

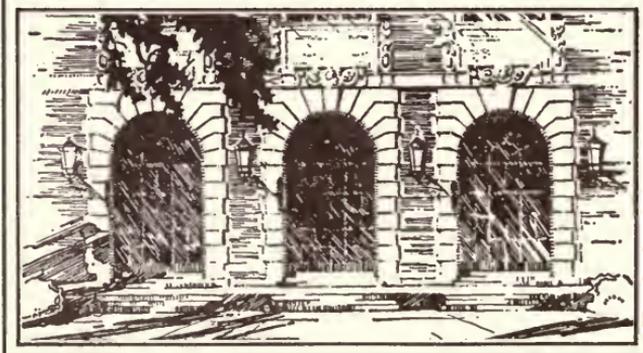
LIBRARY OF THE
UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

630.7

Il 6b

no. 272-275

cop. 2



AGRICULTURE

NON CIRCULATING

**CHECK FOR UNBOUND
CIRCULATING COPY**

The Illinois Soil Experiment Fields

BULLETIN No. 273

UNIVERSITY OF ILLINOIS
AGRICULTURAL EXPERIMENT STATION
January, 1926

FOREWORD

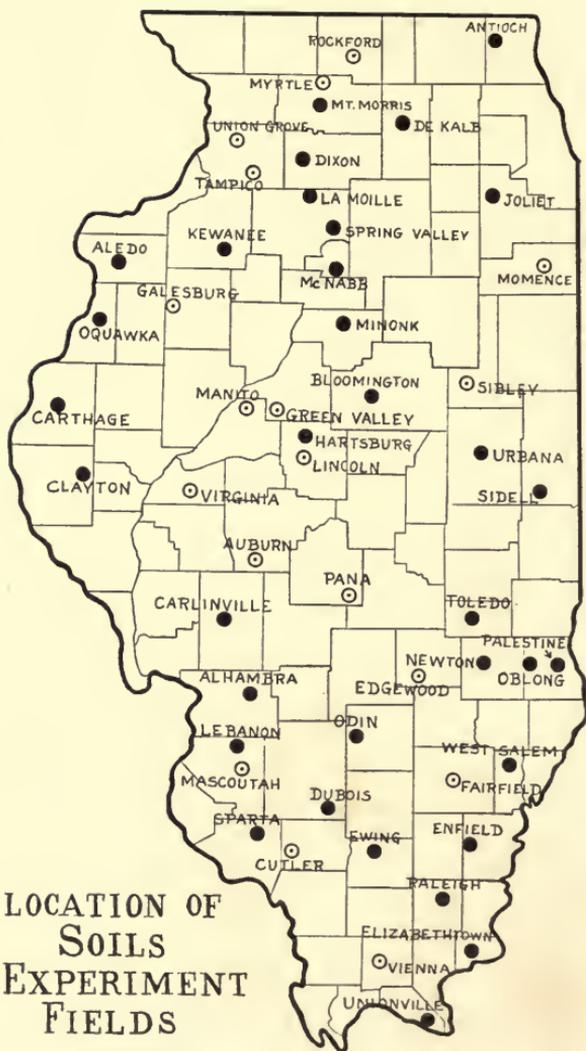
In the investigations of the soils of Illinois three main lines of procedure have been followed: namely, mapping and classifying the soils of the state by types; subjecting samples to laboratory analysis; and conducting field experiments. In accordance with this program there have been operated for a sufficient length of time to afford results of some significance, all told, 56 soil experiment fields distributed over the state on various soil types.

It is the purpose of the present bulletin to place on record a description of the work on each of these fields, together with the results obtained to date. It is the thought that these data, presented without discussion or comment, will furnish the basic information for many different studies connected with the innumerable problems concerned in the maintenance and the improvement of our soils.

While the authors must assume the responsibility for the presentation of this material, obviously credit for its accumulation belongs to the many former and present members of the Agronomy Department who have had charge of the fields and the recording of results.

CONTENTS

| | PAGE |
|---|------|
| INTRODUCTION..... | 41 |
| GENERAL PLAN OF WORK ON THE FIELDS..... | 42 |
| Size and Arrangement of Fields..... | 42 |
| Two Systems of Farming Provided..... | 42 |
| Crop Rotations Practiced..... | 42 |
| The Standard Plan of Soil Treatment..... | 43 |
| Necessity for Changes in Standard Plans..... | 44 |
| New Problems Arising from Experiment Fields Work..... | 45 |
| Explanation of Symbols Used..... | 46 |
| THE INDIVIDUAL EXPERIMENT FIELDS..... | 46 |
| DESCRIPTION OF SOILS..... | 311 |
| INDEX..... | 324 |



LOCATION OF SOILS EXPERIMENT FIELDS

(Open circles indicate
fields discontinued)

THE ILLINOIS SOIL EXPERIMENT FIELDS

By F. C. BAUER, R. S. SMITH, AND L. H. SMITH¹

INTRODUCTION

As a major feature of the investigation of the soils of Illinois, the Illinois Agricultural Experiment Station has conducted investigations on more than fifty soil experiment fields distributed over the state on various types of soil. This number is exclusive of the fields on the University campus at Urbana. These soil experiment fields vary in size from about one acre to 40 acres or more, and have been in operation for periods varying from three years to half a century.

The Morrow plots, located at Urbana, were established in 1876, altho they were not given official recognition until three years later. The present year (1926) is thus the fiftieth anniversary of their establishment. So far as is known, these are the oldest soil experiment plots in America. The Davenport plots, also located at the University, now have records extending back thirty years.

Several of the outlying fields were established in the summer and fall of 1901, and others have been put into operation at various times since, some being only a few years old at the present time. In 1924, thirty-four fields, aside from those at Urbana, were in operation. The others have been abandoned at different times, for various reasons.

This bulletin constitutes a report of the work on all these fields, whereby there is placed on record a description of each field, information with respect to cropping systems followed and fertility treatments applied, and the results obtained expressed in terms of crop yields.

For each of the fields in operation in 1924 a soil and topographic map is included which shows the arrangement of the plots, the distribution of soil types and, by means of contour lines, the elevation of the land. These maps have been prepared in conformance with recent developments in the science of soil mapping. An inspection of them will reveal more or less diversity in the soil types present on some of the fields—a condition which indicates a lack of uniformity for experimental purposes. At the time these fields were established these variations were not detected or were regarded as insignificant. Whether all the type separations made on the basis of the present methods of soil mapping have any practical significance or not can be determined only by crop yield correlations and further investigation; many of the

¹F. C. Bauer, Chief in charge of Soil Experiment Fields; R. S. Smith, Chief in Soil Physics, in charge of Soil Survey mapping; L. H. Smith, Chief in charge of publications of the Soil Survey. Special acknowledgment is accorded Mr. F. W. Gault, who, thru his intimate knowledge of the records of the fields, has rendered invaluable aid in the assembling of the data.

crops results herein recorded will be found useful in making such a study. It seems quite clear, however, that some of these fields have been located on soils lacking sufficient uniformity for satisfactory soil experiments. Some of these fields have been abandoned and others will be abandoned as soon as it is clear that they have served all useful purposes.

GENERAL PLAN OF WORK ON THE FIELDS

SIZE AND ARRANGEMENTS OF FIELDS

The soil experiment fields vary in size from less than an acre up to 40 acres or more. They are laid off in one or more series of plots. Each series is occupied by but one kind of crop in any one season. Usually there are sufficient series so that a crop rotation can be carried on with every crop represented each year. The individual plots, which are usually $\frac{1}{5}$ or $\frac{1}{10}$ acre in area, are treated in various ways in order to secure information as to the effect of various systems of soil management.

TWO SYSTEMS OF FARMING PROVIDED

On many of the fields, the treatment provides for two distinct systems of farming, namely, livestock farming and grain farming.

In the livestock system, stable manure is used to furnish organic matter and nitrogen. The amount applied to a plot is based upon the amount that can be produced from the crops raised on that plot.

In the grain system no animal manures are used. The organic matter and nitrogen are applied in the form of plant manures, such as cornstalks; straw from wheat, oats, and clover; the second crop of clover; and leguminous green manure crops grown for the purpose. In the main, it has been the purpose in this plan to remove from the land only the grain and seed produced, except in the case of alfalfa and sometimes the first crop or both the first and second crops of clover, which are harvested for hay and considered as a cash crop. Originally, all legume crops with the exception of alfalfa were harvested for seed. During recent years this practice has not been adhered to because of the great uncertainty of seed production with the common biennial clovers.

CROP ROTATIONS PRACTICED

The crops grown on the experiment fields are always arranged in a definite rotation. On some fields two or more rotations are practiced. The crops grown are those common to the respective localities and include corn, oats, wheat, barley, rye, red clover, mammoth clover, alsike, sweet clover, alfalfa, cowpeas, soybeans, vetch, hubam clover, timothy, potatoes, and cotton.

On many of the fields a standard four-year rotation has been practiced. It was patterned after the Norfolk rotation widely practiced in Europe in which a cultivated crop is followed by a spring grain, the spring grain by a legume, and the legume by a winter grain. Such a rotation permits the seeding of a legume in the winter grains for use as a green manure for the cultivated crop. The rotation commonly practiced on the Illinois experiment fields has been corn, oats, clover, and wheat with a seeding of sweet clover on the plots representing the grain system of farming. The sweet clover is plowed down as a green manure for corn the following year. If the regular crop of clover, usually red or alsike clover, fails, soybeans are substituted. On some fields this rotation is accompanied by alfalfa, which is grown on a fifth series during one complete rotation of the other crops, after which it is shifted to another series.

THE STANDARD PLAN OF SOIL TREATMENT

For the most part, a rather uniform scheme of soil treatment has been followed on the different fields. In both the livestock and grain systems, untreated plots have been retained to serve as checks for the soil treatments applied. Certain plots in each system have received either animal manure or plant manure; another plot has received pulverized limestone in addition to the manures; another plot as a further addition has received rock phosphate, and still another plot, in the grain system only, has received potash salts in addition to the above materials. A third untreated plot has been maintained, thus making a total of ten plots in each series. In general, the manner of applying and the amounts of the materials applied have been as follows:

Animal Manures.—Animal manure, consisting of excreta from animals with stable litter, has been applied to the respective plots for corn in amounts equal to the total weight of the crops produced in the previous rotation.

Plant Manures.—Crop residues produced upon the land, consisting of stalks, straw, and chaff, have been returned to the respective plots at convenient times during the rotation. In addition to these materials sweet clover has been seeded in the wheat and plowed under the following spring for corn. (On plots where limestone is lacking, sweet clover seldom survives.) These practices are designated as the residue system.

Limestone.—Limestone has been applied usually at the rate of 4 tons an acre as an initial application, and 2 tons an acre each four years thereafter, usually to the surface soil in the preparation of the seedbed for wheat.

Phosphate.—Rock phosphate has been applied usually at the rate of 1 ton an acre to the clover sod previous to plowing for wheat.

Potash Salts.—Kainit at the rate of 800 pounds an acre once during the rotation in connection with the phosphate has been the standard application of potassium. During the World War potash salts from Nebraska, in amounts carrying the same quantity of potassium, were used.

On some fields, minor series and extra plots have permitted deviations from these more or less standard plans. These deviations will be described in connection with the crop data from the individual fields.

NECESSITY FOR CHANGES IN STANDARD PLANS

Experience with this more or less uniform system of cropping and soil treatment has revealed that it cannot be universally used with satisfactory response. Its practice for several rotations on some fields appeared to develop conditions which had a depressing effect upon crop yields. In some instances the small grain lodged frequently. Because of the more or less complex interrelationships of the various factors concerned, the exact cause or causes for these behaviors were not clearly understood. In some cases the amount of nitrogenous organic matter incorporated into the soil may have become excessive and thus brought about the unfavorable conditions for the rotation practices. In some cases the difficulty may have been due to the continued use of straw residues. In other cases it may have been due to applications of mineral fertilizers in improper proportions or amounts. Whatever the reason or reasons may have been, it became clear during the past few years that some deviations from the standard practices should be instituted. Some such changes have been made, among which may be mentioned the following:

Rotations.—The rotation on some of the more naturally productive fields has been changed to include two crops of corn instead of one. The rotation on these fields as now practiced is corn, corn, oats, and wheat. Hubam clover is seeded in the oats on all plots and will be utilized as a hay crop preceding the seeding of wheat. The use of biennial sweet clover is continued as in the past.

Residues.—The return of oats and wheat straw has been omitted on most of the fields. In a few instances oats straw is still returned.

Limestone.—Regular limestone applications have been temporarily abandoned on all fields. Future applications will be made only when there appears to be a need for more as indicated by tests and by crop response.

Rock Phosphate.—Plans have been made to stop entirely the applications of rock phosphate on all plots as soon as the total application on them has reached 4 tons an acre. This point has already been reached on many of the fields.

Other changes are needed and these will be made as soon as more definite information is obtained as to what should be done.

NEW PROBLEMS ARISING FROM EXPERIMENT FIELDS WORK

From the above brief discussion it appears that the practice of uniform cropping and soil treatment methods for long periods may develop unfavorable as well as favorable conditions for the production of crops. This is undoubtedly true because of the dynamic, ever-changing character of soils. Being made up of complex organic and inorganic materials in various proportions and teeming with life in the form of microorganisms, soils will vary in their requirements and in their response to a given set of management standards. For these reasons soil management practices should vary in such a manner as to maintain the proper physical, chemical, and biological balances in soils suitable for profitable and permanent crop production on the type concerned. When certain practices are unvaried for long periods, a considerable time may be required to effect improvement after they are changed. For this reason new investigations should be established from time to time based on the experiences of the old in order to determine the relationships of the various practices and to serve as a guide in practical soil management.

As a result of the work thus far conducted by the Experiment Station on its soil experiment fields, new problems have arisen calling for information on many points, among which the following are the more important:

1. The rotations best adapted to the region and to the system of farming being practiced.
2. The comparative value of various legumes in the rotation.
3. Methods of utilizing legumes for economic soil improvement.
4. The power of various crops to utilize insoluble plant-nutrient-bearing minerals, either native to the soil or applied to it.
5. The effect of non-legume residues, such as cornstalks and straws, on the soil and on the growing crop.
6. The amounts, physical condition, frequency of application, and form of lime necessary to produce economic results.
7. The effect on the soil and on the crops of excessive applications of limestone.
8. The influence of soil type, crop rotation, and limestone, as well as the frequency, rates, and manner of applying rock phosphate, on the effectiveness of rock phosphate.
9. The comparative value of various phosphate carriers under different conditions of soil and soil management.
10. A more thoro study of potash fertilizers under various conditions of soil and soil management.

EXPLANATION OF SYMBOLS USED

The following symbols are used to designate the various soil treatments:

- 0 = Untreated land or check plots
- M = Manure (animal)
- R = Residues (from crops, and includes legumes used as green manure)
- L = Limestone
- K = Potassium (usually in form of kainit)
- N = Nitrogen (usually in the form contained in dried blood)
- Le = Legumes used as green manure
- Cv = Cover crop (legume or non-legume)
- P = Phosphorus applied either as bone meal or as rock phosphate
- aP = Acid phosphate
- bP = Steamed bone meal
- sP = Slag phosphate
- rP = Rock phosphate
- () = Parentheses inclosing figures signify tons of hay as distinguished from bushels of seed.

The single vertical line in the tables indicates the beginning of full soil treatment. The double vertical lines indicate a radical change in either the cropping system or the fertilization.

THE INDIVIDUAL EXPERIMENT FIELDS

The individual experiment fields are presented in alphabetic order on the following pages. With the foregoing general explanation the reader should be able to obtain from the descriptions, maps, and tables the essential information connected with these field investigations. For the sake of brevity, considerable information concerning details that might ordinarily appear in the descriptive text is carried in the table footnotes.

ALEDO FIELD, MERCER COUNTY
ESTABLISHED 1910

Location.—One-half mile west of the railway station at Aledo. A part of the S.E. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 18, Twp. 14 N., R. 3 W. of the 4th P. M.

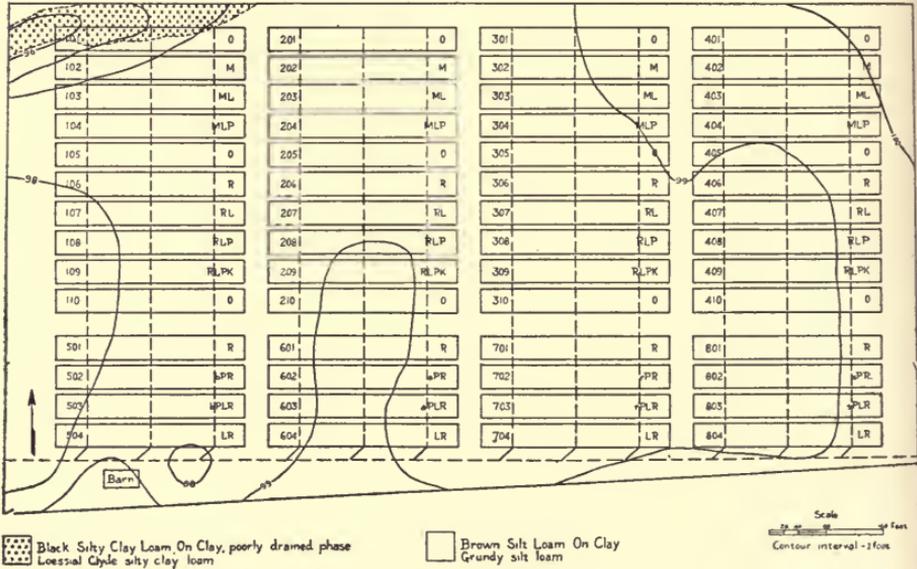
Description.—The field consists of about 20 acres of dark-colored loessial upland soil, which is neutral or slightly acid in reaction. The land is practically uniform both in soil type and in topography. With the exception of a small area on Plot 101, consisting of Black Silty Clay Loam On Clay, poorly drained phase (Loessial Clyde silty clay loam), the field consists entirely of Brown Silt Loam On Clay (Grundy Silt Loam). The land is thoroly tilled and drains well. The field is divided into eight series, each of which contains 4 or 10 fifth-acre plots.

History.—This field was purchased by the business men and landowners of Aledo and vicinity, in part thru the efforts of Williams and Vashti College, and donated to the University for experimental purposes. In 1909 the land occupied by Series 100 and 200 grew corn, while that occupied by Series 300 and 400 was in clover sod on which more or less manure had been applied during the winter and spring. No further information is available in regard to the previous treatment which the field had received.

Cropping and Soil Treatment.—The somewhat standard crop rotation and soil treatment described in the introduction were established on Series 100, 200, 300, and 400. These methods were followed without change until 1918, when it was planned to harvest the first crop of red clover on the residue plots for hay and to plow down the second crop if no seed were formed. In 1921 the return of the oats straw was discontinued. In 1923 the rotation was changed to one of corn, corn, oats, and wheat. In this rotation it was planned to seed hubam clover in the oats on all plots, for use as hay or for soil improvement, and common sweet clover in the wheat on the residue plots for use as a green manure. Since this change, no residues except corn-stalks and the green manure have been returned to the residue plots. The limestone applications were temporarily abandoned in 1923. No more will be applied until there appears to be a need for them. The phosphate applications were evened up to a total of 4 tons an acre in 1924, and no more will be applied for some time at least.

Alfalfa was grown on Series 500, 600, 700, and 800 until 1916. No soil treatments were applied except limestone to Plots 3 and 4. Since 1916 the same crops have been grown on these series as have been grown on the grain plots of Series 200. Coincident with this change various carriers of phosphate have been applied to Plots 2 and 3 of these four series. Bone meal at the rotation rate of 800 pounds an

acre was applied to Series 500. In a similar manner 1,333 pounds of acid phosphate was applied to Series 600; 2,667 pounds of rock phosphate to Series 700; and 1,000 pounds of slag phosphate to Series 800. These phosphates have all been applied once during the rotation, preceding the corn. No limestone has been applied to Plots 1 and 2 on these series, thus making it possible to study the value of the phosphates with and without limestone. The last application of limestone on these series was made in 1918.



SOIL MAP OF ALEDO FIELD

TABLE 1.—*Concluded*
Bushels or (tons) per acre

| Plot No. | Soil treatment applied | 1910 | | 1911 | | 1912 | | 1913 | | 1914 | | 1915 | | 1916 | | 1917 | | 1918 | | 1919 | | 1920 | | 1921 | | 1922 | | 1923 | | 1924 | |
|----------|------------------------|-------------------|------------------------|--------------------|------|------|-----------|--------|------|--------|-------|--------|------|-----------|-------|------|------|-----------|-------|------|------|--------|-------|------|------|-----------|-------|------|------|-------|------|
| | | Oats ¹ | Soy-beans ² | Wheat ³ | Corn | Oats | Soy-beans | Wheat | Corn | Clover | Wheat | Corn | Oats | Soy-beans | Wheat | Corn | Oats | Soy-beans | Wheat | Corn | Oats | Clover | Wheat | Corn | Oats | Soy-beans | Wheat | Corn | Oats | Wheat | Corn |
| 301 | 0 | 64.1 | 15.7 | 11.5 | 45.8 | 42.2 | (1.38) | 10.2 | 40.5 | 74.8 | 41.5 | (1.29) | 34.8 | 65.3 | 65.0 | 19.2 | 42.2 | 19.2 | 42.2 | 19.2 | 42.2 | 19.2 | 42.2 | 19.2 | 42.2 | 19.2 | 42.2 | 19.2 | 42.2 | 19.2 | 42.2 |
| 302 | ML | 58.6 | 17.1 | 12.6 | 44.2 | 51.6 | (1.48) | 22.2 | 55.5 | 76.9 | 41.5 | (1.80) | 39.7 | 71.2 | 68.3 | 19.6 | 52.0 | 19.6 | 52.0 | 19.6 | 52.0 | 19.6 | 52.0 | 19.6 | 52.0 | 19.6 | 52.0 | 19.6 | 52.0 | 19.6 | 52.0 |
| 303 | ML | 64.7 | 15.9 | 11.7 | 51.0 | 52.3 | (1.52) | 15.8 | 64.4 | 83.3 | 53.1 | (1.52) | 39.7 | 77.2 | 72.2 | 22.6 | 70.2 | 22.6 | 70.2 | 22.6 | 70.2 | 22.6 | 70.2 | 22.6 | 70.2 | 22.6 | 70.2 | 22.6 | 70.2 | 22.6 | 70.2 |
| 304 | MLrP | 57.3 | 13.6 | 13.8 | 49.9 | 53.1 | (1.59) | 19.2 | 68.7 | 73.4 | 53.1 | (1.93) | 43.2 | 74.7 | 70.3 | 22.6 | 67.6 | 22.6 | 67.6 | 22.6 | 67.6 | 22.6 | 67.6 | 22.6 | 67.6 | 22.6 | 67.6 | 22.6 | 67.6 | 22.6 | 67.6 |
| 305 | 0 | 68.8 | 16.9 | 18.1 | 43.3 | 51.2 | 19.8 | 12.0 | 54.9 | 72.3 | 51.2 | 19.8 | 35.2 | 64.5 | 53.8 | 19.2 | 42.2 | 19.2 | 42.2 | 19.2 | 42.2 | 19.2 | 42.2 | 19.2 | 42.2 | 19.2 | 42.2 | 19.2 | 42.2 | 19.2 | 42.2 |
| 306 | R | 64.5 | 15.8 | 14.4 | 46.0 | 51.6 | 19.8 | 12.2 | 53.7 | 71.4 | 51.6 | 19.8 | 29.9 | 58.6 | 52.2 | 19.6 | 52.0 | 19.6 | 52.0 | 19.6 | 52.0 | 19.6 | 52.0 | 19.6 | 52.0 | 19.6 | 52.0 | 19.6 | 52.0 | 19.6 | 52.0 |
| 307 | RL | 67.2 | 17.1 | 10.0 | 50.1 | 51.9 | 22.5 | 9.2 | 64.4 | 78.3 | 51.9 | 22.5 | 31.7 | 74.0 | 69.8 | 23.5 | 71.6 | 23.5 | 71.6 | 23.5 | 71.6 | 23.5 | 71.6 | 23.5 | 71.6 | 23.5 | 71.6 | 23.5 | 71.6 | 23.5 | 71.6 |
| 308 | RLrP | 55.9 | 13.3 | 10.8 | 48.8 | 55.2 | 24.0 | 12.8 | 68.6 | 78.1 | 55.2 | 24.0 | 38.5 | 66.0 | 68.8 | 22.8 | 70.4 | 22.8 | 70.4 | 22.8 | 70.4 | 22.8 | 70.4 | 22.8 | 70.4 | 22.8 | 70.4 | 22.8 | 70.4 | 22.8 | 70.4 |
| 309 | RLrPK | 66.7 | 13.2 | 13.3 | 50.5 | 52.5 | 24.8 | 16.2 | 70.1 | 72.3 | 52.5 | 24.8 | 38.2 | 67.0 | 64.8 | 22.0 | 76.0 | 22.0 | 76.0 | 22.0 | 76.0 | 22.0 | 76.0 | 22.0 | 76.0 | 22.0 | 76.0 | 22.0 | 76.0 | 22.0 | 76.0 |
| 310 | 0 | 53.6 | 15.0 | 9.0 | 44.8 | 45.8 | (1.44) | 13.7 | 55.6 | 66.6 | 45.8 | (1.44) | 37.8 | 59.7 | 53.4 | 17.0 | 32.8 | 17.0 | 32.8 | 17.0 | 32.8 | 17.0 | 32.8 | 17.0 | 32.8 | 17.0 | 32.8 | 17.0 | 32.8 | 17.0 | 32.8 |
| 401 | 0 | 45.9 | 53.3 | 15.2 | 39.6 | 43.7 | 71.9 | (3.26) | 21.4 | 78.8 | 43.7 | 71.9 | 53.3 | 40.9 | 67.4 | 58.0 | 33.2 | 58.0 | 33.2 | 58.0 | 33.2 | 58.0 | 33.2 | 58.0 | 33.2 | 58.0 | 33.2 | 58.0 | 33.2 | 58.0 | 33.2 |
| 402 | M | 74.9 | 51.7 | 15.0 | 37.7 | 57.6 | 82.0 | (3.63) | 23.3 | 85.8 | 57.6 | 82.0 | 54.2 | 48.4 | 84.3 | 58.4 | 41.2 | 58.4 | 41.2 | 58.4 | 41.2 | 58.4 | 41.2 | 58.4 | 41.2 | 58.4 | 41.2 | 58.4 | 41.2 | 58.4 | 41.2 |
| 403 | ML | 81.2 | 53.4 | 15.4 | 38.0 | 60.0 | 89.7 | (3.90) | 18.6 | 90.3 | 60.0 | 89.7 | 49.5 | 50.8 | 85.5 | 77.2 | 45.9 | 77.2 | 45.9 | 77.2 | 45.9 | 77.2 | 45.9 | 77.2 | 45.9 | 77.2 | 45.9 | 77.2 | 45.9 | 77.2 | 45.9 |
| 404 | MLrP | 82.1 | 51.6 | 15.8 | 37.7 | 62.9 | 93.4 | (3.86) | 19.4 | 89.4 | 62.9 | 93.4 | 51.9 | 50.5 | 82.6 | 83.8 | 40.2 | 83.8 | 40.2 | 83.8 | 40.2 | 83.8 | 40.2 | 83.8 | 40.2 | 83.8 | 40.2 | 83.8 | 40.2 | 83.8 | 40.2 |
| 405 | 0 | 80.9 | 39.7 | 16.4 | 38.2 | 38.7 | 73.4 | .25 | 28.2 | 81.8 | 38.7 | 73.4 | 49.7 | 41.7 | 71.7 | 56.3 | 32.5 | 56.3 | 32.5 | 56.3 | 32.5 | 56.3 | 32.5 | 56.3 | 32.5 | 56.3 | 32.5 | 56.3 | 32.5 | 56.3 | 32.5 |
| 406 | R | 67.7 | 60.3 | 15.2 | 42.3 | 47.9 | 74.5 | .33 | 26.9 | 85.2 | 47.9 | 74.5 | 51.4 | 43.8 | 74.7 | 67.7 | 34.3 | 67.7 | 34.3 | 67.7 | 34.3 | 67.7 | 34.3 | 67.7 | 34.3 | 67.7 | 34.3 | 67.7 | 34.3 | 67.7 | 34.3 |
| 407 | RL | 67.4 | 62.8 | 14.6 | 38.8 | 48.3 | 83.6 | .25 | 28.0 | 97.1 | 48.3 | 83.6 | 52.3 | 45.0 | 77.7 | 69.4 | 38.0 | 69.4 | 38.0 | 69.4 | 38.0 | 69.4 | 38.0 | 69.4 | 38.0 | 69.4 | 38.0 | 69.4 | 38.0 | 69.4 | 38.0 |
| 408 | RLrP | 71.7 | 62.5 | 16.4 | 40.0 | 48.4 | 81.2 | .25 | 28.2 | 96.7 | 48.4 | 81.2 | 50.9 | 50.6 | 79.0 | 74.1 | 39.2 | 74.1 | 39.2 | 74.1 | 39.2 | 74.1 | 39.2 | 74.1 | 39.2 | 74.1 | 39.2 | 74.1 | 39.2 | 74.1 | 39.2 |
| 409 | RLrPK | 77.8 | 55.5 | 15.8 | 38.9 | 52.7 | 93.8 | .18 | 22.7 | 98.3 | 52.7 | 93.8 | 53.0 | 42.2 | 78.5 | 74.5 | 41.8 | 74.5 | 41.8 | 74.5 | 41.8 | 74.5 | 41.8 | 74.5 | 41.8 | 74.5 | 41.8 | 74.5 | 41.8 | 74.5 | 41.8 |
| 410 | 0 | 67.1 | 52.3 | 14.5 | 34.7 | 40.7 | 58.3 | (2.30) | 20.8 | 72.8 | 40.7 | 58.3 | 47.3 | 40.7 | 62.5 | 74.1 | 30.5 | 74.1 | 30.5 | 74.1 | 30.5 | 74.1 | 30.5 | 74.1 | 30.5 | 74.1 | 30.5 | 74.1 | 30.5 | 74.1 | 30.5 |

¹No soil treatment. ²Residues only. ³No manure. ⁴Residues and lime only.

TABLE 2.—ALEDO FIELD: SERIES 500, 600, 700, 800
 Bushels or (tons) per acre

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|-------------------------------|---------------|--------------|--------------|----------------|--------------|--------------|--|
| | | 1916 Corn ¹ | 1917 Oats ¹ | 1918 Soybeans ¹ | 1919 Wheat | 1920 Corn | 1921 Oats | 1922 Clover | 1923 Corn | 1924 Corn | |
| 501 | R..... | 53.4 | 85.5 | 18.9 | 32.4 | 72.8 | 48.9 | (2.88) | 83.5 | 58.2 | |
| 502 | RbP..... | 61.7 | 91.7 | 19.0 | 34.7 | 86.4 | 61.9 | (3.25) | 82.7 | 66.0 | |
| 503 | RLbP..... | 61.5 | 90.6 | 23.2 | 35.6 | 87.3 | 53.3 | (3.48) | 82.5 | 66.8 | |
| 504 | RL..... | 55.1 | 80.5 | 22.6 | 32.9 | 77.7 | 47.7 | (2.61) | 88.2 | 60.3 | |
| 601 | R..... | 55.2 | 84.7 | 19.5 | 33.0 | 71.2 | 53.6 | (3.17) | 84.7 | 57.3 | |
| 602 | RaP..... | 57.8 | 87.7 | 18.7 | 38.3 | 87.1 | 60.9 | (3.23) | 82.5 | 65.9 | |
| 603 | RLaP..... | 64.7 | 83.4 | 23.1 | 38.2 | 88.1 | 52.3 | (3.53) | 77.6 | 64.7 | |
| 604 | RL..... | 51.9 | 81.7 | 24.6 | 32.8 | 84.9 | 50.2 | (3.06) | 84.1 | 51.9 | |
| 701 | R..... | 54.3 | 83.1 | 20.8 | 34.2 | 75.6 | 52.8 | (3.41) | 82.8 | 61.2 | |
| 702 | RrP..... | 58.8 | 83.3 | 23.3 | 36.7 | 80.4 | 63.0 | (3.60) | 87.8 | 69.3 | |
| 703 | RLrP..... | 57.2 | 81.2 | 28.1 | 36.7 | 80.2 | 53.3 | (3.82) | 86.6 | 70.8 | |
| 704 | RL..... | 52.1 | 81.7 | 26.9 | 34.1 | 82.0 | 48.9 | (3.15) | 84.6 | 62.5 | |
| 801 | R..... | 57.6 | 73.8 | 18.0 | 33.7 | 68.1 | 54.8 | (2.62) | 74.3 | 58.8 | |
| 802 | RsP..... | 56.4 | 87.8 | 20.6 | 38.1 | 81.0 | 66.2 | (3.66) | 80.0 | 69.1 | |
| 803 | RLsP..... | 53.3 | 78.9 | 23.7 | 38.4 | 83.6 | 57.0 | (3.63) | 82.0 | 70.2 | |
| 804 | RL..... | 51.8 | 77.5 | 21.8 | 33.3 | 70.4 | 59.8 | (2.99) | 82.6 | 59.9 | |

¹No residues.

ALHAMBRA FIELD, MADISON COUNTY
ESTABLISHED 1918

Location.—About one mile south of Alhambra. The E. $\frac{1}{2}$ of the S. $\frac{1}{2}$ of the S.E. $\frac{1}{4}$, Sec. 14, Twp. 5 N., R. 6 W. of the 3d P. M.

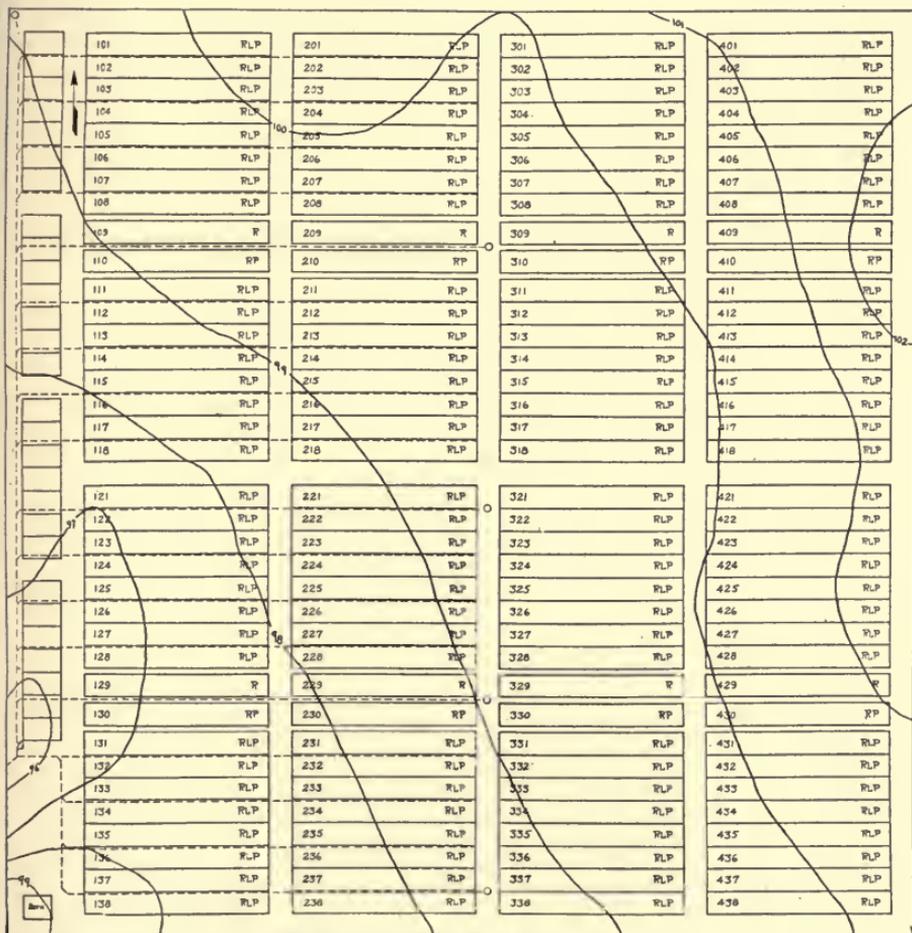
Description.—The field consists of 40 acres of dark-colored loessial soil of medium to strong acidity. Only one soil type has been mapped on the field, namely, Brown-Gray Silt Loam On Tight Clay (Putnam silt loam).

The land is practically level. The west half of the field is tile-drained, while the east half is drained by surface methods entirely. The drainage is not satisfactory, owing to the impervious nature of the subsoil. The field is divided into four series of 36 fifth-acre plots each. Each series is further divided into two divisions, one of which contains the plots numbered from 1 to 18 and the other the plots numbered from 21 to 38. A hedge fence on the south line of the field probably vitiates to some extent the yields on Plot 38 of each series.

History.—The Alhambra field was donated to the University for experimental purposes by Mr. Adolph Hitz of Alhambra. Previous to that time the land had been farmed for a number of years under a tenant system. Corn, oats, wheat, and timothy meadow were the chief crops grown. Some clover was seeded also.

Cropping and Soil Treatment.—The Alhambra field is used primarily for crop investigations. A definite rotation has, however, been practiced over the entire field and some plots have received various soil treatments.

The rotation established on this field is corn, oats, mammoth clover, and wheat, with a seeding of sweet clover for use as a green manure. No animal manure has been used on this field, all plots being handled as grain-system plots. All plots except those ending in the numbers 9 and 0 have received limestone and rock phosphate in accordance with the plans described in the introduction. Plots ending in the number 9 have received residues only, while those ending in 0 have received rock phosphate in addition to the residues.



R Brown-Gray Silt Loam on Tight Clay
L Putnam silt loam

Contour interval - 1 foot



SOIL MAP OF ALHAMBRA FIELD

TABLE 3.—ALHAMBRA FIELD: TILED SECTION, SERIES 100, 200

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | |
|------------------|------------------------|----------------------------|------------------------|------------------------|--------------------------|------------|-----------|-----------|------|
| | | 1918 Soybeans ² | 1919 Corn ⁴ | 1920 Oats ³ | 1921 Clover ³ | 1922 Wheat | 1923 Corn | 1924 Oats | |
| 101 | RrP..... | 14.9 | ..... | 44.9 | } 1.45 | 31.7 | 29.0 | 37.2 | |
| 108 | RrP..... | 13.3 | | 46.3 | | | 33.5 | 19.0 | 38.3 |
| 109 | R..... | 14.1 | | 55.0 | | | 31.1 | 20.6 | 33.7 |
| 110 | RrP..... | 10.8 | ..... | 46.9 | } 1.45 | 32.2 | 19.2 | 42.7 | |
| 111 | RrP..... | 9.7 | | 42.6 | | | 30.7 | 21.0 | 47.5 |
| 118 | RrP..... | 8.6 | | 43.0 | | | 32.4 | 27.9 | 46.5 |
| | | Soybeans ² | Oats ³ | Soybeans ³ | Wheat | Corn | Oats | Soybeans | |
| 121 | RrP..... | 7.2 | 31.8 | 13.2 | 18.1 | 44.9 | 33.6 | 15.1 | |
| 128 | RrP..... | 6.7 | 29.9 | 13.3 | 15.7 | 33.9 | 31.1 | 14.2 | |
| 129 | R..... | 5.5 | 28.8 | 11.2 | 13.0 | 20.0 | 21.1 | 8.8 | |
| 130 | RrP..... | 4.5 | 32.3 | 12.3 | 14.2 | 32.0 | 28.5 | 9.7 | |
| 131 | RrP..... | 4.5 | 26.7 | 11.9 | 12.9 | 26.3 | 28.6 | 12.9 | |
| 138 ¹ | RrP..... | 1.1 | 22.5 | 9.0 | 8.1 | 6.0 | 16.5 | 9.0 | |
| | | Soybeans ² | Soybeans ³ | Wheat | Corn | Oats | Soybeans | Soybeans | |
| 201 | RrP..... | 14.4 | 12.6 | 25.6 | 26.1 | 6.6 | 27.3 | 17.7 | |
| 208 | RrP..... | 12.7 | 14.0 | 14.8 | 28.8 | 7.1 | 17.2 | 17.2 | |
| 209 | R..... | 11.8 | 11.8 | 11.1 | 24.6 | 7.1 | 26.8 | 16.2 | |
| 210 | RrP..... | 13.7 | 14.8 | 11.5 | 26.8 | 5.0 | 24.6 | 14.7 | |
| 211 | RrP..... | 14.8 | 12.5 | 5.6 | 32.2 | 3.7 | 18.8 | 18.8 | |
| 218 | RrP..... | 10.6 | 12.8 | 8.8 | 46.6 | 6.8 | 26.0 | 19.5 | |
| | | Soybeans ² | Wheat | Corn | Oats | Clover | Wheat | Corn | |
| 221 | RrP..... | (.88) | 14.3 | 17.0 ⁽⁵⁾ | 21.3 | .47 | 36.8 | 43.2 | |
| 228 | RrP..... | (1.01) | 19.5 | 17.0 | 25.2 | .53 | 37.8 | 51.2 | |
| 229 | R..... | (.86) | 11.9 | 7.7 | 15.5 | .53 | 35.0 | 26.4 | |
| 230 | RrP..... | (.80) | 17.7 | 12.4 | 20.3 | .58 | 39.8 | 30.5 | |
| 231 | RrP..... | (.87) | 17.3 | 20.3 | 23.7 | .53 | 38.3 | 48.8 | |
| 238 ¹ | RrP..... | (.38) | 11.6 | 11.2 | 10.1 | .53 | 29.6 | 36.0 | |

¹Yields of Plots 138 and 238 are affected by a hedge fence. ²No soil treatment in 1918. ³Residues only. ⁴Corn failed in 1919. ⁵Corn in 1920 on Plot 221 destroyed by chinch bugs.

ANTIOCH FIELD, LAKE COUNTY
ESTABLISHED 1902

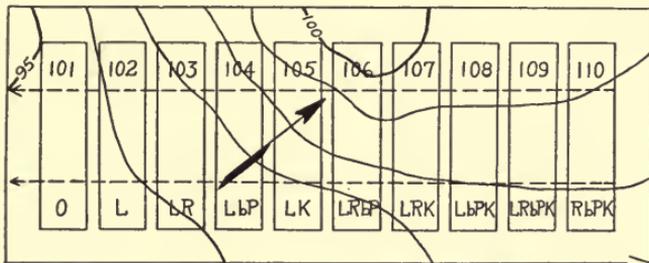
Location.—Three miles southeast of Antioch on the farm of Mr. D. M. White. A part of the N.W. $\frac{1}{4}$ of the S.W. $\frac{1}{4}$ of the N.E. $\frac{1}{4}$, Sec. 22, Twp. 46 N., R. 10 E. of the 3rd P. M. A part of this field which was discontinued in 1911 lay adjacent to the above described land and another portion, also nearby, which was also discontinued in 1911, was a part of the N.E. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$ of the N.W. $\frac{1}{4}$, Sec. 22, Twp. 46 N., R. 10 E. of the 3rd P. M., on the farm of H. D. Hughes.

Description.—The field now in operation consists of 1.7 acres of medium-acid, light-colored upland soil developed on highly calcareous drift. The land is uniform from the standpoint of type, there being only one type present, namely, Yellow-Gray Silt Loam On Calcareous Drift (Miami silt loam). The land is slightly rolling. It was tilled in 1920 and drains well. Each of the discontinued parts of this field contained 2.5 acres. The soil on those areas is probably similar to the soil described above. The individual plots on all series were one-tenth acre in size.

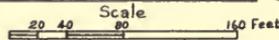
History.—The Antioch field is leased from Mr. D. M. White. The land occupied by Series 100 was first used for experimental purposes in 1902 and is still so used. The land occupied by Series 200 and 300 was not used experimentally until 1904. After eight years use these two series were discontinued. Little is known of the previous history of these three series except that the year previous to which experimental work was begun, the land occupied by Series 100 was in corn, while that occupied by Series 200 and 300 was in oats, with clover seeding.

Cropping and Soil Treatment.—Series 100 was originally planned for a special fertility test. A four-year rotation of corn, corn, oats, and wheat was practiced. Fertilizers were applied at the following annual acre rates: phosphorus in 200 pounds of steamed bone meal, potassium in 100 pounds of potassium sulfate, and nitrogen in 800 pounds of dried blood. The first two applications of phosphorus were made in the form of acidulated bone and the first application of potassium in the form of muriate. Slaked lime was applied in 1902 at the rate of 470 pounds an acre. No further applications of lime were made until 1912. In 1912 the rotation was changed to corn, oats, clover, wheat, with mixed clover, including sweet clover, seeded on the residue plots. The soil treatment remained the same except that crop residues were substituted for commercial nitrogen and an application of 2 tons of limestone an acre was made once during the rotation. This plan was followed without change until 1922, when the application of all fertilizers except residues was discontinued.

Series 200 and 300 were cropped with a rotation of corn, corn, oats, and clover. Soybeans were seeded in the corn on the residue plots on Series 200, and cowpeas in the corn on Series 300. The manure was applied at the rate of 8 tons an acre to the clover sod. Phosphorus, in the form of rock phosphate, was applied at the rate of 1 ton an acre each rotation. Limestone was applied approximately at the rate of 2 tons an acre each rotation.



Contour interval - 1 foot



Yellow-Gray Silt Loam On Calcareous Drift
Miami silt loam

SOIL MAP OF ANTIIOCH FIELD

(Map of present plots—Series 100)

TABLE 5.—ANTIOCH FIELD: SERIES 100
(1902-1912)

| Plot No. | Soil treatment applied ¹ | Busnells or (tons) per acre | | | | | | | | | | |
|----------|-------------------------------------|-----------------------------|--------------|--------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|
| | | 1902 Corn | 1903 Corn | 1904 Oats | 1905 Wheat | 1906 Corn | 1907 Corn | 1908 Oats | 1909 Wheat | 1910 Corn | 1911 Corn | 1912 Oats |
| 101 | 0..... | 44.8 | 36.6 | 17.8 | 18.5 | 35.9 | 12.4 | 65.6 | 12.2 | 5.2 | 34.4 | 21.3 |
| 102 | L..... | 45.1 | 38.9 | 12.8 | 10.3 | 31.5 | 9.5 | 61.6 | 11.7 | 3.0 | 24.6 | 17.5 |
| 103 | LR..... | 46.3 | 40.8 | 2.8 | 17.8 | 37.8 | 6.4 | 60.3 | 13.0 | 1.4 | 10.4 | 24.4 |
| 104 | LbP..... | 50.1 | 53.6 | 12.5 | 35.8 | 57.4 | 13.4 | 70.9 | 23.3 | 6.8 | 37.4 | 49.1 |
| 105 | LK..... | 48.2 | 50.2 | 9.7 | 21.7 | 34.9 | 12.9 | 62.5 | 13.5 | 4.6 | 20.4 | 18.8 |
| 106 | LRbP..... | 56.6 | 62.7 | 15.9 | 15.2 | 59.3 | 20.9 | 49.1 | 33.8 | 6.0 | 37.0 | 46.9 |
| 107 | LRK..... | 52.1 | 54.9 | 10.3 | 11.8 | 39.0 | 11.1 | 52.6 | 21.0 | 1.6 | 7.0 | 16.9 |
| 108 | LKbP..... | 60.7 | 66.0 | 19.7 | 28.7 | 59.1 | 18.2 | 59.4 | 26.2 | 3.2 | 42.2 | 35.9 |
| 109 | LRKbP..... | 61.2 | 69.1 | 31.9 | 18.0 | 65.9 | 31.4 | 51.9 | 30.5 | 3.0 | 44.2 | 31.9 |
| 110 | RKbP..... | 59.7 | 71.8 | 37.2 | 16.3 | 66.3 | 28.8 | 55.9 | 34.5 | 4.0 | 49.0 | 38.1 |

(1913-1923)

| Plot No. | Soil treatment applied | Busnells or (tons) per acre | | | | | | | | | | |
|----------|------------------------|-----------------------------|---------------|---------------------------|--------------|---------------------|---------------|--------------|--------------|---------------------------|---------------|--------------|
| | | 1913 Clover | 1914 Wheat | 1915 Corn ² | 1916 Oats | 1917 Clover seed | 1918 Wheat | 1919 Corn | 1920 Oats | 1921 Sweet clover seed | 1922 Wheat | 1923 Corn |
| 101 | 0..... | (.50) | 30.8 | ..... | 30.6 | .50 | 1.7 | 22.0 | 26.2 | 3.00 | 10.2 | 29.0 |
| 102 | L..... | (.60) | 30.0 | ..... | 25.3 | 0.00 | .8 | 18.0 | 16.9 | 3.17 | 13.8 | 25.8 |
| 103 | LR..... | (.2) | 40.8 | ..... | 35.3 | .67 | 10.7 | 27.4 | 26.6 | 3.67 | 12.2 | 32.0 |
| 104 | LbP..... | (1.32) | 54.2 | ..... | 45.9 | .83 | 33.3 | 26.6 | 39.4 | 2.67 | 28.2 | 33.2 |
| 105 | LK..... | (.72) | 34.0 | ..... | 28.8 | .42 | 7.5 | 18.6 | 19.4 | 2.50 | 12.2 | 19.8 |
| 106 | LRbP..... | (.2) | 41.3 | ..... | 61.6 | 1.13 | 43.0 | 28.0 | 43.1 | 2.25 | 29.7 | 36.4 |
| 107 | LRK..... | (.2) | 43.2 | ..... | 31.9 | 1.17 | 7.0 | 28.4 | 22.8 | 2.50 | 12.7 | 34.4 |
| 108 | LKbP..... | (1.60) | 46.0 | ..... | 40.6 | .92 | 22.7 | 31.8 | 35.6 | 2.00 | 27.8 | 34.0 |
| 109 | LRKbP..... | (.2) | 41.0 | ..... | 54.1 | .67 | 22.7 | 32.0 | 43.4 | 2.33 | 28.3 | 43.8 |
| 110 | RKbP..... | (.2) | 37.8 | ..... | 47.8 | 1.33 | 32.3 | 27.8 | 44.7 | 2.50 | 34.3 | 41.4 |

¹Commercial nitrogen used in place of residues until 1911. ²No seed produced; clover plowed under on these plots (1913). ³Corn failed in 1915.

