catalyst, M₃=14 lb/ac. of Fe Sulphate, M₄=28 lb/ac. of Fe Sulphate, M₅=8 lb/ac. of Potassium Permanganate and M₆=16 lb/ac. of Potassium Permanganate.

3. DESIGN:
   (i) 2 x 7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) and (b) 24' X 12'. (v) No. (vi) Yes.

4. GENERAL:
   (i) N.A. (ii) N.A. (iii) Yield of grains. (iv) (a) 1952-contd. (b) and (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS:
   (i) 447.0 lb/ac.
   (ii) 81.0 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>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>F₀</td>
<td>414.8</td>
<td>416.8</td>
<td>374.7</td>
<td>440.8</td>
<td>394.8</td>
<td>474.9</td>
<td>466.9</td>
</tr>
<tr>
<td>F₁</td>
<td>466.9</td>
<td>446.9</td>
<td>446.9</td>
<td>507.0</td>
<td>454.9</td>
<td>400.8</td>
<td>541.1</td>
</tr>
<tr>
<td>Mean</td>
<td>440.8</td>
<td>436.8</td>
<td>410.8</td>
<td>473.9</td>
<td>424.8</td>
<td>437.8</td>
<td>504.0</td>
</tr>
</tbody>
</table>

   S.E. of F marginal mean = 19.1 lb/ac.
   S.E. of M marginal mean = 33.1 lb/ac.
   S.E. of body of table = 46.8 lb/ac.

Crop: Moong (Kharif).
Site: Govt. Agri. Farm, Bassi.

Object: To find out the effect of catalyst with and without F.Y.M. on germination, growth and yield of Moong.

1. BASAL CONDITIONS:
   (i) (a) No. (b) Bajra. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-Sandy loam. (b) N.A. (iii) 19.7.53. (iv) (a) to (e) N.A. (v) N.A. (vi) Local. (vii) Rainfed. (viii) N.A. (ix) N.A. (x) 23.10.53.

2. TREATMENTS:
   All combinations of (1) and (2)
   (1) 2 doses of F.Y.M.: F₀=0 and F₁=2 ton/ac.
   (2) 7 manures: M₀=0, M₁=40 lb/ac. of Catalyst, M₂=80 lb/ac. of Catalyst, M₃=14 lb/ac. of Fe Sulphate, M₄=28 lb/ac. of Fe Sulphate, M₅=8 lb/ac. of Potassium Permanganate and M₆=16 lb/ac. of Potassium Permanganate.

3. DESIGN:
   (i) 2 x 7 Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12' X 6'. (v) N.A. (vi) Yes.
4. GENERAL:
(i) N.A. (ii) No. (iii) Yield of grain. (iv) (a) 1952. Not known. (b) No. (c) N.A. (v) (a)
No. (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS:
(i) 473.0 lb./ac.
(ii) 138.0 lb./ac.
(iii) None of the effects is significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Kind</th>
<th>50</th>
<th>100</th>
<th>150</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super</td>
<td>74.2</td>
<td>96.0</td>
<td>89.6</td>
<td>86.6</td>
</tr>
<tr>
<td>B.M.</td>
<td>116.5</td>
<td>121.6</td>
<td>138.9</td>
<td>125.7</td>
</tr>
<tr>
<td>Mean</td>
<td>95.3</td>
<td>108.8</td>
<td>114.2</td>
<td>106.1</td>
</tr>
</tbody>
</table>

S.E. of marginal means of sources = 13.95 lb./ac.
S.E. of marginal means of levels = 17.08 lb./ac.
S.E. of body of table = 24.16 lb./ac.
Crop :- Moong (Kharif).
Site :- Govt. Agri. Farm, Bassi.
Object :-To find the effect of Guar bean powder on germination and yield of Moong.

1. BASAL CONDITIONS :
   (i) (a) No. (b) Bajra. (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain. Sandy loam. (b) N.A. (iii) 10.7.52. (iv) (a) N.A. (b) N.A. (c) 8 sr./ac. (d) N.A. (e) N.A. (v) N.A. (vi) Local. (vii) Rainfed. (viii) Weeding and hoeing on 5th and 8th Aug. 52. (ix) N.A. (x) 1st Nov. 52.