TABLE 6.—ANTIOCH FIELD: SERIES 200, 300

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|----------------------------|--------------------------|-------------------|---------------------|-----------|-------------|-----------|-----------|--|--|
| | | 1904 Oats ¹ | 1905 Clover ¹ | 1906 Corn | 1907 Corn | 1908 Oats | 1909 Clover | 1910 Corn | 1911 Corn | | |
| 201 | L..... | 21.6 | (1.24) | 57.5 | 16.3 | 56.6 | (.98) | 2.4 | 23.0 | | |
| 202 | LeL..... | 24.7 | (1.25) | 56.7 | 24.0 | 57.2 | (.4) | 12.0 | 34.8 | | |
| 203 | ML..... | 22.5 | (1.37) | 73.9 | 28.3 | 57.5 | (1.12) | 21.6 | 42.4 | | |
| 204 | LeML..... | 23.1 | (1.57) | 73.1 | 31.0 | 58.8 | (1.51) | 13.8 | 31.0 | | |
| 205 | LrP..... | 24.1 | (2.56) | 77.6 | 20.9 | 61.6 | (2.08) | 3.4 | 24.4 | | |
| 206 | LeLrP..... | 22.5 | (2.58) | 70.4 | 20.3 | 64.4 | (.4) | 8.6 | 29.6 | | |
| 207 | MLrP..... | 11.6 | (2.59) | 69.9 | 10.1 | 57.8 | (1.49) | 3.2 | 23.2 | | |
| 208 | LeMLrP..... | 14.4 | (2.59) | 68.4 | 17.4 | 65.0 | (1.54) | 3.6 | 22.2 | | |
| 209 | L..... | 11.9 | (1.99) | 62.0 | 8.5 | 56.9 | (1.02) | 1.0 | 10.6 | | |
| 210 | L..... | 12.2 | (2.01) | 66.5 | 14.8 | 55.6 | (1.18) | 1.4 | 16.4 | | |
| 211 | Le..... | 21.2 | (2.05) | 74.0 | 39.9 | 62.8 | (.4) | 12.8 | 35.0 | | |
| 212 | LerP..... | 24.7 | (2.20) | 74.3 | 44.6 | 61.9 | (.4) | 20.4 | 42.2 | | |
| | | Corn ¹ | Corn ² | Oats ³ | Clover ⁴ | Corn | Corn | Oats | Clover | | |
| 301 | L..... | 51.7 | 44.0 | 40.3 | (.40) | 44.8 | 24.8 | 43.4 | (.23) | | |
| 302 | LeL..... | 50.9 | 44.1 | 43.7 | (.98) | 47.2 | 28.4 | 47.5 | (.4) | | |
| 303 | ML..... | 47.1 | 56.5 | 35.6 | (1.33) | 54.4 | 40.0 | 50.0 | (.33) | | |
| 304 | LeML..... | 43.2 | 48.6 | 37.5 | (1.15) | 50.8 | 34.8 | 47.2 | (.48) | | |
| 305 | LrP..... | 47.9 | 58.3 | 37.8 | (1.89) | 50.2 | 38.6 | 51.9 | (.34) | | |
| 306 | LeLrP..... | 46.0 | 52.3 | 44.7 | (1.94) | 46.6 | 35.0 | 57.2 | (.4) | | |
| 307 | MLrP..... | 53.3 | 59.1 | 38.7 | (1.64) | 57.2 | 43.8 | 56.6 | (.44) | | |
| 308 | LeMLrP..... | 46.7 | 46.8 | 40.9 | (1.36) | 57.2 | 38.2 | 60.0 | (.73) | | |
| 309 | L..... | 57.4 | 54.1 | 26.2 | (1.28) | 44.2 | 29.8 | 48.8 | (.30) | | |
| 310 | L..... | 54.8 | 56.5 | 23.7 | (1.30) | 48.6 | 28.6 | 45.6 | (.40) | | |
| 311 | Le..... | 52.5 | 50.0 | 32.5 | (1.33) | 47.2 | 24.0 | 47.2 | (.4) | | |
| 312 | LerP..... | 56.5 | 54.1 | 32.2 | (1.67) | 57.8 | 28.6 | 50.9 | (.4) | | |

¹Phosphate only. ²Phosphate and legume treatment only. ³No manure. ⁴No seed formed and the growth was plowed down.

AUBURN FIELD, SANGAMON COUNTY
ESTABLISHED 1905—DISCONTINUED 1912

Location.—Five miles northwest of Auburn on the farm of Mr. B. F. Workman. A part of the N.W. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec 1, Twp. 13, R. 7 W. of the 3d P. M.

Description.—The field consisted of 9.7 acres of dark-colored upland soil, probably somewhat sour, divided into two series of 15 fifth-acre plots each. At the time it was established the soil was classified as Brown Silt Loam and the field was described as being “generally level” and drained by tile.

History.—The Auburn field was leased from Mr. B. F. Workman. Previous to 1905 the land had produced crops of corn, oats, and wheat, and occasionally a crop of clover. No treatment had ever been given the land except hulled clover straw that may have been left in the field at various times. In 1904, the entire field was in oats with a clover seeding.

Cropping and Soil Treatment.—The rotation practiced on this field was corn, corn, oats, clover. Cowpeas were seeded in the corn on the residue plots for use as residues. All the clover grown on Plots 2, 7, and 12, except the seed, was returned to these plots in the form of clippings and hullings. Manure was applied to the manure plots at the rate of 8 tons an acre on the clover sod. Phosphorus was applied in the form of rock phosphate at the rate of 1 ton an acre each rotation. Potassium was applied in the form of potassium sulfate at the rate of 400 pounds an acre each rotation.

TABLE 7.—AUBURN FIELD: SERIES 100, 200

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | 1911 Corn | 1912 Corn |
|----------|------------------------|----------------------------|-----------------------------|------------------------|---------------------|-----------|-------------|-----------|-----------|
| | | 1905 Clover ^{1,2} | 1906 Cowpeas ^{1,3} | 1907 Corn ⁴ | 1908 Corn | 1909 Oats | 1910 Clover | | |
| 101 | O..... | ..... | ..... | 56.9 | 40.4 | 45.0 | (2.07) | 53.0 | 31.4 |
| 102 | R..... | ..... | ..... | 54.1 | 39.0 | 48.1 | .69 | 48.2 | 38.7 |
| 103 | M..... | ..... | ..... | 61.9 | 51.3 | 48.4 | (2.31) | 60.6 | 32.9 |
| 104 | RM..... | ..... | ..... | 64.5 | 52.6 | 52.0 | (1.76) | 40.0 | 41.6 |
| 105 | O..... | ..... | ..... | 61.1 | 38.5 | 43.3 | (2.25) | 51.0 | 28.4 |
| 106 | rP..... | ..... | ..... | 68.6 | 54.1 | 44.7 | (3.23) | 57.5 | 35.5 |
| 107 | RrP..... | ..... | ..... | 68.1 | 59.2 | 50.5 | .38 | 76.1 | 45.1 |
| 108 | MrP..... | ..... | ..... | 69.6 | 59.2 | 55.5 | (3.06) | 65.9 | 33.5 |
| 109 | RMrP..... | ..... | ..... | 66.4 | 53.0 | 55.8 | (3.06) | 68.0 | 43.7 |
| 110 | O..... | ..... | ..... | 62.2 | 43.0 | 46.6 | (2.04) | 54.2 | 25.2 |
| 111 | rPK..... | ..... | ..... | 75.6 | 40.4 | 47.3 | (2.98) | 62.0 | 36.8 |
| 112 | RrPK..... | ..... | ..... | 66.3 | 39.1 | 42.7 | .52 | 73.0 | 37.6 |
| 113 | MrPK..... | ..... | ..... | 73.1 | 39.1 | 53.6 | (3.23) | 75.4 | 36.6 |
| 114 | RMrPK..... | ..... | ..... | 64.6 | 43.3 | 48.4 | (2.83) | 54.1 | 32.9 |
| 115 | O..... | ..... | ..... | 67.2 | 33.9 | 49.1 | (1.63) | 51.3 | 29.0 |
| | | Corn ¹ | Corn ⁴ | Oats ⁴ | Clover ⁴ | Corn | Corn | Oats | Soybeans |
| 201 | O..... | 33.2 | 38.6 | 24.2 | (1.08) | 40.2 | 36.5 | 33.8 | (.78) |
| 202 | R..... | 41.7 | 42.1 | 26.6 | (.91) | 43.0 | 46.0 | 40.6 | (1.12) |
| 203 | M..... | 39.3 | 40.6 | 26.1 | (2.12) | 48.3 | 49.5 | 43.0 | (.80) |
| 204 | RM..... | 41.7 | 34.9 | 25.9 | (1.69) | 41.4 | 45.5 | 43.0 | (.86) |
| 205 | O..... | 42.1 | 38.4 | 24.2 | (.58) | 32.8 | 38.6 | 36.6 | (.58) |
| 206 | rP..... | 48.1 | 42.9 | 35.9 | (.77) | 36.2 | 40.8 | 43.3 | (.90) |
| 207 | RrP..... | 46.3 | 41.3 | 30.5 | (.85) | 25.8 | 44.6 | 45.8 | (1.12) |
| 208 | MrP..... | 48.9 | 39.8 | 31.3 | (1.98) | 39.2 | 39.9 | 55.0 | (1.36) |
| 209 | RMrP..... | 49.7 | 37.6 | 36.7 | (2.10) | 48.5 | 58.6 | 59.1 | (1.30) |
| 210 | O..... | 44.4 | 42.3 | 27.3 | (.80) | 46.2 | 42.7 | 46.3 | (.72) |
| 211 | rPK..... | 51.9 | 41.1 | 29.7 | (.94) | 43.2 | 43.6 | 46.6 | (1.38) |
| 212 | RrPK..... | 46.3 | 40.3 | 34.7 | (.90) | 36.9 | 41.0 | 40.0 | (1.35) |
| 213 | MrPK..... | 49.7 | 44.4 | 31.9 | (2.55) | 57.8 | 54.7 | 55.6 | (1.38) |
| 214 | RMrPK..... | 42.2 | 32.8 | 30.9 | (1.92) | 31.0 | 41.5 | 48.3 | (1.73) |
| 215 | O..... | 38.8 | 36.6 | 24.7 | (.92) | 43.5 | 39.8 | 41.1 | (1.37) |

¹No residues or manure. ²Crop failure. ³Small growth plowed under. ⁴No manure. ⁵No residues.

BLOOMINGTON FIELD, McLEAN COUNTY
ESTABLISHED 1902

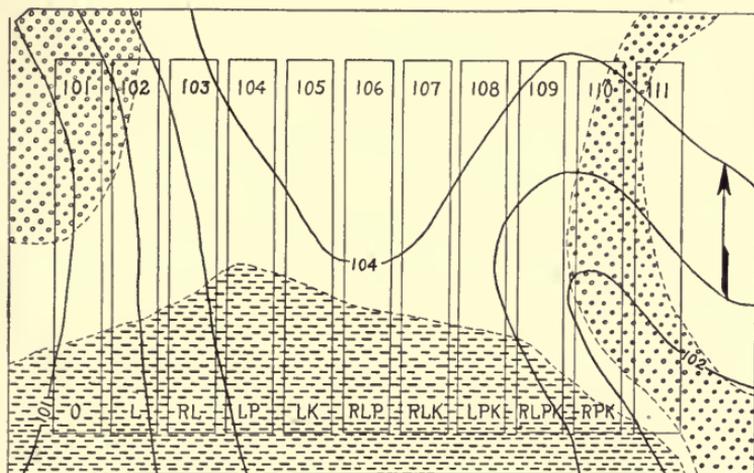
Location.—About 2½ miles northeast of Bloomington on the S. Noble King farm. A part of the N.E. ¼ of the N.W. ¼ of the S.W. ¼, Sec 25, Twp. 24 N., R. 2 E. of the 3d P. M.

Description.—The field consists of 4.4 acres of dark-colored loessial, upland soil of slight acidity. Three soil types have been mapped on the field: (1) Brown Silt Loam On Clay (Grundy silt loam); (2) Brown Silt Loam (Muscatine silt loam); and (3) Black Clay Loam, poorly drained phase (Loessial Clyde clay loam). The land is slightly rolling and drains well without tile. The field is plotted in one series of 10 fifth-acre plots.

History.—The Bloomington field was originally leased from S. Noble King. The lease has been continued under the terms of his will. The land had been well cared for previous to its use for experimental purposes, being a large part of the time in grass and clover. In 1901 it was in oats.

Cropping and Soil Treatment.—This field was originally planned for what was called a complete fertility test. The rotation was corn, corn, oats, wheat, and clover. In 1909 this was changed to corn, corn, oats, clover, wheat, with a clover seeding, including sweet clover, on the residue plots for use as a green manure. Until 1905 nitrogen was applied to the residue plots in 800 pounds of dried blood an acre each year. Thereafter only the grain and clover seed were removed from these plots and all the residues produced were substituted for the dried blood. Steamed bone meal applied at the annual acre rate of 200 pounds supplied the phosphorus; potassium was supplied by potassium sulfate used at the rate of 100 pounds an acre a year. No phosphate or potash has been applied since 1917. Slaked lime at the rate of 320 pounds an acre was applied in 1902 and no further applications were made until 1914, when 2½ tons of limestone were applied. A similar amount was applied in 1919 and no applications have been made since. In 1922 application of all residues except cornstalks and the green manure crops was discontinued.

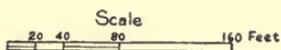
In 1924 an additional plot was added to the east end of the series, and the plots were divided into north and south halves. A more comprehensive plan of fertilization was instituted for the purpose of studying the comparative value of different carriers of phosphorus.



 Brown Silt Loam On Clay
Grundy silt loam

 Black Clay Loam, poorly drained
phase
Loessial Clyde clay loam

 Brown Silt Loam
Muscatine silt loam



Contour interval - 1 foot

SOIL MAP OF BLOOMINGTON FIELD

TABLE 8.—BLOOMINGTON FIELD: SERIES 100
(1902-1912)

| Plot No. | Soil treatment applied ¹ | Bushels or (tons) per acre | | | | | | | | | | |
|----------|-------------------------------------|----------------------------|-------------------|--------------|---------------|-----------------------------|--------------|--------------|--------------|----------------|---------------|--------------|
| | | 1902 Corn | 1903 Corn | 1904 Oats | 1905 Wheat | 1905 Clover ² | 1907 Corn | 1908 Corn | 1909 Oats | 1910 Clover | 1911 Wheat | 1912 Corn |
| 101 | 0..... | 30.8 | 63.9 | 54.8 | 30.8 | (.39) | 60.8 | 40.3 | 46.4 | (1.56) | 22.5 | 55.2 |
| 102 | L..... | 37.0 | 60.3 | 60.8 | 28.8 | (.58) | 63.1 | 35.3 | 53.6 | (1.09) | 22.5 | 47.9 |
| 103 | LR..... | 35.1 | 59.5 | 69.8 | 30.5 | (.46) | 64.3 | 36.9 | 49.4 | .83 | 25.6 | 62.5 |
| 104 | LbP..... | 41.7 | 73.0 | 72.7 | 39.2 | (1.65) | 82.1 | 47.5 | 63.8 | (4.21) | 57.6 | 74.5 |
| 105 | LK..... | 37.7 | 56.4 | 62.5 | 33.2 | (.51) | 64.1 | 36.2 | 45.3 | (1.26) | 21.7 | 57.8 |
| 106 | LRbP..... | 43.9 | 77.6 ³ | 85.3 | 50.9 | (0.00) | 78.9 | 45.8 | 72.5 | 1.67 | 60.2 | 86.1 |
| 107 | LRK..... | 40.4 | 58.9 | 66.4 | 29.5 | (.81) | 64.3 | 31.0 | 51.1 | .33 | 27.3 | 58.9 |
| 108 | LbPK..... | 50.1 | 74.8 | 70.3 | 37.8 | (2.36) | 81.4 | 57.2 | 59.5 | (3.27) | 54.0 | 79.2 |
| 109 | LRbPK..... | 52.7 | 80.9 | 90.5 | 51.9 | (0.00) | 88.4 | 58.1 | 64.2 | .42 | 60.4 | 83.4 |
| 110 | RbPK..... | 52.3 | 73.1 | 71.4 | 51.1 | (0.00) | 78.0 | 51.4 | 55.3 | .60 | 61.0 | 78.3 |

(1913-1923)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------|-------------------------------|---------------|--------------|--------------|--------------|----------------|---------------|--------------|--------------|
| | | 1913 Corn | 1914 Oats | 1915 Soybeans ³ | 1916 Wheat | 1917 Corn | 1918 Corn | 1919 Oats | 1920 Clover | 1921 Wheat | 1922 Corn | 1923 Corn |
| 101 | 0..... | 32.4 | 29.8 | ..... | 20.5 | 24.3 | 46.0 | 31.2 | (.88) | 32.0 | 45.0 | 47.1 |
| 102 | L..... | 30.0 | 40.6 | ..... | 15.8 | 19.2 | 41.1 | 23.6 | (.73) | 29.2 | 39.5 | 42.0 |
| 103 | LR..... | 37.5 | 30.8 | ..... | 21.1 | 29.6 | 55.0 | 34.7 | (1.35) | 34.3 | 38.3 | 55.8 |
| 104 | LbP..... | 44.1 | 45.0 | ..... | 38.8 | 44.0 | 50.3 | 35.8 | (1.77) | 47.2 | 52.2 | 49.0 |
| 105 | LK..... | 32.1 | 35.8 | ..... | 16.7 | 30.2 | 50.9 | 30.3 | (1.03) | 30.3 | 44.7 | 51.4 |
| 106 | LRbP..... | 50.4 | 62.3 | ..... | 40.2 | 47.6 | 60.9 | 43.8 | (1.90) | 47.4 | 50.0 | 64.3 |
| 107 | LRK..... | 34.5 | 34.5 | ..... | 18.7 | 31.1 | 62.0 | 35.0 | (1.33) | 34.3 | 47.3 | 57.3 |
| 108 | LbPK..... | 49.4 | 63.1 | ..... | 39.9 | 47.6 | 49.3 | 36.1 | (1.68) | 46.1 | 60.5 | 59.1 |
| 109 | LRbPK..... | 49.0 | 54.4 | ..... | 43.8 | 48.3 | 56.7 | 43.4 | (2.00) | 45.4 | 56.8 | 67.3 |
| 110 | RbPK..... | 33.8 | 44.8 | ..... | 39.2 | 51.2 | 47.5 | 39.5 | (1.88) | 45.7 | 55.9 | 66.0 |

¹Commercial nitrogen was used from 1902 to 1905. ²Clover partly smothered in 1906 by previous wheat crop. ³Soybeans completely destroyed by hail in 1915.

CARLINVILLE FIELD, MACOUPIN COUNTY

ESTABLISHED 1910

Location.—About one-half mile north of Blackburn College in Carlinville. A part of the N. $\frac{1}{2}$ of the S.E. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 21, Twp. 10 N., R. 7 W. of the 3d P. M.

Description.—The field consists of 20 acres of dark-colored, loessial, upland soil of medium acidity. Five soil types have been mapped: (1) Brown-Gray Silt Loam On Tight Clay (Putnam silt loam); (2) Grayish Brown Silt Loam On Tight Clay (Grundy silt loam, grayish phase); (3) Grayish Brown Clay Loam On Tight Clay (Grundy clay loam, grayish phase); (4) Black Clay Loam (Grundy clay loam); and (5) Brown Silt Loam On Tight Clay (Grundy silt loam, tight phase). The land is rather flat. It is tile-drained and drains fairly well. The field is divided into eight series, four of which contain 10 fifth-acre plots and four of which contain 7 tenth-acre plots.

History.—The Carlinville field is a direct donation from Blackburn College on the basis of a permanent lease without rents. This field had been in timothy sod a number of years previous to 1910.

Cropping and Soil Treatment.—In 1910 the somewhat standard rotation and soil treatment described in the introduction were established on Series 100, 200, 300, and 400. Beginning with 1921 the clover on the grain system plots was harvested for hay rather than seed. At that time the return of oat straw was discontinued. The following year the return of wheat straw was also discontinued. The use of limestone was also discontinued in 1922. In 1923 the phosphate applications were evened up on all plots, and no more will be applied for an indefinite time.

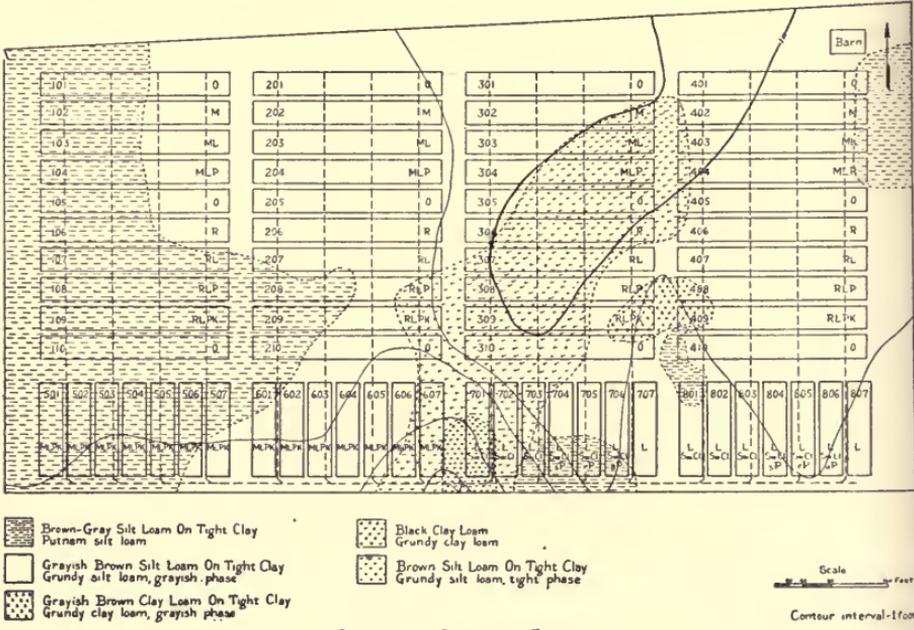
In the beginning, Series 500 and 600 were left unplotted. A rotation of wheat and red clover was planned for one of these series for a period of six years, while alfalfa grew on the other for an equal time, after which the alfalfa was to be shifted. Prior to 1921 these plots had each received a total of 12 tons of manure, $8\frac{1}{2}$ tons of limestone, 3 tons of rock phosphate, and approximately 2,500 pounds of kainit an acre. In 1921 these two series were plotted. No further treatment has been applied.

Series 700 and 800 were also left unplotted when the field was established. A rotation similar to that on Series 500 and 600 was practiced on them, except that timothy was substituted for the alfalfa. No soil treatment, however, was applied to these two series. In 1921 both series were plotted, and the rotation was changed to corn and wheat with a seeding of sweet clover on all plots except Plot 7 for use as a green manure. The mineral treatments planned were:

Plot

- 1—Limestone 250 pounds
- 2—Limestone 1,000 pounds
- 3—Limestone 500 pounds
- 4—Limestone 500 pounds, superphosphate 100 pounds
- 5—Limestone 500 pounds, acid phosphate 200 pounds
- 6—Limestone 500 pounds, rock phosphate 400 pounds
- 7—Limestone 500 pounds

The phosphates have been applied annually to both series. Limestone has been applied biennially for the wheat crop on Series 700, but a twenty-year application was made to Series 800 in the beginning and no more will be applied for that length of time.



SOIL MAP OF CARLINVILLE FIELD

TABLE 9.—CARLINVILLE FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------------|--------------|-----------------------|---------------|--------------|--------------|-------------------------|-----------------|--------------|--------------|-----------------------|---------------|--------------|--------------|
| | | 1910 Wheat ¹ | 1911 Corn | 1912 Oats | 1913 Soy- beans | 1914 Wheat | 1915 Corn | 1916 Oats | 1917 Sweet clover | 1918 Wheat | 1919 Corn | 1920 Oats | 1921 Soy- beans | 1922 Wheat | 1923 Corn | 1924 Corn |
| 101 | 0..... | 8.1 | 36.3 | 19.1 | (1.45) | 7.8 | 36.4 | 31.6 | (0.00) | 26.5 | 28.4 | 33.3 | 22.3 | 15.5 | 17.2 | 18.6 |
| 102 | M..... | 9.3 | 42.9 | 23.8 | (1.54) | 10.4 | 47.7 | 40.6 | (.06) | 36.3 | 36.1 | 37.2 | 25.8 | 23.2 | 32.4 | 25.1 |
| 103 | ML..... | 10.4 | 50.7 | 29.7 | (1.79) | 17.8 | 56.9 | 48.3 | (.76) | 48.0 | 48.0 | 63.3 | 29.1 | 32.1 | 44.8 | 36.2 |
| 104 | MLrP..... | 12.9 | 52.7 | 32.2 | (1.83) | 19.6 | 58.6 | 50.5 | (1.91) | 48.5 | 47.2 | 57.2 | 30.6 | 33.8 | 45.4 | 37.2 |
| 105 | 0..... | 9.1 | 38.0 | 20.3 | 13.0 | 8.4 | 36.6 | 30.6 | ... | 34.5 | 23.4 | 38.4 | 22.9 | 13.4 | 20.1 | 18.1 |
| 106 | R..... | 8.4 | 37.3 | 19.2 | 13.2 | 7.4 | 49.1 | 32.0 | ... | 34.8 | 29.3 | 35.6 | 22.5 | 8.7 | 45.3 | 22.8 |
| 107 | RL..... | 8.8 | 45.7 | 26.9 | 15.8 | 12.8 | 68.0 | 49.5 | ... | 43.4 | 43.3 | 54.7 | 30.4 | 21.5 | 53.8 | 51.1 |
| 108 | RLrP..... | 10.3 | 48.4 | 27.5 | 17.8 | 17.2 | 71.8 | 55.0 | ... | 47.3 | 45.9 | 52.0 | 33.2 | 30.2 | 55.1 | 54.3 |
| 109 | RLrPK..... | 9.3 | 53.6 | 28.3 | 15.3 | 15.6 | 75.2 | 46.1 | ... | 50.6 | 46.8 | 48.2 | 33.4 | 32.3 | 55.3 | 57.1 |
| 110 | 0..... | 6.8 | 40.8 | 19.1 | (1.23) | 7.3 | 38.4 | 27.0 | (.17) | 36.8 | 27.8 | 36.1 | 20.4 | 9.7 | 22.7 | 10.7 |
| | | Cow- pens ² | Wheat ³ | Corn | Oats | Soy- beans | Wheat | Corn | Oats | Sweet clover | Wheat | Corn | Oats | Clover | Wheat | Oats |
| 201 | 0..... | (.65) | 21.3 | 30.6 | 5.1 | (1.20) | 14.2 | 28.4 | 46.1 | (1.70) | 27.3 | 9.3 | 33.3 | (1.30) | 25.2 | 36.7 |
| 202 | M..... | (.62) | 23.6 | 41.4 | 2.3 | (1.27) | 19.7 | 39.9 | 62.2 | (1.90) | 27.7 | 15.9 | 47.7 | (1.83) | 31.9 | 52.2 |
| 203 | ML..... | (.74) | 26.1 | 52.1 | 3.0 | (1.50) | 30.0 | 47.0 | 75.8 | (1.65) | 26.8 | 23.2 | 44.2 | (1.92) | 38.1 | 67.0 |
| 204 | MLrP..... | (.80) | 27.8 | 46.0 | 2.8 | (1.50) | 28.0 | 49.3 | 76.2 | (2.01) | 26.4 | 27.8 | 44.2 | (1.87) | 40.0 | 65.5 |
| 205 | 0..... | (.65) | 22.1 | 25.4 | 1.9 | 10.2 | 14.4 | 28.7 | 45.0 | 5.17 | 31.6 | 10.0 | 36.4 | (1.57) | 29.8 | 41.4 |
| 206 | R..... | ..... | 20.4 | 28.7 | 1.9 | 10.4 | 16.7 | 30.8 | 51.9 | 4.50 | 26.2 | 7.7 | 30.5 | (1.63) | 31.4 | 45.9 |
| 207 | RL..... | ..... | 28.6 | 35.6 | 2.0 | 13.9 | 28.8 | 37.4 | 72.3 | 6.42 | 28.5 | 11.7 | 59.2 | (1.88) | 36.0 | 63.4 |
| 208 | RLrP..... | ..... | 30.3 | 39.6 | 2.3 | 14.8 | 30.0 | 37.8 | 77.0 | 4.67 | 31.1 | 15.9 | 43.1 | (1.97) | 40.7 | 63.4 |
| 209 | RLrPK..... | ..... | 32.7 | 44.7 | 3.8 | 12.9 | 27.1 | 43.2 | 81.2 | 3.83 | 28.7 | 17.1 | 52.7 | (2.15) | 42.8 | 65.5 |
| 210 | 0..... | (.64) | 28.2 | 35.1 | 5.5 | (1.37) | 18.6 | 32.8 | 46.2 | (1.70) | 17.8 | 6.8 | 41.6 | (1.36) | 28.2 | 40.8 |

¹No manure or residues. ²No manure. ³No seed produced in 1917.

TABLE 9.—Concluded

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------------------|-------------------------|-----------|-----------|-------------|------------|-----------|-----------|-------------------|------------|-----------|-----------|----------------|
| | | 1910 Oats ¹ | 1911 Clover ² | 1912 Wheat ² | 1913 Corn | 1914 Oats | 1915 Clover | 1916 Wheat | 1917 Corn | 1918 Oats | 1919 Sweet clover | 1920 Wheat | 1921 Corn | 1922 Oats | 1923 Soy-beans | 1924 Oats^{2} |
| 301 | O..... | 32.5 | (.82) | 7.3 | 21.1 | 1.9 | (2.31) | 5.0 | 39.2 | 44.5 | (.25) | 38.3 | 9.4 | 14.3 | 46.9 |
| 302 | M..... | 32.8 | (.79) | 7.6 | 24.7 | 2.2 | (2.45) | 5.8 | 63.8 | 53.4 | (.25) | 43.0 | 17.8 | 19.3 | 53.6 |
| 303 | ML..... | 46.4 | (1.00) | 10.0 | 32.4 | 4.1 | (2.97) | 9.4 | 72.2 | 62.5 | (1.80) | 56.2 | 26.4 | 23.6 | 62.5 |
| 304 | MLrP..... | 45.6 | (1.30) | 12.3 | 33.2 | 3.9 | (2.12) | 11.7 | 71.3 | 64.5 | (1.90) | 59.4 | 27.8 | 22.1 | 63.9 |
| 305 | O..... | 45.6 | (1.51) | 9.8 | 23.2 | 3.4 | .50 | 9.0 | 60.1 | 48.8 | (.31) | 53.3 | 16.1 | 19.2 | 58.1 |
| 306 | R..... | 47.0 | .17 | 8.2 | 16.4 | 3.9 | .58 | 8.0 | 65.3 | 56.9 | (.63) | 53.0 | 17.7 | 24.1 | 65.5 |
| 307 | RL..... | 45.6 | .33 | 12.7 | 18.7 | 3.9 | .50 | 11.4 | 63.7 | 58.3 | (1.85) | 55.6 | 23.8 | 31.0 | 65.8 |
| 308 | RLrP..... | 45.0 | .33 | 14.3 | 18.3 | 4.5 | .50 | 13.7 | 66.6 | 63.3 | (1.68) | 58.2 | 23.4 | 20.8 | 67.7 |
| 309 | RLrPK..... | 40.6 | .33 | 19.0 | 17.7 | 4.4 | .25 | 18.2 | 71.8 | 48.4 | (1.84) | 66.2 | 24.5 | 30.3 | 68.0 |
| 310 | O..... | 38.8 | (.97) | 18.8 | 25.0 | 3.1 | (1.95) | 9.0 | 48.6 | 47.7 | (.58) | 55.6 | 11.4 | 16.8 | 55.2 |
| | | | | Soy-beans ³ | | | | | | | Sweet clover | | | | |
| 401 | O..... | 48.7 | 30.6 | (1.11) | 10.9 | 3.3 | 71.7 | (1.17) | 13.2 | 9.4 | (.09) | 19.9 | 37.4 | 38.8 | (1.94) |
| 402 | M..... | 49.6 | 21.1 | (1.19) | 7.2 | 6.6 | 74.7 | (1.48) | 15.8 | 18.7 | (.28) | 25.5 | 51.4 | 55.6 | (2.83) |
| 403 | ML..... | 48.3 | 32.9 | (1.29) | 7.7 | 6.8 | 70.5 | (1.71) | 23.4 | 35.4 | (2.32) | 28.0 | 58.4 | 56.4 | (4.03) |
| 404 | MLrP..... | 52.0 | 34.7 | (1.37) | 9.6 | 7.2 | 70.2 | (1.58) | 25.7 | 40.9 | (2.39) | 26.2 | 56.9 | 51.1 | (3.78) |
| 405 | O..... | 49.5 | 38.4 | 11.3 | 7.7 | 2.5 | 68.8 | 2.75 | 19.8 | 14.0 | (.28) | 23.3 | 39.5 | 42.5 | (2.30) |
| 406 | R..... | 43.7 | 30.3 | 12.6 | 15.3 | 3.0 | 71.1 | 2.75 | 9.7 | 28.5 | (.19) | 25.7 | 45.1 | 47.3 | (2.34) |
| 407 | RL..... | 38.1 | 31.7 | 13.2 | 7.2 | 5.5 | 69.1 | 3.17 | 14.8 | 35.0 | (1.70) | 28.0 | 53.4 | 51.4 | (3.61) |
| 408 | RLrP..... | 48.5 | 33.3 | 15.2 | 5.3 | 6.6 | 70.2 | 3.00 | 13.8 | 42.9 | (1.78) | 27.2 | 55.1 | 51.3 | (3.93) |
| 409 | RLrPK..... | 47.1 | 34.4 | 14.3 | 8.5 | 6.2 | 66.7 | 2.42 | 10.6 | 45.7 | (1.83) | 29.7 | 59.3 | 49.2 | (4.06) |
| 410 | O..... | 45.6 | 33.8 | 11.5 | 8.7 | 3.5 | 69.1 | (1.20) | 15.6 | 13.3 | (.19) | 19.2 | 37.8 | 43.1 | (1.83) |

¹No manure or residues. ²No manure. ³Wheat winterkilled; oats grown as a substitute crop.

TABLE 10.—CARLINVILLE FIELD: PLOTS A AND B

| Crop | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|---------|------------------------|----------------------------|-------------------|--------|-------------------|---------------------|---------------------|--------|--------|--------|--------|
| | | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 |
| Alfalfa |MLrPK | (5.00) | (0.00) | (2.93) | (3.22) | (3.99) | (2.06) ¹ | (3.87) | (4.61) | (4.71) | (4.28) |
| Wheat |MLrPK | 39.9 | ..... | 9.6 | ..... | 19.9 | ..... | 40.0 | ..... | 26.3 | ..... |
| Clover |MLrPK | ..... | 14.4 ¹ | ..... | 18.7 ¹ | (1.92) ² | (1.26) | ..... | (2.87) | ..... | (1.74) |

¹Soybeans.²Stubble clover.TABLE 11.—CARLINVILLE FIELD: SERIES 500, 600
(Plots A and B, Table 10, were subdivided in 1921
and continued as Series 500 and 600)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | Soybean hay | |
|----------|------------------------|----------------------------|------------------|---------------|--------------|--------------|--------------|-------------|--|
| | | 1921 Wheat | 1922 Soybeans | 1923 Wheat | 1924 Corn | 1924 Corn | 1924 Corn | | |
| 501 | MLrPK | 27.2 | 27.8 | 19.5 | 59.2 | 59.2 | | | |
| 502 | MLrPK | 30.7 | 28.0 | 23.5 | 63.2 | 63.2 | | | |
| 503 | MLrPK | 32.2 | 27.7 | 24.0 | 64.4 | 64.4 | | | |
| 504 | MLrPK | 34.7 | 26.0 | 23.3 | 57.4 | 57.4 | | | |
| 505 | MLrPK | 34.2 | 27.0 | 24.3 | 64.4 | 64.4 | | | |
| 506 | MLrPK | 32.3 | 23.0 | 18.7 | 57.8 | 57.8 | | | |
| 507 | MLrPK | 31.3 | 25.3 | 21.3 | 60.2 | 60.2 | | | |
| | Alfalfa seeding | | | | | | | | |
| 601 | MLrPK | ..... | 49.6 | 30.2 | (2.56) | (2.56) | | | |
| 602 | MLrPK | ..... | 52.6 | 42.8 | (2.75) | (2.75) | | | |
| 603 | MLrPK | ..... | 59.8 | 43.2 | (2.60) | (2.60) | | | |
| 604 | MLrPK | ..... | 52.2 | 40.0 | (2.78) | (2.78) | | | |
| 605 | MLrPK | ..... | 50.0 | 46.4 | (2.88) | (2.88) | | | |
| 606 | MLrPK | ..... | 54.2 | 51.0 | (2.83) | (2.83) | | | |
| 607 | MLrPK | ..... | 41.2 | 54.0 | (2.68) | (2.68) | | | |

TABLE 12.—CARLINVILLE FIELD: PLOTS C AND D

| Crop | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|---------|------------------------|----------------------------|-------------------|-------|-------------------|--------|-------|-------|--------|--------|--------|
| | | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 |
| Timothy | None | (1.84) | (1.57) | (.41) | (.63) | (1.07) | (.85) | (.54) | (1.02) | (2.42) | (1.25) |
| Wheat | None | 30.9 | ..... | 5.6 | ..... | 17.6 | ..... | 12.9 | ..... | 20.2 | ..... |
| Clover | None | ..... | 10.9 ¹ | ..... | 14.8 ¹ | ..... | (.97) | ..... | (1.71) | ..... | (1.81) |

¹Soybeans substituted for clover in 1912 and 1914.

TABLE 13.—CARLINVILLE FIELD: SERIES 700, 800

(Plots C and D, Table 12, were subdivided in 1921 and continued as Series 700 and 800)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | |
|----------|--------------------------|----------------------------|----------------------------|--------------|---------------------------|
| | | 1921 Wheat ² | 1922 Wheat ² | 1923 Corn | 1924 Oats ⁴ |
| 701 | LeL (250) | 24.3 | 13.2 | 34.2 | 40.3 |
| 702 | LeL (1000) | 21.5 | 15.7 | 30.8 | 39.7 |
| 703 | LeL (500) | 24.5 | 16.7 | 37.6 | 42.8 |
| 704 | LeL (500) Superphosphate | 26.0 | 21.3 | 28.0 | 45.6 |
| 705 | LeL (500) Acid phosphate | 25.7 | 20.3 | 44.8 | 46.9 |
| 706 | LeL (500) Rock phosphate | 26.0 | 17.5 | 38.2 | 48.8 |
| 707 | L (500) | 25.7 | 15.2 | 36.0 | 45.0 |
| (1) | Corr ³ | ..... | Wheat ² | Corn | Oats ⁴ |
| 801 | LeL (250) | 42.6 | 12.7 | 36.8 | 42.5 |
| 802 | LeL (1000) | 38.2 | 7.5 | 33.2 | 49.4 |
| 803 | LeL (500) | 39.2 | 9.7 | 50.4 | 46.3 |
| 804 | LeL (500) Superphosphate | 39.0 | 28.0 | 28.0 | 50.9 |
| 805 | LeL (500) Acid phosphate | 38.0 | 25.3 | 40.6 | 53.1 |
| 806 | LeL (500) Rock phosphate | 36.8 | 16.7 | 34.0 | 50.6 |
| 807 | L (500) | 36.2 | 8.3 | 36.0 | 46.3 |

¹Series 800 has received only one application of limestone. That application was made in 1921 and was 20 times the annual rate. ²Lime and phosphate only. ³No soil treatment. ⁴Wheat winter-killed in 1924; oats grown as a substitute crop.

CARTHAGE FIELD, HANCOCK COUNTY

ESTABLISHED 1911

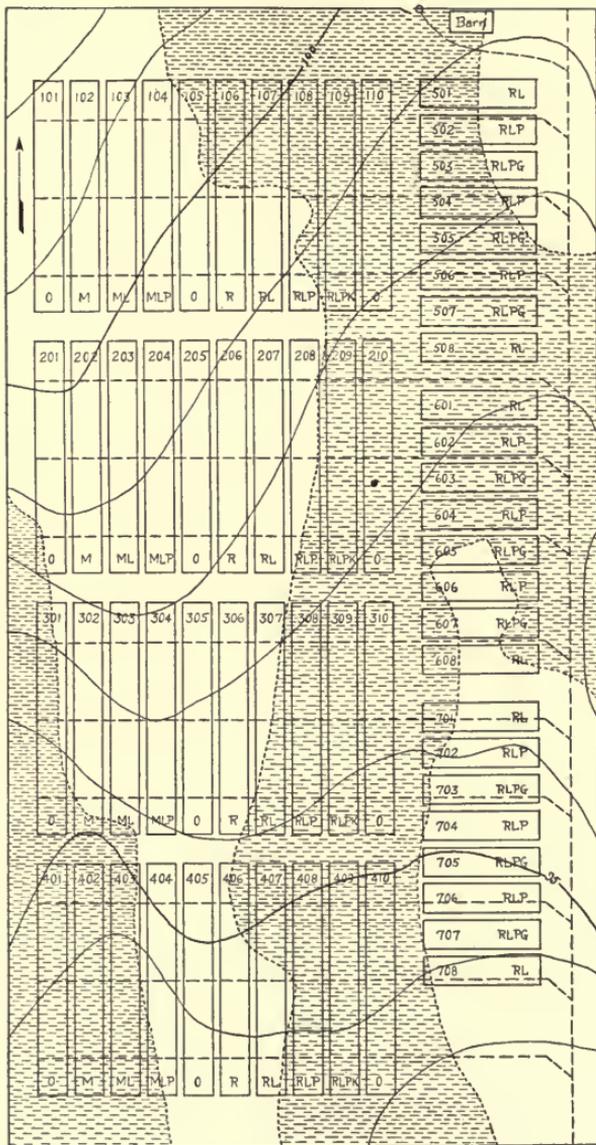
Location.—Five blocks south of the courthouse in Carthage. A part of the E. $\frac{1}{2}$ of the S.W. $\frac{1}{4}$ of the S.W. $\frac{1}{4}$, Sec. 19, Twp. 5 N., R. 6 W. of the 4th P. M.

Description.—The field consists of 20 acres of dark-colored loessial upland soil of medium acidity. Two soil types have been mapped on the field: (1) Black Silty Clay Loam On Clay (Grundy silty clay loam); and (2) Grayish Brown Silt Loam On Tight Clay (Grundy silt loam, grayish phase). The land is comparatively level, sloping gently toward the south and east. It is thoroly tile-drained and drains well. The field is divided into four series which contain 10 fifth-acre plots each and three series which contain 8 tenth-acre plots each.

History.—The Carthage field was purchased by the business men and landowners of Carthage and vicinity, and donated to the University for experimental purposes. Previous to 1911 this field had been cropped continuously for a long time and was in very poor physical condition. In 1910 the field was in oats.

Cropping and Soil Treatment.—The somewhat standard rotation and soil treatments described in the introduction were established on Series 100, 200, 300, and 400. These methods were followed without change until 1920, when it was planned to harvest the first crop of clover on the grain system of plots as hay and the second as seed, returning the chaff to those plots. In 1922 plans were made to harvest all clover as hay, and to discontinue the application of oat and wheat straws. No limestone has been applied since 1922. In 1924 the phosphate applications were evened up to 4 tons an acre on all series, and no further applications will be made for an indefinite time.

In 1912 limestone was applied at the rate of 4 tons an acre to the land now occupied by Series 500, 600, and 700. Alfalfa was grown on this land until 1920, when it was platted for the purpose of studying the comparative value of different amounts of rock phosphate, alone and with corresponding amounts of gypsum. The rotation practiced on these series has been corn, corn, and oats with sweet clover seeding for use as a green manure crop for the first crop of corn. Rock phosphate and gypsum are applied once during the rotation and are plowed under in connection with the sweet clover. On Plots 2 and 3 the rock phosphate is applied at the rotation rate of 300 pounds an acre, on Plots 4 and 5 at 600 pounds, and on Plots 6 and 7 at 1,200 pounds. The gypsum is applied on Plots 3, 5, and 7 in corresponding amounts. No limestone has been applied to these series since the initial application in 1912.



 Black Silty Clay Loam On Clay
Grundy silty clay loam

 Grayish Brown Silt Loam On Tight Clay
Grundy silt loam, grayish phase

Scale
0 50 100 Feet

Contour interval—1 foot

SOIL MAP OF CARTHAGE FIELD

TABLE 14.—CARTHAGE FIELD: SERIES 100, 200, 300, 400
Bushels or (tons) per acre

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|--------------|----------------|---------------|---------------|--------------|--------------|----------------|---------------|--------------|--------------|
| | | 1911 Corn ¹ | 1912 Oats ³ | 1913 Clover ⁴ | 1914 Wheat ⁴ | 1915 Corn | 1916 Clover | 1917 Wheat | 1918 Wheat | 1919 Corn | 1920 Oats | 1921 Clover | 1922 Wheat | 1923 Corn | 1924 Oats |
| 101 | O..... | 39.4 | 31.4 | (2.46) | 18.8 | 35.9 | 20.3 | (2.68) | 17.1 | 34.4 | 33.3 | (1.12) | 20.7 | 41.9 | 43.1 |
| 102 | ML..... | 43.7 | 33.9 | (2.64) | 19.2 | 43.0 | 31.2 | (2.53) | 28.6 | 42.3 | 36.6 | (1.33) | 22.1 | 64.7 | 58.4 |
| 103 | ML..... | 38.5 | 33.3 | (3.06) | 22.9 | 40.0 | 32.8 | (2.37) | 37.6 | 51.6 | 42.0 | (1.95) | 20.6 | 75.4 | 62.7 |
| 104 | MLrP..... | 41.0 | 37.0 | (3.02) | 23.6 | 47.0 | 35.9 | (2.54) | 42.0 | 63.7 | 48.1 | (2.17) | 27.7 | 74.6 | 62.2 |
| 105 | O..... | 35.0 | 30.2 | .67 | 25.6 | 23.1 | 23.4 | .67 | 31.8 | 40.5 | 35.2 | (1.33) | 18.5 | 52.4 | 46.7 |
| 106 | R..... | 30.7 | 24.4 | .67 | 24.7 | 23.4 | 25.0 | .67 | 35.2 | 51.4 | 28.9 | (1.55) | 22.0 | 60.7 | 51.6 |
| 107 | RL..... | 31.6 | 26.1 | .50 | 25.0 | 37.0 | 29.7 | .58 | 39.1 | 59.5 | 46.4 | (2.41) | 26.8 | 69.0 | 61.7 |
| 108 | RLrP..... | 31.2 | 26.3 | .50 | 27.7 | 45.0 | 34.4 | 1.08 | 44.8 | 61.1 | 43.8 | (2.42) | 28.2 | 69.9 | 51.9 |
| 109 | RLrPK..... | 32.0 | 26.1 | .50 | 28.3 | 47.6 | 40.6 | .92 | 45.9 | 57.9 | 44.5 | (2.39) | 28.7 | 73.0 | 58.1 |
| 110 | O..... | 36.5 | 31.4 | (3.64) | 28.4 | 24.2 | 21.9 | (2.00) | 31.6 | 42.9 | 32.8 | (1.45) | 20.1 | 53.1 | 46.7 |
| | | | | | | | | | | | | | Soy- beans | Wheat | Corn |
| 201 | O..... | 4.3 | 33.3 | 27.2 | (1.14) | 24.0 | 23.5 | 49.7 | (2.60) | 31.9 | 36.9 | 28.1 | 18.8 | 14.8 | 28.9 |
| 202 | M..... | 4.9 | 38.8 | 30.0 | (1.25) | 26.7 | 27.9 | 51.7 | (2.42) | 30.8 | 40.6 | 35.2 | 18.3 | 21.2 | 33.1 |
| 203 | ML..... | 3.8 | 39.7 | 32.0 | (1.52) | 28.7 | 32.9 | 57.8 | (2.45) | 30.8 | 48.3 | 45.8 | 19.8 | 28.6 | 59.3 |
| 204 | MLrP..... | 4.7 | 40.8 | 33.9 | (1.66) | 30.1 | 29.1 | 66.9 | (2.16) | 30.8 | 51.2 | 48.3 | 15.8 | 30.8 | 63.3 |
| 205 | O..... | 4.5 | 30.4 | 26.7 | 1.42 | 24.0 | 23.2 | 56.4 | .17 | 31.8 | 43.7 | 32.0 | 14.2 | 17.6 | 35.0 |
| 206 | R..... | 4.4 | 42.3 | 22.5 | 1.42 | 30.8 | 23.4 | 67.0 | .17 | 25.1 | 43.7 | 37.5 | 19.8 | 20.8 | 54.0 |
| 207 | RL..... | 5.0 | 41.3 | 24.4 | 1.33 | 34.2 | 29.9 | 72.0 | .50 | 23.5 | 57.3 | 43.8 | 8.7 | 34.8 | 85.0 |
| 208 | RLrP..... | 5.4 | 55.4 | 27.5 | 1.50 | 38.0 | 27.6 | 66.1 | 1.83 | 24.5 | 49.3 | 45.3 | 8.8 | 34.7 | 84.9 |
| 209 | RLrPK..... | 5.3 | 57.2 | 26.9 | 1.08 | 38.8 | 31.7 | 64.1 | 1.33 | 25.5 | 52.0 | 40.2 | 11.8 | 35.5 | 94.6 |
| 210 | O..... | 4.5 | 28.2 | 25.0 | (1.88) | 31.2 | 20.6 | 40.9 | (2.41) | 21.2 | 38.9 | 27.3 | 21.4 | 20.5 | 34.9 |

¹No soil treatment. ²Phosphorus and potassium only. ³Residues only. ⁴No lime. ⁵Lime and residues only. ⁶No manure.

TABLE 14.—Concluded

| Plot No. | Soil treatment applied | 1911 | | 1912 | | 1913 | | 1914 | | 1915 | | 1916 | | 1917 | | 1918 | | 1919 | | 1920 | | 1921 | | 1922 | | 1923 | | 1924 | | | | | | | | |
|----------|------------------------|-------------------|------------------------|--------------------|------|--------|--------|------|------|--------|--------|------|-------|------|--------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|-------|--|--|--|--|--|
| | | Oats ¹ | Soy-beans ² | Wheat ² | Corn | Oats | Wheat | Corn | Oats | Wheat | Corn | Oats | Wheat | Corn | Oats | Wheat | Corn | Oats | Wheat | Corn | Oats | Wheat | Corn | Oats | Wheat | Corn | Oats | Wheat | Corn | Oats | Wheat | | | | | |
| 301 | 0 | 11.0 | 7.4 | 25.3 | 18.0 | (2.40) | 7.2 | 22.1 | 37.3 | (1.78) | 30.6 | 39.9 | 37.8 | 31.2 | 13.2 | | | | | | | | | | | | | | | | | | | | | |
| 302 | M | 10.3 | 3.6 | 26.1 | 15.6 | (2.90) | 12.5 | 26.5 | 38.8 | (1.97) | 32.3 | 39.3 | 45.2 | 27.1 | 16.4 | | | | | | | | | | | | | | | | | | | | | |
| 303 | ML | 9.3 | 3.8 | 23.7 | 17.2 | (2.90) | 16.7 | 36.2 | 35.9 | (1.68) | 39.3 | 54.6 | 51.1 | 30.4 | 27.3 | | | | | | | | | | | | | | | | | | | | | |
| 304 | MLrP | 11.3 | 5.3 | 34.8 | 17.0 | (3.11) | 22.5 | 41.4 | 35.3 | (1.66) | 41.1 | 57.6 | 53.8 | 28.8 | 28.2 | | | | | | | | | | | | | | | | | | | | | |
| 305 | 0 | 10.8 | 5.7 | 28.6 | 17.8 | 19.2 | 7.5 | 17.4 | 30.3 | 16.6 | 18.4 | 19.4 | 35.9 | 23.6 | 10.0 | | | | | | | | | | | | | | | | | | | | | |
| 306 | R | 10.8 | 4.3 | 47.8 | 23.4 | 21.7 | 8.3 | 54.2 | 43.0 | 19.5 | 18.7 | 49.4 | 46.1 | 24.3 | 14.7 | | | | | | | | | | | | | | | | | | | | | |
| 307 | RL | 11.5 | 6.8 | 49.7 | 26.6 | 23.3 | 18.8 | 61.9 | 49.4 | 22.2 | 36.8 | 54.5 | 57.0 | 29.7 | 31.9 | | | | | | | | | | | | | | | | | | | | | |
| 308 | RLrP | 10.3 | 5.5 | 49.1 | 23.6 | 29.7 | 20.0 | 67.8 | 69.7 | 21.5 | 32.1 | 53.6 | 53.9 | 28.2 | 33.3 | | | | | | | | | | | | | | | | | | | | | |
| 309 | RLrPK | 10.7 | 7.1 | 51.3 | 24.2 | 26.7 | 25.0 | 66.1 | 53.8 | 22.8 | 41.6 | 57.9 | 54.4 | 29.2 | 33.3 | | | | | | | | | | | | | | | | | | | | | |
| 310 | 0 | 10.2 | 6.5 | 29.2 | 19.2 | (2.39) | 10.8 | 37.0 | 32.2 | (1.59) | 27.3 | 35.5 | 40.0 | 22.8 | 10.9 | | | | | | | | | | | | | | | | | | | | | |
| | | | Soy-beans ³ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 401 | 0 | 12.7 | 20.6 | 24.0 | 24.6 | 30.6 | (2.23) | 18.8 | 32.4 | 37.8 | (2.37) | 24.8 | 58.1 | 45.3 | (2.22) | | | | | | | | | | | | | | | | | | | | | |
| 402 | M | 10.6 | 17.9 | 29.8 | 39.5 | 37.8 | (1.88) | 19.2 | 38.4 | 38.0 | (2.47) | 33.8 | 65.9 | 52.7 | (3.47) | | | | | | | | | | | | | | | | | | | | | |
| 403 | ML | 14.8 | 19.6 | 29.1 | 40.8 | 48.4 | (2.18) | 18.9 | 52.8 | 41.2 | (2.73) | 34.5 | 71.3 | 60.2 | (3.71) | | | | | | | | | | | | | | | | | | | | | |
| 404 | MLrP | 15.5 | 20.4 | 24.2 | 44.7 | 49.7 | (2.72) | 17.5 | 53.5 | 45.3 | (2.69) | 33.8 | 76.9 | 59.7 | (3.73) | | | | | | | | | | | | | | | | | | | | | |
| 405 | 0 | 12.8 | 16.9 | 21.0 | 26.4 | 30.3 | .08 | 16.7 | 34.7 | 40.2 | (1.51) | 24.3 | 57.5 | 41.3 | (2.66) | | | | | | | | | | | | | | | | | | | | | |
| 406 | R | 9.8 | 15.0 | 16.4 | 35.4 | 35.9 | .17 | 18.9 | 36.0 | 43.6 | (1.73) | 20.3 | 64.2 | 28.0 | (2.53) | | | | | | | | | | | | | | | | | | | | | |
| 407 | RL | 13.3 | 14.6 | 24.2 | 47.2 | 54.7 | .08 | 21.7 | 33.3 | 40.0 | (1.21) | 31.5 | 79.9 | 51.3 | (3.51) | | | | | | | | | | | | | | | | | | | | | |
| 408 | RLrP | 10.3 | 16.5 | 23.2 | 57.2 | 60.3 | .17 | 15.2 | 47.3 | 45.3 | (1.86) | 35.3 | 78.4 | 55.8 | (3.91) | | | | | | | | | | | | | | | | | | | | | |
| 409 | RLrPK | 11.3 | 16.3 | 23.2 | 58.3 | 59.4 | .50 | 24.1 | 44.9 | 46.6 | (1.71) | 34.8 | 82.2 | 63.8 | (4.37) | | | | | | | | | | | | | | | | | | | | | |
| 410 | 0 | 10.9 | 17.0 | 22.7 | 31.3 | 28.1 | (2.44) | 16.0 | 37.3 | 37.7 | (2.80) | 23.8 | 62.5 | 39.5 | (2.40) | | | | | | | | | | | | | | | | | | | | | |

¹No soil treatment. ²No manure or lime. ³Residues only. ⁴No manure.

TABLE 15.—CARTHAGE FIELD: SERIES 500, 600, 700
Bushels or (tons) per acre

| Plot No. | Soil treatment applied | 1920 | | | | 1921 | | 1922 | | 1923 | | 1924 | |
|----------|----------------------------|------|------|------|------|----------------|--------|----------------|------|------|----------------|------|----------------|
| | | Corn | Oats | Oats | Corn | Corn | Oats | Corn | Oats | Corn | Stubble clover | Oats | Stubble clover |
| 501 | RL..... | 31.8 | | 23.8 | | 68.0 | | | | 70.0 | | 55.3 | (.98) |
| 502 | RLrP(100)..... | 51.8 | | 29.8 | | 71.4 | | | | 74.8 | | 54.7 | (1.00) |
| 503 | RLrP(100) Gypsum(100)..... | 48.6 | | 29.4 | | 72.0 | | | | 71.6 | | 56.6 | (1.02) |
| 504 | RLrP(200)..... | 61.2 | | 29.7 | | 74.8 | | | | 75.8 | | 59.1 | (.80) |
| 505 | RLrP(200) Gypsum(200)..... | 60.6 | | 31.2 | | 72.6 | | | | 70.6 | | 63.1 | (.77) |
| 506 | RLrP(400)..... | 68.0 | | 30.9 | | 74.4 | | | | 89.0 | | 61.3 | (.79) |
| 507 | RLrP(400) Gypsum(400)..... | 66.8 | | 32.5 | | 73.6 | | | | 61.2 | | 62.8 | (.99) |
| 508 | RL..... | 67.0 | | 32.2 | | 72.4 | | | | 76.8 | | 61.3 | (.92) |
| | | Corn | Oats | Oats | Corn | Stubble clover | Oats | Stubble clover | Corn | Oats | Corn | Oats | Corn |
| 601 | RL..... | 68.4 | | 60.6 | | 43.8 | (.93) | | | 76.4 | | 59.4 | |
| 602 | RLrP(100)..... | 68.6 | | 73.8 | | 40.3 | (1.08) | | | 74.2 | | 55.8 | |
| 603 | RLrP(100) Gypsum(100)..... | 63.6 | | 58.2 | | 43.8 | (1.30) | | | 71.6 | | 57.6 | |
| 604 | RLrP(200)..... | 63.6 | | 67.8 | | 43.4 | (1.10) | | | 75.4 | | 59.0 | |
| 605 | RLrP(200) Gypsum(200)..... | 62.4 | | 72.0 | | 40.6 | (1.00) | | | 70.8 | | 65.4 | |
| 606 | RLrP(400)..... | 58.4 | | 67.0 | | 44.7 | (1.08) | | | 72.2 | | 66.4 | |
| 607 | RLrP(400) Gypsum(400)..... | 63.6 | | 71.4 | | 43.4 | (.98) | | | 68.8 | | 61.8 | |
| 608 | RL..... | 70.8 | | 64.2 | | 44.1 | (.98) | | | 72.6 | | 57.6 | |
| | | Oats | Corn | Corn | Corn | Stubble clover | Oats | Stubble clover | Corn | Oats | Corn | Oats | Corn |
| 701 | RL..... | 45.6 | | 61.8 | | 53.4 | | | | 50.6 | (1.33) | 74.2 | |
| 702 | RLrP(100)..... | 31.2 | | 71.0 | | 52.6 | | | | 53.2 | (1.25) | 80.6 | |
| 703 | RLrP(100) Gypsum(100)..... | 61.6 | | 64.6 | | 58.8 | | | | 51.9 | (1.31) | 76.0 | |
| 704 | RLrP(200)..... | 39.7 | | 62.4 | | 54.2 | | | | 46.3 | (1.27) | 71.8 | |
| 705 | RLrP(200) Gypsum(200)..... | 48.1 | | 60.8 | | 50.4 | | | | 38.1 | (1.07) | 69.8 | |
| 706 | RLrP(400)..... | 40.3 | | 61.6 | | 63.4 | | | | 44.1 | (1.30) | 81.0 | |
| 707 | RLrP(400) Gypsum(400)..... | 42.5 | | 57.2 | | 57.4 | | | | 45.9 | (1.22) | 77.2 | |
| 708 | RL..... | 38.8 | | 59.6 | | 60.0 | | | | 47.5 | (1.40) | 69.2 | |

CLAYTON FIELD, ADAMS COUNTY

ESTABLISHED 1911

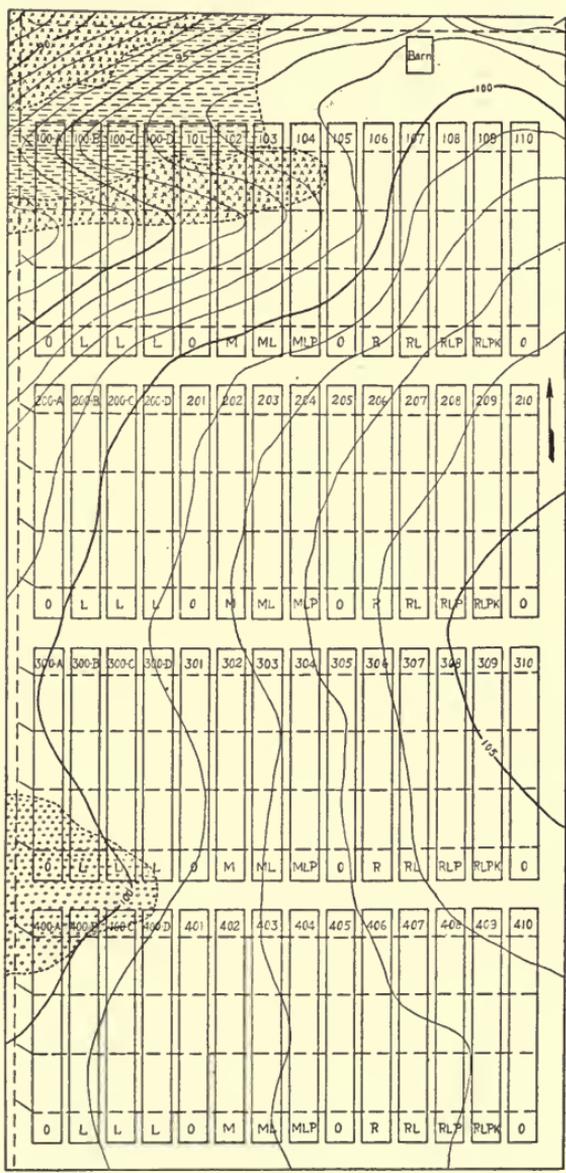
Location.—About one-quarter mile south of Clayton. A part of the W. end of the N. $\frac{1}{2}$ of the S.W. $\frac{1}{4}$, Sec. 35, Twp. 1 N., R. 5 W. of the 4th P. M.

Description.—The field consists of 20 acres of dark-colored loessial upland soil of medium acidity. Four soil types have been mapped on this field: (1) Light Brown Silt Loam On Clay (Grundy silt loam, light phase); (2) Brown-Gray Silt Loam On Tight Clay (Putnam silt loam); (3) Brown Silt Loam On Clay (Grundy silt loam); and (4) Light Brown Silt Loam On Clay, poorly drained phase (Loessial Clyde silt loam, light phase). The land is gently rolling, sloping toward the west, except in the northwest corner, where there is a tendency toward erosion on sharply sloping land extending in part across Series 100. Beginning in 1925 the plots on Series 100 will be reduced to one-tenth acre in order to eliminate this difficulty and also to avoid the first two soil types mentioned above. This change will improve the uniformity of both the soil type and the topography of that part of the field under investigation. The land is tilled and it drains well. The field is divided into four series of 14 fifth-acre plots each.

History.—The Clayton field was purchased by the citizens of Clayton and vicinity and donated to the University for experimental purposes. Little is known of the previous history of this field except that corn grew on it in 1910.

Cropping and Treatment.—The somewhat standard rotation and soil treatments described in the introduction were established on the first ten plots of each of the four series. These methods were followed without change until 1920, when it was planned to remove from the plots in the grain system one crop of clover as hay, and to hull the second crop, returning the chaff to those plots. In 1921 the return of the oats straw was discontinued and plans were made to harvest all clover as hay. In 1922 the use of both limestone and wheat straw was discontinued. In 1923 the phosphate applications were evened up to 4 tons an acre, and no further applications will be made for an indefinite time.

The land occupied by Plots A, B, C, D on the four series was originally left unplotted. It grew alfalfa until 1921, when it was plotted in with the four main series. Aside from an initial application in 1912 of 4 tons of limestone an acre to Plot C, the east half of Plot B, and the west quarter of Plot D, no further treatment has been given these plots.



-  Light Brown Silt Loam On Clay
Grundy silt loam, light phase
 -  Brown-Gray Silt Loam On Tight Clay
Putnam silt loam
 -  Brown Silt Loam On Clay
Grundy silt loam
 -  Light Brown Silt Loam On Clay, poorly drained phase
Loessial Clyde silt loam, light phase
- Scale
0 50 100 Feet
Contour interval - 1 foot

SOIL MAP OF CLAYTON FIELD

TABLE 16.—CLAYTON FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|------------------------------------|----------------------------|--------------|--------------|----------------|---------------|--------------|--------------|-----------------------|---------------|--------------|--------------|
| | | 1911 Corn ¹ | 1912 Oats ² | 1913 Soy- beans ⁴ | 1914 Wheat ⁵ | 1915 Corn | 1916 Oats | 1917 Clover | 1918 Wheat | 1919 Corn | 1920 Oats | 1921 Soy- beans | 1922 Wheat | 1923 Corn | 1924 Oats |
| 100A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 100B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 100C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 100D | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 101 | 0..... | 45.8 | 43.0 | 5.0 | 23.3 | 19.2 | (2.01) | 27.3 | 37.7 | 22.3 | 20.1 | 15.3 | 41.7 | 36.4 | 38.8 |
| 102 | M..... | 50.0 | 42.3 | (1.49) | 4.8 | 27.3 | (2.51) | 30.2 | 50.3 | 38.1 | 18.8 | 15.4 | 60.5 | 48.1 | 39.4 |
| 103 | ML..... | 52.4 | 39.3 | (1.58) | 5.3 | 28.6 | (3.26) | 42.8 | 47.9 | 32.8 | 28.1 | 21.4 | 69.1 | 64.8 | 56.9 |
| 104 | MLrP..... | 48.7 | 46.9 | (1.50) | 5.4 | 31.5 | (3.55) | 47.0 | 41.6 | 40.6 | 21.5 | 24.7 | 72.0 | 65.2 | 43.4 |
| 105 | 0..... | 54.6 | 44.1 | 12.1 | 6.2 | 25.6 | 1.92 | 33.3 | 30.1 | 25.9 | 21.3 | 14.8 | 51.2 | 45.0 | ..... |
| 106 | R..... | 56.5 | 40.0 | 13.5 | 8.5 | 36.0 | 2.17 | 33.7 | 49.7 | 43.1 | 25.8 | 21.8 | 70.1 | 62.8 | ..... |
| 107 | RL..... | 57.6 | 41.6 | 13.5 | 6.8 | 55.4 | 31.4 | 45.5 | 57.9 | 52.8 | 24.3 | 23.7 | 78.0 | 79.1 | ..... |
| 108 | RLrP..... | 55.5 | 42.3 | 13.0 | 8.8 | 55.2 | 2.00 | 50.8 | 59.0 | 55.5 | 20.3 | 28.9 | 76.9 | 67.8 | ..... |
| 109 | RLrPK..... | 52.0 | 43.8 | 11.8 | 7.9 | 56.5 | 2.00 | 47.6 | 70.7 | 51.9 | 25.5 | 30.0 | 80.1 | 77.8 | ..... |
| 110 | 0..... | 54.0 | 50.0 | 12.7 | 7.5 | 27.3 | (2.94) | 31.2 | 49.3 | 46.1 | 17.5 | 15.3 | 50.1 | 39.8 | ..... |
| 200A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 200B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 200C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 200D | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 201 | 0..... | 19.5 | 35.4 | 45.5 | (1.28) | 11.2 | 63.8 | (2.74) | 21.7 | 44.3 | 28.4 | (2.20) | 23.6 | 28.3 | ..... |
| 202 | M..... | 19.1 | 47.4 | 55.3 | (1.41) | 17.9 | 71.6 | (2.79) | 18.9 | 66.4 | 45.2 | (3.06) | 28.8 | 53.4 | ..... |
| 203 | ML..... | 16.9 | 36.9 | 51.6 | (1.38) | 14.5 | 70.6 | (2.78) | 19.0 | 75.1 | 42.2 | (3.52) | 29.9 | 69.7 | ..... |
| 204 | MLrP..... | 20.9 | 56.8 | 56.1 | (1.45) | 23.2 | 72.3 | (2.61) | 18.6 | 76.7 | 39.2 | (3.46) | 34.0 | 67.0 | ..... |
| 205 | 0..... | 18.9 | 38.7 | 45.9 | 14.2 | 7.0 | 65.9 | (2.06) | 1.00 | 53.2 | 31.2 | (2.40) | 22.4 | 41.1 | ..... |
| 206 | R..... | 18.1 | 52.1 | 45.9 | 16.7 | 16.2 | 69.8 | (2.18) | .83 | 59.2 | 32.0 | (2.25) | 29.3 | 48.4 | ..... |
| 207 | RL..... | 18.9 | 50.5 | 48.3 | 18.3 | 16.1 | 26.8 | (2.18) | .58 | 65.7 | 34.2 | (3.00) | 30.9 | 66.8 | ..... |
| 208 | RLrP..... | 20.9 | 54.4 | 52.2 | 19.6 | 30.2 | 26.9 | (2.54) | .58 | 70.1 | 39.8 | (3.53) | 31.8 | 72.4 | ..... |
| 209 | RLrPK..... | 17.5 | 55.5 | 47.7 | 17.1 | 29.2 | 83.6 | (2.29) | .42 | 71.6 | 41.9 | (3.59) | 32.8 | 78.5 | ..... |
| 210 | 0..... | 25.0 | 36.2 | 45.5 | 14.0 | 14.8 | 65.9 | (2.60) | 20.3 | 46.1 | 30.6 | (2.02) | 24.0 | 34.4 | ..... |

¹No treatment. ²Residues only. ³No lime. ⁴Lime and residues only. ⁵No manure.

TABLE 16.—Concluded

Bushels or (tons) per acre

| Plot No. | Soil treatment applied | 1911-1918 | | | | | | | | | | 1919-1924 | | | | | |
|----------|------------------------|------------------------|---------------------|-------|--------|-----------|-----------|----------------|------------|-----------|-----------|----------------|------------|-------------------|-----------|-------------|------------|
| | | Soy-beans ¹ | Barley ² | Corn | Oats | 1914 Oats | Soy-beans | 1915 Soy-beans | 1916 Wheat | 1917 Corn | 1918 Oats | 1919 Soy-beans | 1920 Wheat | 1921 Corn | 1922 Oats | 1923 Clover | 1924 Wheat |
| 300A | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 41.7 | 21.6 | (1.66) | 27.7 |
| 300B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 47.1 | 26.6 | (2.41) | 25.2 |
| 300C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 44.8 | 25.0 | (1.98) | 25.3 |
| 300D | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 43.0 | 21.7 | (1.67) | 19.4 |
| 301 | 0..... | 12.0 | 19.6 | 35.4 | 10.0 | (2.52) | 1.6 | 30.4 | 38.6 | 16.4 | (1.55) | 30.1 | 22.5 | 30.1 | 22.5 | (1.08) | 11.2 |
| 302 | M..... | 12.5 | 19.7 | 55.2 | 14.7 | (2.58) | 2.0 | 52.8 | 49.2 | 30.8 | (1.66) | 52.3 | 20.4 | 52.3 | 20.4 | (1.42) | 20.7 |
| 303 | ML..... | 13.0 | 20.2 | 55.1 | 13.3 | (2.83) | 3.9 | 61.2 | 50.6 | 27.5 | (1.86) | 67.9 | 40.6 | 67.9 | 40.6 | (2.27) | 31.1 |
| 304 | MLrP..... | 12.8 | 22.6 | 58.4 | 15.9 | (3.11) | 4.6 | 60.5 | 53.9 | 32.8 | (1.62) | 67.7 | 37.3 | 67.7 | 37.3 | (2.17) | 30.8 |
| 305 | 0..... | 14.6 | 21.5 | 42.1 | 13.9 | 12.5 | 1.8 | 35.2 | 37.5 | 11.0 | 23.1 | 42.3 | 26.9 | 42.3 | 26.9 | (1.13) | 15.0 |
| 306 | R..... | 14.4 | 21.4 | 49.7 | 17.3 | 12.5 | 4.4 | 52.6 | 46.9 | 11.5 | 20.8 | 58.4 | 26.1 | 58.4 | 26.1 | (1.33) | 16.0 |
| 307 | RL..... | 14.8 | 22.2 | 52.2 | 16.6 | 19.2 | 5.0 | 59.9 | 57.0 | 19.6 | 23.5 | 65.0 | 46.9 | 65.0 | 46.9 | (1.84) | 28.2 |
| 308 | RLrP..... | 14.8 | 24.5 | 55.1 | 18.4 | 19.6 | 7.5 | 65.6 | 73.4 | 21.9 | 25.0 | 66.0 | 41.1 | 66.0 | 41.1 | (1.99) | 29.3 |
| 309 | RLrPK..... | 14.8 | 30.8 | 52.6 | 16.9 | 22.5 | 9.0 | 64.0 | 69.7 | 22.7 | 27.5 | 73.3 | 46.9 | 73.3 | 46.9 | (2.31) | 32.3 |
| 310 | 0..... | 13.8 | 18.9 | 43.6 | 14.7 | (2.21) | 1.7 | 20.3 | 35.3 | 19.2 | (1.38) | 43.9 | 21.9 | 43.9 | 21.9 | (1.17) | 10.5 |
| 400A | ..... | Oats ¹ | Wheat ⁴ | Corn | Clover | Wheat | Corn | Oats | 1920 Oats | 1921 Oats | 1922 Oats | 1923 Oats | 1924 Oats | 28.4 ⁵ | 32.1 | 32.8 | (3.59) |
| 400B | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 32.7 ⁵ | 40.0 | 37.5 | (3.80) |
| 400C | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 38.0 ⁵ | 40.8 | 38.1 | (3.87) |
| 400D | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 18.4 ⁵ | 44.6 | 39.5 | (3.10) |
| 401 | 0..... | 27.0 | 16.4 | 32.9 | 36.0 | 58.1 | (2.30) | 18.0 | 20.2 | 42.5 | (1.70) | 21.4 | 27.2 | 21.4 | 27.2 | 46.6 | (2.43) |
| 402 | M..... | 32.2 | (1.36) | 31.0 | 37.8 | 61.6 | (2.77) | 21.7 | 49.8 | 50.3 | (2.44) | 29.1 | 48.8 | 29.1 | 48.8 | 47.0 | (3.30) |
| 403 | ML..... | 30.0 | (1.36) | 31.6 | 48.7 | 64.5 | (2.76) | 21.6 | 57.1 | 51.4 | (2.64) | 32.0 | 53.4 | 32.0 | 53.4 | 49.5 | (4.07) |
| 404 | MLrP..... | 30.8 | (1.36) | 34.0 | 46.1 | 69.5 | (2.51) | 23.5 | 50.4 | 49.5 | (2.53) | 32.1 | 50.0 | 32.1 | 50.0 | 54.7 | (3.95) |
| 405 | 0..... | 32.8 | 17.5 | 34.1 | 29.9 | 60.5 | 1.83 | 20.4 | 22.1 | 45.0 | (1.40) | 22.6 | 25.2 | 22.6 | 25.2 | 45.3 | (2.39) |
| 406 | R..... | 33.3 | 16.7 | 33.3 | 30.4 | 50.5 | 1.58 | 26.7 | 33.7 | 46.7 | (1.64) | 24.1 | 30.4 | 24.1 | 30.4 | 48.9 | (2.40) |
| 407 | RL..... | 33.3 | 16.9 | 33.8 | 41.6 | 62.5 | 1.00 | 23.5 | 44.6 | 43.0 | (2.92) | 29.1 | 42.1 | 29.1 | 42.1 | 58.3 | (4.36) |
| 408 | RLrP..... | 39.3 | 17.2 | 37.0 | 31.9 | 68.0 | 1.00 | 23.2 | 42.5 | 48.0 | (2.55) | 31.4 | 42.8 | 31.4 | 42.8 | 53.6 | (4.69) |
| 409 | RLrPK..... | 34.7 | 16.3 | 37.3 | 45.5 | 65.6 | 1.25 | 24.7 | 51.5 | 51.9 | (3.10) | 30.2 | 50.0 | 30.2 | 50.0 | 55.6 | (4.66) |
| 410 | 0..... | 35.6 | 17.5 | 35.0 | 34.8 | 62.2 | (2.15) | 16.0 | 24.4 | 47.8 | (1.98) | 22.3 | 29.6 | 22.3 | 29.6 | 48.4 | (2.95) |

¹No treatment. ²No manure or lime; wheat winterkilled, barley grown as a substitute crop. ³Residues only. ⁴No manure. ⁵Oats.

CUTLER FIELD, PERRY COUNTY
ESTABLISHED 1902—DISCONTINUED 1917

Location.—Five miles northwest of Cutler on the farm of Mr. W. E. Braden. A part of the N. $\frac{1}{2}$ of the S.E. $\frac{1}{4}$ of the N.W. $\frac{1}{4}$, Sec. 19, Twp. 5 S., R. 4 W. of the 3d P. M.

Description.—This field consisted of 18 acres of light-colored upland soil which was probably strongly acid. When the field was established the soil was classified as Gray Silt Loam On Tight Clay. The land was described as being rolling enough to insure good drainage without tile, yet sufficiently level and uniform for experimental purposes. It was divided into two series containing fifth-acre plots. One series was subdivided into three sections of 10 plots each.

History.—The Cutler field was leased from Mr. W. E. Braden. For fifty years previous to 1902 the land had been farmed rather intensively. From 1860 to 1882 it had grown wheat almost continuously without fertilizer treatment of any kind. After 1882 other crops were grown, more livestock was kept, and some commercial fertilizer was used. In 1901 this field was in wheat.

Cropping and Soil Treatment.—Of the 15 plots in Series 100, ten were used for what was called a complete fertility test. During the first eight years the rotation was corn, oats, clover, and wheat with clover seeding on the residue plots. Until 1905 nitrogen in the form of dried blood was applied each year on the residue plots at the rate of 800 pounds an acre. After 1905 crop residues were substituted for the dried blood. Phosphorus in the form of steamed bone meal was applied at the rate of 200 pounds and potassium at the rate of 100 pounds of potassium sulfate an acre a year. In 1902 slaked lime at the rate of 450 pounds an acre was applied; the next year 3 tons was applied. No further applications were made until 1911, when 2 tons of limestone was applied. A similar amount was applied in 1916.

In 1904 five Plots, 98, 99, 100, 111, and 112, were established in connection with Series 100, on which it was planned to compare various carriers of phosphorus, applied in proportion to equal money values, along with lime and potash, and with and without residues. Steamed bone meal was applied at the annual rate of 200 pound an acre, acid phosphate at the rate of 200 pounds, and rock phosphate at the rate of 500 pounds an acre on Plot 100 and 600 pounds on Plot 112. The initial application was double these amounts.

Series 200 was cropped with a rotation of wheat, corn, and legumes, chiefly soybeans. Here manure and residues were substituted for nitrogen. Phosphorus was applied in 200 pounds of steamed bone meal and potassium in 100 pounds of potassium sulfate an acre a year. In 1902 an application of 450 pounds of slaked lime was made; in 1903 an application of 3 tons was made, and no more was applied until 1911, when applications at the rate of 1,000 pounds an acre a year were begun.

TABLE 17.—CUTLER FIELD: SPECIAL FERTILITY TEST, SERIES 100

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|----------------------------|-----------------------------|---------------------------|--------------|---------------|------------------------------------|--------------|--------------|----------------|---------------|--------------|--------------|----------------|
| | | 1902 Corn ¹ | 1903 Oats ¹ | 1904 Wheat ¹ | 1905 Clover ¹ | 1906 Corn ¹ | 1907 Corn | 1908 Wheat | 1909 Soy- beans ² | 1910 Corn | 1911 Oats | 1912 Clover | 1913 Wheat | 1914 Corn | 1915 Oats | 1916 Clover | 1917 Wheat |
| 98 | RlbpK..... | .... | .... | 21.0 | (2.74) | 45.8 | 52.5 | 19.6 | 39.8 | 18.4 | .67 | 34.7 | 3.6 | 35.8 | 1.83 | 40.6 |
| 99 | RlspK..... | .... | .... | 23.1 | (2.52) | 46.2 | 60.6 | 24.2 | 35.2 | 16.7 | 1.67 | 38.8 | 2.1 | 40.9 | 1.25 | 46.2 |
| 100 | RlRpK..... | .... | .... | 20.5 | (2.51) | 52.5 | 63.8 | 19.6 | 46.2 | 20.0 | 2.58 | 37.3 | 6.4 | 29.1 | 2.00 | 45.5 |
| 101 | 0..... | 6.8 | 15.2 | 9.0 | (1.33) | 37.3 | 41.3 | 5.3 | 26.0 | 15.8 | (.18) | 10.4 | 6.3 | 18.4 | (.42) | 15.5 |
| 102 | L..... | 5.2 | 13.7 | 10.5 | (1.71) | 40.9 | 36.9 | 8.6 | 33.1 | 20.9 | (.46) | 20.9 | 6.0 | 25.0 | (.84) | 27.4 |
| 103 | RL..... | 1.2 | 16.6 | 9.8 | (1.69) | 41.6 | 32.8 | 12.6 | 29.7 | 20.0 | 1.92 | 22.8 | 3.5 | 31.2 | 1.92 | 29.3 |
| 104 | LbP..... | 3.5 | 14.2 | 21.9 | (1.89) | 40.5 | 24.7 | 19.3 | 26.7 | 20.8 | (.68) | 26.1 | 2.9 | 28.4 | (.95) | 33.2 |
| 105 | LK..... | 2.9 | 18.0 | 10.0 | (1.80) | 43.1 | 56.9 | 11.5 | 44.8 | 20.8 | (.64) | 27.3 | 2.7 | 30.2 | (1.00) | 36.4 |
| 106 | Rlbp..... | 2.2 | 20.3 | 15.8 | (1.98) | 42.3 | 23.8 | 20.4 | 29.1 | 22.3 | 2.58 | 29.2 | 2.1 | 32.5 | 2.42 | 36.8 |
| 107 | RLK..... | 2.8 | 20.0 | 8.2 | (2.11) | 50.0 | 54.7 | 13.0 | 44.6 | 23.8 | 3.08 | 29.6 | 4.5 | 39.4 | 2.25 | 34.3 |
| 108 | LbPK..... | 10.2 | 27.5 | 22.4 | (2.77) | 57.1 | 59.4 | 20.9 | 52.6 | 25.6 | (.91) | 38.0 | 6.7 | 32.7 | (1.41) | 43.4 |
| 109 | RlbpK..... | 4.6 | 28.7 | 17.7 | (2.79) | 55.7 | 55.0 | 21.3 | 49.9 | 23.9 | 3.25 | 37.2 | 3.8 | 40.6 | 2.58 | 42.8 |
| 110 | RbPK..... | 5.4 | 37.7 | 15.0 | (2.83) | 55.5 | 40.3 | 18.0 | 37.7 | 19.4 | 3.33 | 34.8 | 2.1 | 38.8 | 3.17 | 31.9 |
| 111 | LsPK..... | .... | .... | 24.2 | (2.40) | 52.7 | 51.9 | 18.3 | 37.9 | 23.8 | (.65) | 37.3 | 5.8 | 39.8 | (1.38) | 46.9 |
| 112 | LrPK..... | .... | .... | 13.1 | (2.06) | 47.3 | 43.8 | 16.1 | 49.3 | 24.4 | (.64) | 26.2 | 8.8 | 34.2 | (1.15) | 42.1 |

¹Commercial nitrogen in place of residues. ²Legumes plowed under on residue plots.

TABLE 18.—CUTLER FIELD: SERIES 200

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | | | | |
|----------|------------------------|---------------------------------|-------------------------|--------------|------------------|---------------|--------------|-------------------|------------------------|--------------|-------------------|---------------|--------------|--------------------------------|------------------------|--------------|-------------------|--------|------|------|
| | | 1902 Cow-peas ^{1,2} | 1903 Wheat | 1904 Corn | 1905 Cow-peas | 1906 Wheat | 1907 Corn | 1908 Soy-beans | 1909 Wheat | 1910 Corn | 1911 Soy-beans | 1912 Wheat | 1913 Corn | 1914 Soy-beans ⁴ | 1915 Wheat | 1916 Corn | 1917 Soy-beans | | | |
| 201 | O..... | (.71) | 6.0 | 22.8 | (1.35) | 12.1 | 15.9 | 4.0 | 7.8 | 7.7 | (.63) | 1.8 | 8.1 | .5 | 13.5 | (.75) | | | | |
| 202 | R..... | | 9.2 | 24.7 | (1.38) | 13.3 | 19.1 | 5.3 | 10.8 | 12.5 | (.58) | 1.3 | 13.0 | .5 | 21.6 | 4.2 | | | | |
| 203 | M..... | (.98) | 12.1 | 36.9 | (1.72) | 14.6 | 26.3 | 4.9 | 10.0 | 37.8 | (1.14) | 3.6 | 18.3 | 1.8 | 28.8 | (1.24) | | | | |
| 204 | RL..... | | 13.5 | 30.6 | (1.48) | 23.4 | 29.1 | 5.1 | 13.9 | 35.9 | (.85) | 3.0 | 22.0 | 1.8 | 38.4 | 12.7 | | | | |
| 205 | ML..... | (.86) | 13.3 | 44.1 | (1.62) | 21.6 | 35.0 | 4.8 | 15.8 | 40.9 | (1.92) | 5.3 | 24.4 | 2.4 | 40.8 | (1.59) | | | | |
| 206 | RLbP..... | (.95) | 20.3 | 30.6 | (1.64) | 26.5 | 31.3 | 4.6 | 20.2 | 44.0 | (.85) | 5.7 | 25.5 | 2.2 | 43.8 | 13.4 | | | | |
| 207 | MLbP..... | | 20.8 | 30.9 | (1.79) | 24.6 | 36.9 | 5.1 | 19.3 | 48.4 | (1.91) | 6.6 | 24.6 | 2.6 | 43.6 | (1.51) | | | | |
| 208 | RLbPK..... | (.95) | 26.8 | 60.0 | (1.82) | 30.4 | 57.8 | 6.8 | 19.0 | 69.5 | (.85) | 7.2 | 28.1 | 3.3 | 43.1 | 12.9 | | | | |
| 209 | MLbPK..... | (1.18) | 24.0 | 70.9 | (1.91) | 29.5 | 45.6 | 6.9 | 16.9 | 54.7 | (2.03) | 7.7 | 32.7 | 5.2 | 42.7 | (1.65) | | | | |
| 210 | LbPK..... | (1.41) | 21.1 | 71.9 | (2.19) | 26.8 | 35.6 | 8.1 | 16.4 | 41.7 | (1.98) | 7.5 | 30.0 | 3.9 | 34.2 | (1.36) | | | | |
| | | | Cow-peas ⁴ | | Wheat | | Corn | | Soy-beans ¹ | | Wheat | | Corn | | Soy-beans ⁴ | | Wheat | | Corn | |
| 211 | O..... | 19.6 | 9.0 | 24.1 | (.43) | 14.8 | 27.0 | 27.0 | (.43) | 7.3 | 22.9 | (1.08) | 8.8 | .... | .2 | 29.9 | .... | .2 | 34.2 | .... |
| 212 | R..... | 23.8 | 8.5 | 52.0 | (.81) | 26.6 | 36.6 | 26.6 | (.95) | 11.8 | 24.6 | (1.20) | 5.6 | .... | .2 | 39.7 | .... | .2 | 48.0 | .... |
| 213 | M..... | 26.6 | 18.2 | 51.1 | (.81) | 25.2 | 37.6 | 37.6 | (.95) | 10.2 | 31.4 | (1.20) | 8.3 | .... | .2 | 48.0 | .... | .2 | 48.0 | .... |
| 214 | RL..... | 26.9 | 8.8 | 57.7 | (.81) | 26.1 | 37.6 | 37.6 | (.95) | 21.9 | 44.0 | (1.61) | 15.0 | .... | .2 | 48.0 | .... | .2 | 48.0 | .... |
| 215 | ML..... | 27.8 | 18.4 | 69.7 | (1.03) | 30.7 | 50.3 | 50.3 | (1.35) | 15.5 | 43.8 | (1.61) | 17.8 | .... | 1.8 | 57.5 | .... | 1.8 | 57.5 | .... |
| 216 | RLbP..... | 28.0 | 14.3 | 57.3 | (.81) | 32.0 | 38.6 | 38.6 | (.95) | 26.7 | 47.6 | (1.78) | 32.2 | .... | 2.3 | 48.3 | .... | 2.3 | 48.3 | .... |
| 217 | MLbP..... | 25.1 | 19.7 | 69.3 | (1.40) | 37.2 | 50.7 | 50.7 | (1.25) | 18.3 | 52.0 | (1.78) | 29.7 | .... | 2.4 | 57.8 | .... | 2.4 | 57.8 | .... |
| 218 | RLbPK..... | 26.8 | 16.4 | 71.3 | (.81) | 36.7 | 53.9 | 53.9 | (.95) | 27.6 | 54.5 | (1.79) | 31.7 | .... | 1.3 | 58.0 | .... | 1.3 | 58.0 | .... |
| 219 | MLbPK..... | 26.8 | 19.7 | 64.7 | (1.97) | 36.3 | 54.8 | 54.8 | (1.33) | 17.3 | 50.4 | (1.90) | 29.6 | .... | 1.6 | 59.1 | .... | 1.6 | 59.1 | .... |
| 220 | LbPK..... | 28.7 | 15.0 | 67.7 | (1.73) | 29.5 | 50.9 | 50.9 | (1.56) | 14.2 | 37.7 | (1.79) | 23.3 | .... | 1.5 | 59.1 | .... | 1.5 | 59.1 | .... |
| | | | Cow-peas ^{4,5} | | Wheat | | Corn | | Soy-beans ¹ | | Wheat | | Corn | | Soy-beans ⁴ | | Wheat | | Corn | |
| 221 | O..... | 12.8 | 4.0 | 8.7 | (.58) | 28.6 | 6.4 | 6.4 | (.58) | 17.5 | 5.6 | (.14) | 7.2 | .... | (.46) | 9.5 | .... | (.46) | 9.5 | .... |
| 222 | R..... | 12.3 | 3.7 | 12.8 | (.68) | 30.9 | 5.5 | 5.5 | (.68) | 22.6 | 5.0 | (.14) | 8.8 | .... | (.46) | 9.5 | .... | (.46) | 9.5 | .... |
| 223 | M..... | 12.4 | 3.5 | 14.9 | (.73) | 33.2 | 7.0 | 7.0 | (.73) | 25.9 | 5.8 | (.18) | 10.2 | .... | (.63) | 13.2 | .... | (.63) | 13.2 | .... |
| 224 | RL..... | 13.2 | 3.7 | 13.8 | (.90) | 38.1 | 10.6 | 10.6 | (.90) | 35.8 | 9.0 | (.15) | 20.9 | .... | (.63) | 13.2 | .... | (.63) | 13.2 | .... |
| 225 | ML..... | 12.9 | 3.6 | 20.1 | (1.05) | 35.1 | 13.8 | 13.8 | (1.05) | 36.6 | 10.4 | (.39) | 22.4 | .... | (1.74) | 27.9 | .... | (1.74) | 27.9 | .... |
| 226 | RLbP..... | 16.9 | 2.4 | 18.2 | (1.11) | 29.1 | 16.4 | 16.4 | (1.11) | 33.8 | 12.6 | (.42) | 7.1 | .... | (.46) | 9.5 | .... | (.46) | 9.5 | .... |
| 227 | MLbP..... | 16.1 | 2.1 | 20.1 | (.93) | 32.8 | 15.6 | 15.6 | (.93) | 31.6 | 14.8 | (.41) | 19.8 | .... | (1.62) | 26.3 | .... | (1.62) | 26.3 | .... |
| 228 | RLbPK..... | 20.8 | 3.7 | 23.5 | (1.96) | 48.4 | 21.4 | 21.4 | (1.96) | 41.8 | 22.5 | (.59) | 23.4 | .... | (1.92) | 32.1 | .... | (1.92) | 32.1 | .... |
| 229 | MLbPK..... | 19.4 | 6.1 | 23.0 | (2.27) | 35.3 | 20.7 | 20.7 | (2.27) | 34.2 | 18.7 | (.59) | 20.4 | .... | (1.92) | 32.1 | .... | (1.92) | 32.1 | .... |
| 230 | LbPK..... | 20.8 | 9.2 | 21.5 | (2.19) | 37.2 | 17.7 | 17.7 | (2.19) | 32.6 | 18.7 | (.54) | 22.7 | .... | (1.58) | 26.6 | .... | (1.58) | 26.6 | .... |

¹Legume plowed under on residue plots. ²No manure or residues. ³No manure, residues, or lime. ⁴Crop failure. ⁵No manure.

DEKALB FIELD, DEKALB COUNTY

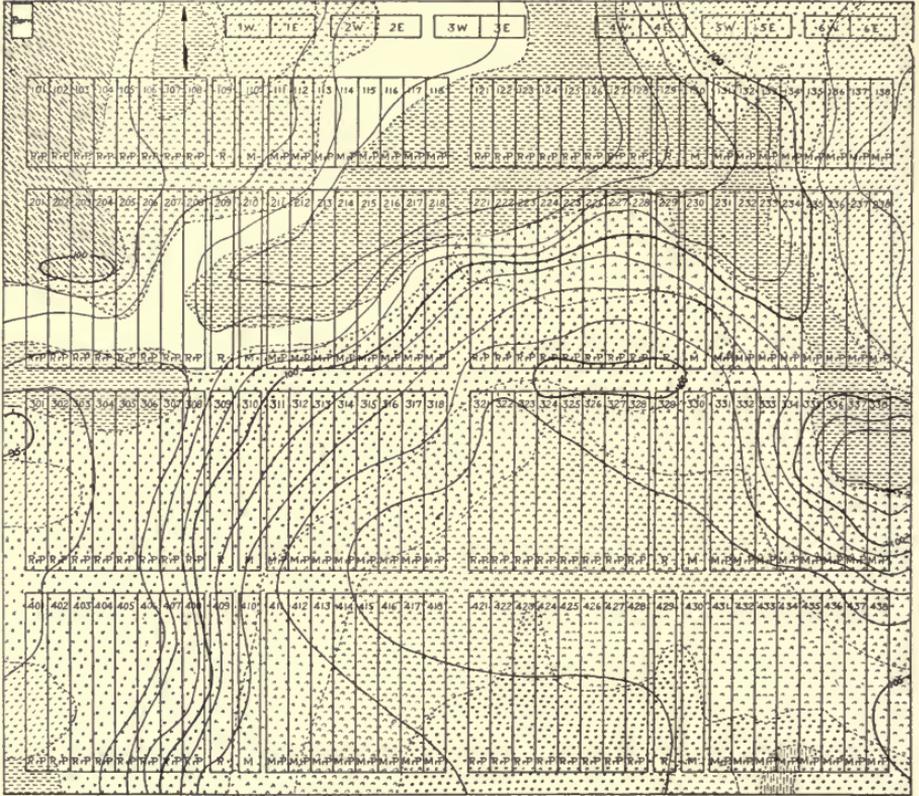
ESTABLISHED 1906

Location.—About one mile south of DeKalb on land owned by the Fairview Park Cemetery Association. A part of the S.E. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 27, Twp. 40 N., R. 4 E. of the 3d P. M.

Description.—The field consists of 40 acres of dark-colored loessial and drift soils of slight to medium acidity. Nine soil types have been mapped on the field: (1) Black Clay Loam On Drift (Clyde clay loam); (2) Black Silty Clay Loam On Drift (Clyde silty clay loam); (3) Black Silty Clay Loam On Clay (Grundy silty clay loam); (4) Brown Silt Loam On Calcareous Drift (Clarion silt loam); (5) Brown Silt Loam On Red Calcareous Drift (Bellefontaine silt loam); (6) Black Clay Loam, poorly drained phase (Loessial Clyde clay loam); (7) Brown Silt Loam On Plastic Calcareous Drift (Webster silt loam); (8) Brown Silt Loam On Clay (Grundy silt loam); and (9) Brown Silt Loam (Muscatine silt loam). The land is moderately rolling. It is not tile-drained, the surface drainage being fairly satisfactory. The field is divided into four series, three of which contain 36 fifth-acre plots and one which contains 36 tenth-acre plots. On one division these plots are numbered from 1 to 18 and on the other from 21 to 38.

History.—The land is leased from the Fairview Park Cemetery Association. No information is available in regard to the previous history of the field.

Cropping and Soil Treatment.—The DeKalb field is used primarily for crop studies in connection with two definite rotations. Some plots on each series have received various soil treatments under standard cropping conditions. On the west halves of all series a rotation of corn, corn, oats, and clover has been practiced, while on the east halves it has been corn, oats, wheat, and clover. All plots ending in the numbers 3, 6, and 9 of each series have been handled as grain system plots, while all plots ending in the numbers 10, 13, and 16, or 30, 33, and 36, have been handled as livestock plots. All plots on all series have received either crop residues or manure, and with the exception of those ending in the numbers 9 and 0 all have received rock phosphate at the annual acre rate of 500 pounds. No limestone has been used on this field.