2. TREATMENTS :
   1. Guar bean powder 0.02% of weight (3/4 seers).
   2. Guar bean powder 0.05% of weight (1 sr. 14 ch.).
   3. Guar bean powder 1% of weight (3 sr. 14 ch.).
   4. Control.

3. DESIGN :
   (i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 16'×9'. (v) N.A. (vi) Yes.

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

5. RESULTS :
   (i) 471.4 lb./ac.
   (ii) 179.4 lb./ac.
   (iii) The treatment differences are not significant.
   (iv) Av. yield of grain in lb./ac.
   Treatment | Av. yield
   1. | 435.9
   2. | 487.7
   3. | 538.7
   4. | 423.6
   S.E./mean | = 103.6 lb./ac.

———

Crop :- Groundnut (Kharif).
Site :- Govt. Agri. Farm, Bassi.
Ref :- Rj. 51(14).
Type :- ‘M’.
Object :-To find out the effect of different doses of B.M. and Super on the yield of Groundnut.

1. BASAL CONDITIONS :
   (i) (a) to (c) N.A. (ii) (a) Yellow alluvium of Gangetic plain-sandy loam. (b) N.A. (iii) to (x) N.A.

2. TREATMENTS :
   All combinations of (1) and (2) + a Control.
   (1) 2 kinds of P fertilizer : Super & B.M.
   (2) 3 levels of each kind : 50, 100 & 150 lb./ac.

3. DESIGN :
   (i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) 30'×3'×24' (b) 24'×3'×18'. (v) 3' on each side of the plot. (vi) Yes.

4. GENERAL :
   (i) N.A. (ii) Damage by rats and white ants. (iii) Yield of pod. (iv) (a), (b) No. (c) N.A. (v) (a) (b) N.A. (vi) Nil. (vii) Originally the experiment was laid in 4 blocks but due to considerable damage done to 4th replication, it has been neglected.

5. RESULTS :
   (i) 2617 lb./ac.
   (ii) 544.4 lb./ac.
   (iii) Only control vs. other treatments effect is significant.
(iv) Av. yield of groundnut in lb./ac.

Control = 1731 lb./ac.

<table>
<thead>
<tr>
<th>Level</th>
<th>50</th>
<th>100</th>
<th>150</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super</td>
<td>3238</td>
<td>3345</td>
<td>2484</td>
<td>3022</td>
</tr>
<tr>
<td>B.M.</td>
<td>3015</td>
<td>2304</td>
<td>2201</td>
<td>2507</td>
</tr>
<tr>
<td>Mean</td>
<td>3126</td>
<td>2824</td>
<td>2342</td>
<td>2764</td>
</tr>
</tbody>
</table>

S.E. of marginal mean of sources = 181.5 lb./ac.
S.E. of marginal mean of levels = 223.3 lb./ac.
S.E. of body of table = 343 lb./ac.

Crop: Groundnut (Kharif). Site: Govt. Agri. Farm, Bassi. Ref: Rj. 51(22). Type: 'M'.

Object: To study the effect of different doses of B.M. and Super on Groundnut.

1. BASAL CONDITIONS:
   (i) (a) Oats-Groundnut-Wheat. (b) Oats. (c) Nil. (ii) (a) Yellow alluvium of Gangetic plain-sandy loam. (b) N.A. (iii) 30.5.71. (iv) (a) After the commencement of monsoon, the soil was planked. (b) Drilling in rows. (c) N.A. (d) Rows one foot apart. (e) N.A. (v) N.A. (vi) Lo al (Medium). (vii) Irrigated. (viii) Intercultivation and weeding on 10.8.51. (ix) N.A. (x) 3.11.51.

2. TREATMENTS:
   All combinations of (1) and (2) + a Control.
   (1) 2 kinds of P fertilizer: Super & B.M.
   (2) 3 levels of each kind: 50, 100 and 150 lb./ac.
   Fertilizers applied by broadcast before sowing.

3. DESIGN:
   (i) R.B.D. (ii) (a) 7. (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) Slight damage by white ants. (iii) Yield of groundnut. (iv) (a) 1951-1952. (b) Yes. (c) N.A. (v) N.A. (vi) Nil. (vii) Yield of plot with B.M. at 150 lb./ac. in replication 4 was missing.