- | | | |
|---|--|--|
| Black Clay Loam On Drift Clyde clay loam | Brown Silt Loam On Calcareous Drift Clanton silt loam | Brown Silt Loam On Plastic Calcareous Drift Webster silt loam |
| Black Silty Clay Loam On Drift Clyde silty clay loam | Brown Silt Loam On Red Calcareous Drift Ballertontane silt loam | Brown Silt Loam On Clay Grundy silt loam |
| Black Silty Clay Loam On Clay Grundy silty clay loam | Black Clay Loam, poorly drained phase Loessial Clyde clay loam | Brown Silt Loam Muscatine silt loam |
- Scale 100 feet
Contour interval - 1 foot

SOIL MAP OF DE KALB FIELD

TABLE 20.—DEKALB FIELD: ROTATION, CORN, OATS, WHEAT, CLOVER

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | | | | | |
|------------------------|------------------------|----------------------------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|--------|--------|--------|--------|-----------|--------|--------|-------|
| | | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | |
| | | Corn | Oats | Wheat | Clover | Corn | Oats | Clover | Corn | Oats | Clover | Corn | Oats | Clover | Corn | Oats | Wheat | Soy-beans | Corn | Oats | Wheat |
| 123 | RrP | 67.4 | 30.0 | 27.7 | 0.00 | 48.2 | 15.0 | 42.3 | 0.00 | 81.5 | 49.8 | 35.2 | 0.00 | 58.8 | 47.7 | 31.8 | 16.3 | 72.2 | 70.4 | 41.4 | |
| 126 | RrP | 92.8 | 38.5 | 38.5 | 0.00 | 70.9 | 12.2 | 41.1 | 0.00 | 84.1 | 51.2 | 43.4 | 0.00 | 62.0 | 45.5 | 31.8 | 24.0 | 93.1 | 66.9 | 45.1 | |
| 129 | R | 67.3 | 33.4 | 37.3 | 0.00 | 63.9 | 18.1 | 55.9 | 0.00 | 61.3 | 40.7 | 35.1 | 0.00 | 57.2 | 41.4 | 26.6 | 18.6 | 83.0 | 72.8 | 44.6 | |
| 130 | M | 69.3 | 33.8 | 33.0 | (.60) | 61.1 | 17.6 | 64.6 | (.92) | 69.4 | 26.9 | 29.3 | (.92) | 57.3 | 41.1 | 28.5 | (1.44) | 88.4 | 75.0 | 43.2 | |
| 133 | MrP | 76.8 | 39.1 | 43.0 | (.90) | 61.5 | 19.7 | 72.9 | (1.96) | 79.0 | 33.1 | 29.9 | (.85) | 57.0 | 38.8 | 36.8 | (1.62) | 69.1 | 77.7 | 48.1 | |
| 136 | MrP | 72.0 | 35.0 | 41.8 | (.90) | 57.9 | 14.0 | 78.1 | (1.96) | 77.7 | 36.9 | 28.0 | (.81) | 57.0 | 42.7 | 36.8 | (1.44) | 81.5 | 76.5 | 49.7 | |
| Soy-beans | | | | | | | | | | | | | | | | | | | | | |
| 223 | RrP | 22.9 | 18.6 | (2.92) | 64.2 | 71.0 | 29.0 | 0.00 | 55.4 | 47.4 | 39.9 | 0.00 | 17.4 | 63.0 | 19.3 | .50 | 64.9 | 33.0 | 39.5 | ... | (1) |
| 226 | RrP | 26.1 | 19.0 | (2.90) | 76.8 | 74.0 | 33.0 | 0.00 | 52.7 | 50.4 | 42.7 | 0.00 | 17.0 | 66.3 | 20.4 | .70 | 64.9 | 32.0 | 40.8 | ... | (1) |
| 229 | R | 24.1 | 14.6 | (2.32) | 59.8 | 76.2 | 25.9 | 0.00 | 59.0 | 44.6 | 39.0 | 0.00 | 8.8 | 71.8 | 17.3 | .90 | 64.4 | 32.0 | 30.4 | ... | (1) |
| 230 | M | 26.4 | 19.3 | (2.55) | 70.2 | 81.0 | 34.8 | (1.40) | 63.3 | 45.4 | 39.2 | (2.25) | 16.7 | 73.9 | 19.6 | (2.30) | 67.3 | 32.5 | 31.3 | (1.25) | |
| 233 | MrP | 38.0 | 20.7 | (2.67) | 75.5 | 80.3 | 37.0 | (1.40) | 68.3 | 49.2 | 45.0 | (2.56) | 23.1 | 61.2 | 19.8 | (2.46) | 67.5 | 32.0 | 40.3 | (1.22) | |
| 236 | MrP | 36.9 | 22.7 | (2.45) | 72.0 | 79.5 | 36.7 | (1.90) | 65.4 | 45.7 | 38.6 | (2.56) | 27.6 | 69.6 | 26.0 | (2.24) | 67.5 | 33.0 | 39.9 | (1.18) | |
| Soy-beans | | | | | | | | | | | | | | | | | | | | | |
| 323 | RrP | 27.9 | (1.66) | 55.9 | 70.1 | 31.2 | 0.00 | 67.2 | 57.4 | 39.0 | 0.00 | 48.6 | 87.0 | 24.4 | 2.91 | 56.0 | 29.6 | 46.2 | ... | (1) | 20.1 |
| 326 | RrP | 24.9 | (1.66) | 59.6 | 65.4 | 33.4 | 0.00 | 66.8 | 64.1 | 41.0 | 0.00 | 46.8 | 85.9 | 26.3 | 2.67 | 56.0 | 29.7 | 51.7 | ... | (1) | 13.4 |
| 329 | R | 25.4 | (1.30) | 39.2 | 73.3 | 25.6 | 0.00 | 54.4 | 54.0 | 33.4 | 0.00 | 38.5 | 80.7 | 21.1 | 2.90 | 43.4 | 24.6 | 33.7 | ... | (1) | 6.8 |
| 330 | M | 26.1 | (1.30) | 75.4 | 68.4 | 38.9 | (.80) | 69.9 | 66.4 | 33.5 | (1.92) | 50.7 | 77.1 | 20.4 | (1.76) | 61.4 | 26.8 | 40.0 | (1.94) | 6.5 | |
| 333 | MrP | 22.8 | (1.90) | 67.1 | 74.6 | 39.0 | (1.46) | 67.9 | 71.9 | 37.2 | (2.19) | 52.6 | 78.3 | 22.2 | (1.97) | 57.4 | 25.2 | 42.6 | (2.21) | 10.4 | |
| 336 | MrP | 23.6 | (1.90) | 72.6 | 67.3 | 45.9 | (1.46) | 66.8 | 71.7 | 39.5 | (2.19) | 54.7 | 74.5 | 29.0 | (1.90) | 57.4 | 27.1 | 44.5 | (2.21) | 10.0 | |
| Soy-beans ¹ | | | | | | | | | | | | | | | | | | | | | |
| 423 | RrP | 43.9 | 36.2 | 61.4 | 0.00 | 81.0 | 81.3 | 35.4 | 3.29 | 32.4 | 68.8 | 25.4 | 1.24 | 70.1 | 80.7 | 34.8 | 1.62 | 54.2 | 83.9 | | |
| 426 | RrP | 45.3 | 31.7 | 59.4 | 0.00 | 80.0 | 77.6 | 33.1 | 3.29 | 38.7 | 64.8 | 30.7 | 1.28 | 73.3 | 80.7 | 31.8 | 1.69 | 62.2 | 88.0 | | |
| 429 | R | 43.5 | 37.3 | 66.1 | 0.00 | 76.4 | 77.8 | 27.7 | 4.00 | 30.9 | 62.5 | 25.2 | 1.33 | 62.3 | 68.8 | 25.0 | 1.23 | 57.5 | 80.6 | | |
| 430 | M | 58.1 | 42.8 | 72.3 | (3.10) | 76.8 | 75.0 | 36.0 | (2.68) | 42.4 | 66.5 | 25.4 | (2.21) | 68.5 | 82.7 | 29.4 | (2.24) | 64.5 | 81.2 | | |
| 433 | MrP | 50.9 | 43.9 | 69.4 | (3.08) | 83.5 | 75.0 | 41.2 | (3.05) | 39.4 | 71.6 | 33.6 | (2.68) | 74.9 | 83.6 | 36.7 | (2.47) | 59.3 | 73.6 | | |
| 436 | MrP | 50.8 | 41.2 | 59.5 | (3.08) | 86.7 | 71.3 | 37.2 | (3.05) | 47.1 | 73.7 | 34.7 | (2.56) | 71.4 | 83.6 | 32.8 | (2.68) | 69.1 | 70.7 | | |

¹Yields not taken.

DIXON FIELD, LEE COUNTY

ESTABLISHED 1910

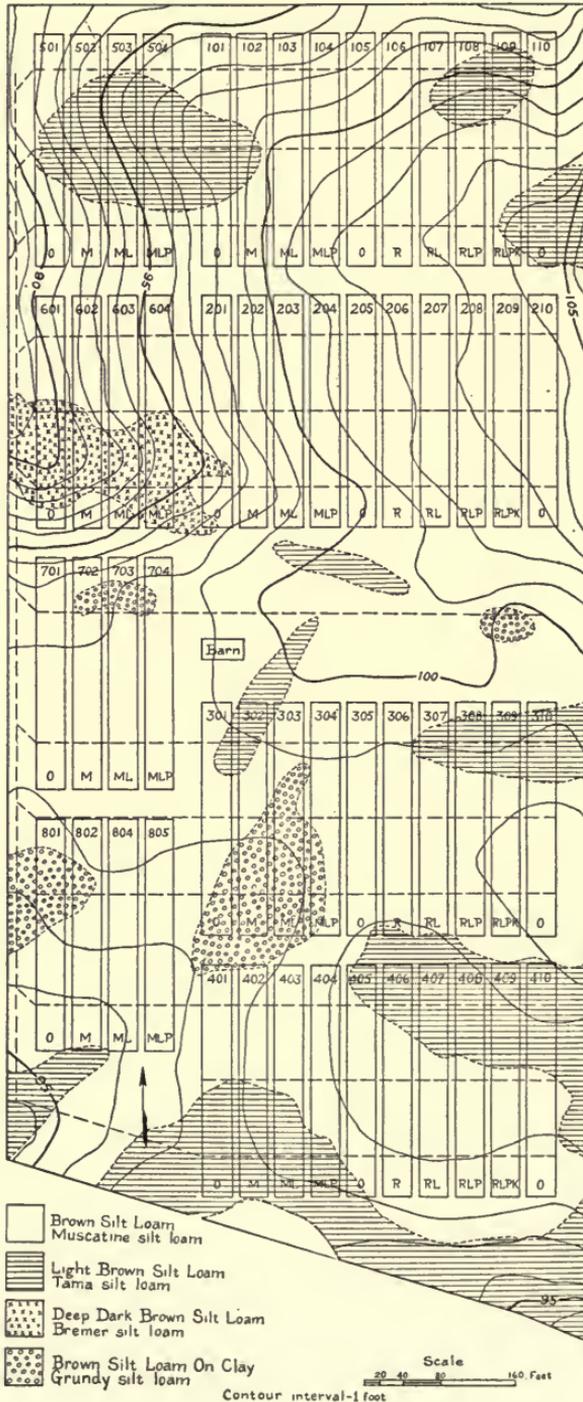
Location.—About two miles west of Dixon on the Lincoln highway. A part of the E. $\frac{1}{2}$ of the S.E. $\frac{1}{4}$, Sec. 26, Twp. 22 N., R. 8 E. of the 4th P. M.

Description.—The field consists of 21.41 acres of dark-colored loessial soil of medium acidity. Four types of soil have been mapped on this field: (1) Light Brown Silt Loam (Tama silt loam); (2) Brown Silt Loam (Muscatine silt loam); (3) Deep Dark Brown Silt Loam (Bremer silt loam); and (4) Brown Silt Loam On Clay (Grundy silt loam). The land is rolling, with rather sharp slopes occurring in the northwest portion of the field. The field is thoroly tile-drained and drains well. It is divided into eight series, four of which contain 10 fifth-acre plots, and four which contain 4 fifth-acre plots, each plot being subdivided into north and south halves.

History.—The Dixon field was purchased by the citizens of Dixon and vicinity and donated to the University for experimental purposes. In 1909 the land occupied by Series 100 and 200 was in timothy and clover meadow. That occupied by Series 300 and 400 was in corn. There is little information available regarding the previous history of the field.

Cropping and Soil Treatment.—The somewhat standard crop rotation and soil treatment methods described in the introduction were established on Series 100, 200, 300, and 400. These methods were followed without change until 1921, when it was planned to remove all clover as hay and to discontinue the return of the oat straw. In 1922 the return of the wheat straw was also discontinued, as well as the application of limestone. In 1923 the phosphate applications were evened up to 4 tons an acre, and no more will be applied for an indefinite period.

When the field was established Series 500, 600, 700, and 800 were left unplotted and were seeded to alfalfa. In 1912 they were plotted for a potato, alfalfa rotation. It was planned to grow potatoes two years in succession on the same land, while alfalfa was to be grown six years. The initial application of limestone was at the rate of 4 tons an acre. Subsequent applications were at the rate of 4 tons an acre when the land was seeded to alfalfa. Rock phosphate was applied at the annual acre rate of 500 pounds. Manure was applied at the rate of 15 tons an acre for each potato crop. Beginning with 1915 potassium sulfate was applied to the north half of all plots at the rate of 200 pounds an acre for each potato crop. In 1921 the rotation on these series was changed to one of corn, corn, and oats with sweet clover seeding on Plots 2, 3, and 4, with alfalfa on the fourth series for four years. The fertilizers on all series were evened up at this time, and no more will be applied for an indefinite period.



SOIL MAP OF DIXON FIELD

TABLE 21.—DIXON FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|------------------------|------------------------|--------------------------|-------------------------|-----------|-----------|----------------|--------------------------|-------------------|-----------|-------------|------------|-----------|-----------|
| | | 1910 Barley ¹ | 1911 Corn ³ | 1912 Oats ³ | 1913 Clover ³ | 1914 Wheat ¹ | 1915 Corn | 1916 Oats | 1917 Soy-beans | 1918 Barley ³ | 1919 Corn | 1920 Oats | 1921 Clover | 1922 Wheat | 1923 Corn | 1924 Oats |
| 101 | O..... | 20.5 | 56.4 | 35.2 | (3.14) | 24.8 | 5.6 | 72.0 | (1.62) | 43.3 | 35.9 | 42.8 | (1.11) | 20.0 | 40.6 | 42.2 |
| 102 | ML..... | 20.8 | 62.8 | 39.5 | (3.32) | 25.3 | 32.9 | 70.8 | (1.82) | 46.4 | 50.0 | 64.2 | (1.59) | 28.5 | 56.0 | 57.2 |
| 103 | ML ² | 24.4 | 60.5 | 47.2 | (3.47) | 26.6 | 38.1 | 79.2 | (2.25) | 55.2 | 60.7 | 76.2 | (1.88) | 33.3 | 63.8 | 67.2 |
| 104 | MLrP..... | 24.7 | 64.7 | 42.2 | (3.56) | 33.5 | 41.7 | 81.0 | (2.40) | 58.3 | 70.6 | 86.6 | (1.89) | 38.2 | 62.0 | 71.6 |
| 105 | O..... | 26.8 | 64.3 | 47.8 | 1.00 | 32.8 | 18.5 | 76.0 | 10.8 | 49.5 | 44.8 | 52.3 | (1.11) | 26.8 | 42.0 | 45.9 |
| 106 | R..... | 24.9 | 65.9 | 50.0 | 1.25 | 37.7 | 24.4 | 78.8 | 9.1 | 53.8 | 42.5 | 66.9 | (1.65) | 26.0 | 53.6 | 60.2 |
| 107 | RL..... | 24.4 | 67.5 | 49.5 | 1.00 | 34.2 | 29.0 | 81.2 | 10.8 | 54.5 | 66.5 | 77.7 | (1.90) | 29.4 | 60.9 | 79.7 |
| 108 | RLrP..... | 22.3 | 68.2 | 44.5 | 1.00 | 37.9 | 33.0 | 83.4 | 11.0 | 59.0 | 71.4 | 87.2 | (2.36) | 35.5 | 58.0 | 78.4 |
| 109 | RLrPK..... | 20.8 | 69.2 | 49.4 | .75 | 35.2 | 32.6 | 78.1 | 10.3 | 56.9 | 70.9 | 83.9 | (2.80) | 37.5 | 56.1 | 69.7 |
| 110 | O..... | 21.6 | 65.0 | 43.3 | (2.96) | 24.9 | 2.4 | 69.7 | (1.28) | 45.4 | 45.9 | 55.6 | (1.24) | 23.3 | 42.6 | 41.3 |
| | | | | | | | | | | Soy-beans | Wheat | Corn | Oats | Clover | Wheat | Corn |
| 201 | O..... | (1.69) | 31.9 | 3.3 ⁶ | 49.2 | (1.76) | 27.9 | 37.8 | 68.4 | (1.80) | 23.8 | 30.6 | 31.6 | (2.13) | 9.4 | 41.6 |
| 202 | ML..... | (1.56) | 31.0 | 12.9 ⁶ | 55.6 | (2.13) | 28.2 | 44.5 | 82.3 | (1.85) | 26.3 | 42.9 | 41.9 | (2.98) | 19.9 | 57.6 |
| 203 | ML ² | (1.54) | 33.8 | 11.4 ⁶ | 52.7 | (2.64) | 29.2 | 49.5 | 85.6 | (1.85) | 31.2 | 48.3 | 39.2 | (3.31) | 21.6 | 62.4 |
| 204 | MLrP..... | (1.87) | 37.4 | 26.2 ⁶ | 58.4 | (2.77) | 34.0 | 52.8 | 93.0 | (1.96) | 37.3 | 54.2 | 44.5 | (3.43) | 25.3 | 62.0 |
| 205 | O..... | (1.87) | 30.5 | 21.1 | 58.9 | (1.83) | 28.0 | 43.4 | 76.1 | 14.6 | 27.8 ¹ | 44.2 | 31.4 | (2.59) | 10.3 | 45.0 |
| 206 | R..... | (?) | 37.9 | 37.5 | 58.4 | 1.42 | 31.3 | 44.3 | 77.7 | 17.1 | 28.9 | 46.9 | 35.8 | (3.05) | 13.7 | 51.8 |
| 207 | RL..... | (?) | 30.7 | 34.2 | 52.7 | 1.58 | 30.0 | 48.5 | 77.7 | 16.2 | 28.8 | 53.6 | 31.7 | (3.24) | 16.8 | 57.2 |
| 208 | RLrP..... | (?) | 41.0 | 42.2 | 58.6 | 2.17 | 36.8 | 50.4 | 85.9 | 13.3 | 35.2 | 52.3 | 39.2 | (3.65) | 20.8 | 59.6 |
| 209 | RLrPK..... | (?) | 41.6 | 61.5 | 56.1 | 2.00 | 34.6 | 49.4 | 84.4 | 15.0 | 36.4 | 55.2 | 44.7 | (4.02) | 24.0 | 62.2 |
| 210 | O..... | (1.80) | 30.6 | 20.4 | 52.3 | 1.17 | 25.1 | 40.9 | 68.1 | (1.94) | 28.2 | 39.0 | 36.4 | (2.40) | 13.6 | 45.8 |

¹No soil treatment. ²No seed harvested. ³Residues only. ⁴No manure or lime. ⁵Residues and lime only. ⁶Corn damaged by white grubs. ⁷No manure. ⁸Wheat winterkilled; barley grown as a substitute crop.

TABLE 22.—DIXON FIELD: SERIES 500, 600, 700, 800

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | 1921 Corn | 1922 Oats | 1923 Corn | 1924 Corn |
|----------|------------------------|----------------------------|----------------------------|------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|---------------------------|----------------------------|-----------|-----------|-----------|-----------|
| | | 1913 Potatoes ¹ | 1914 Potatoes ¹ | 1915 Barley hay ¹ | 1916 Alfalfa ¹ | 1917 Alfalfa ¹ | 1918 Alfalfa ¹ | 1919 Alfalfa ¹ | 1920 Soybeans ¹ | 1920 Alfalfa ¹ | 1920 Soybeans ¹ | | | | |
| 501N | K..... | } 109.2 | } 87.0 | (.94) | (1.93) | (1.30) | (1.12) | (2.39) | (1.97) | 63.2 | 70.9 | 52.2 | 29.8 | | |
| 501S | O..... | | | | (2.61) | (1.45) | (1.50) | (.95) | (1.30) | (1.30) | 68.0 | 67.2 | 51.2 | 33.4 | |
| 502N | MK..... | } 124.8 | } 120.2 | (1.71) | (4.21) | (1.68) | (1.66) | (3.15) | (2.06) | 70.4 | 84.4 | 59.2 | 51.4 | | |
| 502S | M..... | | | | (4.50) | (1.70) | (3.37) | (2.73) | (2.73) | (1.97) | 75.6 | 78.4 | 58.2 | 45.4 | |
| 503N | MLK..... | } 127.9 | } 106.3 | (1.70) | (4.02) | (1.94) | (3.25) | (4.30) | (2.15) | 76.0 | 84.1 | 53.8 | 55.0 | | |
| 503S | ML..... | | | | (4.37) | (1.99) | (3.70) | (3.30) | (3.30) | (1.93) | 77.8 | 79.1 | 62.0 | 51.8 | |
| 504N | MLrPK..... | } 134.7 | } 119.1 | (1.51) | (4.00) | (2.15) | (2.77) | (3.97) | (2.11) | 74.8 | 87.5 | 50.8 | 56.2 | | |
| 504S | MLrP..... | | | | (4.28) | (2.15) | (3.42) | (3.94) | (3.94) | (2.01) | 76.2 | 79.4 | 56.4 | 49.8 | |
| | | Alfalfa ^{2,3} | Alfalfa ² | Potatoes | Potatoes | Alfalfa ⁴ | Alfalfa | Alfalfa | Alfalfa ⁴ | Corn | Corn | Oats | Corn | | |
| 601N | K..... | } (6.82) | } (6.82) | } 95.5 | 20.8 | ..... | (2.74) | (4.08) | ..... | 68.0 | 85.6 | 54.1 | 39.2 | | |
| 601S | O..... | | | | 110.3 | 24.2 | | (1.73) | (3.80) | (3.80) | | 65.2 | 75.4 | 67.5 | 38.6 |
| 602N | MK..... | } (6.30) | } (6.30) | } 177.2 | 65.8 | ..... | (5.27) | (4.82) | ..... | 78.6 | 86.2 | 65.6 | 58.0 | | |
| 602S | M..... | | | | 151.2 | 75.0 | | (4.81) | (4.39) | (4.39) | | 75.0 | 88.4 | 66.9 | 54.2 |
| 603N | MLK..... | } (6.33) | } (6.33) | } 162.5 | 60.0 | ..... | (5.46) | (5.50) | ..... | 78.6 | 90.4 | 72.5 | 60.8 | | |
| 603S | ML..... | | | | 130.0 | 70.8 | | (6.23) | (4.63) | (4.63) | | 73.4 | 85.6 | 70.9 | 57.2 |
| 604N | MLrPK..... | } (6.09) | } (6.09) | } 147.3 | 62.5 | ..... | (6.10) | (6.00) | ..... | 76.8 | 89.8 | 72.5 | 60.0 | | |
| 604S | MLrP..... | | | | 96.0 | 65.0 | | (5.73) | (4.99) | (4.99) | | 76.8 | 79.8 | 68.8 | 59.6 |

¹No potassium. ²No manure or potassium. ³Plots harvested together; average yield 5.35 tons an acre. ⁴Alfalfa seeding.

TABLE 22.—Concluded

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|-----------------------------|---------------------------|---------------------------|---------------------------|---------------|---------------|--------------|--------------|--------------|-----------|-----------|-----------|
| | | 1913 Alfalfa ^{1,2} | 1914 Alfalfa ¹ | 1915 Alfalfa ¹ | 1916 Alfalfa ¹ | 1917 Potatoes | 1918 Potatoes | 1919 Alfalfa | 1920 Alfalfa | 1921 Alfalfa | 1922 Corn | 1923 Corn | 1924 Oats |
| 701N | K..... | ..... | (5.63) | (4.91) | (5.00) | 66.7 | 71.7 | (1.83) | (4.08) | (5.14) | 84.2 | 58.4 | 80.3 |
| 701S | 0..... | ..... | ..... | (4.68) | (4.83) | 47.5 | 48.3 | (1.79) | (3.88) | (4.84) | 81.6 | 52.4 | 72.2 |
| 702N | MK..... | ..... | (5.39) | (4.71) | (4.23) | 100.0 | 142.2 | (2.10) | (4.19) | (5.43) | 93.8 | 70.8 | 82.8 |
| 702S | M..... | ..... | ..... | (4.70) | (4.95) | 76.7 | 124.2 | (2.11) | (3.71) | (4.94) | 85.8 | 59.4 | 80.0 |
| 703N | MLK..... | ..... | (5.91) | (4.81) | (5.48) | 102.5 | 140.0 | (2.49) | (4.72) | (5.49) | 92.2 | 71.8 | 85.3 |
| 703S | ML..... | ..... | ..... | (5.06) | (5.00) | 81.7 | 123.3 | (2.21) | (4.49) | (4.92) | 88.0 | 62.4 | 76.9 |
| 704N | MLrPK..... | ..... | (5.39) | (4.89) | (4.83) | 95.0 | 155.0 | (2.26) | (4.56) | (5.26) | 96.0 | 73.8 | 85.3 |
| 704S | MLrP..... | ..... | ..... | (4.77) | (4.21) | 100.8 | 133.5 | (1.97) | (3.80) | (4.78) | 86.6 | 59.6 | 76.3 |
| 801N | K..... | ..... | (5.39) | (4.64) | (4.49) | ..... | (3.90) | 38.3 | Potatoes | Oats | Alfalfa | Alfalfa | Alfalfa |
| 801S | 0..... | ..... | ..... | (4.52) | (4.26) | ..... | (4.22) | 36.3 | Potatoes | Alfalfa | Alfalfa | Alfalfa | Alfalfa |
| 802N | MK..... | ..... | (5.45) | (4.76) | (5.14) | ..... | (4.28) | 64.0 | 92.2 | 53.1 | (5.63) | (4.42) | (3.15) |
| 802S | M..... | ..... | ..... | (4.50) | (4.52) | ..... | (4.56) | 56.7 | 80.8 | 47.5 | (5.24) | (4.35) | (3.28) |
| 803N | MLK..... | ..... | (5.40) | (4.62) | (4.47) | ..... | (4.43) | 49.5 | 98.7 | 52.5 | (5.64) | (4.99) | (3.38) |
| 803S | ML..... | ..... | ..... | (4.56) | (4.22) | ..... | (4.40) | 40.8 | 98.0 | 49.7 | (5.33) | (4.69) | (3.43) |
| 804N | MLrPK..... | ..... | (6.08) | (5.09) | (4.45) | ..... | (4.73) | 71.7 | 109.0 | 50.3 | (5.75) | (5.20) | (3.21) |
| 804S | MLrP..... | ..... | ..... | (4.72) | (3.49) | ..... | (4.22) | 58.3 | 104.5 | 50.3 | (5.34) | (4.98) | (3.13) |

¹No manure or potassium. ²Plots harvested together; average yield 5.35 tons an acre. ³Alfalfa seeding.

DUBOIS FIELD, WASHINGTON COUNTY

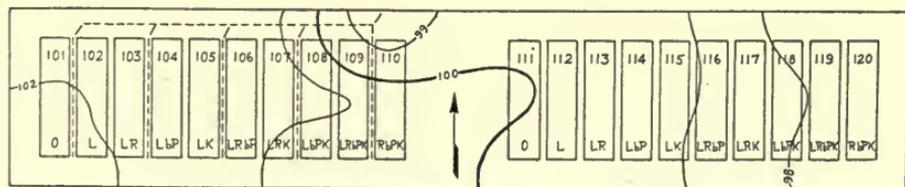
ESTABLISHED 1902

Location.—About one mile northwest of DuBois on the farm of Mr. A. A. Hinkley. A part of the S. $\frac{1}{2}$ of the S.E. $\frac{1}{4}$ of the N.E. $\frac{1}{4}$ of Sec. 29, Twp. 3 S., R. 1 W. of the 3d P. M.

Description.—The field consists of 4.5 acres of light-colored loessial soil of strong acidity. The land is uniform from the standpoint both of soil type and of topography. Only one soil type has been mapped on the field, namely, Gray Silt Loam On Tight Clay. The field is plotted in one series of two sections, each containing 10 tenth-acre plots. The west section is tile-drained. Owing, however, to the impervious nature of the subsoil, drainage is not ideal; in some seasons the tiled section appeared to have some advantage.

History.—The DuBois field is now leased from Mr. J. M. Hinkley. It had been farmed intensively for many years previous to 1902. In 1901 the field was in cowpeas but produced a very poor crop. For a few years previous to this, the field had been in grass.

Cropping and Soil Treatment.—This field was originally planned for what was called a complete fertility test on tiled and untilled land. The rotation practiced for the first eight years was three grain crops followed by a legume. After two of these rotations the order was changed to corn, oats, clover, and wheat with a sweet clover-alsike mixture seeded on the residue plots for use as a green manure. Until 1905 nitrogen was applied annually in approximately 650 pounds of dried blood an acre on the residue plots; thereafter crop residues were substituted. Phosphorus was applied at the annual rate of 200 pounds of steamed bone meal an acre, and potassium in 100 pounds of potassium sulfate. In 1922 the application of steamed bone meal and potassium sulfate was discontinued temporarily. At that time the rotation was also changed to one of corn and wheat with sweet clover seeding on all plots. Five tons of hydrated lime was applied in 1902 and no further applications of lime were made until 1922, when 2 tons of limestone an acre was applied on the limed plots of the east section and 1,000 pounds an acre on the west section.



Gray Silt Loam On Tight Clay

Contour interval - 1 foot

Scale
0 25 50 Feet

SOIL MAP OF DUBOIS FIELD

TABLE 23.—DUBOIS FIELD: SPECIAL FERTILITY TEST
(1902-1913)

| Plot No. | Soil treatment applied ¹ | Bushels or (tons) per acre | | | | | | | | | | | |
|-----------------------|-------------------------------------|----------------------------|--------------|---------------|----------------|--------------|--------------|---------------|-----------------------|--------------|--------------|----------------|---------------|
| | | 1902 Corn | 1903 Oats | 1904 Wheat | 1905 Clover | 1906 Corn | 1907 Oats | 1908 Wheat | 1909 Soy- beans | 1910 Corn | 1911 Oats | 1912 Clover | 1913 Wheat |
| Land Not Tile-drained | | | | | | | | | | | | | |
| 101 | 0..... | 6.4 | 9.4 | 6.3 | (1.25) | 30.3 | 18.8 | 8 | 3.5 | 25.8 | 13.1 | (.46) | 7.7 |
| 102 | L..... | 6.7 | 16.2 | 6.5 | (1.57) | 35.2 | 28.8 | 8.0 | 6.7 | 26.2 | 24.1 | (.40) | 8.7 |
| 103 | RL..... | 5.9 | 18.1 | 11.0 | (1.78) | 38.0 | 38.1 | 8.5 | 7.2 | 33.6 | 31.9 | .92 | 14.7 |
| 104 | LbP..... | 13.4 | 25.9 | 25.0 | (2.42) | 38.7 | 43.8 | 17.8 | 8.5 | 17.6 | 40.9 | (1.02) | 21.0 |
| 105 | LK..... | 11.6 | 27.5 | 16.2 | (2.22) | 48.8 | 37.2 | 14.8 | 9.3 | 65.6 | 29.1 | (.81) | 16.8 |
| 106 | LrBp..... | 9.3 | 25.0 | 32.7 | (2.30) | 32.3 | 46.6 | 19.8 | 8.2 | 30.0 | 35.9 | 2.42 | 29.7 |
| 107 | LrK..... | 6.8 | 23.8 | 20.2 | (2.34) | 43.6 | 43.8 | 16.5 | 7.8 | 67.6 | 29.1 | 3.92 | 21.0 |
| 108 | LbPK..... | 12.4 | 30.0 | 27.5 | (2.86) | 48.9 | 50.0 | 20.8 | 9.5 | 73.2 | 35.3 | (1.34) | 30.2 |
| 109 | LrBpK..... | 10.4 | 29.1 | 33.3 | (2.83) | 46.3 | 46.6 | 19.7 | 7.8 | 73.2 | 38.8 | 3.00 | 30.2 |
| 110 | LbPK..... | 2.0 | 25.6 | 27.3 | (2.59) | 39.9 | 36.9 | 10.0 | 6.3 | 66.8 | 26.6 | 1.67 | 10.7 |
| Land Tile-drained | | | | | | | | | | | | | |
| 111 | 0..... | 1.4 | 17.2 | 3.3 | (1.29) | 32.5 | 13.1 | 4.3 | 3.3 | 27.4 | 12.2 | (.40) | 6.7 |
| 112 | L..... | 3.3 | 17.2 | 11.5 | (1.72) | 33.6 | 23.8 | 11.0 | 6.2 | 29.0 | 19.4 | (.66) | 16.5 |
| 113 | Lr..... | 2.7 | 20.6 | 9.2 | (1.79) | 31.7 | 30.0 | 14.5 | 6.7 | 36.6 | 27.2 | 1.83 | 21.5 |
| 114 | LbP..... | 6.5 | 27.5 | 28.3 | (2.27) | 29.7 | 31.9 | 19.2 | 7.2 | 22.2 | 30.9 | (.71) | 22.8 |
| 115 | LK..... | 4.9 | 27.2 | 14.7 | (2.16) | 47.5 | 46.3 | 16.2 | 7.8 | 64.2 | 26.6 | (.85) | 21.8 |
| 116 | LrBp..... | 8.0 | 33.8 | 31.2 | (2.44) | 30.5 | 45.9 | 19.5 | 8.8 | 39.4 | 35.6 | 2.50 | 37.2 |
| 117 | LrK..... | 7.3 | 27.2 | 23.3 | (2.52) | 49.3 | 39.1 | 18.5 | 10.2 | 74.6 | 32.2 | 2.75 | 28.8 |
| 118 | LbPK..... | 14.1 | 25.6 | 32.2 | (2.95) | 55.2 | 44.4 | 23.0 | 10.3 | 76.4 | 33.4 | (1.31) | 30.8 |
| 119 | LrBpK..... | 10.4 | 31.9 | 30.5 | (2.89) | 51.6 | 42.2 | 21.3 | 11.3 | 75.8 | 38.8 | 2.33 | 29.5 |
| 120 | LbPK..... | 4.8 | 33.1 | 28.2 | (2.79) | 50.7 | 35.3 | 12.0 | 6.7 | 65.4 | 28.1 | 1.83 | 24.0 |

¹Commercial nitrogen used in place of residues until 1906.

TABLE 23.—*Concluded*
(1914-1923)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|-----------------------|------------------------|----------------------------|--------------|----------------|---------------|--------------|--------------|----------------|---------------|--------------|---------------|
| | | 1914 Corn | 1915 Oats | 1916 Clover | 1917 Wheat | 1918 Corn | 1919 Oats | 1920 Clover | 1921 Wheat | 1922 Corn | 1923 Wheat |
| Land Not Tile-drained | | | | | | | | | | | |
| 101 | 0..... | 1.0 | 18.8 | (.62) | 4.0 | .4 | 9.7 | (0.00) | 6.7 | 1.0 | 6.7 |
| 102 | L..... | 1.4 | 35.3 | (.47) | 18.0 | 1.2 | 10.6 | (0.00) | 9.8 | 7.0 | 7.5 |
| 103 | RL..... | 3.0 | 46.2 | .67 | 24.3 | 4.0 | 19.7 | (0.00) | 13.8 | 21.0 | 9.3 |
| 104 | LbP..... | 2.6 | 52.5 | (.72) | 34.2 | 1.2 | 13.1 | (0.00) | 13.5 | 29.0 | 12.7 |
| 105 | LK..... | 1.4 | 46.2 | (.54) | 29.3 | 1.6 | 13.8 | (0.00) | 13.3 | 26.4 | 10.0 |
| 106 | LRbP..... | .6 | 47.8 | 1.33 | 40.0 | 2.2 | 13.8 | (.03) | 24.2 | 30.4 | 12.5 |
| 107 | LRK..... | .6 | 50.3 | .83 | 31.8 | 2.2 | 17.5 | (1.14) | 20.2 | 30.6 | 8.3 |
| 108 | LbPK..... | 1.0 | 54.7 | (1.21) | 45.2 | 2.2 | 17.8 | (1.28) | 28.3 | 37.0 | 15.7 |
| 109 | LRbPK..... | 1.0 | 50.0 | 1.17 | 44.0 | 3.8 | 9.7 | (1.60) | 25.8 | 38.2 | 9.2 |
| 110 | RbPK..... | .6 | 33.8 | 2.50 | 34.2 | 1.0 | 9.7 | (1.40) | 21.8 | 22.4 | 9.3 |
| Land Tile-drained | | | | | | | | | | | |
| 111 | 0..... | .6 | 18.8 | (.48) | 11.5 | .6 | 10.3 | (0.00) | 6.7 | 7.6 | 5.3 |
| 112 | L..... | 1.8 | 37.2 | (.68) | 24.5 | 1.6 | 15.0 | (.02) | 13.3 | 13.2 | 4.5 |
| 113 | RL..... | 3.2 | 46.6 | .83 | 29.7 | 3.4 | 15.6 | (.87) | 18.3 | 21.0 | 4.0 |
| 114 | LbP..... | 1.6 | 54.1 | (.86) | 35.8 | 1.6 | 17.8 | (.71) | 19.7 | 18.4 | 7.3 |
| 115 | LK..... | 1.6 | 48.8 | (.63) | 17.0 | 2.0 | 20.0 | (1.29) | 20.0 | 31.0 | 7.0 |
| 116 | LRbP..... | 1.2 | 62.8 | 2.33 | 44.7 | 3.2 | 12.5 | (1.77) | 25.3 | 27.4 | 4.2 |
| 117 | LRK..... | 2.2 | 50.3 | 1.33 | 38.8 | 5.6 | 13.1 | (1.86) | 20.3 | 40.4 | 10.2 |
| 118 | LbPK..... | 2.2 | 55.3 | (1.22) | 42.2 | 5.0 | 15.3 | (2.04) | 30.5 | 41.4 | 21.3 |
| 119 | LRbPK..... | 4.2 | 37.8 | 1.83 | 44.7 | 6.0 | 15.0 | (2.44) | 21.5 | 36.6 | 20.7 |
| 120 | RbPK..... | 1.8 | 45.6 | 2.67 | 18.3 | 2.4 | 9.1 | (2.02) | 21.8 | 5.4 | 8.7 |

EDGEWOOD FIELD, EFFINGHAM COUNTY

ESTABLISHED 1896—DISCONTINUED 1911

Location.—About one mile northwest of Edgewood on the farm of Mr. Samuel Bartley. A part of the S. $\frac{1}{2}$ of the S.E. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 30, Twp. 6 N., R. 5 E. of the 3d P. M.

Description.—Definite information is not available in connection with certain details of this field. It is probable, however, that the field contained about 16 acres of light-colored upland soil of strong acidity. The predominating soil type was probably Gray Silt Loam On Tight Clay. The land was considered as being low and wet. A portion of it was tile-drained. One part of the field, known as the West field, contained two series of 7 tenth-acre plots. Another part known as the East field contained one series of 10 tenth-acre plots. Another part known as the North field contained five series of 10 tenth-acre plots each.

History.—The Edgewood experiment field was leased from Mr. Samuel Bartley. Before it was used for experimental purposes it had been cropped for about forty years with the crops common to that section. There is little definite information in regard to its previous history. That part of the field known as the West field was first laid out in plots in 1896. The plots in this series were irregular in size and without borders. Little treatment was given them. The principal experiments on them appeared to be on the value of green manures, subsoiling, and tile drainage. Some sodium nitrate was used. No definite rotation was followed. In 1902 this land was replotted into Series 100 and 200. The East field was plotted and tile-drained in 1902, and the North field was laid out in 1903. Series 500 and 600 were replotted over two older series that had been treated with bone meal, potash, nitrate of soda, and lime, alone and in various combinations.

Cropping and Soil Treatment.—On Series 100 and 200 a rotation of corn, oats, and legumes was practiced. Manure was applied at the rate of 12 tons an acre for corn. The first application was not made until 1904. Phosphorus in the form of steamed bone meal was applied at the annual rate of 200 pounds an acre, and potassium in the form of potassium sulfate at the annual rate of 100 pounds an acre. Limestone was applied in 1903 at the rate of 10 tons an acre. No further applications of limestone were made.

Series 300 was planned for what was called a complete fertility test. The rotation practiced was corn, oats, and clover. Nitrogen was supplied in the form of dried blood at the approximate rate of 700 pounds an acre until 1905, when clover and crop residues were substituted. Phosphorus and potassium were applied as on Series 100 and 200. In 1903, 10 tons of limestone was applied to the south halves and 5 tons of water-slaked lime to the north halves. No further applications of lime were made to this series.

The North field was composed of the five series, 500, 600, 700, 800, and 900. All series were cropped alike each year and grew corn, oats, and clover in successive years. The object of the work on these series was to compare results obtained from rock phosphate and steamed bone meal in various amounts with and without limestone. On all series Plots 2, 4, 6, and 8 received bone meal at the rate of 200, 500, 1,000, and 2,000 pounds an acre respectively. In a similar manner Plots 3, 5, 7, and 9 received rock phosphate at the rate of 1,000, 2,500, 5,000, and 10,000 pounds an acre respectively. No additional materials were applied to Series 500 and 900. All plots of Series 600 received air-slaked lime at the rate of 2,000 pounds an acre; all plots of Series 700 in a similar manner received 4,000 pounds; and all plots of Series 800 received 8,000 pounds. All the above applications were made in 1903. No further applications were made to any of these plots.

TABLE 24.—EDGEWOOD FIELD: SERIES 100, 200

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|-----------------------|------------------------|----------------------------|-----------|-----------|-------------|-----------|-----------|-------------|------------------------------|-----------|--------------|
| | | 1903 Oats ² | 1904 Corn | 1905 Oats | 1906 Clover | 1907 Corn | 1908 Oats | 1909 Clover | 1909 Cowpea hay ³ | 1910 Corn | 1911 Oat hay |
| Land Not Tile-drained | | | | | | | | | | | |
| 101 | MbP..... | 12.5 | 60.4 | 30.3 | (.62) | 54.0 | 10.0 | (.34) | (1.80) | 70.6 | (0.00) |
| 102 | M..... | 10.9 | 52.0 | 20.3 | (.41) | 50.8 | 12.2 | (.26) | (.70) | 51.8 | (0.00) |
| 103 | 0..... | 12.2 | 29.0 | 13.4 | (.08) | 36.8 | 9.4 | (.04) | (.29) | 26.0 | (0.00) |
| 104 | LeL..... | 11.3 | 40.9 | 18.4 | (.44) | 46.3 | 19.1 | (.06) | ..... | 34.6 | (.14) |
| 105 | LeLbP..... | 21.2 | 43.0 | 19.4 | (.44) | 52.8 | 22.8 | (.12) | ..... | 39.0 | (.31) |
| 106 | LeLbPK..... | 21.0 | 52.5 | 17.8 | (1.06) | 62.5 | 13.8 | (.27) | ..... | 64.0 | (.34) |
| 107 | LbPK..... | 20.6 | 52.6 | 22.2 | (1.33) | 38.9 | 10.9 | (.40) | (1.07) | 66.0 | (.35) |
| Land Tile-drained | | | | | | | | | | | |
| 201 | MbP..... | 6.6 | 59.6 | 24.7 | (.39) | 58.3 | 16.9 | (.10) | (.71) | 63.0 | (.27) |
| 202 | M..... | 9.4 | 58.0 | 29.4 | (.33) | 51.4 | 11.6 | (.04) | (.38) | 44.8 | (0.00) |
| 203 | 0..... | 7.2 | 27.8 | 22.8 | (.16) | 30.0 | 9.1 | (.03) | (.21) | 18.0 | (0.00) |
| 204 | LeL..... | 16.2 | 44.4 | 43.7 | (.66) | 48.6 | 20.0 | (.09) | (0.00) | 27.2 | (.21) |
| 205 | LeLbP..... | 35.2 | 59.2 | 41.2 | (.98) | 55.5 | 14.7 | (.45) | (0.00) | 38.8 | (.22) |
| 206 | LeLbPK..... | 37.5 | 62.1 | 38.8 | (1.64) | 69.5 | 15.9 | (.99) | (0.00) | 75.6 | (.16) |
| 207 | LbPK..... | 35.0 | 61.3 | 26.9 | (1.59) | 69.5 | 17.5 | (1.00) | (1.27) | 68.6 | (.27) |

¹Phosphorus and potassium only. ²No manure. ³Cowpeas seeded after first crop of clover was removed; cowpeas plowed down on legume plots.

TABLE 25.—EDGEWOOD FIELD: SPECIAL FERTILITY TEST, SERIES 300

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|----------------------------|-------------|-----------|-----------|-------------|-----------|-----------|-------------|-----------|------|
| | | 1903 Oats | 1904 Clover | 1905 Corn | 1906 Oats | 1907 Clover | 1908 Corn | 1909 Oats | 1910 Clover | 1911 Corn | |
| 301 | 0..... | 33.9 | (1.74) | 75.5 | 53.9 | (1.84) | 27.1 | 43.0 | (1.67) | .92 | 33.2 |
| 302 | L..... | 40.6 | (1.95) | 81.7 | 70.8 | (1.98) | 22.4 | 43.9 | (2.44) | 1.17 | 28.8 |
| 303 | LN..... | 39.1 | (1.85) | 81.5 | 71.2 | (1.87) | 24.4 | 41.9 | (2.53) | 1.42 | 33.5 |
| 304 | LbP..... | 42.8 | (1.97) | 77.4 | 69.7 | (1.88) | 28.0 | 48.6 | (2.60) | 1.50 | 28.5 |
| 305 | LK..... | 38.3 | (1.79) | 85.8 | 69.1 | (2.04) | 37.8 | 48.9 | (2.60) | 1.83 | 40.2 |
| 306 | LNbP..... | 41.1 | (2.64) | 80.5 | 70.9 | (1.80) | 31.0 | 48.3 | (2.94) | 1.50 | 29.4 |
| 307 | LNK..... | 37.2 | (2.39) | 85.8 | 71.1 | (1.97) | 42.2 | 52.8 | (2.94) | 1.83 | 36.6 |
| 308 | LbPK..... | 48.1 | (2.61) | 83.6 | 73.1 | (2.03) | 41.9 | 48.0 | (2.94) | 1.58 | 35.5 |
| 309 | LNbPK..... | 46.7 | (2.71) | 88.9 | 74.4 | (1.90) | 41.6 | 46.4 | (2.94) | 1.92 | 34.5 |
| 310 | NbPK..... | 49.1 | (2.14) | 82.7 | 55.8 | (1.80) | 39.4 | 51.6 | (2.94) | 1.25 | 38.5 |

¹No lime.

TABLE 26.—EDGEWOOD FIELD: COMPARATIVE PHOSPHATE TEST, SERIES 500-900

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|-----------------------------|--------------|---------------------------|-----------------------------|--------------|---------------------------|-----------------------------|-------|
| | | 1903 Corn ¹ | 1904 Oats ² | 1905 Clover ³ | 1906 Corn | 1907 Oats ⁴ | 1908 Clover ⁵ | 1909 Corn | 1910 Oats ⁴ | 1911 Clover ⁵ | |
| 501 | Le..... | 43.6 | 21.7 | ..... | 28.0 | ..... | ..... | 43.6 | ..... | ..... | ..... |
| 502 | LebP(20)..... | 46.8 | 26.2 | ..... | 23.5 | ..... | ..... | 28.8 | ..... | ..... | ..... |
| 503 | LeP(100)..... | 42.0 | 26.4 | ..... | 22.1 | ..... | ..... | 27.6 | ..... | ..... | ..... |
| 504 | LebP(50)..... | 38.9 | 23.6 | ..... | 16.5 | ..... | ..... | 22.4 | ..... | ..... | ..... |
| 505 | LeP(250)..... | 29.1 | 23.4 | ..... | 20.1 | ..... | ..... | 23.8 | ..... | ..... | ..... |
| 506 | LebP(100)..... | 43.0 | 28.5 | ..... | 25.9 | ..... | ..... | 28.0 | ..... | ..... | ..... |
| 507 | LeP(500)..... | 35.9 | 27.5 | ..... | 28.3 | ..... | ..... | 33.0 | ..... | ..... | ..... |
| 508 | LebP(200)..... | 42.6 | 33.4 | ..... | 30.3 | ..... | ..... | 38.4 | ..... | ..... | ..... |
| 509 | LeP(1000)..... | 41.8 | 28.7 | ..... | 30.6 | ..... | ..... | 37.0 | ..... | ..... | ..... |
| 510 | Le..... | 48.5 | 27.0 | ..... | 28.3 | ..... | ..... | 37.2 | ..... | ..... | ..... |
| 601 | Le..... | 40.3 | 21.7 | (2.29) | 19.8 | 15.7 | (1.13) | 39.4 | 24.9 | (.27) | (.27) |
| 602 | LebP(20)..... | 53.2 | 26.2 | (2.75) | 20.8 | 16.0 | (1.36) | 37.2 | 41.4 | (.24) | (.24) |
| 603 | LeP(100)..... | 39.6 | 26.4 | (1.68) | 8.6 | 15.1 | (.99) | 21.8 | 33.2 | (.12) | (.12) |
| 604 | LebP(50)..... | 32.5 | 23.6 | (1.65) | 11.5 | 17.2 | (1.10) | 20.2 | 33.0 | (.13) | (.13) |
| 605 | LeP(250)..... | 26.5 | 23.4 | (2.12) | 15.3 | 17.5 | (1.11) | 23.2 | 36.8 | (.22) | (.22) |
| 606 | LebP(100)..... | 40.1 | 28.5 | (2.57) | 22.6 | 15.1 | (1.54) | 35.0 | 43.9 | (.29) | (.29) |
| 607 | LeP(500)..... | 25.8 | 27.5 | (2.53) | 25.1 | 16.1 | (1.47) | 25.4 | 45.8 | (.18) | (.18) |
| 608 | LebP(200)..... | 31.9 | 33.4 | (2.70) | 23.1 | 15.2 | (1.41) | 32.8 | 48.3 | (.20) | (.20) |
| 609 | LeP(1000)..... | 42.0 | 28.7 | (2.83) | 25.8 | 18.1 | (1.25) | 40.4 | 41.5 | (.20) | (.20) |
| 610 | Le..... | 44.0 | 27.0 | (1.50) | 29.9 | 16.2 | (1.10) | 48.0 | 22.9 | (.28) | (.28) |
| 701 | Le..... | 30.8 | 21.7 | (1.92) | 14.4 | 15.7 | (.91) | 34.2 | 24.9 | (.15) | (.15) |
| 702 | LebP(20)..... | 23.3 | 26.2 | (1.92) | 16.4 | 16.0 | (1.09) | 30.0 | 41.4 | (.24) | (.24) |
| 703 | LeP(100)..... | 22.4 | 26.4 | (1.87) | 14.8 | 15.1 | (1.08) | 32.8 | 34.2 | (.27) | (.27) |
| 704 | LebP(50)..... | 19.8 | 23.6 | (1.78) | 15.3 | 17.2 | (1.24) | 27.4 | 33.0 | (.18) | (.18) |
| 705 | LeP(250)..... | 21.9 | 23.4 | (1.85) | 17.3 | 17.5 | (1.20) | 24.0 | 36.8 | (.14) | (.14) |
| 706 | LebP(100)..... | 25.0 | 28.5 | (2.08) | 21.5 | 15.1 | (1.23) | 27.8 | 43.9 | (.24) | (.24) |
| 707 | LeP(500)..... | 27.4 | 27.5 | (2.45) | 25.3 | 16.1 | (1.36) | 31.6 | 45.8 | (.10) | (.10) |
| 708 | LebP(200)..... | 31.5 | 33.4 | (2.72) | 22.3 | 15.2 | (1.31) | 32.8 | 48.3 | (.20) | (.20) |
| 709 | LeP(1000)..... | 31.4 | 28.7 | (2.88) | 27.1 | 18.1 | (1.17) | 40.6 | 41.5 | (.37) | (.37) |
| 710 | Le..... | 37.2 | 27.0 | (1.78) | 22.1 | 16.2 | (1.01) | 39.4 | 22.9 | (.33) | (.33) |

¹No legume treatment. ²Harvested across all series. ³Series 500 harvested as a unit; yield 2.17 tons per acre. ⁴The plot yields given for Series 600, 700, and 800 in 1907 and 1910 represent the averages of the corresponding plots of these three series. No individual plot yields were taken on Series 500 in 1907 and 1910. ⁵Clover crop failed on Series 500 in 1908 and 1911.

TABLE 26.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|----------------------------|-------------|-----------|------------------------|-------------|-----------|------------------------|-------------|--|--|
| | | 1904 Oats ¹ | 1905 Clover | 1906 Corn | 1907 Oats ² | 1908 Clover | 1909 Corn | 1910 Oats ³ | 1911 Clover | | |
| 801 | Lc..... | 21.7 | (1.88) | 31.4 | 15.7 | (1.22) | 38.4 | 24.9 | (.24) | | |
| 802 | LepP(20)..... | 26.2 | (2.10) | 24.9 | 16.0 | (1.23) | 31.4 | 41.4 | (.23) | | |
| 803 | LepP(100)..... | 26.4 | (1.92) | 19.0 | 15.1 | (1.15) | 23.4 | 34.2 | (.23) | | |
| 804 | LepP(50)..... | 23.6 | (1.80) | 22.0 | 17.2 | (1.18) | 30.6 | 33.0 | (.25) | | |
| 805 | LepP(250)..... | 23.4 | (2.02) | 27.1 | 17.5 | (1.39) | 37.6 | 36.8 | (.25) | | |
| 806 | LepP(100)..... | 28.5 | (2.19) | 28.9 | 15.1 | (1.22) | 32.4 | 43.9 | (.34) | | |
| 807 | LepP(500)..... | 27.5 | (2.50) | 35.1 | 16.1 | (1.37) | 31.8 | 45.8 | (.25) | | |
| 808 | LepP(200)..... | 33.4 | (2.56) | 32.3 | 15.2 | (1.31) | 37.8 | 48.3 | (.21) | | |
| 809 | LepP(1000)..... | 28.7 | (3.12) | 35.9 | 18.1 | (1.40) | 44.6 | 41.5 | (.31) | | |
| 810 | Lc..... | 27.0 | (2.13) | 38.9 | 16.2 | (1.48) | 39.0 | 22.9 | (.33) | | |
| 901 | Lc..... | 21.7 | (.98) | 26.9 | .... | (.19) | 39.4 | 28.4 | (.00) | | |
| 902 | LepP(20)..... | 26.2 | (1.05) | 27.1 | .... | (.14) | 20.2 | 20.3 | (.00) | | |
| 903 | LepP(100)..... | 26.4 | (1.12) | 22.9 | .... | (.26) | 20.8 | 28.4 | (.00) | | |
| 904 | LepP(50)..... | 23.6 | (1.35) | 26.5 | .... | (.37) | 21.0 | 19.4 | (.04) | | |
| 905 | LepP(250)..... | 23.4 | (1.68) | 32.1 | .... | (.41) | 20.2 | 24.1 | (.17) | | |
| 906 | LepP(100)..... | 28.5 | (1.81) | 37.6 | .... | (.29) | 7.8 | 32.5 | (.32) | | |
| 907 | LepP(500)..... | 27.5 | (1.80) | 43.4 | .... | (.14) | 6.8 | 32.5 | (.40) | | |
| 908 | LepP(200)..... | 33.4 | (1.85) | 36.6 | .... | (.47) | 16.0 | 35.3 | (.35) | | |
| 909 | LepP(1000)..... | 28.7 | (2.15) | 40.0 | .... | (.69) | 17.0 | 40.0 | (.23) | | |
| 910 | Lc..... | 27.0 | (1.37) | 40.9 | .... | (.24) | 18.0 | 31.3 | (.09) | | |

¹No legume treatment. ²Harvested across all series. ³The plot yields given for Series 600, 700, and 800 in 1907 and 1910 represent the averages of the corresponding plots of these three series. No individual plot yields were taken on Series 900 in 1907.

ELIZABETHTOWN FIELD, HARDIN COUNTY
ESTABLISHED 1917

Location.—About two miles north of Elizabethtown. The west part of the E. $\frac{1}{2}$ of the S.E. $\frac{1}{4}$, Sec. 14, Twp. 12 S., R. 8 E. of the 3d P. M.

Description.—The field consists of 32.58 acres of light-colored loessial upland soils of strong acidity. Three soil types have been mapped on this field: (1) Yellow Silt Loam; (2) Yellow-Gray Silt Loam; and (3) a small area of Stony Loam. The land is very rough and hilly and is subject to erosion. No tiling has been done. The field is divided into four series of 10 fifth-acre plots each, one series of 10 tenth-acre plots, and three minor plots known as A, B, C divided into 2 tenth-acre plots each.

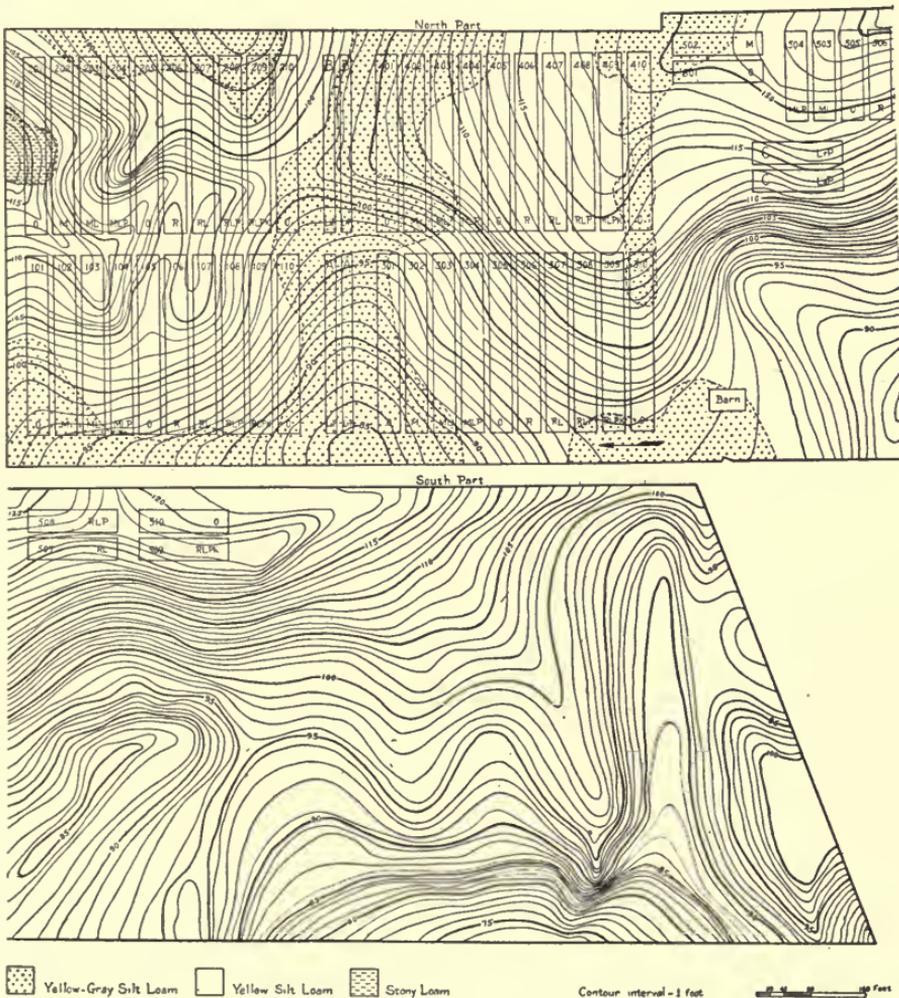
History.—The Elizabethtown experiment field was a direct gift by deed from Mr. R. A. Ledbetter to the University for experimental purposes. In 1915 the land occupied by Series 100, 200, 300, and 400 was in corn. The next year the stalks were disked down and clover seeded. In 1917 when the plots were laid out there was a fair stand of clover on this area. There is no information available in regard to the previous history of the rest of the land on this field. It is quite probable that much of it was not cultivated on account of the extremely rough topography.

Cropping and Soil Treatment.—The rotation established on Series 100, 200, 300, and 400 was corn (rye cover crop), soybeans, wheat, and sweet clover. This rotation was changed in 1923 to corn, wheat, timothy-clover mixture, and wheat with sweet clover seeding on the residue plots in order to prevent erosion as much as possible. The treatments applied to the various plots have been similar to the somewhat uniform treatments described in the introduction. In 1923 the application of limestone was discontinued until the need for it should become apparent.

Series 500 has received soil treatment similar to that received by the first four series. This series, however, has been used for alfalfa. To date, alfalfa has not been successful on this land. It has been reseeded several times and for two years cowpeas and wheat were substituted.

Plots A, B, and C have been cropped chiefly with a rotation of corn, cowpeas, and wheat, in which rye has been seeded in the corn as a cover crop and sweet clover in the wheat for use as a green manure. The rye cover crop was discontinued in 1923. One application of limestone at the rate of 4 tons an acre has been applied to these plots. In the fall of 1918 rock phosphate was applied to both halves of Plot B at the rate of 2,000 pounds an acre. The north half of Plots A and B and

the west half of Plot C have received 200 pounds an acre of acid phosphate applied ahead of each crop, the south half of Plots A and B and the east half of Plot C have received rock phosphate at the rate of 400 pounds an acre annually, applied once in the rotation, ahead of the corn crop.



SOIL MAP OF ELIZABETHTOWN FIELD

TABLE 27.—ELIZABETHTOWN FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | |
|----------|------------------------|----------------------------|-------------------------------|---------------------------|------------------|---------------|-----------------|--------------|
| | | 1918 Wheat ¹ | 1919 Clover ^{2,3} | 1920 Corn | 1921 Soybeans | 1922 Wheat | 1923 Wheat | 1924 Corn |
| 101 | 0..... | 6.2 | ..... | 30.1 | 2.2 | 6.5 | 3.9 | 14.2 |
| 102 | M..... | 5.3 | ..... | 29.7 | 1.6 | 5.7 | 3.1 | 13.9 |
| 103 | ML..... | 4.8 | ..... | 45.4 | 3.0 | 9.8 | 10.0 | 18.5 |
| 104 | MLrP..... | 5.6 | ..... | 60.7 | 3.2 | 12.6 | 18.3 | 33.8 |
| 105 | 0..... | 4.2 | ..... | 29.0 | .8 | 9.9 | 2.2 | 2.5 |
| 106 | R..... | 3.6 | ..... | 18.5 | .7 | 9.8 | 1.8 | 2.3 |
| 107 | RL..... | 6.9 | ..... | 48.0 | 1.4 | 6.7 | 11.4 | 19.3 |
| 108 | RLrP..... | 7.1 | ..... | 60.2 | 1.3 | 7.2 | 19.6 | 45.3 |
| 109 | RLrPK..... | 9.2 | ..... | 55.9 | 1.0 | 10.0 | 17.9 | 45.0 |
| 110 | 0..... | 8.4 | ..... | 35.3 | .7 | 6.8 | 5.5 | 17.5 |
| | | | | Sweet clover ³ | Corn | Soybeans | Timothy mixture | Wheat |
| 201 | 0..... | (.18) | 8.8 | 0.00 | 1.6 | 1.9 | (0.00) | 0.0 |
| 202 | M..... | (.15) | 10.0 | 0.00 | 2.5 | 2.8 | (0.00) | 0.3 |
| 203 | ML..... | (.23) | 11.1 | .85 | 5.5 | 5.6 | (.43) | 5.7 |
| 204 | MLrP..... | (.32) | 11.2 | 4.23 | 17.3 | 7.3 | (.87) | 11.7 |
| 205 | 0..... | 1.6 | 10.0 | 0.00 | 5.4 | 2.8 | (0.00) | .8 |
| 206 | R..... | 1.8 | 11.2 | 0.00 | 10.0 | 3.7 | (0.00) | 2.3 |
| 207 | RL..... | 3.9 | 16.2 | 2.98 | 32.9 | 7.3 | (1.08) | 12.6 |
| 208 | RLrP..... | 5.8 | 19.3 | 4.52 | 36.2 | 8.6 | (1.66) | 21.8 |
| 209 | RLrPK..... | 6.2 | 21.8 | 4.89 | 41.2 | 7.8 | (1.82) | 21.2 |
| 210 | 0..... | (.75) | 17.1 | 0.00 | 30.1 | 3.8 | (0.00) | 8.0 |

¹No residues or manure. ²Crop failure. ³No manure.

TABLE 27.—Concluded

| Plot No. | Soil treatment applied | 1918 | | | 1919 | | 1920 | | 1921 | | 1922 | | 1923 | | 1924 | |
|----------|------------------------|-------------------|-----------------------|-------------------|-----------------------|-------------------|--------------|------|-------|-------|--------|-------|-----------------|--|------|--|
| | | Corn ¹ | Soybeans ² | Oats ³ | Soybeans ² | Oats ³ | Sweet clover | Corn | Wheat | Wheat | Corn | Wheat | Timothy mixture | | | |
| 301 | 0..... | 5.2 | (.58) | 26.7 | 0.00 | 26.0 | 5.3 | 0.00 | 26.0 | 5.3 | (0.00) | 0.00 | | | | |
| 302 | M..... | 5.3 | (.44) | 17.2 | 0.00 | 13.9 | 3.5 | 0.00 | 13.9 | 3.5 | (0.00) | 0.00 | | | | |
| 303 | ML..... | 9.1 | (.78) | 28.0 | 4.58 | 44.3 | 10.8 | 4.58 | 44.3 | 10.8 | (1.37) | 4.58 | | | | |
| 304 | MLrP..... | 11.3 | (.51) | 26.2 | 2.58 | 49.6 | 8.3 | 2.58 | 49.6 | 8.3 | (2.03) | 2.58 | | | | |
| 305 | 0..... | 2.0 | 1.2 | 16.2 | 0.00 | 4.5 | 1.1 | 0.00 | 4.5 | 1.1 | (0.00) | 0.00 | | | | |
| 306 | R..... | 1.8 | 1.7 | 21.2 | 0.00 | 4.0 | 1.0 | 0.00 | 4.0 | 1.0 | (0.00) | 0.00 | | | | |
| 307 | RL..... | 5.3 | 1.7 | 23.1 | 2.83 | 27.5 | 3.3 | 2.83 | 27.5 | 3.3 | (0.95) | 2.83 | | | | |
| 308 | RLrP..... | 6.8 | 2.2 | 24.7 | 2.58 | 34.1 | 3.9 | 2.58 | 34.1 | 3.9 | (1.73) | 2.58 | | | | |
| 309 | RLrPK..... | 8.5 | 2.7 | 20.6 | 2.08 | 33.5 | 4.8 | 2.08 | 33.5 | 4.8 | (2.05) | 2.08 | | | | |
| 310 | 0..... | 2.5 | (.50) | 19.4 | 0.00 | 10.0 | 3.4 | 0.00 | 10.0 | 3.4 | (0.00) | 0.00 | | | | |
| 401 | 0..... | (.53) | 30.8 | (.40) | 17.3 | 0.00 | 25.8 | 0.00 | 0.00 | 25.8 | 4.6 | 0.00 | | | | |
| 402 | M..... | (.50) | 32.2 | (.50) | 16.7 | 0.00 | 30.4 | 0.00 | 0.00 | 30.4 | 5.3 | 0.00 | | | | |
| 403 | ML..... | (.43) | 42.0 | (.41) | 19.0 | (.10) | 45.2 | .50 | .50 | 45.2 | 9.6 | .50 | | | | |
| 404 | MLrP..... | (.40) | 26.1 | (.51) | 19.0 | (.13) | 45.1 | .54 | .54 | 45.1 | 9.6 | .54 | | | | |
| 405 | 0..... | 2.2 | 22.5 | 3.2 | 14.8 | 0.00 | 23.2 | 0.00 | 0.00 | 23.2 | 3.7 | 0.00 | | | | |
| 406 | R..... | 2.9 | 27.5 | 3.2 | 10.4 | 0.00 | 31.7 | 0.00 | 0.00 | 31.7 | 4.7 | 0.00 | | | | |
| 407 | RL..... | 2.8 | 29.1 | 4.1 | 15.5 | (.11) | 34.0 | 1.04 | 1.04 | 34.0 | 6.5 | 1.04 | | | | |
| 408 | RLrP..... | 2.1 | 30.7 | 5.1 | 14.3 | (.19) | 41.2 | .71 | .71 | 41.2 | 6.4 | .71 | | | | |
| 409 | RLrPK..... | 2.5 | 26.0 | 4.9 | 17.1 | (.22) | 42.5 | .67 | .67 | 42.5 | 5.0 | .67 | | | | |
| 410 | 0..... | (.48) | 18.8 | (.45) | 8.9 | 0.00 | 23.2 | 0.00 | 0.00 | 23.2 | 5.3 | 0.00 | | | | |

¹No residues or manure. ²Crop failure. ³No manure.

TABLE 28.—ELIZABETHTOWN FIELD: ALFALFA SERIES, SERIES 500

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | |
|----------|------------------------|---|------------------------------|------------------------------|------------------------------|---------------|----------------------------|----------------------------|
| | | 1918 Alfalfa ¹ seeding | 1919 Alfalfa ¹ | 1920 Alfalfa ¹ | 1921 Cowpeas ¹ | 1922 Wheat | 1923 Alfalfa seeding | 1924 Alfalfa seeding |
| 501 | 0..... | ..... | (.46) | (.03) | 6.8 | 4.1 | ..... | ..... |
| 502 | M..... | ..... | (.52) | (.06) | 6.5 | 4.2 | ..... | ..... |
| 503 | ML..... | ..... | (1.61) | (1.15) | 6.3 | 4.7 | ..... | ..... |
| 504 | MLrP..... | ..... | (2.03) | (1.43) | 6.3 | 4.7 | ..... | ..... |
| 505 | 0..... | ..... | (.08) | (.01) | 3.9 | 3.1 | ..... | ..... |
| 506 | R..... | ..... | (.11) | (.03) | 3.8 | 3.3 | ..... | ..... |
| 507 | RL..... | ..... | (.57) | (.54) | 5.9 | 4.7 | ..... | ..... |
| 508 | RLrP..... | ..... | (.91) | (.40) | 6.2 | 5.7 | ..... | ..... |
| 509 | RLrPK..... | ..... | (2.16) | (1.40) | 5.8 | 7.6 | ..... | ..... |
| 510 | 0..... | ..... | (.13) | (0.00) | 5.4 | 3.1 | ..... | ..... |

¹No residues.

TABLE 29.—ELIZABETHTOWN FIELD: PLOTS A, B, C

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | |
|----------|------------------------|----------------------------|---------------------------|-------------------------------|----------------------------|--------------|-----------------|---------------|
| | | 1918 Corn ² | 1919 Corn ² | 1920 Soybeans ³ | 1921 Wheat ⁴ | 1922 Corn | 1923 Cowpeas | 1924 Wheat |
| A North | RaP..... | } 33.5 | } 26.4 | } 1.3 | { 18.5 | } 34.4 | } 10.5 | } 13.3 |
| A South | RrP..... |  |  |  |  |  |  |  | { 16.7 | } 32.0 | } 9.2 | } 8.8 |
| B North | RaP..... | ..... | 24.3 | 47.3 | { 28.8 | 12.5 | 18.6 | 54.6 |
| B South | RrP..... | ..... | ..... | ..... | { 28.6 | 11.7 | 14.3 | 59.2 |
| C West | RaP..... | } | } .4 | } 17.3 | { 9.2 | } 3.2 | } 32.2 | } (.78) |
| C East | RrP..... |  |  |  |  |  |  |  | { 7.8 | } 9.8 | } 46.8 | } (.80) |

²2000 pounds of rock phosphate per acre was applied to the entire plot in the fall of 1918. ³No treatment. ⁴Residues only. ⁵Lime and rock phosphate only. ⁶No lime.

ENFIELD FIELD, WHITE COUNTY

ESTABLISHED 1912

Location.—About one mile east of Enfield. A part of the E. $\frac{1}{2}$ of the S.E. $\frac{1}{4}$, Sec. 9, Twp. 5 S., R. 8 E. of the 3d P. M.

Description.—The field consists of 20 acres of light-colored, loessial upland soil of strong acidity. Four soil types have been mapped on the field: (1) Yellow-Gray Silt Loam On Medium Plastic Clay; (2) Gray Silt Loam On Orange Mottled Plastic Clay; (3) Light Gray Silt Loam On Tight Clay; and (4) Deep Gray Silt Loam. The field is somewhat rolling. Surface drainage is assisted by catch basins and tile to carry away the runoff. Some parts of the field are still in need of better drainage. The field is divided into four major series of 10 fifth-acre plots each, and two minor series divided into twentieth-acre half plots. In addition there are 2 four-fifth acre plots.

History.—The Enfield field was purchased by about six hundred citizens of White county and donated to the University for experimental purposes. In 1912 wheat was grown on approximately the north two-thirds of the field, while the remainder of the field was in redtop meadow. No further information in regard to the previous treatment of this field is available.

Cropping and Soil Treatment.—The somewhat standard rotation and soil treatment methods described in the introduction were established on Series 100, 200, 300, and 400. In addition cowpeas or soybeans were seeded in the corn at the last cultivation for use as residues on the residue plots. These methods were followed until 1920, when the use of the peas and beans was discontinued. In 1922 the use of limestone was discontinued until the need for it becomes apparent. The return of wheat straw was also discontinued at that time. In 1923 the phosphate applications were evened up to 4 tons an acre, and no more will be applied for an indefinite period.

Plots A and B have been used for a wheat, legume, alfalfa rotation. On one of them wheat and clover or soybeans are grown in rotation, while alfalfa is grown on the other for a period of six years, when the cropping is changed. Manure was applied to the whole plot at the rate of 5 tons an acre before the alfalfa was seeded. Rock phosphate at the annual rate of 500 pounds an acre was applied in the fall of 1912 and again in the fall of 1918. Kainit at the annual rate of 200 pounds an acre was applied with the phosphate. One application of limestone at the rate of 10 tons an acre was applied to the east three-quarters of these plots in 1913. No more will be applied until there appears to be need for it.

Series 700 and 800 were at first unplotted. Until 1922 these two series were cropped like Plots A and B except that timothy was used in place of alfalfa. No fertilizers were applied to this land previous to

that time. In 1922 this land was platted and a rotation of corn and wheat established. Since that time sweet clover has been seeded in the wheat on the west halves of Plots 2, 3, 4, 5, and 6, and red clover on the east halves of these plots. The clovers have been plowed down as a green manure for the corn. With this change in cropping a single application of the following materials was made: limestone at the rate of 2 tons an acre to all plots, rock phosphate at the rate of 2,000 pounds to Plots 2 and 3, and at the rate of 1,000 pounds to Plots 4 and 5; acid phosphate at the rate of 100 pounds an acre to Plot 2 and at the rate of 200 pounds an acre to Plot 4. It is planned to repeat the phosphate applications on Plots 2 and 3 every ten years, and on Plots 4 and 5 every five years. Limestone will be applied when it appears to be needed.

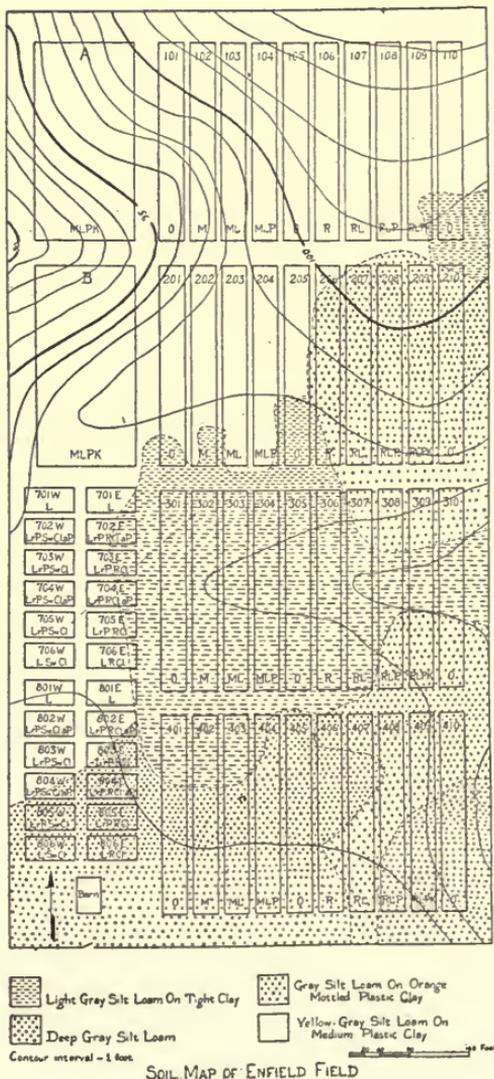


TABLE 30.—ENFIELD FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|-------------------------|--------------------|-----------|----------------|------------|-----------|-----------|-------------------|--------------|-----------|-----------|
| | | 1913 Cow-peas ¹ | 1914 Wheat ² | 1915 Corn | 1916 Oats | 1917 Soy-beans | 1918 Wheat | 1919 Corn | 1920 Oats | 1921 Sweet clover | 1922 Wheat | 1923 Corn | 1924 Oats |
| 101 | 0 | (.19) | 8.2 | 23.2 | 13.3 | (.99) | 4.7 | 3.1 | 10.3 | 0.00 | 3.7 | 22.0 | 13.1 |
| 102 | M | (.16) | 9.6 | 38.9 | 16.6 | (1.14) | 6.3 | 10.4 | 17.3 | 0.00 | 7.3 | 32.7 | 21.7 |
| 103 | ML | (.13) | 8.3 | 45.8 | 19.4 | (1.62) | 12.2 | 14.1 | 22.8 | .75 | 17.0 | 39.2 | 56.4 |
| 104 | MLrP | (.09) | 13.2 | 50.4 | 17.2 | (1.96) | 17.0 | 15.4 | 24.5 | .75 | 20.1 | 46.3 | 58.6 |
| 105 | 0 | (.10) | 7.0 | 28.8 | 9.1 | 5.0 | 8.0 | 3.2 | 10.5 | 0.00 | 6.1 | 22.1 | 10.6 |
| 106 | R | (.07) | 8.0 | 32.8 | 8.3 | 5.0 | 9.6 | 2.9 | 10.0 | 0.00 | 4.3 | 32.2 | 11.3 |
| 107 | RL | (.07) | 11.4 | 45.2 | 14.1 | 13.5 | 19.2 | 13.6 | 21.9 | .50 | 17.8 | 39.9 | 39.8 |
| 108 | RLrP | (.07) | 16.2 | 48.4 | 14.4 | 15.6 | 22.9 | 18.0 | 26.7 | .58 | 20.5 | 42.9 | 47.5 |
| 109 | RLrPK | (.02) | 18.6 | 44.8 | 18.3 | 15.0 | 23.9 | 29.3 | 28.0 | .67 | 20.8 | 56.0 | 53.6 |
| 110 | 0 | (.22) | 13.2 | 38.5 | 9.7 | (1.22) | 12.4 | 8.7 | 14.5 | 0.00 | 6.7 | 31.5 | 11.3 |
| | | Oats ¹ | Soy-beans ² | Wheat ³ | Corn | Oats | Clover | Wheat | Corn | Oats | Sweet clover | Wheat | Corn |
| 201 | 0 | 3.1 | (.57) | 10.1 | 26.6 | 20.0 | (.18) | 7.1 | 27.4 | 2.8 | 0.00 | 2.1 | 7.3 |
| 202 | M | 3.8 | (.60) | 12.8 | 37.1 | 27.5 | (.18) | 8.3 | 42.6 | 7.5 | 0.00 | 3.8 | 20.4 |
| 203 | ML | 4.2 | (.77) | 13.7 | 49.3 | 35.3 | (.71) | 20.5 | 54.9 | 22.2 | 1.67 | 7.3 | 39.1 |
| 204 | MLrP | 4.4 | (.86) | 23.6 | 53.6 | 37.5 | (1.03) | 24.3 | 52.4 | 24.8 | 1.33 | 8.9 | 49.4 |
| 205 | 0 | 2.3 | 4.8 | 7.8 | 30.3 | 22.0 | 0.00 | 9.1 | 33.4 | 4.8 | 0.00 | 2.8 | 8.2 |
| 206 | R | 3.0 | 4.8 | 13.8 | 35.2 | 20.0 | 0.00 | 10.2 | 34.5 | 7.7 | 0.00 | 2.8 | 16.7 |
| 207 | RL | 4.1 | 4.8 | 15.2 | 50.1 | 36.2 | .04 | 21.1 | 51.0 | 20.8 | 2.83 | 7.7 | 35.4 |
| 208 | RLrP | 3.8 | 4.9 | 21.1 | 52.5 | 40.3 | .17 | 25.8 | 51.2 | 20.8 | 1.67 | 10.8 | 44.6 |
| 209 | RLrPK | 5.0 | 4.8 | 22.0 | 54.8 | 44.4 | .02 | 25.3 | 53.7 | 22.2 | 1.92 | 13.7 | 37.2 |
| 210 | 0 | 7.8 | (.76) | 20.1 | 42.0 | 25.2 | (.31) | 11.4 | 43.5 | 10.8 | 0.00 | 5.7 | 21.4 |

¹No manure or residues. ²Growth plowed under. ³No manure.

TABLE 30.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|-----------|----------------------|------------|-----------|-----------|----------------|-----------|-----------|-----------|-------------------|--------------|
| | | 1913 Corn ¹ | 1914 Oats | 1915 Soy-beans | 1916 Wheat | 1917 Corn | 1918 Oats | 1919 Soy-beans | 1920 Oats | 1921 Corn | 1922 Oats | 1923 Sweet clover | 1924 Wheat |
| 301 | 0..... | 19.0 | 2.8 | (0.00) | .9 | 13.6 | 21.6 | (.55) | 6.4 | 17.3 | 3.4 | 0.00 | .5 |
| 302 | M..... | 19.6 | 3.0 | (.07) | 2.0 | 14.4 | 27.8 | (.52) | 6.2 | 22.4 | 2.5 | 0.00 | .8 |
| 303 | ML..... | 26.5 | 3.3 | (.19) | 8.4 | 44.2 | 30.6 | (1.71) | 24.4 | 38.6 | 5.6 | .88 | 23.1 |
| 304 | MLrP..... | 30.9 | 3.4 | (.09) | 11.0 | 46.8 | 36.9 | (1.93) | 29.5 | 39.9 | 7.2 | .29 | 26.9 |
| 305 | 0..... | 21.4 | 1.1 | ⁽⁴⁾ | 1.8 | 20.3 | 22.5 | 3.8 | 11.2 | 13.7 | 3.3 | 0.00 | 1.8 |
| 306 | R..... | 23.7 | 1.3 | ⁽⁴⁾ | 2.0 | 26.3 | 30.6 | 3.0 | 9.5 | 16.4 | 3.0 | 0.00 | 3.9 |
| 307 | RL..... | 29.3 | 1.6 | ⁽⁴⁾ | 5.7 | 69.8 | 51.1 | 14.1 | 27.2 | 43.5 | 6.1 | 1.40 | 21.8 |
| 308 | RLrP..... | 26.2 | 1.1 | ⁽⁴⁾ | 15.8 | 69.6 | 60.8 | 13.5 | 31.5 | 34.2 | 6.7 | .49 | 25.3 |
| 309 | RLrPK..... | 21.8 | 1.3 | ⁽⁴⁾ | 11.7 | 74.0 | 64.7 | 11.4 | 29.7 | 32.6 | 6.7 | .69 | 25.6 |
| 310 | 0..... | 17.3 | .8 | (0.00) | 3.4 | 36.9 | 29.7 | (.56) | 12.8 | 23.6 | 3.8 | 0.00 | 3.6 |
| | | | Corn | Oats | Clover | Wheat | Corn | Oats | Soy-beans | Wheat | Corn | Oats | Sweet clover |
| 401 | 0..... | 13.0 | 24.3 | 24.7 | (.52) | 8.3 | 19.0 | 7.8 | (.28) | 7.3 | 23.2 | 9.1 | 0.00 |
| 402 | M..... | 5.4 | 22.5 | 22.5 | (.35) | 6.2 | 21.0 | 6.6 | (.55) | 8.8 | 38.4 | 12.2 | 0.00 |
| 403 | ML..... | 6.5 | 32.6 | 33.3 | (1.66) | 28.2 | 28.3 | 19.4 | (.83) | 16.1 | 54.6 | 24.4 | 3.00 |
| 404 | MLrP..... | 5.7 | 32.4 | 30.9 | (1.43) | 23.2 | 28.0 | 16.1 | (.83) | 13.3 | 52.6 | 24.5 | 2.83 |
| 405 | 0..... | 3.7 | 19.3 | 20.3 | 0.00 | 4.2 | 14.6 | 9.1 | 4.3 | 6.2 | 27.5 | 10.3 | 0.00 |
| 406 | R..... | 7.1 | 11.1 | 24.4 | .33 | 8.2 | 19.0 | 10.0 | 5.2 | 7.1 | 30.6 | 13.9 | 0.00 |
| 407 | RL..... | 7.2 | 14.4 | 28.6 | 1.58 | 23.2 | 12.5 | 22.2 | 9.7 | 15.3 | 40.7 | 23.3 | 0.00 |
| 408 | RLrP..... | 9.8 | 14.7 | 33.4 | 1.75 | 32.1 | 13.5 | 26.1 | 10.5 | 16.8 | 51.2 | 25.5 | 2.25 |
| 409 | RLrPK..... | 14.8 | 20.5 | 36.4 | 1.42 | 31.3 | 24.8 | 26.1 | 9.8 | 17.3 | 53.3 | 25.8 | 3.25 |
| 410 | 0..... | 7.1 | 19.8 | 30.8 | (.49) | 5.0 | 17.7 | 15.2 | (.78) | 6.0 | 34.1 | 16.4 | 0.00 |

¹No residues. ²No manure. ³Growth plowed under in 1915.

TABLE 31.—ENFIELD FIELD: PLOTS A and B

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|-----------------|------------------|---|------------------|--------------------|---------------|---------------------|---------------|--------------------|---------------|---------------------------------------|
| | | 1913 Alfalfa | 1914 Alfalfa | 1915 Alfalfa | 1916 Alfalfa | 1917 Alfalfa | 1918 Alfalfa | 1919 Wheat | 1920 Clover | 1921 Wheat | 1922 Clover | 1923 Wheat | 1924 Clover varieties ² |
| A | MrPK | (.57) (0.00) | (.93) (0.00) | (2.53) (0.00) | (1.45) (0.00) | (1.83) (0.00) | (1.43) (0.00) | 16.2 | (3.06) | 24.8 | (1.29) | 3.3 | ..... |
| | MrPK | | | | | | | 18.1 | (1.45) ² | 17.6 | (.70) ² | 3.2 | ..... |
| | | Wheat Soybeans | | Wheat | Clover | Wheat | Clover | Alfalfa | Alfalfa | Alfalfa | Alfalfa | Alfalfa | Oat hay |
| B | MrPK | 8.5 | 5.4 | { 20.3 13.8 | { (1.12) ¹ (.48) ¹ | 24.1 | (1.11) | (0.00) | (1.06) | (1.12) | (1.89) | (1.86) | (1.50) |
| | MrPK | | | | | 5.7 | (.57) ² | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (1.42) |

¹Stubble clover 1915. ²Growth mostly weeds. ³Yields not taken.

TABLE 32.—ENFIELD FIELD: PLOTS C and D

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|----------|------------------------|----------------------------|-----------------|-----------------|-----------------|-----------------|--------------------|---------------|------------------|---------------|-----------------|---------|
| | | 1913 Timothy | 1914 Timothy | 1915 Timothy | 1916 Timothy | 1917 Timothy | 1918 Timothy | 1919 Wheat | 1920 Soybeans | 1921 Wheat | 1922 Timothy | |
| C | None | (.45) | (.40) | (.59) | (.68) | (.18) | (.49) | 6.1 | (.49) | 5.4 | | |
| | | Wheat Soybeans | | Wheat | Clover | Wheat | Clover | Timothy | Timothy | Timothy | Timothy | Timothy |
| D | None | 3.7 | 4.6 | 6.9 | (0.00) | 3.3 | (.46) ¹ | (.52) | (.58) | (0.00) | | |

¹Growth mostly weeds.

TABLE 33.—ENFIELD FIELD: SERIES 700, 800
(Plots C and D, Table 32, were subdivided in 1922 and continued
as Series 700 and 800)

| | | Bushels or (tons) per acre | | |
|----------|-----------------------------------|------------------------------|---------------------------|----------------------------|
| Plot No. | Soil treatment applied | 1922 Cowpeas ¹ | 1923 Corn ² | 1924 Wheat ² |
| 701W | L..... | (.50) | 39.6 | } 2.7 |
| 701E | L..... | (.33) | 44.0 | |
| 702W | LrP(2000)aP(100)Sweet clover..... | (.40) | 47.6 | } 7.5 |
| 702E | LrP(2000)aP(100)Red clover..... | (.38) | 40.0 | |
| 703W | LrP(2000)Sweet clover..... | (.38) | 44.4 | } 6.3 |
| 703E | LrP(2000)Red clover..... | (.42) | 42.8 | |
| 704W | LrP(1000)aP(200)Sweet clover..... | (.50) | 43.2 | } 6.5 |
| 704E | LrP(1000)aP(200)Red clover..... | (.57) | 42.0 | |
| 705W | LrP(1000)Sweet clover..... | (.45) | 44.0 | } 4.8 |
| 705E | LrP(1000)Red clover..... | (.52) | 43.6 | |
| 706W | L Sweet clover..... | (.40) | 26.4 | } 1.7 |
| 706E | L Red clover..... | (.61) | 28.4 | |
| | | Cowpeas ¹ | Wheat | Corn |
| 801W | L..... | (.31) | } 1.5 | { 12.4 |
| 801E | L..... | (.43) | | { 14.4 |
| 802W | LrP(2000)aP(100)Sweet clover..... | (.31) | } 3.3 | { 22.4 |
| 802E | LrP(2000)aP(100)Red clover..... | (.29) | | { 17.6 |
| 803W | LrP(2000)Sweet clover..... | (.31) | } 3.2 | { 16.0 |
| 803E | LrP(2000)Red clover..... | (.29) | | { 10.4 |
| 804W | LrP(1000)aP(200)Sweet clover..... | (.27) | } 3.2 | { 16.0 |
| 804E | LrP(1000)aP(200)Red clover..... | (.29) | | { 12.8 |
| 805W | LrP(1000)Sweet clover..... | (.21) | } 3.2 | { 10.0 |
| 805E | LrP(1000)Red clover..... | (.21) | | { 16.4 |
| 806W | L Sweet clover..... | (.23) | } 3.2 | { 12.4 |
| 806E | L Red clover..... | (.23) | | { 15.2 |

¹No soil treatment. ²No legume catch crop.

EWING FIELD, FRANKLIN COUNTY

ESTABLISHED 1910

Location.—About one mile northeast of Ewing. A part of the E. $\frac{1}{2}$ of the S.E. $\frac{1}{4}$ of the S.W. $\frac{1}{4}$, Sec. 11, Twp. 5 S., R. 3 E. of the 3d P. M.

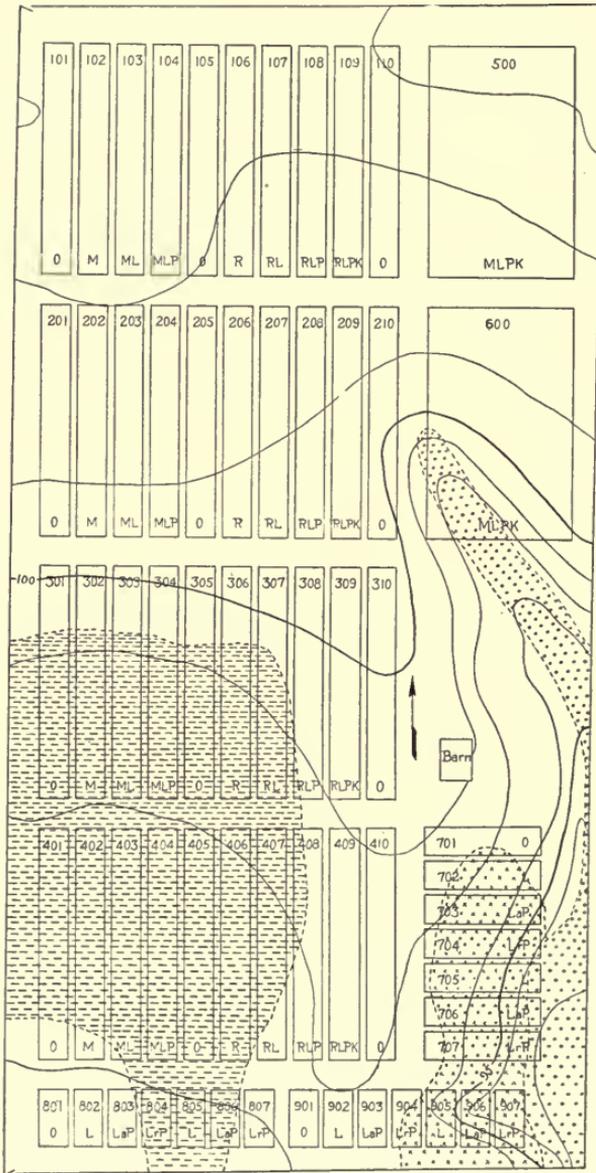
Description.—This field consists of 20 acres of light-colored, loessial upland soil of strong acidity. Four soil types have been mapped on this field: (1) Gray Silt Loam On Tight Clay; (2) Gray Silt Loam On Orange Mottled Tight Clay; (3) Deep Gray Silt Loam; (4) Yellow-Gray Silt Loam. The field is quite level except in the southeast corner, where it is somewhat rolling. The drainage is naturally poor. Only small surface ditches have been used in leading the surface water from the plots. The field is divided into four major series of 10 fifth-acre plots each, 2 unplotted acre areas, one series of 7 tenth-acre plots and two series of 7 twentieth-acre plots each.

History.—The Ewing experiment field was purchased by Ewing College with the assistance of friends and donated to the University for experimental purposes. In 1908 corn was grown on this field, but in 1909 no crops were grown. No other information is available in regard to the previous history of the field.

Cropping and Soil Treatment.—The somewhat standard cropping and soil treatment methods described in the introduction were established on Series 100, 200, 300, and 400, with the exception that cowpeas were seeded in the corn at the last cultivation for use as residues on the residue plots. These methods were followed without change until 1920, when the seeding of cowpeas in the corn was discontinued. In 1921 sweet clover was substituted as the regular legume in the rotation in addition to its seeding in the wheat for use as a green manure crop. Seed was harvested from all the regular sweet clover plots and the straw returned to the residue plots only. In 1922 the application of limestone was discontinued. No more will be applied until there appears to be a need for it. The same year the return of the wheat straw as a residue was also discontinued. In 1923 the phosphate was evened up to 8,500 pounds an acre and no more will be applied for an indefinite time.

Series 500 and 600 have been used for a wheat, legume, alfalfa rotation. On one of them the two-year rotation was practiced, while alfalfa was grown on the other for six years, after which the cropping was changed. Eight tons of manure an acre was applied to Series 500 in 1910 and to Series 600 in 1916. In 1910 limestone at the rate of 5 tons an acre, rock phosphate at the rate of 3,000 pounds an acre, and kainit at the rate of 1,200 pounds an acre were applied to both series; this application of minerals was repeated in 1916.

Series 700, 800, and 900 were at first unplotted. Until 1921 this land, as two large plots, grew crops in rotation similar to those on Series 500 and 600 except that timothy was substituted for alfalfa. No fertilizers, however, were applied to these plots. In 1921 this land was plotted into the three series and a rotation of corn, oats (hubam clover), and wheat, with a seeding of sweet clover for use as green manure, was established upon it. Limestone was applied to all plots except Plot 1 at the rate of 2 tons an acre at this time, and no more will be applied until it appears to be needed. Acid phosphate has been applied to Plots 3 and 6 at the annual rate of 100 and 200 pounds an acre respectively, and rock phosphate has been applied to Plots 4 and 7 at the annual rate of 200 and 400 pounds respectively. The phosphate applications are split, one half being applied for each crop of corn and wheat.



Gray Silt Loam On Tight Clay
 Deep Gray Silt Loam
 Gray Silt Loam On Orange Mottled Tight Clay
 Yellow-Gray Silt Loam

Contour interval - 1 foot

0 20 40 80 160 Feet

SOIL MAP OF EWING FIELD

TABLE 34.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | |
|----------|------------------------|----------------------------|----------------------------|-------------------------|-----------|-----------|----------------|-------------------|-----------|-----------|----------------|------------------------|-----------|---------------------------|
| | | 1910 Oats ¹ | 1911 Cow peas ² | 1912 Wheat ² | 1913 Corn | 1914 Oats | 1915 Soy-beans | 1916 Wheat | 1917 Corn | 1918 Oats | 1919 Soy-beans | 1920 Oats ⁴ | 1921 Corn | 1922 Oats | 1923 Sweet clover | 1924 Wheat |
| 301 | 0..... | 37.1 (.25) | 1.8 | 6.0 | 3.0 | 2.0 | .3 | 6.4 | 26.9 | 4.8 | 2.6 | 6.3 | 0.00 | 0.0 |
| 302 | M..... | 43.1 (.23) | 2.3 | 10.3 | 3.4 | 1.8 | .4 | 24.4 | 35.5 | (.70) | 9.6 | 7.0 | 0.00 | 2.3 |
| 303 | ML..... | 42.6 (.34) | 4.9 | 20.8 | 5.6 | 6.6 | 5.6 | 54.1 | 58.8 | (1.83) | 25.3 | 11.4 | .22 | 26.0 |
| 304 | MLrP..... | 45.3 (.38) | 3.0 | 23.9 | 6.4 | 7.7 | 6.8 | 58.9 | 56.6 | (1.93) | 23.3 | 14.1 | .29 | 29.6 |
| 305 | 0..... | 32.8 | 1.6 | 5.6 | 1.4 | 1.7 | .2 | 12.6 | 31.6 | 3.8 | 3.2 | 8.0 | 0.00 | 0.0 |
| 306 | R..... | 37.8 | 1.2 | 6.2 | 3.3 | 2.5 | .4 | 17.1 | 31.2 | 3.8 | 5.9 | 7.8 | 0.00 | 1.3 |
| 307 | RL..... | 39.2 | 2.4 | 22.5 | 5.9 | 7.5 | 7.4 | 35.7 | 57.0 | 14.2 | 20.2 | 16.1 | .37 | 17.3 |
| 308 | RLrP..... | 35.6 | 3.2 | 21.8 | 5.3 | 6.4 | 4.8 | 45.9 | 61.9 | 13.2 | 23.2 | 18.0 | .29 | 20.5 |
| 309 | RLrPK..... | 36.7 | 4.0 | 26.8 | 6.6 | 8.2 | 6.9 | 63.8 | 61.1 | 11.1 | 32.6 | 21.9 | .40 | 30.4 |
| 310 | 0..... | 44.2 | 1.3 | 6.1 | 1.4 | 3.8 | .5 | 13.1 | 35.6 | (.56) | 7.0 | 11.1 | 0.00 | 0.0 |
| | | | | Cow-peas ² | Corn | Oats | Clover | Oats ⁴ | Corn | Oats | Wheat | Corn | Oats | Sweet clover ⁵ |
| 401 | 0..... | 30.8 | 17.7 (.76) | .8 | 4.3 | 9.7 | (.35) | 15.5 | 10.3 | 9.4 | 3.2 | 5.5 | 14.1 | ..... |
| 402 | M..... | 35.1 | 29.2 (.66) | .8 | 4.5 | 16.9 | (.46) | 15.3 | 14.9 | 9.8 | 3.6 | 12.3 | 19.5 | ..... |
| 403 | ML..... | 36.4 | 31.3 (1.26) | 11.8 | 7.6 | 37.5 | (1.66) | 39.4 | 15.3 | 20.3 | 24.6 | 27.9 | 35.9 | ..... |
| 404 | MLrP..... | 40.4 | 32.0 (1.38) | 11.3 | 6.3 | 49.4 | (1.94) | 47.3 | 10.9 | 18.4 | 20.2 | 29.8 | 33.3 | ..... |
| 405 | 0..... | 37.3 | 23.9 (.90) | .9 | 3.5 | 12.3 | 0.00 | 22.5 | 10.4 | 7.8 | 3.2 | 9.8 | 14.4 | ..... |
| 406 | R..... | 38.4 | 21.8 (1.1) | 1.1 | 2.7 | 13.8 | 0.00 | 27.3 | 13.6 | 8.8 | 4.0 | 12.2 | 17.7 | ..... |
| 407 | RL..... | 51.7 | 42.7 (1.6) | 16.0 | 3.1 | 43.9 | 1.25 | 58.1 | 21.8 | 23.1 | 20.2 | 25.4 | 33.9 | ..... |
| 408 | RLrP..... | 50.7 | 36.7 (1.4) | 14.9 | 3.6 | 44.5 | 1.58 | 62.8 | 22.2 | 16.7 | 23.1 | 29.2 | 33.8 | ..... |
| 409 | RLrPK..... | 47.6 | 42.8 (1.0) | 27.2 | 6.4 | 45.3 | 1.58 | 65.5 | 17.7 | 25.3 | 23.1 | 47.5 | 30.5 | ..... |
| 410 | 0..... | 43.6 | 23.9 (0.00) | 2.5 | 2.7 | 16.2 | (.47) | 32.3 | 9.7 | 13.0 | 8.0 | 11.2 | 16.6 | ..... |

¹No manure or residues. ²No manure. ³Growth plowed down. ⁴Wheat winterkilled, oats grown as a substitute crop. ⁵No crop removed.

TABLE 35.—EWING FIELD: PLOTS A AND B

| Plot No. | Soil treatment applied | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 |
|----------|------------------------|------------------------|---------|--------------------|------------------------|--------------------|---------------------|---------|---------|---------|---------|-----------|---------|-----------|--------|
| | | Alfalfa | Alfalfa | Alfalfa | Alfalfa | Alfalfa | Soy-beans | Wheat | Wheat | Alfalfa | Wheat | Soy-beans | Wheat | Alfalfa | Wheat | Clover |
| A | MLrPK | (0.00) | (0.00) | (1.20) | (0.00) | (2.47) | 11.0 | 21.1 | .13 | 26.0 | (1.46) | 19.2 | (1.54) | 4.4 | (1.17) |
| | | Soy-beans ¹ | | Wheat ¹ | Soy-beans ¹ | Wheat ¹ | Clover ¹ | Alfalfa | Alfalfa | Alfalfa | Alfalfa | Alfalfa | Alfalfa | Soy-beans | Wheat |
| B | MLrPK | 24.2 | 5.9 | 17.6 | (.59) | 18.6 | (1.13) | .... | (2.72) | (.27) | (.28) | (1.88) | (.78) | (1.47) | 6.9 |

¹No manure.