5. RESULTS:
   (i) 2335 lb./ac.
   (ii) 673.4 lb./ac.
   (iii) Only control vs. other treatments effect is significant.
   (iv) Av. yield of groundnut in lb./ac.
   Control = 1428 lb./ac.

<table>
<thead>
<tr>
<th>Level</th>
<th>50</th>
<th>100</th>
<th>150</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super</td>
<td>2743</td>
<td>2890</td>
<td>2214</td>
<td>2616</td>
</tr>
<tr>
<td>B.M.</td>
<td>2756</td>
<td>2125</td>
<td>2188</td>
<td>2356</td>
</tr>
<tr>
<td>Mean</td>
<td>2749</td>
<td>2507</td>
<td>2201</td>
<td>2486</td>
</tr>
</tbody>
</table>

S.E. of the difference of two means in the body of the table (other than missing) = 476.2 lb./ac.
S.E. of the difference of two means in the body of the table (one containing the missing value) = 520.4 lb./ac.
S.E. of the difference of 'Super vs. B.M.' marginal means = 287.1 lb./ac.
S.E. of the difference of two levels of kind (50 vs. 150 lb.) = 336.7 lb./ac.
S.E. of the difference of two levels of kind (100 vs. 50 or 150 lb.) = 354.3 lb./ac.
Crop :- Til (Kharif).
Site :- Govt. Agri. Farm, Mandore.

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

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Desert sandy soil. (b) N.A. (iii) N.A. (iv) (a) to (e) N.A. (v) N.A.
(vi) Local. (vii) Rainfed. (viii) No. (ix) N.A. (x) N.A.

2. TREATMENTS:

1. Control.
2. 15 lb./ac. of N as A/S.
3. 20 lb./ac. of N as A/S.
4. 20 lb./ac. of N as Castorcake.
5. 20 lb./ac. of N as F.Y.M.  
Fertilizers broadcast at the time of cultivation before sowing.

3. DESIGN:

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 36'-3'x24'. (b) 30'-3''x18'. (v) 3' on either side.
(vi) Yes.

4. GENERAL:

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

5. RESULTS:

(i) 139.0 lb./ac.
(ii) 69.46 lb./ac.
(iii) The 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>1. Control</td>
<td>109.0</td>
</tr>
<tr>
<td>2.</td>
<td>148.0</td>
</tr>
<tr>
<td>3.</td>
<td>174.8</td>
</tr>
<tr>
<td>4.</td>
<td>104.9</td>
</tr>
<tr>
<td>5.</td>
<td>158.3</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>28.35 lb./ac.</td>
</tr>
</tbody>
</table>

---

Crop :- Sesamum (Kharif).
Site :- Govt. Agri. Farm, Mandore.

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

1. BASAL CONDITIONS:

(i) (a) No. (b) C. A. (c) N.A. (ii) (a) Desert sandy soil. (b) N.A. (iii) 9.75.3. (iv) (a) Ploughing. (b) to (e) N.A. (v) No. (vi) N.A. (vii) Rainfed. (viii) No. (ix) N.A. (x) 9.11.53.

2. TREATMENTS:

1. Control.
2. 15 lb./ac. of N as A/S.
3. 20 lb./ac. of N as A/S.
4. 20 lb./ac. of N as Castorcake.
5. 20 lb./ac. of N as F.Y.M.  
Fertilizers were mixed and broadcast at the time of cultivation.

3. DESIGN:

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 36'-3'x24'. (b) 30'-3''x18'. (v) 3' on each side.
(vi) Yes.

4. GENERAL:

(i) Good. (ii) No. (iii) Yield of grain. (iv) (a) 1952-53. (b) No. (c) N.A. (v) (a) No. (b) N.A.
(vi) Nil. (vii) Nil.
5. RESULTS:
(i) 105.6 lb./ac.
(ii) 8.8 lb./ac.
(iii) The treatment differences are highly significant.
(iv) Av. yield of grain in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>102.8</td>
</tr>
<tr>
<td>2.</td>
<td>124.4</td>
</tr>
<tr>
<td>3.</td>
<td>146.0</td>
</tr>
<tr>
<td>4.</td>
<td>87.4</td>
</tr>
<tr>
<td>5.</td>
<td>131.8</td>
</tr>
<tr>
<td>SE./mean</td>
<td>= 24.9 lb./ac.</td>
</tr>
</tbody>
</table>

Crop: Sesamum (Kharif).
Site: Govt. Agri. Farm, Mandore
Object: To study the effect of different doses and sources of N on Sesamum.