TABLE 36.—EWING FIELD: PLOTS C AND D

| Plot No. | Soil treatment applied | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 |
|----------|------------------------|---------|----------|---------|----------|---------|---------|-------|---------|---------|---------|---------|
| | | Timothy | Timothy | Timothy | Wheat | Timothy | Timothy | Wheat | Wheat | Clover | Wheat | Cowpeas | Wheat |
| C | None | (0.00) | (0.00) | (0.00) | 8.1 | (1.68) | (.77) | 2.2 | (.74) | 9.1 | (.79) | 6.4 |
| | | Wheat | Soybeans | Wheat | Soybeans | Wheat | Clover | Wheat | Timothy | Timothy | Cowpeas | Timothy |
| D | None | 11.4 | 3.5 | 4.6 | 3.5 | 3.9 | (.33) | .7 | (.47) | (0.00) | (.69) | (.87) |

TABLE 37.—EWING FIELD: SERIES 700, 800, 900
(Plots C and D, Table 36, were subdivided in 1922 and continued
as Series 700, 800, 900)

| Bushels or (tons) per acre | | | | |
|----------------------------|------------------------|----------------------------|-------------------|-------------------|
| Plot No. | Soil treatment applied | 1922 Wheat ¹ | 1923 Corn | 1924 Oats |
| 701 | Le..... | .8 | 28.4 | 10.0 |
| 702 | LeL..... | .7 | 32.4 | 29.7 |
| 703 | LeLaP(100)..... | .8 | 32.8 | 31.9 |
| 704 | LeLrP(200)..... | 1.2 | 31.0 | 37.6 |
| 705 | LeL..... | 1.5 | 28.0 | 28.4 |
| 706 | LeLaP(200)..... | 1.0 | 34.6 | 39.1 |
| 707 | LeLrP(400)..... | .5 | 38.4 | 40.0 |
| | | | Corn ² | Oats ² |
| 801 | Le..... | 6.4 | 10.0 | 0.0 |
| 802 | LeL..... | 9.2 | 16.3 | 2.7 |
| 803 | LeLaP(100)..... | 6.0 | 25.6 | 6.3 |
| 804 | LeLrP(200)..... | 9.6 | 19.4 | 3.3 |
| 805 | LeL..... | 12.0 | 12.5 | 0.0 |
| 806 | LeLaP(200)..... | 12.8 | 23.1 | 3.7 |
| 807 | LeLrP(400)..... | 11.2 | 18.8 | 3.0 |
| | | | Oats ² | Wheat |
| 901 | Le..... | 2.5 | 0.0 | 2.8 |
| 902 | LeL..... | 3.8 | 1.0 | 11.6 |
| 903 | LeLaP(100)..... | 3.1 | 1.6 | 14.0 |
| 904 | LeLr(200)..... | 3.8 | 3.0 | 16.4 |
| 905 | LeL..... | 1.3 | 1.6 | 10.0 |
| 906 | LeLaP(200)..... | 1.9 | 4.0 | 15.6 |
| 907 | LeLrP(400)..... | 1.9 | 4.7 | 13.2 |

¹Phosphorus only. ²No legume catch crop.

FAIRFIELD FIELD, WAYNE COUNTY

ESTABLISHED 1905—DISCONTINUED 1923

Location.—About one mile northwest of Fairfield on the Rinard and Porter farms. The E. $\frac{1}{2}$ of the W. $\frac{1}{2}$ of the N.W. $\frac{1}{4}$ and the W. $\frac{1}{2}$ of the W. $\frac{1}{2}$ of the N.E. $\frac{1}{4}$, all in Sec. 36, Twp. 1 S., R. 7 E. of the 3d P. M.

Description.—The field consisted of 40 acres of light-colored upland soil of strong acidity. The soil was described as the typical prairie soil of southern Illinois and probably consisted chiefly of Gray Silt Loam On Tight Clay. The land was practically level. Half of it was tile-drained, but due to the impervious nature of the subsoil, drainage over all the field was rather poor. The field was divided into four series of 36 fifth-acre plots each. Each series was further divided into two parts; one containing the plots numbered from 1 to 18 and the other from 21 to 38.

History.—The Fairfield field was leased from Mr. John Rinard and Mr. G. Porter. During the later years the Porter land was leased from Mr. H. J. Smedley. As far as is known the land had not previously received fertilizer treatment of any kind.

Cropping and Soil Treatment.—The Fairfield field was used primarily for the investigation of crop problems. A uniform rotation, however, was practiced on the field, and certain plots were maintained with various soil treatments. The rotation originally practiced was corn, cowpeas, wheat, and clover on both tilled and untilled land. During the later years it was changed to corn, soybeans, wheat, and sweet clover. All plots ending in the numbers 3, 6, and 9, were handled as grain system plots and received crop residues. All plots ending in the numbers 10, 13, and 16, or 30, 33, and 36, were handled as livestock plots and received farm manure. All plots except those ending in the numbers 9 and 0 received applications of limestone and rock phosphate. These soil treatments were applied in accordance with the methods described in the introduction.

In addition to the above described soil treatments, potassium compounds were applied in two forms; namely, kainit and sulfate. These materials were applied lengthwise of all series in such manner that a 4-rod strip in the middle received kainit at the annual acre rate of 150 pounds, and a 2-rod strip on either side of the kainit received potassium sulfate at the annual acre rate of 50 pounds. These treatments continued from 1907 to 1915. The effect of the potassium treatments on the crop yields was measured only in the corn for the years 1907 to 1915 and in the clover for the years 1910, 1911, and 1912.

TABLE 38.—FAIRFIELD FIELD: SERIES 100, 200, 300, 400
(1905-1914)

| Plot No. | Soil treatment applied ¹ | Bushels or (tons) per acre | | | | | | | | | | |
|-----------------------|-------------------------------------|----------------------------|-----------------------|---------------|----------------|--------------|-----------------------|---------------|----------------|--------------|-----------------------|--|
| | | 1905 Corn | 1906 Soy- beans | 1907 Wheat | 1908 Clover | 1909 Corn | 1910 Soy- beans | 1911 Wheat | 1912 Clover | 1913 Corn | 1914 Soy- beans | |
| Land Tile-drained | | | | | | | | | | | | |
| 103 | RrP..... | 26.5 | 1.0 | 15.1 | (1.02) | 31.2 | 20.1 | 13.2 | .35 | 2.9 | 12.4 | |
| 106 | RrP..... | 43.5 | 1.3 | 15.6 | (1.02) | 33.7 | 21.6 | 16.1 | .35 | 1.6 | 12.4 | |
| 109 | R..... | 51.3 | 1.4 | 11.8 | (.90) | 48.5 | 18.5 | 4.8 | .15 | 11.4 | 10.4 | |
| 110 | M..... | 57.0 | 1.4 | 3.8 | (.65) | 39.4 | (1.54) | 5.3 | (.70) | 7.1 | (.77) | |
| 113 | MlrP..... | 57.0 | 0.0 | 19.8 | (1.55) | 39.0 | (2.14) | 25.6 | (2.19) | 2.6 | (1.18) | |
| 116 | MlrP..... | 67.5 | 2.9 | 17.9 | (1.22) | 41.6 | (2.06) | 26.3 | (2.19) | 3.0 | (1.21) | |
| Land Not Tile-drained | | | | | | | | | | | | |
| 123 | RrP..... | 26.6 | .8 | 13.1 | (.90) | 37.9 | 20.8 | 11.1 | .39 | 3.3 | 13.8 | |
| 126 | RrP..... | 28.4 | 1.8 | 8.4 | (1.32) | 25.3 | 19.5 | 4.2 | .39 | 1.3 | 14.4 | |
| 129 | R..... | 13.1 | 0.0 | 0.0 | (.67) | 17.7 | 10.3 | .7 | 0.00 | 1.8 | 6.4 | |
| 130 | M..... | 47.0 | 0.0 | 1.5 | (.63) | 18.7 | (1.02) | 7 | (.34) | 3.7 | (.51) | |
| 133 | MlrP..... | 59.6 | .5 | 12.0 | (1.80) | 30.0 | (1.74) | 10.6 | (1.72) | 1.1 | (1.07) | |
| 136 | MlrP..... | 59.1 | .8 | 14.3 | (1.55) | 36.9 | (1.84) | 18.6 | (1.72) | 2.7 | (.98) | |

¹Potassium sulfate and kainit applied to different parts of each plot, as explained on page 117.

TABLE 38.—Continued
(1915-1923)

| Plot No. | Soil treatment applied ¹ | Bushels or (tons) per acre | | | | | | | | | |
|-----------------------|-------------------------------------|----------------------------|------------------------------------|--------------|-----------------------|---------------|-------------------------|--------------|-----------------------|---------------|-------|
| | | 1915 Wheat | 1916 Soy- beans ² | 1917 Corn | 1918 Soy- beans | 1919 Wheat | 1920 Sweet clover | 1921 Corn | 1922 Soy- beans | 1923 Wheat | |
| Land Tile-drained | | | | | | | | | | | |
| 103 | RLrP..... | 7.9 | 19.2 | 43.6 | 15.1 | 22.6 | 2.20 | 43.7 | | | |
| 106 | RLrP..... | 7.2 | 19.5 | 51.1 | 14.6 | 24.2 | 1.30 | 38.3 | | | 13.3 |
| 109 | R..... | 0.0 | 13.7 | 65.3 | 12.5 | 8.7 | 0.00 | 30.8 | | | 2.8 |
| 110 | M..... | 0.0 | (0.00) | 41.8 | (.97) | 10.5 | (.84) | 33.6 | | | 3.9 |
| 113 | MLrP..... | 5.4 | (1.60) | 55.0 | (1.56) | 27.5 | (1.57) | 46.2 | | | ..(9) |
| 116 | MLrP..... | 4.7 | (1.60) | 62.9 | (1.69) | 24.4 | (1.69) | 49.4 | | | ..(9) |
| Land Not Tile-drained | | | | | | | | | | | |
| 123 | RLrP..... | 2.7 | 15.6 | 44.5 | 14.0 | 20.6 | 13.9 | 22.3 | | | 8.3 |
| 126 | RLrP..... | .6 | 13.6 | 24.7 | 12.1 | 19.6 | 12.3 | 19.2 | | | 10.5 |
| 129 | R..... | 0.0 | 2.3 | 7.5 | 6.0 | 0.0 | 5.4 | 15.2 | | | .1 |
| 130 | M..... | 0.0 | (0.00) | 13.0 | (.79) | 0.0 | (.53) | 25.3 | | | ..(9) |
| 133 | MLrP..... | 2.7 | (1.33) | 35.9 | (1.39) | 25.8 | (1.26) | 40.7 | | | ..(9) |
| 136 | MLrP..... | .6 | (1.33) | 51.6 | (1.31) | 28.8 | (1.17) | 46.1 | | | ..(9) |

¹Potassium sulfate and kainit applied to different parts of each plot, as explained on page 117. ²Sweet clover on manure plots in 1916. ³Weight lost before recording.

TABLE 38.—Continued
(1905-1914)

| Plot No. | Soil treatment applied ¹ | Bushels or (tons) per acre | | | | | | | | | |
|-----------------------|-------------------------------------|----------------------------|------------|--------------------------|-----------|--------------|------------|--------------------|-----------|---------------|------------|
| | | 1905 Soybeans | 1906 Wheat | 1907 Clover ² | 1908 Corn | 1909 Cowpeas | 1910 Wheat | 1911 Clover | 1912 Corn | 1913 Soybeans | 1914 Wheat |
| Land Tile-drained | | | | | | | | | | | |
| 203 | RLrP..... | 3.0 | 1.3 | (.47) | 22.4 | 3.9 | 29.4 | 0.00 | 40.7 | 13.9 | 14.6 |
| 206 | RLrP..... | 2.4 | 1.3 | (.52) | 22.2 | 3.9 | 30.0 | 0.00 | 38.1 | 12.8 | 14.5 |
| 209 | R..... | 3.3 | .3 | (.20) | 23.5 | 8.3 | 20.2 | 0.00 | 22.3 | 9.8 | 8.8 |
| 210 | M..... | 1.6 | 1.2 | (.51) | 37.9 | 8.4 | 20.9 | (.41) ³ | 22.3 | (.92) | 12.3 |
| 213 | MLrP..... | 1.8 | 2.8 | (.90) | 39.0 | 6.6 | 38.1 | (.99) | 60.6 | (1.12) | 23.2 |
| 216 | MLrP..... | 1.8 | 2.0 | (.78) | 35.3 | 6.8 | 36.8 | (.99) | 54.5 | (.99) | 20.0 |
| Land Not Tile-drained | | | | | | | | | | | |
| 223 | RLrP..... | 2.7 | 2.8 | (.80) | 30.9 | 4.6 | 31.6 | 0.00 | 29.7 | 12.3 | 15.3 |
| 226 | RLrP..... | 2.9 | 1.2 | (.76) | 21.2 | 4.9 | 28.6 | 0.00 | 7.4 | 11.3 | 12.1 |
| 229 | R..... | 2.2 | 0.0 | (.61) | 15.6 | 3.8 | 7.2 | 0.00 | 1.6 | 7.8 | .6 |
| 230 | M..... | 1.6 | 1.6 | (.66) | 30.2 | 6.4 | 16.4 | (.39) ³ | 4.0 | (.71) | 2.7 |
| 233 | MLrP..... | .8 | 1.1 | (.85) | 38.3 | 7.7 | 35.2 | (.85) | 22.0 | (1.16) | 17.2 |
| 236 | MLrP..... | 2.9 | 5.3 | (1.20) | 40.3 | 7.1 | 36.7 | (.85) | 23.8 | (1.22) | 19.3 |

¹Potassium sulfate and kainit applied to different parts of each plot, as explained on page 117. ²Growth in 1907 mostly redtop. ³Grass and weeds in 1911.

TABLE 38.—Continued
(1915-1923)

| Plot No. | Soil treatment applied ¹ | Bushels or (tons) per acre | | | | | | | | |
|-----------------------|-------------------------------------|----------------------------|-----------|---------------|------------|-------------------|-----------|----------------|------------|-------------------|
| | | 1915 Soybeans | 1916 Corn | 1917 Soybeans | 1918 Wheat | 1919 Sweet clover | 1920 Corn | 1921 Soy-beans | 1922 Wheat | 1923 Sweet clover |
| Land Tile-drained | | | | | | | | | | |
| 203 | RLrP..... | 17.2 | 11.3 | 12.6 | 23.0 | ..(?) | 29.5 | 13.0 | 16.2 | ..(?) |
| 206 | RLrP..... | 16.9 | 10.7 | 12.9 | 25.5 | ..(?) | 25.7 | 12.9 | 22.4 | ..(?) |
| 209 | R..... | 11.8 | 20.7 | 11.6 | 25.1 | ..(?) | 33.3 | 12.9 | 11.3 | ..(?) |
| 210 | M..... | (1.01) | 16.9 | (1.13) | 29.2 | (.70) | 36.9 | (1.21) | 17.5 | (0.00) |
| 213 | MLrP..... | (1.88) | 11.5 | (1.35) | 31.4 | (1.10) | 46.2 | (1.67) | 23.6 | (1.72) |
| 216 | MLrP..... | (1.82) | 7.8 | (1.34) | 27.1 | (1.00) | 47.6 | | 26.9 | |
| Land Not Tile-drained | | | | | | | | | | |
| 223 | RLrP..... | 12.0 | 14.0 | 10.7 | 23.8 | ..(?) | 14.1 | 9.7 | 20.4 | ..(?) |
| 226 | RLrP..... | 13.5 | 12.1 | 9.1 | 18.2 | ..(?) | 13.2 | 7.8 | 19.6 | ..(?) |
| 229 | R..... | 5.9 | 14.0 | 8.8 | 11.1 | ..(?) | 18.7 | | 1.2 | |
| 230 | M..... | (.72) | 11.9 | (.70) | 11.3 | (.67) | 27.1 | (1.06) | 1.9 | (0.00) |
| 233 | MLrP..... | (2.01) | 18.2 | (1.40) | 20.4 | (1.15) | 41.0 | (1.60) | 21.6 | (1.75) |
| 236 | MLrP..... | (2.04) | 16.9 | (1.40) | 22.6 | (1.37) | 49.9 | | 26.3 | |

¹Potassium sulfate and kaimit applied to different parts of each plot, as explained on page 117. ²No seed harvested in 1919 and 1923.

TABLE 38.—Continued
(1905-1914)

| Plot No. | Soil treatment applied ¹ | Bushels or (tons) per acre | | | | | | | | | |
|-----------------------|-------------------------------------|----------------------------|----------------|--------------|-----------------|--------------|---------------------|--------------|------------------|---------------|------------------|
| | | 1905 | 1906 Clover | 1907 Corn | 1908 Cowpeas | 1909 Oats | 1910 Clover | 1911 Corn | 1912 Soybeans | 1913 Wheat | 1914 Soybeans |
| Land Tile-drained | | | | | | | | | | | |
| 303 | RLrP..... | .... | (.09) | 40.8 | 5.7 | 37.5 | 1.45 | 34.3 | (1.58) | 14.3 | 15.4 |
| 306 | RLrP..... | .... | (.15) | 37.2 | 9.6 | 34.2 | 1.45 | 34.9 | (1.80) | 14.3 | 19.2 |
| 309 | R..... | .... | (.10) | 32.1 | 4.7 | 25.8 | 0.00 | 25.9 | (.53) | .0 | 7.3 |
| 310 | M..... | .... | (.25) | 35.3 | 5.4 | 30.8 | (.76) ² | 30.5 | (1.29) | 3.1 | (.87) |
| 313 | MLrP..... | .... | (.40) | 50.5 | 10.3 | 30.2 | (3.95) | 39.8 | (1.66) | 19.8 | (1.48) |
| 316 | MLrP..... | .... | (.48) | 48.5 | 12.7 | 44.4 | (3.95) | 36.5 | (2.68) | 25.7 | (1.62) |
| Land Not Tile-drained | | | | | | | | | | | |
| 323 | RLrP..... | .... | (.49) | 39.0 | 8.4 | 33.6 | 1.96 | 34.0 | (1.87) | 14.0 | 13.7 |
| 326 | RLrP..... | .... | (.51) | 51.8 | 9.5 | 37.8 | 1.96 | 39.2 | (1.56) | 17.0 | 14.9 |
| 329 | R..... | .... | (.20) | 34.2 | 5.3 | 29.9 | 0.00 | 24.2 | (.97) | 2.2 | 10.0 |
| 330 | M..... | .... | (.39) | 42.1 | 7.4 | 34.2 | (1.06) ² | 31.8 | (.99) | 3.2 | (1.11) |
| 333 | MLrP..... | .... | (.40) | 52.7 | 9.0 | 32.5 | (3.70) | 34.0 | (2.15) | 15.0 | (1.64) |
| 336 | MLrP..... | .... | (.56) | 52.0 | 9.7 | 47.5 | (3.70) | 28.8 | (2.04) | 16.6 | (1.61) |

¹Potassium sulfate and kainit applied to different parts of each plot, as explained on page 117. ²Mostly grass and weeds in 1910.

TABLE 38.—Continued
(1915-1923)

| Plot No. | Soil treatment applied ¹ | Bushels or (tons) per acre | | | | | | | | | |
|-----------------------|-------------------------------------|----------------------------|------------------|---------------|-------------------------|--------------|------------------|---------------|-------------------------|-------------------|--|
| | | 1915 Corn | 1916 Soybeans | 1917 Wheat | 1918 Sweet clover | 1919 Corn | 1920 Soybeans | 1921 Wheat | 1922 Sweet clover | 1923 Corn | |
| Land Tile-drained | | | | | | | | | | | |
| 303 | RLrP..... | 46.8 | 7.6 | 27.2 | 1.83 | 28.3 | 11.6 | 22.0 | ..(?) | 13.4 ³ | |
| 306 | RLrP..... | 41.3 | 7.3 | 20.3 | 2.26 | 37.1 | 14.5 | 26.0 | ..(?) | 29.5 | |
| 309 | R..... | 24.9 | 6.3 | 5.5 | 0.00 | 19.1 | 7.9 | 4.5 | ..(?) | 22.0 | |
| 310 | M..... | 26.6 | (.90) | 14.0 | (0.00) | 27.1 | (.87) | 15.8 | (0.00) | 30.0 | |
| 313 | MLrP..... | 44.6 | (1.15) | 30.2 | (1.50) | 35.4 | (1.50) | 33.0 | (2.19) | 36.8 | |
| 316 | MLrP..... | 49.4 | (.88) | 34.4 | (1.40) | 37.0 | (1.41) | 36.4 | | 32.9 | |
| Land Not Tile-drained | | | | | | | | | | | |
| 323 | RLrP..... | 47.1 | 6.9 | 30.8 | .87 | 19.4 | 8.8 | 27.7 | ..(?) | 7.5 ³ | |
| 326 | RLrP..... | 51.0 | 8.4 | 36.1 | 1.36 | 33.1 | 13.6 | 30.6 | ..(?) | 18.1 | |
| 329 | R..... | 30.1 | 7.4 | 13.0 | 0.00 | 11.5 | 10.5 | 6.5 | ..(?) | 18.1 | |
| 330 | M..... | 36.5 | (.82) | 17.3 | (0.00) | 21.0 | (.94) | 16.6 | (0.00) | 28.2 | |
| 333 | MLrP..... | 46.2 | (1.12) | 33.6 | (1.11) | 35.6 | (1.34) | 34.1 | (2.22) | 32.9 | |
| 336 | MLrP..... | 46.0 | (.92) | 27.7 | (.91) | 33.5 | (1.24) | 30.6 | | 19.0 | |

¹Potassium sulfate and kainit applied to different parts of each plot, as explained on page 117. ²Growth plowed down in 1922. ³Chinch-bug injury.

TABLE 38.—Continued
(1905-1914)

| Plot No. | Soil treatment applied ¹ | Bushels or (tons) per acre | | | | | | | | | |
|-----------------------|-------------------------------------|----------------------------|---------|-------|---------|-------|------|----------|-------|----------|-------|
| | | 1905 | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 |
| | | Corn | Cowpeas | Wheat | Cowpeas | Wheat | Corn | Soybeans | Wheat | Soybeans | Corn* |
| Land Tile-drained | | | | | | | | | | | |
| 403 | RLP | 34.8 | 3.5 | 16.0 | 5.0 | 55.1 | 10.6 | 12.5 | 9.9 | 9.9 | ..... |
| 406 | RLP | 38.2 | 3.1 | 14.0 | 7.2 | 60.9 | 12.3 | 13.2 | 10.5 | 10.5 | ..... |
| 409 | R | 32.6 | 3.2 | 5.3 | 7.2 | 44.4 | 11.5 | 1.7 | 9.9 | 9.9 | ..... |
| 410 | M | 41.0 | 3.4 | 10.6 | 6.9 | 43.8 | 10.2 | 2.1 | (.65) | (.65) | ..... |
| 413 | MLP | 50.8 | 8.2 | 21.8 | 6.7 | 66.9 | 14.7 | 13.3 | (.91) | (.91) | ..... |
| 416 | MLP | 49.2 | 7.7 | 21.3 | 6.5 | 64.9 | 15.2 | 13.1 | (.86) | (.86) | ..... |
| Land Not Tile-drained | | | | | | | | | | | |
| 423 | RLP | 47.2 | 8.0 | 14.9 | 5.8 | 60.9 | 11.7 | 14.0 | 13.4 | 13.4 | ..... |
| 426 | RLP | 38.0 | 2.4 | 10.0 | 4.8 | 57.7 | 13.4 | 9.3 | 11.0 | 11.0 | ..... |
| 429 | R | 33.0 | 1.8 | 2.8 | 6.5 | 37.6 | 9.1 | 1.0 | 7.5 | 7.5 | ..... |
| 430 | M | 40.3 | 2.2 | 1.4 | 5.4 | 47.5 | 8.8 | 1.1 | (.55) | (.55) | ..... |
| 433 | MLP | 48.8 | 6.6 | 15.1 | 4.7 | 63.6 | 10.6 | 13.6 | (.82) | (.82) | ..... |
| 436 | MLP | 53.0 | 4.3 | 16.3 | 6.0 | 65.1 | 15.5 | 10.4 | (.90) | (.90) | ..... |

¹Potassium sulfate and kainit applied to different parts of each plot, as explained on page 117. *Crop failure.

TABLE 38.—*Concluded*
(1915-1923)

| Plot No. | Soil treatment applied ¹ | Bushels or (tons) per acre | | | | | | | | |
|-----------------------|-------------------------------------|----------------------------|------------|---------------|-----------|---------------|------------|-------------------|-----------|---------------|
| | | 1915 Soybeans | 1916 Wheat | 1917 Soybeans | 1918 Corn | 1919 Soybeans | 1920 Wheat | 1921 Sweet clover | 1922 Corn | 1923 Soybeans |
| Land Tile-drained | | | | | | | | | | |
| 403 | RrP..... | 18.0 | 14.9 | 9.1 | 14.6 | 7.4 | 17.3 | 1.21 | 32.3 | 13.0 |
| 406 | RrP..... | 20.1 | 10.3 | 8.9 | 22.9 | 8.6 | 12.7 | 0.00 | 37.8 | 9.7 |
| 409 | R..... | 7.6 | 0.0 | 6.2 | 20.0 | 5.7 | 0.0 | | 24.3 | |
| 410 | M..... | (.77) | 0.3 | (.95) | 16.6 | (.53) | .5 | (0.00) | 20.8 | (1.30) |
| 413 | MLP..... | (1.83) | 30.7 | (1.28) | 21.3 | (1.00) | 22.8 | (1.41) | 40.3 | (2.03) |
| 416 | MLP..... | (1.85) | 27.1 | (1.49) | 17.5 | (1.05) | 23.6 | (1.45) | 32.9 | |
| Land Not Tile-drained | | | | | | | | | | |
| 423 | RrP..... | 13.6 | 14.8 | 8.8 | 21.4 | 9.6 | 17.7 | 1.58 | 29.8 | 14.1 |
| 426 | RrP..... | 13.8 | 11.1 | 8.7 | 14.8 | 9.2 | 10.2 | 0.00 | 22.8 | 8.6 |
| 429 | R..... | 4.5 | 0.0 | 4.9 | 7.8 | 3.8 | 0.0 | | 12.8 | |
| 430 | M..... | (.62) | 0.0 | (.83) | 5.1 | (.48) | 0.0 | (0.00) | 15.3 | (1.25) |
| 433 | MLP..... | (1.90) | 26.9 | (1.27) | 6.7 | (.88) | 19.9 | (1.86) | 20.5 | (2.07) |
| 436 | MLP..... | (1.87) | 23.9 | (1.38) | 12.0 | (.95) | 23.3 | (1.71) | 30.4 | |

¹Potassium sulfate and kaimit applied to different parts of each plot, as explained on page 117.

TABLE 39.—FAIRFIELD FIELD: SPECIAL POTASSIUM TEST (1907-1915)

| Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | |
|------------------------------|----------------------------|--------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|--------------|--------------|
| | 1907 Corn | 1908 Corn | 1909 Corn | 1910 Clover | 1910 Corn | 1910 Clover | 1911 Corn | 1911 Clover | 1911 Corn | 1912 Clover | 1912 Corn | 1913 Corn | 1915 Corn |
| Land Tile-drained | | | | | | | | | | | | | |
| R..... | 30.9 | 28.4 | 45.1 | ..... | 33.1 | ..... | 29.2 | ..... | 29.2 | ..... | 24.1 | 9.8 | 19.2 |
| R, Potassium sulfate..... | 31.4 | 30.4 | 50.2 | ..... | 48.8 | ..... | 23.9 | ..... | 23.9 | ..... | 21.0 | 14.8 | 26.4 |
| R, Kainit..... | 35.4 | 26.8 | 50.1 | ..... | 50.2 | ..... | 24.9 | ..... | 24.9 | ..... | 21.8 | 9.8 | 29.2 |
| M..... | 27.1 | 38.6 | 35.5 | ..... | 34.4 | ..... | 31.2 | ..... | 31.2 | ..... | 25.7 | 5.9 | 22.7 |
| M, Potassium sulfate..... | 29.6 | 38.6 | 47.7 | ..... | 50.4 | ..... | 31.1 | ..... | 31.1 | ..... | 20.0 | 8.1 | 25.0 |
| M, Kainit..... | 34.9 | 36.6 | 42.9 | ..... | 46.6 | ..... | 29.2 | ..... | 29.2 | ..... | 21.0 | 7.4 | 32.2 |
| RLrP..... | 37.0 | 20.8 | 27.3 | 2.00 | 55.1 | ..... | 35.0 | ..... | 35.0 | .27 | 38.6 | 1.6 | 39.5 |
| RLrP, Potassium sulfate..... | 38.7 | 19.5 | 36.0 | 2.29 | 59.2 | ..... | 35.4 | ..... | 35.4 | .41 | 38.5 | 2.0 | 47.1 |
| RLrP, Kainit..... | 45.6 | 26.4 | 34.0 | 2.54 | 59.8 | ..... | 33.6 | ..... | 33.6 | .45 | 46.1 | 3.1 | 45.5 |
| MLrP..... | 48.0 | 38.5 | 41.3 | (3.62) | 64.6 | (.94) | 35.4 | (.94) | 35.4 | (2.05) | 57.0 | 2.6 | 47.0 |
| MLrP, Potassium sulfate..... | 50.3 | 37.2 | 39.0 | (3.97) | 67.5 | (.95) | 38.6 | (.95) | 38.6 | (2.55) | 52.8 | 5.4 | 46.3 |
| MLrP, Kainit..... | 52.4 | 35.5 | 40.6 | (4.59) | 68.2 | (1.15) | 40.6 | (1.15) | 40.6 | (2.10) | 62.9 | 3.4 | 47.8 |
| Land Not Tile-drained | | | | | | | | | | | | | |
| R..... | 30.4 | 15.6 | 14.9 | ..... | 33.1 | ..... | 26.2 | ..... | 26.2 | ..... | 3.9 | 7 | 22.0 |
| R, Potassium sulfate..... | 38.8 | 11.6 | 18.8 | ..... | 42.8 | ..... | 24.6 | ..... | 24.6 | ..... | .6 | 2.1 | 34.8 |
| R, Kainit..... | 37.2 | 16.6 | 19.2 | ..... | 36.9 | ..... | 21.7 | ..... | 21.7 | ..... | .4 | 2.5 | 33.6 |
| M..... | 40.4 | 30.8 | 19.4 | ..... | 52.6 | ..... | 36.6 | ..... | 36.6 | ..... | 6.7 | 3.7 | 35.3 |
| M, Potassium sulfate..... | 42.8 | 30.4 | 19.6 | ..... | 65.2 | ..... | 35.7 | ..... | 35.7 | ..... | 3.2 | 3.4 | 34.3 |
| M, Kainit..... | 44.9 | 29.6 | 17.1 | ..... | 66.2 | ..... | 37.5 | ..... | 37.5 | ..... | 2.3 | 3.9 | 39.9 |
| RLrP..... | 40.9 | 20.6 | 23.1 | .89 | 46.0 | ..... | 33.7 | ..... | 33.7 | .37 | 25.7 | 2.1 | 39.2 |
| RLrP, Potassium sulfate..... | 49.9 | 26.1 | 37.6 | 1.98 | 48.3 | ..... | 31.7 | ..... | 31.7 | .39 | 21.9 | 2.5 | 55.2 |
| RLrP, Kainit..... | 53.9 | 31.4 | 34.1 | 2.03 | 48.4 | ..... | 30.1 | ..... | 30.1 | .43 | 27.8 | 2.4 | 52.8 |
| MLrP..... | 49.8 | 39.7 | 32.2 | (3.50) | 62.9 | (.70) | 31.5 | (.70) | 31.5 | (1.50) | 24.0 | 2.0 | 43.2 |
| MLrP, Potassium sulfate..... | 52.3 | 39.5 | 33.8 | (3.89) | 65.3 | (.94) | 30.9 | (.94) | 30.9 | (1.90) | 18.0 | 2.3 | 46.6 |
| MLrP, Kainit..... | 54.7 | 38.9 | 34.3 | (3.93) | 65.0 | (1.06) | 31.8 | (1.06) | 31.8 | (2.00) | 26.7 | 1.6 | 48.2 |

GALESBURG FIELD, KNOX COUNTY

ESTABLISHED 1904—DISCONTINUED 1918

Location.—About six miles southwest of Galesburg on the farm of Mr. George W. Gale. A part of the N.W. corner of the N.W. $\frac{1}{4}$ of the S.W. $\frac{1}{4}$, Sec. 31, Twp. 11 N., R. 1 E. of the 4th P. M.

Description.—The field consisted of 18.7 acres of dark-colored upland soil which was probably moderately acid. At the time the field was established the soil was described as Brown Silt Loam. A survey of the soil a few years later indicated that this Brown Silt Loam occurred in three phases, namely, (1) the heavy phase, (2) the intermediate phase, and (3) the ordinary, slightly rolling phase. The field was not tile-drained. It was divided into three series of 20 fifth-acre plots each.

History.—The Galesburg field was leased from Mr. George W. Gale. Previous to 1904, the field was cropped as follows: 1887, wheat seeded to timothy; 1889-1894, meadow; 1894-1899, corn; 1899, oats seeded to timothy and clover; 1900-1903, meadow. Small amounts of manure had been applied to the field from time to time.

Cropping and Soil Treatment.—The original rotation was corn, corn, oats, wheat, clover, and timothy. In 1909 this was changed to corn, corn, oats, clover, wheat, and clover. The phosphorus was applied in rock phosphate at the annual acre rate of 500 pounds. In the beginning 1,300 pounds of limestone an acre was applied; no more was added until 1913, when an application of 4 tons an acre was made. No further applications of limestone were made on this field. The potassium was supplied in potassium sulfate at the annual rate of 100 pounds an acre. On Plot 19 nitrogen was applied in dried blood at the annual rate of 200 pounds an acre. The manure and residues were supplied as described in the introduction. Cover crops for use as residues were grown in the corn on Plots 4, 9, and 14, as well as on the regular residue plots as follows: cowpeas on Series 100, soybeans and sweet clover on Series 200, and vetch on Series 300.

TABLE 40.—GALESBURG FIELD: SERIES 100, 200, 300

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------------|--------------|--------------|--------------|----------------|---------------|-------------------|--------------|--------------|--------------|
| | | 1904 Corn ¹ | 1905 Corn ¹ | 1906 Oats ⁴ | 1907 Wheat ² | 1908 Clover ² | 1909 Timothy ² | 1910 Corn | 1911 Corn | 1912 Oats | 1913 Clover | 1914 Wheat | 1915 Soy-beans | 1916 Corn | 1917 Corn | 1918 Oats |
| 101 | L..... | 63.8 | 52.5 | 53.8 | 34.0 | (2.71) | (2.04) | 59.8 | 66.5 | 53.3 | (2.64) | 28.6 | (1.12) | 29.5 | 33.7 | 64.5 |
| 102 | RL..... | 67.3 | 49.8 | 53.6 | 41.4 | .96 | (3.83) | 72.6 | 75.1 | 56.9 | ..(9) | 33.2 | 14.9 | 38.2 | 52.1 | 75.0 |
| 103 | ML..... | 64.7 | 48.1 | 50.3 | 31.6 | (2.59) | (1.83) | 77.6 | 81.0 | 60.0 | (3.18) | 36.2 | (1.20) | 46.4 | 59.7 | 68.4 |
| 104 | CvML..... | 65.3 | 46.5 | 46.7 | 32.8 | (2.61) | (1.70) | 77.9 | 78.9 | 70.2 | (3.05) | 34.3 | (1.25) | 51.2 | 58.9 | 64.5 |
| 105 | L..... | 74.7 | 54.9 | 52.3 | 35.1 | (2.80) | (2.05) | 66.2 | 67.4 | 60.8 | (2.80) | 31.0 | (1.05) | 32.4 | 45.3 | 72.3 |
| 106 | LrP..... | 78.2 | 66.1 | 53.9 | 41.9 | (3.18) | (2.58) | 72.4 | 79.4 | 68.6 | (3.54) | 46.4 | 16.2 | 40.7 | 53.5 | 68.9 |
| 107 | RLrP..... | 75.9 | 63.1 | 56.0 | 41.3 | .67 | (4.92) | 78.0 | 83.8 | 65.2 | ..(9) | 44.9 | 16.2 | 42.0 | 55.8 | 77.0 |
| 108 | MLrP..... | 72.6 | 61.1 | 54.2 | 37.9 | (3.18) | (2.36) | 74.6 | 79.8 | 77.3 | (3.19) | 37.5 | (1.40) | 44.9 | 62.7 | 69.8 |
| 109 | CvMLrP..... | 74.1 | 60.0 | 54.2 | 40.0 | (3.15) | (2.33) | 74.0 | 79.1 | 74.4 | (3.75) | 39.2 | (1.50) | 45.5 | 57.9 | 76.6 |
| 110 | L..... | 72.4 | 58.8 | 50.5 | 32.7 | (2.65) | (1.74) | 61.5 | 59.2 | 54.5 | ..(9) | 30.8 | 11.9 | 24.8 | 33.9 | 73.9 |
| 111 | LrPK..... | 81.2 | 72.3 | 53.9 | 36.6 | (3.21) | (2.42) | 74.5 | 81.1 | 70.9 | (3.88) | 41.0 | 14.8 | 41.9 | 56.5 | 72.0 |
| 112 | RLrPK..... | 82.3 | 71.0 | 59.4 | 41.1 | .58 | (5.00) | 81.9 | 83.7 | 59.5 | ..(9) | 41.7 | 16.6 | 49.1 | 60.2 | 68.8 |
| 113 | MLrPK..... | 77.1 | 72.2 | 52.8 | 36.1 | (3.45) | (2.49) | 77.6 | 82.4 | 74.4 | (3.81) | 41.5 | (1.37) | 45.9 | 58.4 | 73.3 |
| 114 | CvMLrPK..... | 89.4 | 60.9 | 54.5 | 38.7 | (3.36) | (2.55) | 75.9 | 85.0 | 70.0 | (4.02) | 40.8 | (1.25) | 48.2 | 65.0 | 73.4 |
| 115 | L..... | 81.2 | 68.1 | 62.8 | 36.8 | (2.99) | (2.19) | 59.4 | 67.3 | 53.0 | (2.59) | 23.3 | (1.07) | 26.9 | 28.8 | 68.4 |
| 116 | R..... | 77.1 | 61.8 | 57.3 | 38.2 | 1.17 | (5.33) | 70.6 | 68.9 | 52.0 | ..(9) | 28.8 | 15.4 | 34.7 | 43.2 | 69.5 |
| 117 | RrPK..... | 79.4 | 64.2 | 60.0 | 36.2 | 1.25 | (5.50) | 75.0 | 77.5 | 66.1 | ..(9) | 49.8 | 15.3 | 46.0 | 51.4 | 81.2 |
| 118 | RrPK..... | 82.3 | 70.8 | 52.0 | 40.9 | 1.38 | (4.75) | 78.3 | 78.4 | 68.1 | ..(9) | 53.3 | 17.3 | 58.7 | 54.0 | 70.3 |
| 119 | RLNPK..... | 87.1 | 76.3 | 66.2 | 46.0 | 1.08 | (5.00) | 74.8 | 79.3 | 67.3 | ..(9) | 49.6 | 17.9 | 66.7 | 72.5 | 75.9 |
| 120 | O..... | 82.9 | 65.1 | 65.3 | 45.8 | (2.04) | (2.82) | 72.7 | 67.4 | 70.2 | (2.58) | 40.4 | 12.9 | 47.7 | 54.6 | 66.9 |

¹No manure, cover crop, or residues. ²No seed harvested in 1913.

TABLE 40.—Continued

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | |
|----------|-------------------------|----------------------------|-------------------------|--------------------------|---------------------------|-----------|-----------|-----------|-------------|------------|-------------|-----------|-----------|-----------|----------------|------------|
| | | 1904 Oats ¹ | 1905 Wheat ¹ | 1906 Clover ¹ | 1907 Timothy ¹ | 1908 Corn | 1909 Corn | 1910 Oats | 1911 Clover | 1912 Wheat | 1913 Clover | 1914 Corn | 1915 Corn | 1916 Oats | 1917 Soy-beans | 1918 Wheat |
| 201 | L..... | 57.5 | 40.5 | (.72) | (2.30) | 79.8 | 54.1 | 48.0 | (1.39) | 17.5 | (2.27) | 25.1 | 38.8 | 42.5 | (1.32) | 24.5 |
| 202 | R _L | 55.0 | 40.0 | (.63) | (1.31) | 78.8 | 51.9 | 43.3 | (.7) | 21.1 | (.7) | 37.6 | 49.2 | 42.2 | 17.0 | 32.6 |
| 203 | M _L | 52.5 | 38.5 | (.57) | (2.55) | 101.3 | 65.6 | 50.6 | (2.64) | 21.7 | (2.28) | 42.8 | 58.1 | 45.6 | (2.26) | 38.2 |
| 204 | CvML..... | 55.0 | 40.2 | (.63) | (2.73) | 102.7 | 66.8 | 53.0 | (2.32) | 19.6 | (2.39) | 40.6 | 56.7 | 35.6 | (1.89) | 37.8 |
| 205 | L..... | 67.5 | 42.2 | (1.22) | (2.84) | 86.3 | 54.4 | 44.4 | (2.29) | 18.2 | (2.54) | 30.6 | 48.8 | 44.7 | (1.82) | 30.4 |
| 206 | LrP..... | 62.5 | 41.3 | (1.36) | (3.27) | 99.6 | 59.1 | 55.5 | (2.42) | 27.3 | (2.83) | 36.5 | 55.4 | 43.1 | 14.8 | 39.4 |
| 207 | R _L rP..... | 57.5 | 42.2 | (.90) | (1.79) | 105.6 | 49.4 | 48.6 | (.7) | 27.3 | (.7) | 43.1 | 56.7 | 42.2 | 18.0 | 49.5 |
| 208 | M _L rP..... | 60.0 | 40.0 | (.91) | (3.18) | 106.6 | 69.8 | 58.6 | (2.30) | 27.3 | (2.87) | 41.6 | 67.7 | 30.8 | (2.03) | 44.3 |
| 209 | CvMLrP..... | 50.0 | 39.0 | (.91) | (3.16) | 105.8 | 75.7 | 60.3 | (2.03) | 27.8 | (2.75) | 38.5 | 68.9 | 37.2 | (1.80) | 41.3 |
| 210 | L..... | 57.5 | 37.5 | (.69) | (2.46) | 84.5 | 57.8 | 42.3 | (1.14) | 12.2 | (.7) | 29.0 | 40.1 | 41.1 | 14.0 | 23.5 |
| 211 | LrPK..... | 55.0 | 38.7 | (1.31) | (3.38) | 95.7 | 67.0 | 55.3 | (2.01) | 28.2 | (2.63) | 35.8 | 60.7 | 43.1 | 16.1 | 37.2 |
| 212 | R _L rPK..... | 65.0 | 39.3 | (1.40) | (2.15) | 103.3 | 57.5 | 53.8 | (.7) | 28.3 | (.7) | 41.1 | 62.4 | 44.2 | 16.4 | 45.8 |
| 213 | M _L rPK..... | 65.0 | 41.5 | (1.79) | (3.62) | 98.1 | 69.8 | 58.3 | (2.55) | 25.9 | (2.81) | 30.3 | 64.2 | 33.1 | (2.11) | 39.0 |
| 214 | CvMLrPK..... | 62.5 | 40.7 | (1.51) | (3.48) | 102.8 | 73.2 | 62.8 | (2.46) | 25.3 | (3.02) | 37.5 | 64.9 | 32.8 | (1.93) | 44.0 |
| 215 | L..... | 60.0 | 35.5 | (.83) | (2.33) | 84.1 | 58.2 | 41.6 | (.98) | 8.8 | (2.27) | 25.6 | 44.9 | 40.2 | (1.58) | 24.5 |
| 216 | R..... | 72.5 | 37.0 | (.82) | (1.37) | 87.3 | 54.8 | 38.6 | (.7) | 11.8 | (.7) | 28.7 | 46.5 | 38.1 | 8.1 | 35.2 |
| 217 | RrP..... | 57.5 | 38.7 | (.85) | (1.44) | 98.6 | 49.6 | 43.4 | (.7) | 22.1 | (.7) | 38.9 | 53.5 | 43.6 | 16.8 | 45.2 |
| 218 | RrPK..... | 50.0 | 40.7 | (1.51) | (2.17) | 99.0 | 43.0 | 46.3 | (.7) | 28.3 | (.7) | 36.4 | 64.0 | 45.2 | 14.8 | 46.2 |
| 219 | R _L rPK..... | 57.5 | 37.7 | (1.21) | (1.98) | 109.6 | 47.2 | 57.2 | (.7) | 27.3 | (.7) | 39.8 | 65.7 | 38.1 | 18.6 | 44.1 |
| 220 | 0..... | 55.0 | 39.5 | (.71) | (2.49) | 88.3 | 49.5 | 38.1 | (1.00) | 15.6 | (2.24) | 18.9 | 38.6 | 28.3 | (1.51) | 31.2 |

¹No manure, cover crop, or residues. ²No seed harvested in 1911 and 1913.

TABLE 40.—Concluded

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|------------------------|------------------------|------------------------|-------------------------|------------|-------------|-----------|-----------|-----------|----------------|--------------------------|----------------|-----------|
| | | 1904 Timothy ¹ | 1905 Timothy ¹ | 1906 Corn ¹ | 1907 Corn ² | 1908 Oats ² | 1909 Wheat ² | 1910 Wheat | 1911 Clover | 1912 Corn | 1913 Corn | 1914 Oats | 1915 Soy-beans | 1916 Barley ⁴ | 1917 Soy-beans | 1918 Corn |
| 301 | L..... | (1.36) | (1.54) | 66.8 | 75.9 | 28.6 | 31.7 | 16.2 | (2.17) | 70.8 | 36.6 | 29.8 | (1.36) | 22.5 | (.84) | 63.8 |
| 302 | RL..... | (1.38) | (1.59) | 68.6 | 77.7 | 26.6 | 33.8 | 19.4 | ..(9) | 89.6 | 37.2 | 40.8 | 17.3 | 27.1 | 5.8 | 76.6 |
| 303 | ML..... | (1.30) | (1.92) | 72.0 | 80.3 | 28.3 | 36.3 | 19.6 | (2.57) | 104.3 | 40.9 | 34.1 | (1.49) | 25.5 | (1.29) | 70.4 |
| 304 | CvML..... | (1.38) | (2.02) | 75.6 | 83.1 | 26.1 | 40.4 | 22.3 | (2.03) | 103.3 | 42.9 | 35.2 | (1.58) | 25.6 | (1.42) | 75.2 |
| 305 | L..... | (1.20) | (1.75) | 70.5 | 78.3 | 22.5 | 36.6 | 21.2 | (1.83) | 92.1 | 38.9 | 36.1 | (1.30) | 21.7 | (.90) | 61.8 |
| 306 | LrP..... | (1.21) | (1.65) | 69.7 | 84.4 | 32.7 | 40.6 | 22.2 | (2.64) | 98.2 | 42.9 | 37.6 | 17.7 | 24.2 | 7.9 | 76.0 |
| 307 | RLrP..... | (1.16) | (1.55) | 74.0 | 84.1 | 27.5 | 41.2 | 24.1 | (3.25) | 103.2 | 44.5 | 50.3 | 19.2 | 29.8 | 8.9 | 77.3 |
| 308 | MLrP..... | (1.25) | (1.63) | 73.9 | 86.1 | 33.9 | 39.7 | 21.6 | (3.25) | 107.9 | 45.3 | 35.5 | (1.67) | 26.8 | (1.49) | 81.1 |
| 309 | CvMLrP..... | (1.55) | (2.03) | 83.9 | 87.8 | 28.9 | 44.9 | 24.9 | (3.13) | 106.0 | 49.0 | 27.3 | (1.68) | 33.0 | (1.52) | 78.4 |
| 310 | L..... | (1.75) | (2.25) | 84.3 | 85.6 | 31.6 | 39.8 | 22.4 | (2.74) | 93.0 | 45.5 | 32.2 | 18.8 | 23.0 | 6.2 | 65.5 |
| 311 | LrPK..... | (2.10) | (2.41) | 86.9 | 87.8 | 32.3 | 44.3 | 24.5 | (3.59) | 101.9 | 39.1 | 22.8 | 23.3 | 22.7 | 7.9 | 62.8 |
| 312 | RLrPK..... | (1.55) | (1.91) | 75.8 | 81.2 | 25.9 | 41.8 | 23.2 | ..(9) | 98.4 | 44.5 | 37.3 | 21.2 | 38.4 | 9.2 | 76.9 |
| 313 | MLrPK..... | (1.16) | (1.53) | 68.4 | 77.9 | 31.3 | 35.8 | 23.0 | (3.28) | 108.8 | 44.3 | 28.4 | (1.98) | 29.7 | (1.55) | 82.3 |
| 314 | CvMLrPK..... | (1.50) | (1.52) | 70.6 | 81.7 | 27.7 | 42.0 | 23.1 | (3.57) | 106.9 | 46.8 | 21.4 | (1.82) | 35.1 | (1.68) | 77.6 |
| 315 | L..... | (1.90) | (1.97) | 74.1 | 85.1 | 30.6 | 36.8 | 21.6 | (2.47) | 90.6 | 31.1 | 26.9 | (1.48) | 25.5 | (1.13) | 77.6 |
| 316 | R..... | (1.82) | (1.82) | 67.7 | 80.6 | 26.7 | 34.2 | 22.9 | ..(9) | 82.1 | 35.0 | 37.2 | 17.8 | 33.3 | 8.6 | 73.3 |
| 317 | RLrP..... | (1.95) | (2.00) | 59.1 | 83.3 | 31.1 | 44.0 | 27.0 | ..(9) | 99.2 | 38.9 | 46.2 | 19.2 | 31.5 | 5.5 | 69.1 |
| 318 | RrPK..... | (2.65) | (2.18) | 66.8 | 73.6 | 25.8 | 43.3 | 29.1 | ..(9) | 113.2 | 42.8 | 55.5 | 20.2 | 32.6 | 4.9 | 60.4 |
| 319 | RLNHPK..... | (4.16) | (2.37) | 71.2 | 84.7 | 32.7 | 43.8 | 24.9 | ..(9) | 104.1 | 37.5 | 43.1 | 25.2 | 39.1 | 7.9 | 79.9 |
| 320 | 0..... | (1.46) | (1.56) | 59.6 | 72.8 | 31.3 | 28.5 | 15.8 | (1.46) | 79.1 | 27.8 | 25.0 | 15.4 | 24.9 | (.60) | 49.3 |

¹No manure, cover crop, or residues. ²No manure. ³No seed harvested in 1911. ⁴Barley grown as a substitute for wheat in 1916.

GREEN VALLEY FIELD, TAZEWELL COUNTY

ESTABLISHED 1902—DISCONTINUED 1907

Location.—About two miles southwest of Green Valley on the farm of Mr. J. C. Drake. A part of the S.W. $\frac{1}{4}$ of the N.W. $\frac{1}{4}$ of the N.W. $\frac{1}{4}$, Sec. 3, Twp. 22 N., R. 5 W. of the 3d P. M.

Description.—The field consisted of 8.7 acres of terrace soils, probably more or less acid. At the time the field was established the soil was described as sand ridge with no clay subsoil to a depth of four feet. Several soil types were present on the field, ranging from Dune Sand to Black Sandy Loam. The south acre, according to the records, was a fairly good, uniform soil, being described as a mixture of sand and black loam. The north acre was described as very sandy with a few fertile spots in it. The middle portions of this field were more spotted. The field was divided into four series of 10 tenth-acre plots each.

History.—The Green Valley field was leased from Mr. J. C. Drake. Previous to 1902 the land had been cultivated for about fifty years and had had but little manure applied to it. The land had been used for pasture and for corn. In 1901 oats were grown.

Cropping and Soil Treatment Practices.—Series 100, 200, and 300 were cropped with a rotation of corn, oats, and legumes, with cowpeas seeded in the corn on the residue plots. Phosphorus was supplied in steamed bone meal at the annual rate of 200 pounds, and potassium in potassium sulfate at the rate of 100 pounds an acre. Manure was applied once during the rotation at the rate of 6 tons an acre. One application of slaked lime at the rate of 311 pounds an acre was made in 1902.

Series 400 was used for what was called a complete fertility test. The rotation on this series was corn, corn, oats, wheat. It was located on the south side of the field. Nitrogen was supplied in dried blood applied at the approximate annual rate of 725 pounds, potassium in 100 pounds of potassium sulfate, and phosphorus in 200 pounds of steamed bone meal an acre. One application of slaked lime at the rate of 311 pounds an acre was made in 1902.

TABLE 41.—GREEN VALLEY FIELD: SERIES 100, 200, 300

| | | Bushels or (tons) per acre | | | | | |
|----------|------------------------|----------------------------|-------------------|-----------------------|------|------|----------|
| Plot No. | Soil treatment applied | 1902 | 1903 | 1904 | 1905 | 1906 | 1907 |
| | | Corn ¹ | Oats ² | Cow-peas ³ | Corn | Oats | Cow-peas |
| 101 | 0..... | 38.3 | 21.0 | (1.33) | 30.9 | 11.3 | (1.55) |
| 102 | Le..... | 33.1 | 26.9 | ..(?) | 35.0 | 17.5 | (2.23) |
| 103 | M..... | 33.1 | 22.5 | (1.70) | 35.9 | 8.1 | (2.21) |
| 104 | LeL..... | 27.2 | 32.2 | ..(?) | 32.9 | 17.8 | (2.46) |
| 105 | ML..... | 36.0 | 24.4 | (1.66) | 41.4 | 13.4 | (2.06) |
| 106 | LeLbP..... | 40.3 | 36.2 | ..(?) | 43.1 | 23.1 | (2.34) |
| 107 | MLbP..... | 29.5 | 26.9 | (1.82) | 28.7 | 10.9 | (2.50) |
| 108 | LeLbPK..... | 12.7 | 25.0 | ..(?) | 14.1 | 25.3 | (2.84) |
| 109 | MLbPK..... | 22.4 | 21.0 | (1.50) | 13.3 | 13.4 | (3.02) |
| 110 | LbPK..... | 25.6 | 22.5 | (1.61) | 16.9 | 10.0 | (2.30) |

| | | Oats ¹ | Cow-peas ² | Corn | Oats | Cow-peas | Corn |
|-----|-------------|-------------------|-----------------------|------|------|----------|------|
| 201 | 0..... | 41.6 | (1.00) | 52.2 | 24.1 | (1.50) | 48.8 |
| 202 | Le..... | 39.4 | ..(?) | 59.0 | 36.9 | (1.60) | 52.3 |
| 203 | M..... | 30.9 | (1.05) | 55.7 | 23.1 | (1.50) | 46.0 |
| 204 | LeL..... | 25.6 | ..(?) | 45.3 | 26.3 | (1.55) | 34.1 |
| 205 | ML..... | 41.3 | (1.30) | 71.2 | 35.3 | (2.02) | 63.5 |
| 206 | LeLbP..... | 51.6 | ..(?) | 73.5 | 35.9 | (2.35) | 67.9 |
| 207 | MLbP..... | 53.4 | (1.45) | 79.2 | 35.3 | (2.58) | 71.9 |
| 208 | LeLbPK..... | 35.9 | ..(?) | 69.7 | 48.1 | (2.37) | 51.5 |
| 209 | MLbPK..... | 32.8 | (1.35) | 64.5 | 33.4 | (2.02) | 59.3 |
| 210 | LbPK..... | 47.2 | (1.40) | 54.0 | 29.1 | (1.81) | 43.3 |

| | | Cow-peas ^{1, 2} | Corn | Oats | Cow-peas | Corn | Oats |
|-----|-------------|--------------------------|------|------|----------|------|------|
| 301 | 0..... | .... | 57.4 | 38.4 | (2.17) | 58.8 | 15.6 |
| 302 | Le..... | .... | 61.4 | 37.5 | (1.86) | 58.0 | 25.3 |
| 303 | M..... | .... | 71.9 | 41.2 | (1.87) | 50.3 | 16.3 |
| 304 | LeL..... | .... | 48.0 | 32.5 | (1.50) | 43.4 | 17.5 |
| 305 | ML..... | .... | 59.9 | 36.9 | (1.79) | 46.3 | 12.5 |
| 306 | LeLbP..... | .... | 55.0 | 40.6 | (1.69) | 45.6 | 28.4 |
| 307 | MLbP..... | .... | 76.3 | 42.8 | (2.17) | 58.0 | 15.0 |
| 308 | LeLbPK..... | .... | 57.1 | 46.6 | (2.50) | 54.1 | 33.1 |
| 309 | MLbPK..... | .... | 81.0 | 51.6 | (2.95) | 62.8 | 21.6 |
| 310 | LbPK..... | .... | 53.6 | 35.6 | (2.18) | 44.1 | 13.8 |

¹Minerals only. ²No yields taken; growth plowed down on the legume plots. ³No manure.

TABLE 42.—GREEN VALLEY FIELD: SPECIAL FERTILITY TEST, SERIES 400

| | | Bushels or (tons) per acre | | | | | |
|----------|------------------------|----------------------------|------|------|-------|------|------|
| Plot No. | Soil treatment applied | 1902 | 1903 | 1904 | 1905 | 1906 | 1907 |
| | | Corn | Corn | Oats | Wheat | Corn | Corn |
| 401 | 0..... | 68.7 | 56.3 | 49.7 | 18.3 | 32.9 | 35.3 |
| 402 | L..... | 68.2 | 42.0 | 35.9 | 19.0 | 17.8 | 29.5 |
| 403 | LN..... | 68.6 | 65.4 | 44.4 | 23.5 | 62.9 | 58.9 |
| 404 | LbP..... | 30.3 | 24.9 | 20.3 | 16.7 | 10.4 | 13.1 |
| 405 | LK..... | 23.1 | 20.1 | 16.9 | 16.5 | 8.4 | 12.8 |
| 406 | LNbP..... | 57.4 | 69.8 | 51.9 | 26.8 | 70.8 | 64.7 |
| 407 | LNK..... | 70.0 | 72.9 | 54.7 | 36.5 | 74.8 | 73.6 |
| 408 | LbPK..... | 49.8 | 39.6 | 36.9 | 13.7 | 18.3 | 27.7 |
| 409 | LNbPK..... | 69.5 | 69.8 | 47.8 | 36.2 | 66.4 | 73.6 |
| 410 | LbPK..... | 57.2 | 66.1 | 50.0 | 26.5 | 66.0 | 71.9 |

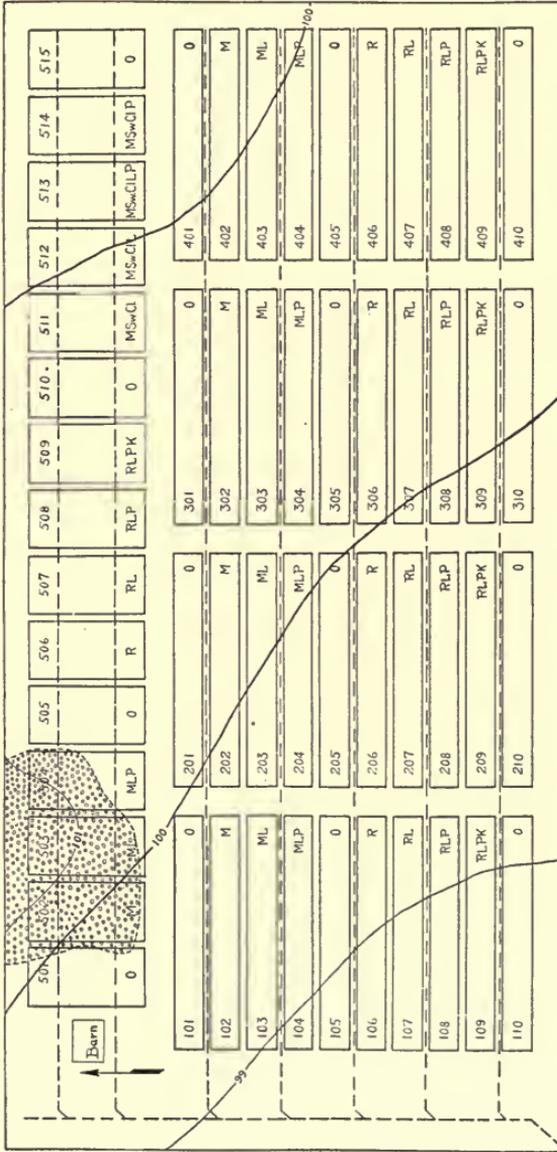
HARTSBURG FIELD, LOGAN COUNTY
ESTABLISHED 1911

Location.—About one-half mile east of Hartsburg. A part of the S. $\frac{1}{2}$ of the S.W. $\frac{1}{4}$ of the S.W. $\frac{1}{4}$, Sec. 22, Twp. 21 N., R. 3 W. of the 3d P. M.

Description.—The field consists of 20 acres of dark-colored loessial upland soil which is neutral to slightly acid in reaction. The land is quite uniform from the standpoint both of soil and topography. With the exception of a small area in the northwest part of the field consisting of Brown Silt Loam On Clay (Grundy silt loam), the field consists entirely of Black Clay Loam (Grundy clay loam). The field is thoroly tile-drained and drains very well. It is divided into five series, four of which contain 10 fifth-acre plots and one which contains 15 fifth-acre plots.

History.—The Hartsburg field was donated to the University by the Scully estate for experimental purposes. Previous to that time it had been farmed under a tenant system. Oats were grown on this land in 1910.

Cropping and Soil Treatment.—The somewhat standard rotation, including alfalfa and the soil treatment methods described in the introduction, were established on the five series. Some modifications were made in the order of treatment given the extra five plots on Series 500. These methods were followed without change until 1918, when it was planned to remove one hay crop and a seed crop of clover from the residue plots. In 1921 it was decided to harvest all the clover as hay. At that time the return of the oats straw was discontinued. In 1922 the return of the wheat straw was discontinued. The only residues plowed under since that time have been the cornstalks and the green sweet clover before the corn. On this field the sweet clover has grown satisfactorily on the unlimed plots. The application of limestone was also discontinued in 1922 until further need for it becomes apparent. In 1923 the phosphate applications were evened up to 4 tons an acre on all plots, and no more will be applied for an indefinite period. At that time the rotation on Series 100, 200, 300, and 400 was changed to corn, corn, oats, and wheat, with a seeding of hubam clover in the oats on all plots, and a seeding of biennial sweet clover in the wheat on the residue plots. On Series 500, the rotation was changed to corn, oats, wheat, and alfalfa-red clover mixture for one year.



Scale
0 50 100 feet
Contour interval - 3 feet

SOIL MAP OF HARTSBURG FIELD

Black Clay Loam
Grundy clay loam
Brown Silt Loam
Grundy silt loam

TABLE 43.—HARTSBURG FIELD: SERIES 100-500

Bushels or (tons) per acre

| Plot treatment No. | Soil applied | 1912-1914 | | | | | | | | | | 1915-1924 | | | | | | | | | |
|--------------------|--------------|------------------------|--------------------------|-------------------------|-----------|--------------------|-------------|------------|--------------|--------------|--------------|--------------|-----------|-----------|---------------------|--|--|--|--|--|--|
| | | 1912 Oats ¹ | 1913 Clover ² | 1914 Wheat ³ | 1915 Corn | 1916 Oats | 1917 Clover | 1918 Wheat | 1919 Alfalfa | 1920 Alfalfa | 1921 Alfalfa | 1922 Alfalfa | 1923 Corn | 1924 Oats | 1924 Stubble clover | | | | | | |
| 101 | 0 | 39.5 | (1.88) | 35.9 | 52.9 | 62.7 | (1.90) | 34.0 | (1.54) | (3.14) | (3.54) | 62.2 | 80.0 | (.83) | | | | | | | |
| 102 | M | 30.5 | (1.84) | 27.9 | 51.2 | 59.4 | (2.57) | 37.3 | (1.54) | (2.78) | (3.24) | 76.4 | 85.9 | (1.15) | | | | | | | |
| 103 | ML | 43.9 | (2.03) | 36.1 | 61.9 | 74.5 | (2.51) | 39.5 | (1.85) | (3.09) | (3.44) | 72.0 | 79.1 | (.91) | | | | | | | |
| 104 | MLrP | 37.2 | (1.90) | 33.8 | 64.1 | 71.2 | (2.63) | 44.2 | (1.90) | (3.82) | (4.19) | 76.3 | 85.3 | (1.17) | | | | | | | |
| 105 | 0 | 35.0 | 2.67 | 30.2 | 45.0 | 53.3 | 1.75 | 38.2 | (1.82) | (2.44) | (3.21) | 72.6 | 71.3 | (.71) | | | | | | | |
| 106 | R | 33.0 | 2.33 | 30.8 | 52.1 | 54.8 | 2.25 | 37.3 | (2.09) | (3.86) | (5.13) | 70.2 | 71.9 | (.75) | | | | | | | |
| 107 | RL | 33.3 | 2.67 | 32.1 | 60.5 | 58.3 | 2.00 | 34.1 | (1.98) | (3.09) | (3.18) | 73.3 | 64.7 | (.68) | | | | | | | |
| 108 | RLrP | 37.8 | 2.50 | 36.0 | 63.9 | 60.6 | 2.50 | 42.5 | (2.92) | (4.17) | (5.59) | 72.3 | 78.8 | (.72) | | | | | | | |
| 109 | RLrPK | 33.0 | 2.25 | 36.2 | 62.7 | 63.0 | 2.50 | 40.5 | (2.57) | (4.31) | (4.38) | 69.8 | 78.3 | (.80) | | | | | | | |
| 110 | 0 | 31.2 | (1.95) | 33.7 | 49.3 | 56.2 | (1.86) | 31.4 | (1.44) | (2.71) | (3.11) | 68.9 | 78.4 | (.75) | | | | | | | |
| | | Corn ¹ | | Soy-beans ³ | | Wheat ³ | | Oats | | Clover | | Corn | | Clover | | | | | | | |
| 201 | 0 | 32.1 | 25.9 | (1.51) | 39.9 | 45.6 | (3.92) | 25.9 | 48.1 | 34.8 | (2.26) | 60.6 | 53.8 | | | | | | | | |
| 202 | M | 21.9 | (1.90) | 41.5 | 36.0 | 52.2 | (4.03) | 24.2 | 58.3 | 21.9 | (2.52) | 69.4 | 62.4 | | | | | | | | |
| 203 | ML | 43.3 | 25.6 | (1.88) | 42.8 | 61.1 | (4.30) | 26.5 | 63.0 | 32.7 | (2.61) | 68.1 | 72.0 | | | | | | | | |
| 204 | MLrP | 38.4 | 24.1 | (1.80) | 45.1 | 56.6 | (4.42) | 25.2 | 61.7 | 33.0 | (2.74) | 68.3 | 62.6 | | | | | | | | |
| 205 | 0 | 35.0 | 22.8 | 22.1 | 40.7 | 42.8 | .08 | 27.4 | 55.2 | 30.9 | (2.51) | 72.6 | 61.2 | | | | | | | | |
| 206 | R | 36.6 | 20.5 | 22.6 | 40.9 | 48.2 | 1.67 | 23.2 | 65.2 | 30.2 | (1.93) | 72.5 | 61.8 | | | | | | | | |
| 207 | RL | 37.0 | 19.5 | 21.2 | 34.3 | 49.9 | 78.4 | 2.17 | 67.9 | 34.2 | (1.63) | 73.5 | 60.6 | | | | | | | | |
| 208 | RLrP | 40.5 | 22.3 | 21.2 | 39.7 | 45.2 | 1.92 | 25.8 | 64.3 | 36.9 | (1.88) | 72.5 | 68.4 | | | | | | | | |
| 209 | RLrPK | 38.3 | 24.8 | 20.8 | 41.7 | 44.2 | 90.3 | 2.25 | 59.0 | 39.4 | (1.60) | 72.1 | 68.0 | | | | | | | | |
| 210 | 0 | 39.2 | 22.3 | (1.40) | 37.8 | 43.1 | (3.80) | 27.2 | 47.9 | 31.6 | (2.55) | 60.6 | 55.0 | | | | | | | | |
| | | Wheat ² | | Corn | | Oats | | Soy-beans | | Wheat | | Corn | | Oats | | | | | | | |
| 301 | 0 | ..... | 21.1 | 25.8 | (1.43) | 33.1 | (.69) | 19.8 | 48.2 | 37.0 | | 24.8 | 40.0 | | | | | | | | |
| 302 | M | ..... | 21.3 | 30.9 | (1.84) | 39.8 | (.96) | 22.0 | 68.0 | 47.7 | | 39.3 | 60.0 | | | | | | | | |
| 303 | ML | ..... | 33.1 | 36.9 | (1.13) | 53.3 | (1.13) | 43.1 | 67.3 | 52.5 | | 42.7 | 64.0 | | | | | | | | |
| 304 | MLrP | ..... | 30.0 | 36.9 | (2.23) | 54.1 | (1.16) | 44.7 | 69.0 | 52.3 | | 42.5 | 57.4 | | | | | | | | |
| 305 | 0 | ..... | 27.1 | 33.1 | 30.8 | 43.9 | (.56) | 36.5 | 50.1 | 39.4 | | 32.9 | 49.0 | | | | | | | | |
| 306 | R | ..... | 34.2 | 31.2 | 28.4 | 79.1 | (.59) | 48 | 60.8 | 45.8 | | 35.0 | 68.8 | | | | | | | | |
| 307 | RL | ..... | 49.5 | 32.5 | 30.1 | 63.1 | (.43) | 37.8 | 63.3 | 45.9 | | 32.3 | 73.6 | | | | | | | | |
| 308 | RLrP | ..... | 41.7 | 36.4 | 28.2 | 84.8 | (.45) | 38 | 63.2 | 41.4 | | 34.0 | 68.0 | | | | | | | | |
| 309 | RLrPK | ..... | 39.5 | 35.5 | 28.9 | 84.1 | (.38) | 28 | 63.1 | 44.7 | | 34.0 | 76.2 | | | | | | | | |
| 310 | 0 | ..... | 26.7 | 34.5 | (2.00) | 49.1 | (.72) | 32.2 | 58.3 | 39.7 | | 30.5 | 48.8 | | | | | | | | |

¹Lime only. ²Yields not taken. ³No manure.

TABLE 43.—*Concluded*
Bushels or (tons) per acre

| Plot No. | Soil treatment applied | 1913-1924 | | | | | | | | | | | | | |
|------------------------------|------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|------------|-----------|-----------|------------|------|
| | | 1912 Soy-beans | 1913 Wheat* | 1914 Corn | 1915 Oats | 1916 Clover | 1917 Wheat | 1918 Corn | 1919 Oats | 1920 Soybeans | 1921 Wheat | 1922 Corn | 1923 Oats | 1924 Wheat | |
| 401 | O..... | 12.1 | 26.2 | 31.3 | 48.8 | (1.40) | 19.1 | 53.2 | 33.6 | (1.15) | 19.3 | 36.2 | 43.8 | 17.5 | |
| 402 | M..... | (.99) | 24.8 | 35.0 | 58.0 | (2.07) | 31.7 | 64.0 | 41.4 | (1.45) | 22.8 | 50.1 | 62.2 | 26.2 | |
| 403 | ML..... | (1.12) | 29.9 | 46.5 | 63.1 | (2.12) | 32.7 | 70.7 | 45.5 | (1.68) | 30.8 | 58.7 | 65.8 | 40.7 | |
| 404 | MLrP..... | (1.20) | 33.2 | 39.0 | 66.2 | (2.28) | 42.2 | 71.4 | 42.8 | (1.62) | 38.3 | 57.9 | 63.1 | 37.7 | |
| 405 | O..... | 15.0 | 28.7 | 33.9 | 46.9 | .67 | 35.8 | 62.3 | 36.6 | 20.8 | 24.3 | 40.7 | 43.8 | 21.8 | |
| 406 | R..... | 17.5 | 30.6 | 41.2 | 51.6 | .50 | 40.3 | 70.3 | 42.7 | 25.1 | 33.6 | 41.5 | 63.6 | 29.5 | |
| 407 | RL..... | 17.3 | 28.8 | 43.0 | 54.2 | .75 | 34.8 | 71.8 | 39.2 | 26.8 | 31.3 | 50.3 | 48.6 | 36.2 | |
| 408 | RLrP..... | 17.4 | 32.1 | 45.1 | 53.3 | .83 | 40.8 | 67.7 | 40.0 | 24.1 | 36.4 | 48.2 | 54.7 | 36.5 | |
| 409 | RLrPK..... | 17.6 | 30.9 | 45.6 | 52.0 | .67 | 39.7 | 61.9 | 37.5 | 24.0 | 33.0 | 51.3 | 54.4 | 34.7 | |
| 410 | O..... | 16.1 | 32.4 | 38.1 | 50.2 | (2.17) | 40.7 | 65.4 | 40.0 | (1.38) | 32.4 | 44.3 | 48.8 | 32.2 | |
| Alfalfa ³ seeding | | | | | | | | | | | | | | | |
| | | Alfalfa ³ | Alfalfa^{3} | Alfalfa^{3} | Alfalfa^{3} | Alfalfa^{3} | Alfalfa^{3} | Alfalfa^{3} | Alfalfa^{3} | Alfalfa^{3} | Oats | Clover | Wheat | Corn | Oats |
| 501 | O..... | (2.36) | (4.11) | (3.53) | (4.53) | (3.38) | (3.17) | (4.22) | 69.9 | (4.22) | (3.20) | (4.22) | 40.0 | 58.0 | 69.1 |
| 502 | ML..... | (2.89) | (4.23) | (3.56) | (5.20) | (3.67) | (3.66) | (4.76) | 72.1 | (4.76) | (3.84) | (4.76) | 38.5 | 66.3 | 75.8 |
| 503 | ML..... | (3.20) | (4.51) | (3.56) | (5.35) | (3.85) | (3.65) | (5.11) | 74.5 | (5.11) | (3.65) | (5.11) | 39.5 | 68.5 | 83.4 |
| 504 | MLrP..... | (3.31) | (4.66) | (4.66) | (5.58) | (3.94) | (4.05) | (5.05) | 75.8 | (5.05) | (3.94) | (5.05) | 41.3 | 70.1 | 82.5 |
| 505 | O..... | (1.80) | (3.53) | (3.53) | (4.53) | (3.38) | (3.42) | (4.57) | 76.5 | (4.57) | (3.42) | (4.57) | 40.7 | 64.5 | 65.9 |
| 506 | R..... | (2.79) | (4.24) | (3.24) | (5.17) | (3.57) | (3.38) | (4.41) | 75.6 | (4.41) | (3.38) | (4.41) | 40.9 | 74.3 | 69.4 |
| 507 | RL..... | (2.12) | (3.56) | (3.56) | (4.72) | (3.25) | (3.24) | (4.24) | 82.4 | (4.24) | (3.24) | (4.24) | 35.2 | 71.3 | 70.9 |
| 508 | RLrP..... | (2.28) | (4.04) | (3.33) | (5.33) | (3.15) | (3.98) | (4.76) | 75.5 | (4.76) | (3.15) | (4.76) | 39.6 | 74.6 | 79.4 |
| 509 | RLrPK..... | (2.72) | (4.46) | (3.52) | (4.52) | (3.49) | (4.00) | (4.98) | 78.8 | (4.98) | (3.49) | (4.98) | 40.5 | 74.3 | 77.2 |
| 510 | O..... | (1.87) | (3.71) | (3.71) | (4.46) | (2.60) | (3.14) | (4.24) | 65.1 | (4.24) | (2.60) | (4.24) | 37.3 | 63.8 | 60.9 |
| 511 | RM..... | (2.45) | (3.61) | (3.61) | (4.52) | (2.79) | (2.83) | (4.05) | 74.2 | (4.05) | (2.79) | (4.05) | 37.8 | 72.4 | 70.8 |
| 512 | RML..... | (2.79) | (3.76) | (3.76) | (4.61) | (2.94) | (2.92) | (4.14) | 74.3 | (4.14) | (2.92) | (4.14) | 36.8 | 74.7 | 78.8 |
| 513 | RMLrP..... | (3.71) | (4.63) | (3.45) | (5.03) | (3.36) | (3.45) | (4.57) | 68.7 | (4.57) | (3.36) | (4.57) | 40.8 | 66.3 | 83.9 |
| 514 | RMLrP..... | (3.30) | (4.73) | (3.73) | (5.09) | (3.96) | (3.87) | (4.70) | 68.0 | (4.70) | (3.87) | (4.70) | 41.4 | 68.2 | 76.4 |
| 515 | O..... | (1.79) | (3.92) | (3.92) | (4.19) | (2.81) | (2.89) | (3.20) | 59.3 | (3.20) | (2.81) | (3.20) | 35.3 | 51.7 | 60.2 |

Lime only. *No manure. ³No residues.

JOLIET FIELD, WILL COUNTY

ESTABLISHED 1914

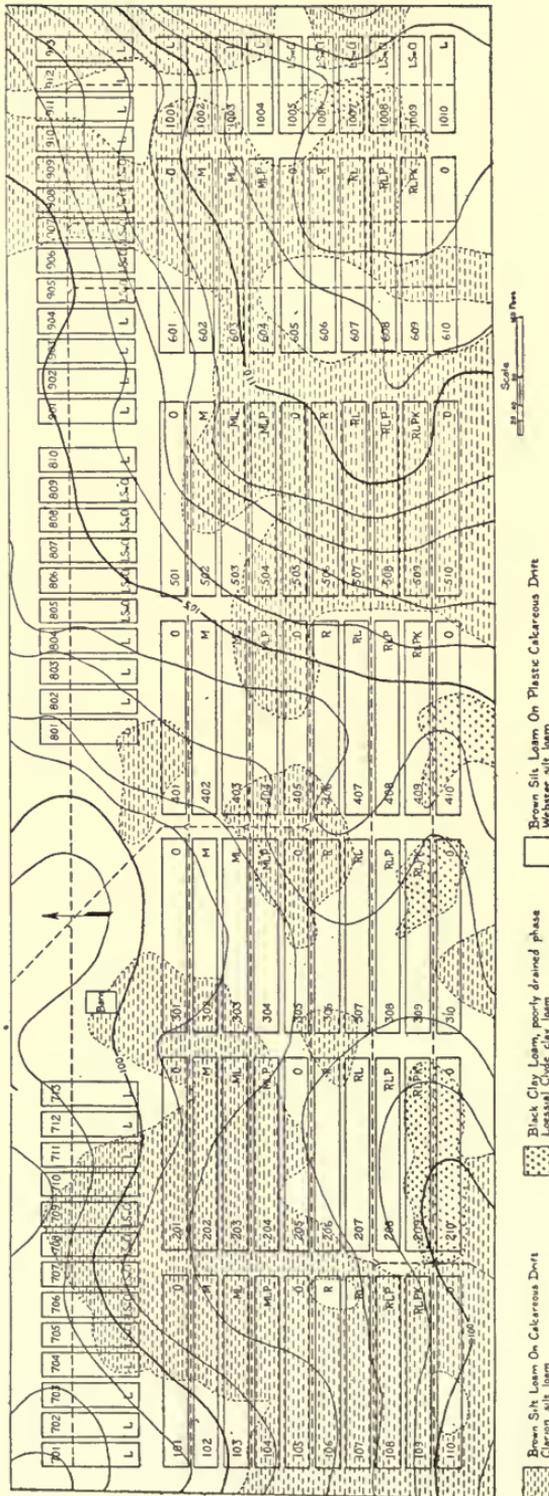
Location.—About three miles northwest of Joliet on the Lincoln highway. A part of the S. $\frac{1}{2}$ of the N.W. $\frac{1}{4}$ and the S.W. $\frac{1}{4}$ of the N.E. $\frac{1}{4}$, Sec. 31, Twp. 36 N., R. 10 E. of the 3d P. M.

Description.—The field consists of 31 acres of dark-colored loessial and drift upland soil of medium acidity. Three soil types have been mapped on the field: (1) Brown Silt Loam On Calcareous Drift, (Clarion silt loam); (2) Black Clay Loam, poorly drained phase (Loessial Clyde clay loam); (3) Brown Silt Loam On Plastic Calcareous Drift (Webster silt loam). The land is gently rolling. It is tile-drained and drains well. The field is divided into ten series, six of which contain 10 fifth-acre plots, two of which contain 10 tenth-acre plots, and two of which contain 13 tenth-acre plots.

History.—The Joliet field was purchased by Will county and donated to the University for experimental purposes. Series 100, 200, and 300 were seeded to oats and clover in 1913. Series 400, 500, and 600 had been in pasture several years preceding the laying out of the experiment field.

Cropping and Soil Treatment.—The original rotation on Series 100, 200, 300, 400, 500, and 600 was corn, oats, clover, wheat, and soybeans, with alfalfa on the sixth series for six years. In 1921 this rotation was changed to corn, corn, oats, clover, and wheat, with a seeding of sweet clover on the residue plots, and alfalfa on the sixth series for six years. The soil treatments planned for this field were similar to those described in the introduction. Since 1921 all clover has been removed as hay. In 1921 the return of the oats straw was discontinued and in 1922 the return of the wheat straw was discontinued. At that time the limestone applications were also discontinued until the need for more becomes apparent.

Series 700, 800, 900, and 1,000 were known as Plots A, B, C, and D until 1921, at which time they were subdivided. Plots A and B were used for a wheat-legume-alfalfa combination, while Plots C and D were used for a wheat-legume-timothy combination. All these plots received $2\frac{1}{2}$ tons of limestone an acre; no other treatment was given the land. In 1921 they were plotted and a rotation of corn, barley, soybeans, and wheat was established on them. Hubam clover has been seeded on Plots 5, 6, 7, 8, and 9 in the barley, and biennial sweet clover on the same plots in wheat; no other treatment has been given the land.



SOIL MAP OF JOLIET FIELD

TABLE 44.—JOLIET FIELD: SERIES 100-000

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|----------|------------------------|---|------------------------------------|--------------|--------------|----------------------------|---------------|----------------------------|---------------------------|-----------------|-----------------|-----------------|
| | | 1914 Wheat ¹ | 1915 Soy- beans ² | 1916 Corn | 1917 Oats | 1918 Soy- beans | 1919 Wheat | 1920 Alfalfa seeding | 1921 Oats ⁴ | 1922 Alfalfa | 1923 Alfalfa | 1924 Alfalfa |
| 101 | 0 | 16.5 | (1.42) | 18.1 | 73.4 | (1.13) | 28.2 | ... | 46.7 | (1.50) | (1.63) | (1.12) |
| 102 | M | 19.3 | (1.50) | 29.4 | 80.1 | (1.33) | 32.5 | ... | 45.9 | (1.79) | (1.79) | (1.70) |
| 103 | ML | 20.9 | (1.68) | 34.0 | 79.4 | (1.32) | 35.0 | ... | 50.8 | (2.32) | (2.42) | (2.57) |
| 104 | MLrP | 21.5 | (1.82) | 33.4 | 83.1 | (1.53) | 39.8 | ... | 51.4 | (2.79) | (3.32) | (3.49) |
| 105 | 0 | 18.2 | 15.2 | 18.5 | 70.2 | 18.8 | 19.4 | ... | 41.1 | (1.24) | (1.59) | (1.39) |
| 106 | R | 19.9 | 14.0 | 18.9 | 73.8 | 18.7 | 23.8 | ... | 43.3 | (1.46) | (1.46) | (1.15) |
| 107 | RL | 20.8 | 15.8 | 21.6 | 73.8 | 21.2 | 26.6 | ... | 47.7 | (1.80) | (1.75) | (1.93) |
| 108 | RLrP | 20.2 | 15.2 | 25.0 | 80.5 | 23.2 | 33.6 | ... | 51.9 | (2.73) | (3.51) | (4.21) |
| 109 | RLrPK | 22.0 | 16.3 | 25.1 | 70.5 | 23.6 | 33.8 | ... | 52.3 | (2.82) | (3.54) | (4.03) |
| 110 | 0 | 17.4 | 15.1 | 18.6 | 75.5 | (1.17) | 32.3 | ... | 46.6 | (1.49) | (1.68) | (1.70) |
| | | Clover ¹ Wheat ³ Soy- beans ² | | Corn | Oats | Clover | Wheat | Corn | Oats | Clover | | |
| 201 | 0 | (2.00) | 9.8 | (.55) | 7.3 | 75.2 | (1.50) | 22.6 | 31.4 | 28.8 | 58.9 | (1.40) |
| 202 | M | (2.05) | 7.9 | (.59) | 7.9 | 69.4 | (1.67) | 33.6 | 31.7 | 35.0 | 67.7 | (2.27) |
| 203 | ML | (1.97) | 14.3 | (.66) | 10.4 | 72.0 | (1.60) | 36.4 | 35.5 | 39.7 | 63.1 | (2.46) |
| 204 | MLrP | (2.02) | 20.3 | (.63) | 14.3 | 75.2 | (1.73) | 46.5 | 39.2 | 45.4 | 66.4 | (2.82) |
| 205 | 0 | (1.91) | 10.6 | 8.2 | 6.0 | 76.2 | (1.45) | 31.7 | 31.5 | 31.8 | 60.2 | (1.75) |
| 206 | R | .42 | 15.6 | 7.9 | 7.7 | 76.9 | .29 | 32.7 | 38.2 | 36.9 | 62.0 | (1.56) |
| 207 | RL | 1.00 | 20.0 | 8.9 | 11.1 | 76.7 | .54 | 33.2 | 45.3 | 40.5 | 61.1 | (2.00) |
| 208 | RLrP | .92 | 24.9 | 11.5 | 14.6 | 82.2 | .75 | 47.4 | 48.6 | 46.5 | 71.3 | (3.13) |
| 209 | RLrPK | 1.83 | 30.4 | 15.0 | 23.4 | 87.8 | .62 | 48.3 | 50.7 | 54.9 | 67.2 | (3.67) |
| 210 | 0 | 1.25 | 25.2 | (1.06) | 23.7 | 81.1 | (1.64) | 23.8 | 37.0 | 35.0 | 59.4 | (2.31) |
| | | Oats ¹ Soy- beans ² Wheat ³ | | Corn | Oats | Soy- beans ² | Wheat | Corn | Oats | Corn | Oats | |
| 301 | 0 | 60.9 | 10.6 | 4.1 | (1.58) | 27.2 | 35.3 | (1.64) | 30.4 | 29.0 | 36.9 | 56.6 |
| 302 | M | 60.2 | (1.42) | 5.2 | (1.66) | 57.2 | 48.0 | (1.62) | 33.3 | 32.7 | 46.8 | 60.3 |
| 303 | ML | 59.8 | (1.69) | 8.3 | (1.67) | 56.3 | 51.7 | (1.81) | 40.7 | 44.4 | 56.5 | 63.6 |
| 304 | MLrP | 59.5 | (1.75) | 7.9 | (1.78) | 59.2 | 50.6 | (1.88) | 44.3 | 45.4 | 57.2 | 63.3 |
| 305 | 0 | 50.2 | 13.9 | 6.0 | 9.4 | 34.5 | 37.7 | 9.4 | 25.6 | 23.9 | 33.1 | 56.6 |
| 306 | R | 53.3 | 13.0 | 9.9 | 8.8 | 33.2 | 38.6 | 9.4 | 26.9 | 37.0 | 45.0 | 53.9 |
| 307 | RL | 60.8 | 13.7 | 13.2 | 8.2 | 45.6 | 44.2 | 11.8 | 28.5 | 43.0 | 54.9 | 68.8 |
| 308 | RLrP | 59.1 | 15.1 | 18.7 | 11.5 | 55.6 | 49.2 | 14.1 | 37.9 | 50.9 | 61.5 | 76.1 |
| 309 | RLrPK | 68.8 | 15.0 | 15.2 | 12.6 | 60.2 | 49.7 | 15.4 | 42.9 | 57.9 | 68.2 | 70.9 |
| 310 | 0 | 52.5 | 12.8 | 7.1 | (1.39) | 38.8 | 35.0 | (1.60) | 28.5 | 23.8 | 32.4 | 53.1 |

¹Lime only. ²No manure. ³Nurse crop for alfalfa seeding in 1921.

TABLE 44.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|----------|------------------------|----------------------------------|---------------------------|-----------------------------|----------------------------|------------------------------------|----------------------------|--------------|----------------|---------------|--------------|--------------|
| | | 1914 Corn ¹ | 1915 Oats ² | 1916 Clover ³ | 1917 Wheat ⁴ | 1918 Soy- beans ⁵ | 1919 Corn | 1920 Oats | 1921 Clover | 1922 Wheat | 1923 Corn | 1924 Corn |
| 401 | O..... | 44.7 | 72.5 | (1.17) | 8.2 | (1.26) | 28.1 | 57.3 | (.63) | 25.9 | 35.4 | 36.2 |
| 402 | M..... | 46.9 | 73.0 | (1.24) | 10.3 | (1.35) | 32.6 | 67.5 | (.70) | 30.4 | 53.6 | 41.1 |
| 403 | ML..... | 52.4 | 70.5 | (1.16) | 10.9 | (1.21) | 39.5 | 63.5 | (.75) | 32.7 | 57.9 | 45.2 |
| 404 | MLrP..... | 50.2 | 75.0 | (1.64) | 19.6 | (1.53) | 44.3 | 99.1 | (1.13) | 38.8 | 66.1 | 52.4 |
| 405 | O..... | 42.3 | 67.7 | .33 | 9.8 | 18.6 | 29.0 | 59.8 | (.55) | 26.6 | 36.7 | 35.6 |
| 406 | R..... | 50.6 | 62.8 | .42 | 8.8 | 18.6 | 39.0 | 61.7 | (.66) | 27.1 | 49.9 | 34.0 |
| 407 | RL..... | 53.2 | 63.4 | .50 | 13.4 | 19.2 | 41.8 | 62.5 | (.86) | 29.1 | 50.1 | 40.7 |
| 408 | RLrP..... | 51.0 | 65.0 | .50 | 22.5 | 23.3 | 42.9 | 72.5 | (1.29) | 39.3 | 57.4 | 44.2 |
| 409 | RLrPK..... | 53.1 | 72.0 | .42 | 24.3 | 22.6 | 44.4 | 71.7 | (1.31) | 40.7 | 63.0 | 49.5 |
| 410 | O..... | 45.1 | 63.1 | (1.15) | 0.0 | (1.63) | 29.2 | 58.6 | (.75) | 27.3 | 36.7 | 38.2 |
| | | Soy- beans ¹ | Corn | Oats | Soy- beans ² | Wheat | Soy- beans ³ | Corn | Oats | Clover | Wheat | Corn |
| 501 | O..... | (1.24) | 28.6 | 70.9 | (1.60) | 19.8 | (.67) | 32.8 | 62.2 | (1.44) | 16.8 | 34.2 |
| 502 | M..... | (1.40) | 36.3 | 75.9 | (1.74) | 21.5 | (.88) | 48.6 | 70.3 | (1.90) | 20.0 | 44.8 |
| 503 | ML..... | (1.51) | 38.3 | 77.2 | (1.84) | 31.0 | (.94) | 51.1 | 66.4 | (1.70) | 22.5 | 49.6 |
| 504 | MLrP..... | (1.28) | 47.7 | 77.7 | (1.87) | 39.9 | (1.06) | 48.9 | 69.1 | (2.10) | 30.8 | 55.8 |
| 505 | O..... | 12.1 | 28.5 | 73.3 | 10.9 | 22.0 | 9.2 | 36.2 | 58.3 | (1.18) | 14.1 | 34.3 |
| 506 | R..... | 11.9 | 32.4 | 71.1 | 11.0 | 28.8 | 9.2 | 46.0 | 61.1 | (1.28) | 11.8 | 37.2 |
| 507 | RL..... | 13.3 | 28.7 | 63.9 | 11.0 | 27.0 | 12.2 | 42.8 | 59.2 | (1.46) | 16.8 | 39.9 |
| 508 | RLrP..... | 11.9 | 31.2 | 59.8 | 13.4 | 35.4 | 14.0 | 47.4 | 68.4 | (1.88) | 28.9 | 56.6 |
| 509 | RLrPK..... | 14.8 | 43.4 | 81.4 | 14.7 | 39.9 | 13.3 | 51.3 | 69.7 | (2.14) | 36.5 | 54.6 |
| 510 | O..... | (1.12) | 27.1 | 74.1 | (1.50) | 20.8 | (.67) | 34.5 | 60.8 | (1.30) | 11.4 | 31.2 |
| | | Alfalfa seedling ¹ | Alfalfa ² | Alfalfa ³ | Alfalfa ³ | Alfalfa ³ | Soy- beans ³ | Corn | Oats | Clover | Wheat | Wheat |
| 601 | O..... | ..... | (1.79) | (1.46) | (.44) | (1.55) | (.81) | (1.94) | 49.4 | 53.3 | (.32) | 19.6 |
| 602 | M..... | ..... | (2.13) | (1.78) | (.47) | (1.64) | (.74) | (1.97) | 51.2 | 56.1 | (.71) | 27.3 |
| 603 | ML..... | ..... | (2.83) | (2.96) | (.81) | (2.52) | (1.25) | (1.97) | 52.6 | 60.0 | (.81) | 28.9 |
| 604 | MLrP..... | ..... | (3.73) | (4.35) | (1.28) | (2.99) | (1.13) | (2.07) | 50.7 | 60.8 | (1.02) | 38.4 |
| 605 | O..... | ..... | (2.18) | (2.16) | (.71) | (2.01) | (.89) | 16.2 | 51.8 | 58.4 | (.41) | 25.9 |
| 606 | R..... | ..... | (2.57) | (2.23) | (.74) | (2.06) | (1.12) | 16.7 | 46.1 | 53.6 | (.51) | 27.8 |
| 607 | RL..... | ..... | (2.90) | (2.88) | (.97) | (2.30) | (1.18) | 16.2 | 53.2 | 61.9 | (.64) | 25.7 |
| 608 | RLrP..... | ..... | (3.39) | (4.10) | (1.28) | (2.42) | (1.23) | 15.7 | 54.5 | 62.2 | (.83) | 37.0 |
| 609 | RLrPK..... | ..... | (3.56) | (4.38) | (1.46) | (2.56) | (1.15) | 16.2 | 53.0 | 63.3 | (.91) | 37.5 |
| 610 | O..... | ..... | (1.90) | (1.72) | (.41) | (1.30) | (.86) | (1.68) | 51.5 | 55.5 | (.80) | 17.9 |

¹Lime only. ²No manure. ³No residues or manure.

TABLE 45.—JOLIET FIELD: SERIES 700, 800, 900, 1000

| | | Bushels or (tons) per acre | | | |
|----------|------------------------|----------------------------|-----------------------------|--------------------|---------------|
| Plot No. | Soil treatment applied | 1921 Corn ¹ | 1922 Barley ¹ | 1923 Soybeans | 1924 Wheat |
| 701 | L..... | 48.6 | 23.8 | 15.2 | 29.5 |
| 702 | L..... | 55.0 | 32.1 | 18.8 | 28.3 |
| 703 | L..... | 52.4 | 26.7 | 15.0 | 28.7 |
| 704 | L..... | 45.6 | 26.7 | 16.2 | 27.0 |
| 705 | LeL..... | 41.0 | 24.6 | 14.7 | 26.7 |
| 706 | L..... | 48.4 | 29.8 | 18.7 | 29.0 |
| 707 | LeL..... | 45.2 | 28.3 | 16.2 | 27.5 |
| 708 | LeL..... | 42.0 | 23.5 | 14.7 | 22.7 |
| 709 | LeL..... | 52.0 | 25.2 | 17.2 | 19.5 |
| 710 | L..... | 51.6 | 27.7 | 18.0 | 19.5 |
| 711 | L..... | 56.8 | 29.0 | 19.8 | 17.5 |
| 712 | L..... | 53.0 | 24.4 | 21.2 | 19.7 |
| 713 | L..... | 49.2 | 24.4 | 18.5 | 26.2 |
| 714 | L..... | 47.8 | 26.0 | 13.3 | 25.2 |
| | | Wheat ^{1, 2} | Corn | Barley | Barley |
| 801 | L..... | .... | 33.0 | 31.5 | 17.9 |
| 802 | L..... | .... | 39.8 | 37.7 | 16.3 |
| 803 | L..... | .... | 47.6 | 42.3 | 18.8 |
| 804 | L..... | .... | 34.0 | 35.6 | 14.8 |
| 805 | LeL..... | .... | 37.0 | 35.8 | 16.0 |
| 806 | L..... | .... | 35.8 | 34.8 | 17.3 |
| 807 | LeL..... | .... | 42.2 | 38.8 | 17.1 |
| 808 | LeL..... | .... | 43.8 | 40.4 | 18.1 |
| 809 | LeL..... | .... | 43.8 | 42.3 | 17.9 |
| 810 | L..... | .... | 39.2 | 42.7 | 21.7 |
| | | Corn ¹ | Wheat ³ | Corn | Corn |
| 901 | L..... | 48.8 | .... | 40.6 | 31.8 |
| 902 | L..... | 49.6 | .... | 55.4 | 46.8 |
| 903 | L..... | 53.4 | .... | 58.2 | 49.0 |
| 904 | L..... | 47.6 | .... | 49.0 | 48.4 |
| 905 | LeL..... | 49.0 | .... | 52.0 | 48.0 |
| 906 | L..... | 53.8 | .... | 54.4 | 42.2 |
| 907 | LeL..... | 50.8 | .... | 53.4 | 49.6 |
| 908 | LeL..... | 50.2 | .... | 46.4 | 46.4 |
| 909 | LeL..... | 45.4 | .... | 45.4 | 41.0 |
| 910 | L..... | 54.0 | .... | 53.6 | 38.4 |
| 911 | L..... | 62.2 | .... | 58.8 | 48.6 |
| 912 | L..... | 52.4 | .... | 51.8 | 46.0 |
| 913 | L..... | 54.8 | .... | 52.8 | 46.0 |
| | | Wheat ¹ | Soybeans ¹ | Wheat ³ | Soybeans |
| 1001 | L..... | 27.7 | 13.5 | .... | 15.0 |
| 1002 | L..... | 28.2 | 13.8 | .... | 15.7 |
| 1003 | L..... | 31.3 | 15.7 | .... | 18.2 |
| 1004 | L..... | 32.0 | 15.3 | .... | 17.3 |
| 1005 | LeL..... | 30.2 | 14.5 | .... | 18.2 |
| 1006 | L..... | 32.2 | 15.7 | .... | 18.2 |
| 1007 | LeL..... | 29.5 | 15.7 | .... | 17.2 |
| 1008 | LeL..... | 29.0 | 14.8 | .... | 14.5 |
| 1009 | LeL..... | 31.2 | 17.0 | .... | 15.5 |
| 1010 | L..... | 29.3 | 11.8 | .... | 15.3 |

¹No legume treatment. ²All plots harvested together. ³Crop failure.

FOR PLOT 6 IN EACH SERIES
ABOVE, READ LeL.

KEWANEE FIELD, HENRY COUNTY

ESTABLISHED 1915

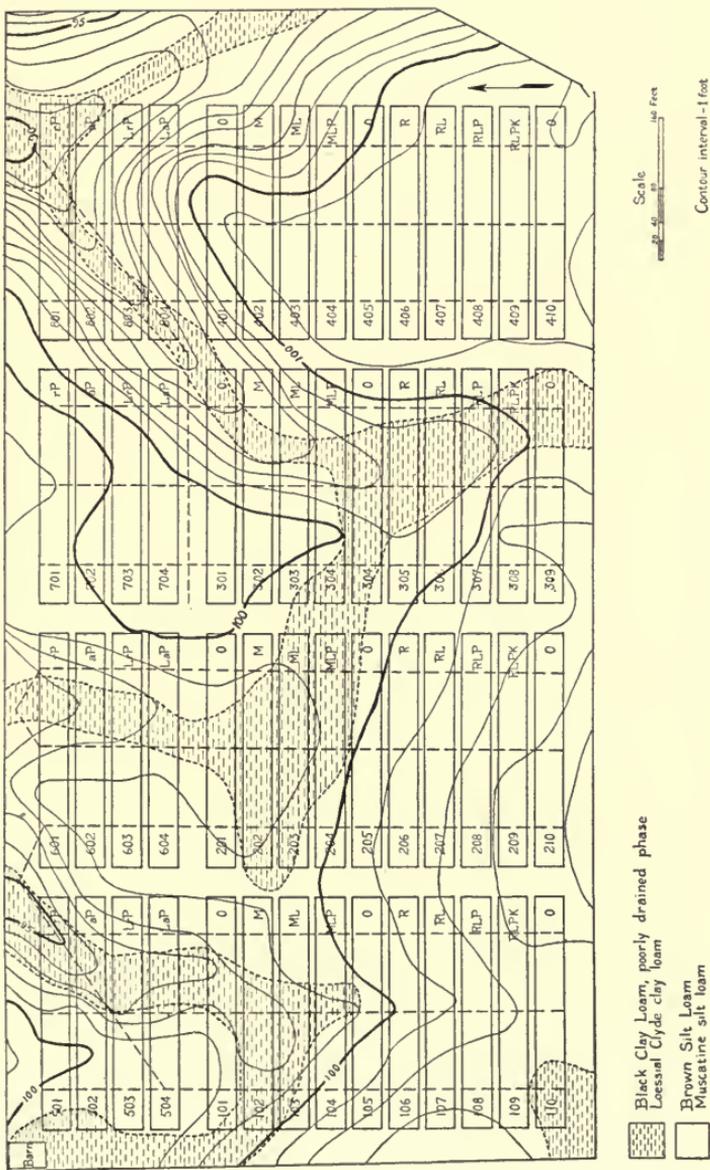
Location.—About midway between Kewanee and Galva. The N. 20 acres of the W. $\frac{1}{2}$ of the N.W. $\frac{1}{4}$, Sec. 18, Twp. 14 N., R. 5 E. of the 4th P. M.

Description.—The field consists of 20 acres of dark-colored loessial upland soil of medium acidity. Two soil types have been mapped on this field: (1) Black Clay Loam, poorly drained phase, (Loessial Clyde clay loam); and (2) Brown Silt Loam (Muscatine silt loam). The land is rather rolling with a tendency to wash at a point or two. It is thoroly tile-drained. The drainage is fairly satisfactory. The field is divided into eight series, four of which contain 10 fifth-acre plots and four of which contain 4 fifth-acre plots.