1. BASAL CONDITIONS:
(i) (a) No. (b) N.A. (c) N.A. (ii) (a) Desert sandy soil. (b) N.A. (iii) 9.7.51. (iv) (a) 4 ploughings.
(b) to (e) N.A. (v) No (vi) N.A. (vii) Rainfed. (viii) No. (ix) N.A. (x) 9.11.52.

2. TREATMENTS:
1. Control.
2. 15 lb./ac. of N as A/S.
3. 20 lb./ac. of N as A/S.
4. 20 lb./ac. of N as Oilcake.
5. 20 lb./ac. of N as F.Y.M.

3. DESIGN:
(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 36'-3'x24'. (b) 30'-3'x18'. (v) 3' all round. (iv) Yes.

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

5. RESULTS:
(i) 120.3 lb./ac.
(ii) 61.0 lb./ac.
(iii) The treatment differences are not significant.
(iv) Av. yield of sesamum in lb./ac.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Av. yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>102.8</td>
</tr>
<tr>
<td>2.</td>
<td>124.4</td>
</tr>
<tr>
<td>3.</td>
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<tr>
<td>4.</td>
<td>87.4</td>
</tr>
<tr>
<td>5.</td>
<td>131.8</td>
</tr>
<tr>
<td>S.E./mean</td>
<td>= 24.9 lb./ac.</td>
</tr>
</tbody>
</table>
Crop: Metha (Kharif)  
Site: Govt. Agri. Farm, Tabiji.

Object: To study the effect of Super on the yield of Metha.

1. BASAL CONDITIONS:
   (i) (a) No.  (b) N.A.  (c) N.A.  (ii) Sandy loam.  (b) N.A.  (iii) 1.8.49.  (iv) (a) to (e) N.A.  (v) N.A.  (vi) Local.  (vii) N.A.  (viii) Nil.  (ix) N.A.  (x) 13.11.49.

2. TREATMENTS:
   1. Control.
   2. 100 lb/ac. of Super.
   3. 150 lb/ac. of Super.

3. DESIGN:
   (i) R.B.D.  (ii) (a) 3.  (b) N.A.  (iii) 4.  (iv) (a) 18'×14'.  (b) 16'×12'.  (v) 1' all round.  (vi) Yes.

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

5. RESULTS:
   (i) 27896 lb/ac.
   (ii) 4717.4 lb/ac.
   (iii) The treatment differences are not significant.
   (iv) Av. yield of fodder in lb/ac.

   Treatment | Av. yield | S.E./mean
   ---------- | ---------- | ----------
   1          | 23247      | 975.2 lb/ac.
   2          | 30844      |
   3          | 20597      |

---

Crop: Metha (Kharif)  
Site: Govt. Agri. Farm, Tabiji.

Object: To study the effect of Super on the yield of Metha (fodder).

1. BASAL CONDITIONS:
   (i) (a) No.  (b) N.A.  (c) N.A.  (ii) (a) Sandy loam.  (b) N.A.  (iii) 20.7.49.  (iv) (a) N.A.  (b) N.A.  (c) N.A.  (d) N.A.  (e) N.A.  (v) N.A.  (vi) Local.  (vii) N.A.  (viii) Nil.  (ix) N.A.  (x) 13.10.49.

2. TREATMENTS:
   1. Control.
   2. 100 lb/ac. of Super.
   3. 150 lb/ac. of Super.

3. DESIGN:
   (i) R.B.D.  (ii) (a) 3.  (b) N.A.  (iii) 4.  (iv) (a) 18'×14'.  (b) 16'×12'.  (v) 1' all round.  (vi) Yes.

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

5. RESULTS:
   (i) 27896 lb/ac.
   (ii) 4717.4 lb/ac.
   (iii) The treatment differences are not significant.
   (iv) Av. yield of fodder in lb/ac.

   Treatment | Av. yield | S.E./mean
   ---------- | ---------- | ----------
   1          | 23247      | 975.2 lb/ac.
   2          | 30844      |
   3          | 20597      |