History.—The Kewanee field was purchased by the citizens of Kewanee, Galva, and vicinity, and donated to the University for experimental purposes. Shortly before the experiment field was established the land occupied by Plots 1, 2, and 3 of Series 100, 200, and 300 received an application of manure. Also, a part of the land occupied by Plots 8, 9, and 10 of Series 100 had been used as a threshing ground. Oats were grown on Series 100 and 200 in 1914, and soybeans and corn were grown on the land occupied by Series 300 and 400 respectively.

Cropping and Soil Treatment.—The somewhat standard rotation and soil treatment methods described in the introduction were established on Series 100, 200, 300, and 400. These methods were followed without change until 1918, when it was planned to harvest from the residue plots the first crop of clover as hay and the second crop as seed. In 1921 it was planned to harvest all clover as hay and to discontinue the return of the oats straw. In 1922 the application of limestone was discontinued until again needed. The return of the wheat straw was also discontinued in 1922.

Alfalfa was grown on Series 500, 600, 700, and 800 until 1922. In the beginning, limestone was applied to Plots 3 and 4 at the rate of 4 tons an acre. This application was repeated in 1919. In 1922 the same rotation practiced on the larger series was established on these series. Rock phosphate was applied to Plots 1 and 3 at the annual rate of 400 pounds an acre, applied once in the rotation ahead of the wheat. Acid phosphate was applied to Plots 2 and 4 at the annual rate of 200 pounds an acre. It was applied twice in the rotation, one-half for wheat and one-half for oats.



SOIL MAP OF KEWANEE FIELD

TABLE 46.—KEWANEE FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|--------------|--------------|----------------|---------------|--------------|--------------|
| | | 1915 Corn ¹ | 1916 Oats ² | 1917 Clover ⁴ | 1918 Wheat ⁴ | 1919 Corn | 1920 Oats | 1921 Clover | 1922 Wheat | 1923 Corn | 1924 Oats |
| 101 | 0 | 32.6 | 66.4 | (1.67) | 13.1 | 55.8 | 62.7 | (1.83) | 34.8 | 35.0 | 80.0 |
| 102 | M | 40.5 | 68.4 | (2.33) | 34.6 | 66.3 | 65.8 | (2.48) | 31.7 | 54.8 | 93.3 |
| 103 | ML | 37.3 | 68.3 | (2.04) | 26.7 | 69.3 | 74.7 | (2.19) | 36.6 | 51.5 | 98.9 |
| 104 | MLrP | 37.5 | 63.6 | (1.70) | 32.5 | 67.5 | 75.6 | (2.16) | 41.0 | 50.8 | 99.7 |
| 105 | 0 | 38.6 | 69.8 | .42 | 34.1 | 65.1 | 67.0 | (1.96) | 36.7 | 38.8 | 84.1 |
| 106 | R | 32.4 | 63.3 | .54 | 41.0 | 52.4 | 63.0 | (2.11) | 39.2 | 49.1 | 80.0 |
| 107 | RL | 44.2 | 62.3 | .67 | 40.1 | 71.5 | 64.5 | (2.04) | 33.3 | 53.3 | 94.5 |
| 108 | RLrP | 36.3 | 68.1 | .79 | 46.0 | 77.2 | 67.5 | (2.58) | 39.1 | 58.3 | 100.6 |
| 109 | RLrPK | 41.6 | 64.7 | .58 | 50.8 | 71.1 | 70.0 | (2.87) | 40.5 | 61.4 | 97.7 |
| 110 | 0 | 44.2 | 63.4 | (1.85) | 40.5 | 47.8 | 56.2 | (2.50) | 39.9 | 48.8 | 79.4 |
| | | Wheat ¹ | Corn ³ | Oats | Clover | Wheat | Corn | Oats | Clover | Wheat | Corn |
| 201 | 0 | 33.8 | 42.7 | 72.0 | (2.76) | 30.1 | 58.1 | 43.9 | (2.32) | 29.1 | 51.5 |
| 202 | M | 35.0 | 43.7 | 84.4 | (2.95) | 27.0 | 65.3 | 53.4 | (2.96) | 33.7 | 62.0 |
| 203 | ML | 36.5 | 50.6 | 95.2 | (3.07) | 28.4 | 69.0 | 52.0 | (3.03) | 36.5 | 63.2 |
| 204 | MLrP | 29.9 | 46.0 | 82.7 | (3.35) | 28.0 | 72.4 | 52.8 | (3.10) | 38.9 | 64.2 |
| 205 | 0 | 30.8 | 46.3 | 72.3 | (1.46) | 35.1 | 60.8 | 47.3 | (2.49) | 30.3 | 50.0 |
| 206 | R | 41.2 | 47.9 | 70.5 | (1.22) | 38 | 51.9 | 44.5 | (2.81) | 31.2 | 53.0 |
| 207 | RL | 27.2 | 52.5 | 68.6 | (1.60) | 25.4 | 61.4 | 45.0 | (2.82) | 30.8 | 56.0 |
| 208 | RLrP | 29.7 | 49.2 | 71.2 | (1.67) | 26.8 | 64.7 | 47.5 | (2.94) | 38.4 | 62.4 |
| 209 | RLrPK | 28.8 | 54.2 | 77.3 | (1.82) | 28.4 | 68.9 | 46.7 | (2.94) | 42.2 | 62.1 |
| 210 | 0 | 31.7 | 45.6 | 67.8 | (2.10) | 31.8 | 41.0 | 41.4 | (1.58) | 24.8 | 45.0 |

¹Limestone only. ²No manure or potassium. ³No potassium. ⁴No manure.

TABLE 46.—*Concluded*
Bushels or (tons) per acre

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|-----------------------------|-------------------------|---------------------|-----------|-------------|------------|-----------|-----------|-------------|------------|
| | | 1915 Soy-beans ¹ | 1916 Wheat ² | 1917 Corn | 1918 Oats | 1919 Clover | 1920 Wheat | 1921 Corn | 1922 Oats | 1923 Clover | 1924 Wheat |
| 301 | O..... | 19.7 | 17.8 | 47.5 | 59.7 | (1.93) | 28.3 | 72.6 | 61.7 | (.87) | 38.3 |
| 302 | M..... | (1.78) | 13.6 | 49.2 | 65.2 | (1.98) | 31.2 | 74.5 | 69.7 | (1.49) | 40.8 |
| 303 | ML..... | (1.62) | 10.1 | 56.2 | 67.8 | (1.81) | 29.3 | 84.2 | 71.6 | (1.99) | 46.9 |
| 304 | MLrP..... | (1.70) | 15.5 | 58.5 | 65.2 | (2.06) | 35.3 | 78.7 | 72.3 | (1.85) | 49.4 |
| 305 | O..... | 20.2 | 12.8 | 44.1 | 55.0 | (1.84) | 27.2 | 66.2 | 62.0 | (.54) | 33.4 |
| 306 | R..... | 19.1 | 13.7 | 39.9 | 62.0 | (1.16) | 29.2 | 74.9 | 54.4 | (.85) | 35.2 |
| 307 | RL..... | 19.6 | 10.2 | 47.0 | 59.1 | (1.17) | 29.4 | 78.6 | 63.9 | (1.31) | 43.0 |
| 308 | RLrP..... | 19.7 | 14.3 | 51.0 | 67.0 | (1.43) | 38.4 | 78.3 | 58.8 | (1.71) | 49.1 |
| 309 | RLrPK..... | 22.2 | 16.4 | 57.6 | 70.6 | (1.54) | 35.9 | 90.3 | 66.9 | (1.70) | 49.8 |
| 310 | O..... | 19.7 | 14.8 | 44.0 | 62.5 | (1.85) | 31.1 | 69.9 | 50.6 | (0.00) | 31.0 |
| | | Oats ¹ | Clovers ² | Wheats ³ | Corn | Oats | Clover | Wheat | Corn | Oats | Clover |
| 401 | O..... | 83.8 | (2.43) | 26.5 | 60.5 | 36.1 | (.84) | 25.3 | 52.0 | 54.2 | (3.31) |
| 402 | M..... | 80.0 | (2.34) | 27.5 | 66.8 | 43.0 | (1.36) | 32.0 | 69.0 | 69.4 | (4.14) |
| 403 | ML..... | 91.6 | (2.51) | 27.3 | 68.4 | 48.4 | (1.42) | 35.7 | 78.6 | 61.6 | (3.53) |
| 404 | MLrP..... | 77.0 | (2.04) | 26.1 | 70.2 | 45.5 | (1.59) | 39.9 | 78.8 | 67.2 | (3.89) |
| 405 | O..... | 84.8 | (⁴) | 30.2 | 58.0 | 43.3 | (.80) | 30.6 | 57.5 | 56.4 | (2.82) |
| 406 | R..... | 77.5 | (⁴) | 34.8 | 69.8 | 43.6 | (.83) | 40 | 30.8 | 64.4 | 51.3 |
| 407 | RL..... | 88.1 | (⁴) | 32.0 | 76.8 | 44.1 | (1.00) | 33.8 | 81.3 | 63.9 | (4.04) |
| 408 | RLrP..... | 87.8 | (⁴) | 33.2 | 69.4 | 45.3 | (.89) | 36.7 | 89.0 | 69.4 | (3.91) |
| 409 | RLrPK..... | 95.6 | (⁴) | 38.7 | 75.7 | 46.4 | .81 | 32.6 | 86.6 | 64.4 | (3.90) |
| 410 | O..... | 72.2 | (1.95) | 19.7 | 53.2 | 35.2 | (1.03) | 24.7 | 54.9 | 49.1 | (2.90) |

¹Lime only. ²No manure or potassium. ³Lime and residues only. ⁴No seed harvested in 1916. ⁵No manure.

TABLE 47.—KEWANEE FIELD: SERIES 500, 600, 700, 800

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | Soil treatment applied | 1922 | | 1923 | | 1924 | |
|----------|------------------------|----------------------------|----------------------|----------------------|----------------------|--------------|--------------|-----------|---------|---------|--------|------------------------|-------|------|------|--|------|--|
| | | 1915 Barley | 1916 Alfalfa seeding | 1917 Alfalfa seeding | 1918 Alfalfa seeding | 1919 Alfalfa | 1920 Alfalfa | 1921 Corn | Wheat | Corn | Oats | | Wheat | Corn | Oats | | | |
| 501 | 0 | 19.2 | ..... | ..... | ..... | (2.65) | (2.26) | 70.7 | LerP | 34.5 | 70.1 | 88.8 | | | | | | |
| 502 | 0 | 26.1 | ..... | ..... | ..... | (2.38) | (2.40) | 63.9 | LeaP | 38.9 | 68.2 | 90.9 | | | | | | |
| 503 | L | 18.2 | ..... | ..... | ..... | (2.15) | (2.41) | 71.7 | LerLP | 31.8 | 69.7 | 90.6 | | | | | | |
| 504 | L | 23.7 | ..... | ..... | ..... | (2.37) | (2.54) | 70.0 | LeLaP | 40.5 | 66.1 | 98.1 | | | | | | |
| | | Barley | Alfalfa seeding | Alfalfa seeding | Alfalfa seeding | Alfalfa | Alfalfa | Alfalfa | Alfalfa | Alfalfa | Wheat | Wheat | Corn | | | | | |
| 601 | 0 | 25.7 | ..... | ..... | ..... | (2.48) | (2.47) | (4.57) | LerP | (4.94) | 36.4 | 67.6 | | | | | | |
| 602 | 0 | 25.6 | ..... | ..... | ..... | (2.47) | (2.60) | (4.32) | LeaP | (3.05) | 41.4 | 70.2 | | | | | | |
| 603 | L | 22.7 | ..... | ..... | ..... | (3.05) | (2.78) | (4.18) | LerLP | (4.83) | 33.1 | 70.9 | | | | | | |
| 604 | L | 20.2 | ..... | ..... | ..... | (2.20) | (2.21) | (3.66) | LeLaP | (4.85) | 40.1 | 69.1 | | | | | | |
| | | Barley | Alfalfa seeding | Alfalfa seeding | Alfalfa seeding | Alfalfa | Alfalfa | Alfalfa | Alfalfa | Oats | Clover | Wheat | | | | | | |
| 701 | 0 | 29.2 | ..... | ..... | ..... | (2.85) | (2.61) | (4.63) | LerP | 57.5 | (3.81) | 50.7 | | | | | | |
| 702 | 0 | 23.8 | ..... | ..... | ..... | (2.83) | (2.49) | (4.50) | LeaP | 62.2 | (4.10) | 55.6 | | | | | | |
| 703 | L | 22.4 | ..... | ..... | ..... | (3.80) | (3.01) | (4.30) | LerLP | 57.5 | (4.07) | 48.9 | | | | | | |
| 704 | L | 30.9 | ..... | ..... | ..... | (2.89) | (2.58) | (3.94) | LeLaP | 63.6 | (3.86) | 58.3 | | | | | | |
| | | Barley | Alfalfa seeding | Alfalfa seeding | Alfalfa seeding | Alfalfa | Alfalfa | Alfalfa | Alfalfa | Corn | Oats | Clover | | | | | | |
| 801 | 0 | 25.1 | ..... | ..... | ..... | (2.57) | (1.99) | (3.72) | LerP | 78.9 | 61.1 | (4.03) | | | | | | |
| 802 | 0 | 22.1 | ..... | ..... | ..... | (2.25) | (1.91) | (3.72) | LeaP | 75.8 | 72.2 | (3.45) | | | | | | |
| 803 | L | 14.7 | ..... | ..... | ..... | (2.29) | (2.30) | (3.78) | LerLP | 77.7 | 67.5 | (3.51) | | | | | | |
| 804 | L | 21.8 | ..... | ..... | ..... | (2.47) | (2.31) | (3.79) | LeLaP | 80.4 | 68.6 | (3.92) | | | | | | |

¹Wheat damaged by standing water in 1923.

LAMOILLE FIELD, BUREAU COUNTY

ESTABLISHED 1910

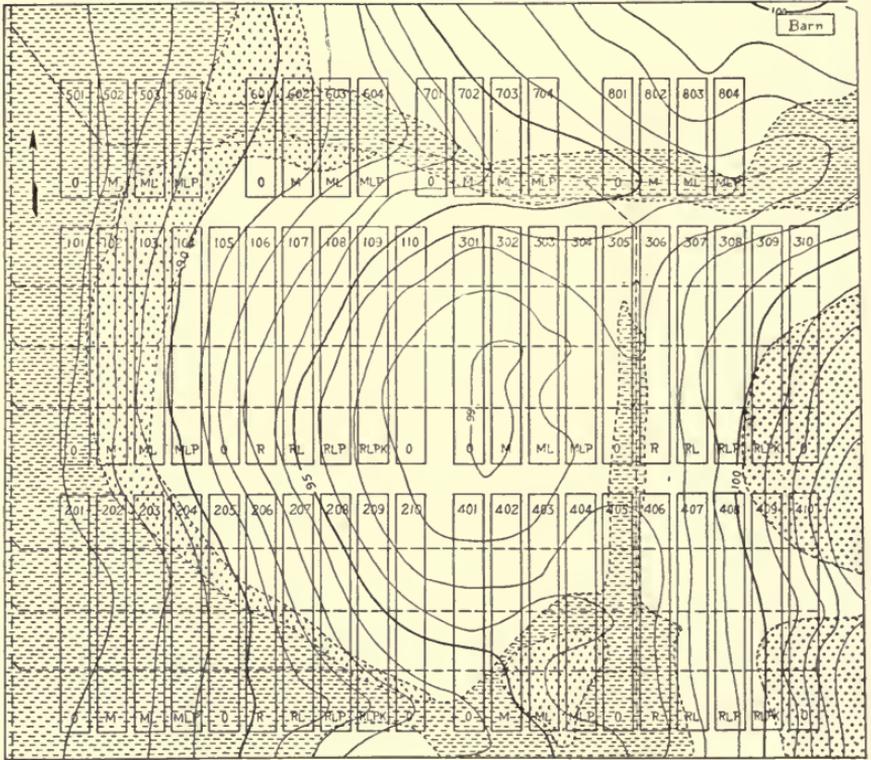
Location.—About one mile south of LaMoille. A part of the N.E. $\frac{1}{4}$ of the N.W. $\frac{1}{4}$, Sec. 36, Twp. 18 N., R. 10 E. of the 4th P. M.

Description.—The field consists of 20 acres of dark-colored loessial upland soil practically neutral or slightly acid. Four soil types have been mapped on this field: (1) Black Clay Loam, poorly drained phase (Loessial Clyde clay loam); (2) Black Silty Clay Loam On Clay (Grundy silty clay loam); (3) Brown Silt Loam (Muscatine silt loam); and (4) Light Brown Silt Loam (Tama silt loam). The land is moderately rolling. It is thoroly tilled and drains well except in the lower and flatter portions in the west end of the field. The field is divided into eight series, four of which contain 10 fifth-acre plots and four which contain 4 tenth-acre plots.

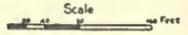
History.—The LaMoille field was donated by Mrs. Anna Norris Kendall to the University for experimental purposes. In 1909 the entire field was in corn. Little is known of the previous history of the field. It is believed that it had been heavily pastured for some time before it was plotted.

Cropping and Soil Treatment.—The somewhat standard rotation and soil treatment methods described in the introduction were established on Series 100, 200, 300, and 400. These methods were followed without change until 1918, when it was planned to harvest from the clover a hay crop as well as a seed crop on the residue plots. In 1921 the return of the oat straw was discontinued, and in 1922 the return of the wheat straw was discontinued. In 1923 the rotation was changed to corn, corn, oats, and wheat, with a seeding of hubam clover in the oats on all plots and biennial sweet clover in the wheat on the residue plots. At that time the limestone was discontinued until further need for it should appear and the phosphate applications were evened up to 4 tons an acre. No more phosphate will be applied for an indefinite period.

The original rotation on Series 500, 600, 700, and 800 was potatoes two years and alfalfa six years. Manure was applied at the rate of 15 tons an acre for each potato crop. Limestone was applied at the annual acre rate of $\frac{1}{2}$ ton at the time the alfalfa was seeded. Rock phosphate at the annual acre rate of 500 pounds was applied at the same time. In 1921 these materials were evened up to 30 tons of manure, 9 tons of limestone, and $3\frac{1}{2}$ tons of rock phosphate an acre and the rotation was changed to corn, corn, wheat, and alsike clover. Since this time all the crops have been removed from the land and nothing has been returned.



- | | |
|---|---|
|  Black Silty Clay Loam On Clay Grundy silty clay loam |  Brown Silt Loam Muscatine silt loam |
|  Black Clay Loam, poorly drained phase Loessial Clyde clay loam |  Light Brown Silt Loam Tama silt loam |



Contour interval - 1 foot

SOIL MAP OF LA MOILLE FIELD

TABLE 48.—LAMOILLE FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|------------------------|------------------------|-----------------------------|-------------------------|-----------|-----------|-------------|------------|-----------|-----------|-------------|------------|-----------|-----------|
| | | 1910 Barley ¹ | 1911 Corn ² | 1912 Oats ² | 1913 Soy-beans ³ | 1914 Wheat ⁴ | 1915 Corn | 1916 Oats | 1917 Clover | 1918 Wheat | 1919 Corn | 1920 Oats | 1921 Clover | 1922 Wheat | 1923 Corn | 1924 Oats |
| 101 | 0 | 32.6 | 82.5 | 63.9 | (1.94) | 45.7 | 33.3 | 75.0 | (1.34) | 13.7 | 61.3 | 73.1 | (3.64) | 40.5 | 67.6 | 75.0 |
| 102 | M | 41.7 | 84.8 | 63.1 | (1.75) | 44.5 | 45.2 | 77.3 | (1.37) | 40.8 | 59.5 | 77.0 | (3.93) | 40.8 | 75.2 | 85.3 |
| 103 | ML | 39.8 | 79.6 | 60.9 | (1.56) | 41.3 | 38.3 | 66.9 | (1.32) | 43.2 | 57.0 | 75.8 | (3.25) | 37.8 | 74.0 | 81.7 |
| 104 | MLrP | 37.7 | 72.4 | 46.7 | (1.55) | 37.5 | 36.1 | 61.2 | (1.40) | 42.2 | 55.1 | 76.7 | (3.78) | 45.1 | 66.0 | 77.8 |
| 105 | 0 | 30.5 | 73.5 | 64.2 | 17.5 | 39.2 | 20.0 | 54.7 | .25 | 47.2 | 38.7 | 69.2 | (3.43) | 39.8 | 45.4 | 62.0 |
| 106 | R | 48.0 | 79.4 | 66.4 | 17.7 | 46.8 | 31.1 | 73.1 | .29 | 52.8 | 52.2 | 75.8 | (3.08) | 42.0 | 54.2 | 68.9 |
| 107 | RL | 41.1 | 81.5 | 67.2 | 19.0 | 46.9 | 32.1 | 74.4 | .29 | 53.0 | 57.2 | 78.4 | (3.18) | 36.7 | 68.4 | 80.0 |
| 108 | RLrP | 46.7 | 80.0 | 65.6 | 19.1 | 46.7 | 33.1 | 70.3 | .29 | 53.8 | 63.6 | 81.2 | (3.74) | 40.6 | 66.1 | 75.6 |
| 109 | RLrPK | 41.0 | 74.2 | 57.2 | 19.7 | 45.9 | 32.6 | 67.3 | .58 | 55.3 | 59.6 | 77.0 | (3.34) | 37.4 | 71.8 | 80.0 |
| 110 | 0 | 41.7 | 75.0 | 61.6 | 18.3 | 43.0 | 24.6 | 67.3 | (1.31) | 36.9 | 39.0 | 74.4 | (3.05) | 39.5 | 44.1 | 63.4 |
| | | | Soy-beans ³ | Wheat ⁴ | Corn ⁴ | Oats | Wheat | Corn | Oats | Wheat | Wheat | Corn | Oats | Clover | Corn | Corn |
| 201 | 0 | 15.0 | 19.3 | 87.8 | 63.6 | (3.29) | 30.8 | 38.4 | 88.0 | (3.09) | 25.1 | 65.7 | 49.4 | (3.27) | 72.1 | 41.5 |
| 202 | M | 16.3 | 43.3 | 88.7 | 75.2 | (4.83) | 42.1 | 46.5 | 89.4 | (3.29) | 26.4 | 75.5 | 50.0 | (3.18) | 70.9 | 50.5 |
| 203 | ML | 14.9 | 38.2 | 83.1 | 72.5 | (4.67) | 47.1 | 47.3 | 89.7 | (3.99) | 27.4 | 76.8 | 44.8 | (3.44) | 77.5 | 50.1 |
| 204 | MLrP | 15.0 | 37.8 | 78.9 | 69.7 | (4.56) | 48.3 | 44.0 | 95.9 | (4.20) | 30.3 | 74.0 | 47.5 | (3.44) | 77.7 | 48.9 |
| 205 | 0 | 11.3 | 37.9 | 69.5 | 64.4 | 4.08 | 46.8 | 32.8 | 87.5 | (3.14) | 33.4 | 54.3 | 47.3 | (3.26) | 60.7 | 43.5 |
| 206 | R | 12.2 | 41.2 | 73.9 | 72.2 | 2.75 | 45.8 | 39.4 | 95.9 | (2.72) | 26.8 | 55.8 | 46.7 | (3.49) | 58.5 | 45.2 |
| 207 | RL | 12.0 | 41.2 | 73.9 | 73.0 | 3.00 | 36.7 | 42.2 | 89.4 | (2.85) | 27.6 | 58.7 | 48.4 | (3.34) | 62.9 | 49.3 |
| 208 | RLrP | 11.3 | 41.3 | 70.1 | 75.5 | 3.25 | 40.8 | 39.7 | 91.7 | (2.71) | 27.9 | 61.4 | 46.6 | (3.39) | 58.5 | 51.1 |
| 209 | RLrPK | 11.3 | 39.6 | 77.0 | 66.7 | 3.25 | 45.8 | 38.1 | 85.2 | (2.68) | 24.8 | 56.3 | 47.8 | (3.41) | 63.8 | 49.7 |
| 210 | 0 | 14.0 | 40.8 | 67.4 | 71.9 | (4.14) | 34.2 | 36.3 | 81.6 | (4.05) | 27.3 | 46.8 | 45.0 | (2.43) | 50.0 | 31.2 |

¹No soil treatment. ²Residues only. ³No lime or manure. ⁴No lime. ⁵Lime and residues only. ⁶No manure.

TABLE 48.—*Concluded*
Bushels or (tons) per acre

| Plot No. | Soil treatment applied | 1910 | | 1911 | | 1912 | | 1913 | | 1914 | | 1915 | | 1916 | | 1917 | | 1918 | | 1919 | | 1920 | | 1921 | | 1922 | | 1923 | | 1924 | |
|----------|------------------------|-------------------|------------------------|------------------------|------------------------|------|--------|------|------|------|------|--------|------|-------|------|-------|------|--------|------|--------|--------|-------|-------|------|-------|------|------|------|------|-------|------|
| | | Oats ¹ | Soy-beans ² | Soy-beans ² | Barley ^{3, 4} | Corn | Oats | Oats | Oats | Corn | Oats | Oats | Oats | Wheat | Corn | Wheat | Corn | Oats | Oats | Oats | Clover | Wheat | Wheat | Corn | Wheat | Corn | Oats | Oats | Oats | Wheat | Corn |
| 301 | O..... | 61.3 | 18.0 | 44.7 | 35.6 | 51.6 | 21.5 | 22.8 | 58.4 | 58.4 | 58.4 | (2.20) | 21.5 | 22.8 | 40.3 | 78.4 | 43.3 | 36.7 | 49.7 | (2.45) | 36.7 | 43.3 | 63.1 | 74.2 | 54.5 | 20.2 | 33.9 | 30.2 | 50.0 | | |
| 302 | M..... | 74.1 | 21.2 | 46.3 | 51.2 | 58.9 | 29.8 | 40.3 | 78.4 | 78.4 | 78.4 | (2.20) | 29.8 | 40.3 | 36.1 | 65.5 | 41.2 | 43.3 | 63.1 | (2.76) | 43.3 | 63.1 | 61.7 | 74.2 | 54.5 | 20.2 | 33.9 | 30.2 | 50.0 | | |
| 303 | ML..... | 65.9 | 22.1 | 47.2 | 46.6 | 60.5 | 30.7 | 36.1 | 65.5 | 65.5 | 65.5 | (2.18) | 30.7 | 36.1 | 38.1 | 63.5 | 41.2 | 43.3 | 63.1 | (2.84) | 43.3 | 63.1 | 61.7 | 74.2 | 54.5 | 20.2 | 33.9 | 30.2 | 50.0 | | |
| 304 | MLrP..... | 59.4 | 21.2 | 43.0 | 47.9 | 56.2 | 28.6 | 42.5 | 68.8 | 68.8 | 68.8 | (2.20) | 28.6 | 42.5 | 36.1 | 68.8 | 40.8 | 40.8 | 68.7 | (2.77) | 40.8 | 40.8 | 68.7 | 71.7 | 54.5 | 20.2 | 33.9 | 30.2 | 50.0 | | |
| 305 | O..... | 44.7 | 21.8 | 44.8 | 40.2 | 50.0 | 10.9 | 24.6 | 42.8 | 42.8 | 42.8 | (1.80) | 10.9 | 24.6 | 31.2 | 75.9 | 33.7 | 36.2 | 57.8 | (1.80) | 36.2 | 57.8 | 59.2 | 59.2 | 25.6 | 42.1 | 42.1 | 42.1 | 42.1 | | |
| 306 | R..... | 52.8 | 20.4 | 45.2 | 58.9 | 57.5 | 16.8 | 31.2 | 75.9 | 75.9 | 75.9 | (1.80) | 16.8 | 31.2 | 38.9 | 80.0 | 36.9 | 36.9 | 68.7 | (1.88) | 36.9 | 68.7 | 68.7 | 68.6 | 33.0 | 46.7 | 46.7 | 46.7 | 46.7 | | |
| 307 | RL..... | 70.5 | 21.9 | 52.2 | 58.8 | 60.5 | 36.2 | 38.9 | 80.0 | 80.0 | 80.0 | (1.88) | 36.2 | 38.9 | 38.9 | 80.0 | 36.9 | 36.9 | 68.7 | (1.88) | 36.9 | 68.7 | 68.7 | 68.6 | 37.2 | 48.9 | 48.9 | 48.9 | 48.9 | | |
| 308 | RLrP..... | 61.6 | 21.0 | 47.5 | 58.8 | 60.2 | 34.2 | 35.8 | 84.5 | 84.5 | 84.5 | (1.93) | 34.2 | 35.8 | 35.8 | 84.5 | 40.6 | 40.6 | 68.2 | (1.93) | 40.6 | 68.2 | 68.2 | 68.6 | 40.4 | 54.8 | 54.8 | 54.8 | 54.8 | | |
| 309 | RLrPK..... | 53.4 | 19.7 | 47.1 | 51.0 | 57.8 | 32.7 | 34.1 | 76.1 | 76.1 | 76.1 | (1.79) | 32.7 | 34.1 | 20.1 | 46.6 | 37.7 | 37.7 | 65.6 | (1.79) | 37.7 | 65.6 | 65.6 | 74.1 | 34.6 | 48.1 | 48.1 | 48.1 | 48.1 | | |
| 310 | O..... | 58.6 | 20.0 | 44.5 | 36.1 | 46.1 | 25.3 | 20.1 | 46.6 | 46.6 | 46.6 | (1.96) | 25.3 | 20.1 | 20.1 | 46.6 | 23.3 | 23.3 | 49.9 | (2.43) | 23.3 | 49.9 | 49.9 | 43.3 | 22.6 | 34.9 | 34.9 | 34.9 | 34.9 | | |
| 401 | O..... | 34.6 | 57.5 | (2.11) | 42.7 | 44.3 | (2.90) | 40.1 | 52.6 | 52.6 | 52.6 | 75.8 | 44.3 | 40.1 | 45.2 | 59.5 | 51.4 | (1.70) | 39.5 | 51.4 | (1.70) | 39.5 | 60.2 | 60.2 | 65.3 | 65.3 | 43.7 | 43.7 | 43.7 | 43.7 | |
| 402 | M..... | 35.4 | 55.6 | (2.17) | 45.8 | 57.3 | (2.77) | 45.2 | 59.5 | 59.5 | 59.5 | 80.8 | 57.3 | 45.2 | 46.8 | 64.0 | 52.3 | (2.11) | 42.3 | 52.3 | (2.11) | 42.3 | 69.2 | 69.2 | 67.0 | 67.0 | 48.8 | 48.8 | 48.8 | 48.8 | |
| 403 | ML..... | 37.2 | 58.1 | (2.14) | 44.6 | 55.7 | (2.54) | 46.8 | 64.0 | 64.0 | 64.0 | 90.8 | 55.7 | 46.8 | 48.2 | 57.3 | 57.0 | (2.07) | 43.7 | 57.0 | (2.07) | 43.7 | 75.9 | 75.9 | 72.0 | 72.0 | 47.3 | 47.3 | 47.3 | 47.3 | |
| 404 | MLrP..... | 36.2 | 61.9 | (2.20) | 45.8 | 61.2 | (2.51) | 45.3 | 65.1 | 65.1 | 65.1 | 83.4 | 61.2 | 45.3 | 48.8 | 59.7 | 53.9 | (1.94) | 40.8 | 53.9 | (1.94) | 40.8 | 78.3 | 78.3 | 68.6 | 68.6 | 48.6 | 48.6 | 48.6 | 48.6 | |
| 405 | O..... | 37.4 | 68.1 | 30.6 | 48.8 | 49.9 | .25 | 42.8 | 58.3 | 58.3 | 58.3 | 54.7 | 49.9 | 42.8 | 44.4 | 59.7 | 51.4 | (.82) | 38.3 | 51.4 | (.82) | 38.3 | 64.9 | 64.9 | 64.5 | 64.5 | 43.7 | 43.7 | 43.7 | 43.7 | |
| 406 | R..... | 40.5 | 66.6 | 28.8 | 54.4 | 58.5 | .25 | 44.4 | 59.7 | 59.7 | 59.7 | 85.8 | 58.5 | 44.4 | 48.2 | 57.3 | 39.7 | (1.18) | 40.1 | 39.7 | (1.18) | 40.1 | 66.4 | 66.4 | 64.5 | 64.5 | 43.7 | 43.7 | 43.7 | 43.7 | |
| 407 | RL..... | 39.8 | 66.3 | 27.1 | 55.9 | 52.9 | .08 | 48.2 | 57.3 | 57.3 | 57.3 | 68.8 | 52.9 | 48.2 | 48.2 | 59.7 | 42.3 | (1.55) | 43.0 | 42.3 | (1.55) | 43.0 | 72.5 | 72.5 | 55.0 | 55.0 | 39.2 | 39.2 | 39.2 | 39.2 | |
| 408 | RLrP..... | 38.9 | 63.0 | 25.8 | 53.8 | 56.2 | .17 | 48.8 | 59.7 | 59.7 | 59.7 | 76.6 | 56.2 | 48.8 | 48.8 | 59.7 | 47.3 | (1.60) | 39.6 | 47.3 | (1.60) | 39.6 | 70.0 | 70.0 | 54.5 | 54.5 | 41.8 | 41.8 | 41.8 | 41.8 | |
| 409 | RLrPK..... | 39.4 | 58.9 | 25.8 | 49.8 | 59.1 | .33 | 49.1 | 61.8 | 61.8 | 61.8 | 85.9 | 59.1 | 49.1 | 49.1 | 53.1 | 53.1 | (1.70) | 39.3 | 53.1 | (1.70) | 39.3 | 75.5 | 75.5 | 60.8 | 60.8 | 43.5 | 43.5 | 43.5 | 43.5 | |
| 410 | O..... | 36.9 | 50.8 | 26.0 | 44.4 | 40.7 | (2.64) | 39.8 | 55.4 | 55.4 | 55.4 | 64.1 | 40.7 | 39.8 | 39.8 | 55.4 | 42.0 | (1.81) | 36.3 | 42.0 | (1.81) | 36.3 | 56.2 | 56.2 | 66.3 | 66.3 | 36.1 | 36.1 | 36.1 | 36.1 | |

¹No soil treatment. ²Residues only. ³No lime or manure. ⁴Wheat winterkilled in 1912; barley grown as a substitute. ⁵No manure.

LEBANON FIELD, ST. CLAIR COUNTY

ESTABLISHED 1910

Location.—Immediately south of Lebanon. Parts of lots 43 and 44 in the S.W. $\frac{1}{4}$, Sec. 19, Twp. 2 N., R. 6 W. of the 3d P. M.

Description.—The field consists of 20 acres of dark-colored loessial upland soil of medium acidity. It appears to be fairly uniform both as to soil and topography. Only one soil type was found on this field, namely, Grayish Brown Silt Loam On Tight Clay (Grundy silt loam, grayish phase). Altho there is more than 20 feet difference in elevations on the field, the slope is uniform and regular from the northwest to the southeast. The field is thoroly tilled and drains well, except in the lower portions along the east and south. The field is divided into seven series, four of which contain 10 fifth-acre plots and three of which contain 8 tenth-acre plots.

History.—The land was purchased by McKendree College and donated to the University for experimental purposes. The purchase price was contributed for the purpose by Governor Charles S. Deneen, an alumnus and trustee of McKendree College and at the time an ex-officio trustee of the University of Illinois. During the preceding year the land occupied by Series 100 and 300 was in wheat and that occupied by Series 200 and 400 was in corn. No other information is available in regard to the previous history of the field.

Cropping and Soil Treatment.—The somewhat standard rotation and soil treatment methods described in the introduction were established on Series 100, 200, 300, and 400. These methods were followed without change until 1918, when it was planned to harvest a crop of clover hay as well as the seed from the residue plots. In 1921 the return of the oat straw was discontinued and in 1922 the return of wheat straw was discontinued. At that time it was also planned to harvest all clover as hay and to discontinue the application of limestone until need for it should become apparent. In 1923 the rotation was changed to corn, soybeans, wheat, with hubam clover seeded on all plots, and wheat, with sweet clover on the residue plots. At that time the phosphate applications were evened up to 4 tons an acre, and no more will be applied for an indefinite period.

The original rotation on Series 500, 600, 700 was potatoes, corn, and soybeans. This was changed in 1921 to wheat, sweet clover, and potatoes. Previous to this change, manure was applied to Plots 2, 3, and 4 at the rate of 45 tons an acre for the potato crop. Limestone was applied at the annual rate of 1,000 pounds an acre to Plots 3 and 4 for corn. Rock phosphate at the annual rate of 500 pounds an acre was applied to Plot 4 for the potato crop. In 1921 the limestone was evened up to 8 tons an acre, phosphate to 3 tons, and manure to 150 tons. The plots were divided lengthwise and the half-plots were designated 1 West and 1 East, etc. No more fertilizers have been applied

TABLE 50.—LEBANON FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | 1923 Corn | 1924 Soy-beans | | |
|----------|------------------------|----------------------------|------------------------|------------------------|---------------------|--------------------------|----------------|-----------|-----------|-------------|------------|-------------------|-----------|-----------|----------------|-------------|------------|
| | | 1910 Wheat ¹ | 1911 Corn ² | 1912 Oats ² | 1912 Stubble clover | 1913 Clover ³ | 1914 Wheat | 1915 Corn | 1916 Oats | 1917 Clover | 1918 Wheat | 1919 Corn | 1920 Oats | | | 1921 Clover | 1922 Wheat |
| 101 | O..... | ..... | 49.6 | 36.1 | (.76) | (1.12) | 24.7 | 37.7 | 26.4 | (2.12) | 23.5 | 24.7 | 31.9 | (.36) | 42.1 | 42.6 | (1.63) |
| 102 | M..... | ..... | 50.6 | 49.8 | (1.40) | (2.48) | 31.8 | 50.5 | 38.9 | (3.64) | 26.4 | 43.3 | 42.3 | (1.95) | 29.0 | 62.3 | (1.83) |
| 103 | ML..... | ..... | 50.7 | 43.3 | (1.22) | (2.14) | 30.8 | 62.2 | 42.2 | (3.24) | 28.6 | 46.7 | 46.6 | (1.98) | 26.7 | 64.1 | (1.90) |
| 104 | MLrP..... | ..... | 49.0 | 48.4 | (1.14) | (1.86) | 32.3 | 57.0 | 45.6 | (3.62) | 37.0 | 45.7 | 45.2 | (2.05) | 32.8 | 60.9 | (1.86) |
| 105 | O..... | ..... | 45.9 | 42.8 | (.71) | (1.20) | 22.6 | 42.4 | 30.6 | 1.25 | 32.7 | 28.3 | 39.7 | (.65) | 35.8 | 29.3 | (1.63) |
| 106 | R..... | ..... | 44.4 | 43.6 | ..... | ..... | 25.6 | 39.3 | 33.1 | .83 | 33.2 | 36.5 | 43.1 | (1.00) | 30.0 | 36.8 | (1.71) |
| 107 | RL..... | ..... | 44.7 | 42.8 | ..... | ..... | 27.5 | 52.4 | 41.6 | .75 | 37.8 | 56.3 | 54.8 | (1.99) | 33.4 | 55.2 | (1.37) |
| 108 | RLrP..... | ..... | 46.1 | 51.4 | ..... | ..... | 30.0 | 48.7 | 43.4 | .75 | 41.9 | 50.3 | 50.6 | (2.04) | 30.0 | 55.3 | (1.58) |
| 109 | RLrPK..... | ..... | 44.2 | 55.0 | ..... | ..... | 26.2 | 50.0 | 46.9 | .58 | 42.2 | 57.7 | 58.0 | (2.17) | 27.3 | 62.8 | (1.64) |
| 110 | O..... | ..... | 44.8 | 38.4 | (.50) | (1.08) | 23.8 | 35.9 | 29.1 | (2.80) | 41.2 | 20.0 | 41.4 | (.66) | 32.6 | 32.4 | (1.14) |
| | | Cow-peas ⁴ | Wheat ⁵ | Corn | Soy-beans | Wheat | Stubble clover | Corn | Oats | Clover | Wheat | Corn ⁶ | Oats | Clover | Wheat | Corn | Soy-beans |
| 201 | O..... | ..... | 27.3 | 34.0 | (.46) | 3.1 | 25.0 | (1.48) | 15.3 | 39.1 | (1.81) | 24.7 | 3.2 | 43.8 | (1.15) | 29.3 | 16.8 |
| 202 | M..... | ..... | 27.4 | 48.6 | (.37) | 7.3 | 30.8 | (1.80) | 37.6 | 48.9 | (2.16) | 29.2 | 8.4 | 46.1 | (1.47) | 34.7 | 26.2 |
| 203 | ML..... | ..... | 30.0 | 48.7 | (.41) | 5.8 | 33.0 | (1.78) | 29.5 | 71.1 | (3.11) | 30.8 | 10.8 | 48.8 | (2.56) | 32.5 | 43.2 |
| 204 | MLrP..... | ..... | 29.6 | 46.2 | (.41) | 6.1 | 32.4 | (1.80) | 28.1 | 66.2 | (3.09) | 31.7 | 13.8 | 49.2 | (2.86) | 29.3 | 42.4 |
| 205 | O..... | ..... | 23.9 | 27.6 | 2.8 | 5.2 | 19.2 | (0.00) | 10.5 | 42.7 | 2.83 | 25.7 | 3.2 | 41.1 | (1.48) | 30.3 | 12.6 |
| 206 | R..... | ..... | 24.3 | 33.1 | 3.6 | 3.6 | 23.8 | ..... | 17.7 | 60.0 | 3.75 | 28.2 | 2.4 | 42.8 | (1.41) | 30.6 | 14.0 |
| 207 | RL..... | ..... | 25.0 | 45.4 | 5.5 | 4.4 | 32.0 | ..... | 26.6 | 79.1 | 3.92 | 28.8 | 8.9 | 49.5 | (2.83) | 34.7 | 25.2 |
| 208 | RLrP..... | ..... | 26.1 | 43.6 | 5.5 | 5.5 | 33.0 | ..... | 29.8 | 63.4 | 3.62 | 29.2 | 10.2 | 44.5 | (2.66) | 30.2 | 24.4 |
| 209 | RLrPK..... | ..... | 26.8 | 44.2 | 6.1 | 4.8 | 30.0 | ..... | 33.2 | 77.5 | 3.38 | 23.7 | 15.8 | 47.8 | (3.27) | 29.5 | 39.8 |
| 210 | O..... | ..... | 31.0 | 28.9 | 3.1 | 4.1 | 20.2 | (0.00) | 11.1 | 43.4 | (2.14) | 17.8 | 5.0 | 46.9 | (1.74) | 32.3 | 16.8 |

¹No soil treatment; no yields taken. ²No phosphorus or potassium. ³No seed harvested in 1913. ⁴Chinch bugs damaged the corn in 1920. ⁵In 1923 stubble clover was harvested as follows: Plot 207, 1.37 tons; Plot 208, 1.28 tons; and Plot 209, 1.26 tons per acre.

TABLE 50.—Continued (1910-1917)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------|--------------------|---------------------|--------------------|----------------|------|--------|--------|-------|------|
| | | 1910 | | 1911 | | 1912 | | 1913 | 1914 | 1915 | 1916 | 1917 |
| | | Wheat ¹ | Clover ² | Wheat ¹ | Clover ² | Wheat ¹ | Stubble clover | Corn | Oats | Clover | Wheat | Corn |
| 301 | 0 | ..... | ..... | (2.58) | 22.8 | (.81) | 33.0 | 3.1 | (4.83) | 23.1 | 42.1 | |
| 302 | M | ..... | ..... | (2.91) | 26.8 | (1.77) | 29.6 | 7.0 | (5.04) | 27.8 | 47.2 | |
| 303 | ML | ..... | ..... | (2.60) | 26.3 | (2.18) | 35.5 | 8.6 | (5.28) | 28.4 | 57.1 | |
| 304 | MLrP | ..... | ..... | (2.55) | 27.5 | (1.75) | 30.4 | 7.2 | (5.28) | 28.5 | 56.8 | |
| 305 | 0 | ..... | ..... | 3.33 | 17.5 | (.87) | 23.2 | 2.7 | .42 | 18.3 | 36.5 | |
| 306 | R | ..... | ..... | 2.42 | 27.2 | ..... | 30.6 | 2.7 | .33 | 20.2 | 47.7 | |
| 307 | RL | ..... | ..... | 2.50 | 28.0 | ..... | 40.6 | 5.0 | .33 | 21.6 | 60.3 | |
| 308 | RLrP | ..... | ..... | 2.50 | 30.0 | ..... | 37.4 | 7.7 | .42 | 23.7 | 61.4 | |
| 309 | RLrPK | ..... | ..... | 2.67 | 31.5 | ..... | 41.5 | 10.0 | .42 | 27.2 | 70.4 | |
| 310 | 0 | ..... | ..... | (2.26) | 23.5 | (1.62) | 33.9 | 4.7 | (3.80) | 22.2 | 44.0 | |
| 401 | 0 | ..... | 16.2 | 20.5 | (1.03) | 15.2 | 1.0 | 25.3 | (1.36) | (2.69) | 45.5 | |
| 402 | M | ..... | 13.6 | 18.9 | (1.09) | 15.2 | 2.9 | 25.6 | (1.58) | (2.50) | 46.7 | |
| 403 | ML | ..... | 15.0 | 20.8 | (1.24) | 21.2 | 5.5 | 33.6 | (1.80) | (2.58) | 53.2 | |
| 404 | MLrP | ..... | 14.7 | 23.1 | (1.41) | 21.3 | 6.3 | 32.2 | (1.83) | (2.53) | 60.6 | |
| 405 | 0 | ..... | 16.5 | 26.1 | 4.5 | 18.6 | 2.1 | 22.2 | 1.08 | .83 | 39.1 | |
| 406 | R | ..... | 16.8 | 18.6 | 5.9 | 18.8 | 2.9 | 31.2 | 1.25 | .67 | 39.8 | |
| 407 | RL | ..... | 16.1 | 21.6 | 6.5 | 27.2 | 6.2 | 35.2 | 1.17 | .67 | 49.3 | |
| 408 | RLrP | ..... | 18.4 | 24.1 | 8.3 | 26.7 | 7.2 | 34.1 | 1.08 | .75 | 54.7 | |
| 409 | RLrPK | ..... | 16.9 | 28.3 | 7.3 | 30.9 | 8.2 | 47.3 | 1.25 | .83 | 50.5 | |
| 410 | 0 | ..... | 13.4 | 21.9 | (1.43) | 18.3 | 5.1 | 16.9 | (1.38) | (2.09) | 42.1 | |

¹No soil treatment. ²Lime only. ³Residues and lime only. ⁴No manure. ⁵Corn damaged by chinch bugs in 1914.

Stubble clover

Corn⁵ Oats⁵ Stubble clover

Wheat⁴ Soybeans³ Wheat⁴

Wheat⁴ Wheat

TABLE 50.—Concluded (1918-1924)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|----------------------------|----------------|------------|---------------------|-----------|-----------|----------------|---------------------|----------------|---------------------|
| | | 1918 Oats | 1919 Soy-beans | 1920 Wheat | 1920 Stubble clover | 1921 Corn | 1922 Oats | 1923 Wheat | 1923 Stubble clover | 1924 Wheat | 1924 Stubble clover |
| 301 | O..... | 41.9 | (1.57) | 23.2 | .... | 43.1 | 30.9 | 21.3 | (0.00) | 14.6 | .... |
| 302 | M..... | 37.2 | (2.17) | 27.7 | .... | 37.6 | 35.9 | 22.3 | (0.00) | 24.2 | .... |
| 303 | ML..... | 33.8 | (2.57) | 32.8 | .... | 54.2 | 43.0 | 26.9 | (0.00) | 30.0 | .... |
| 304 | MLrP..... | 33.1 | (2.75) | 31.4 | .... | 51.0 | 41.4 | 26.9 | (0.00) | 35.8 | .... |
| 305 | O..... | 37.8 | ..(1) | 24.7 | .... | 42.0 | 22.7 | 20.1 | (0.00) | 18.8 | .... |
| 306 | R..... | 36.7 | ..(1) | 19.1 | (0.00) | 57.1 | 24.8 | 23.5 | (0.00) | 20.8 | (0.00) |
| 307 | RL..... | 39.7 | ..(1) | 29.3 | (1.40) | 69.8 | 51.3 | 32.5 | (1.37) | 29.6 | (2.37) |
| 308 | RLrP..... | 29.1 | ..(1) | 30.1 | (1.24) | 71.2 | 50.8 | 31.4 | (1.28) | 31.7 | (2.71) |
| 309 | RLrPK..... | 31.4 | ..(1) | 29.5 | (1.47) | 72.0 | 53.1 | 31.3 | (1.26) | 33.8 | (2.77) |
| 310 | O..... | 36.1 | (2.17) | 25.9 | .... | 59.2 | 32.0 | 22.5 | (0.00) | 21.3 | .... |
| | | Corn | Oats | Clover | Wheat | Corn | Wheat | Stubble clover | Wheat | Stubble clover | |
| 401 | O..... | 13.3 | 32.5 | (1.90) | 36.0 | 45.7 | 36.0 | 15.3 | 4.3 | (.17) | |
| 402 | M..... | 24.4 | 43.4 | (1.98) | 36.3 | 62.4 | 36.3 | 24.3 | 7.5 | (.24) | |
| 403 | ML..... | 32.2 | 46.7 | (2.11) | 36.9 | 61.2 | 36.9 | 25.4 | 20.0 | (.71) | |
| 404 | MLrP..... | 31.6 | 48.1 | (2.06) | 35.3 | 61.1 | 35.3 | 25.8 | 24.0 | (.54) | |
| 405 | O..... | 20.4 | 36.2 | (1.68) | 18 | 40.6 | 35.6 | 27.7 | 8.5 | (.23) | |
| 406 | R..... | 21.7 | 44.4 | (1.84) | .04 | 59.8 | 32.8 | 25.8 | 8.8 | (.46) | |
| 407 | RL..... | 36.9 | 57.5 | (1.46) | .03 | 30.5 | 30.5 | 25.8 | 19.6 | (.36) | |
| 408 | RLrP..... | 37.5 | 53.9 | (1.87) | .03 | 28.1 | 64.3 | 25.8 | 21.3 | (1.03) | |
| 409 | RLrPK..... | 37.7 | 57.0 | (1.93) | .10 | 28.7 | 70.2 | 28.5 | 20.2 | (1.34) | |
| 410 | O..... | 17.9 | 35.5 | (1.93) | 35.3 | 52.8 | 35.3 | 24.2 | 10.2 | (.27) | |

¹Soybeans harvested for seed in 1919 but not threshed because of continued rain.

TABLE 51.—LEBANON FIELD: SERIES 500, 600, 700 (1911-1920)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------|----------|------|----------|----------|-----------|----------|----------|------|----------|----------|-----------|----------|----------|------|----------|----------|----------------|--|
| | | 1911 | | 1912 | | 1913 | | 1914 | | 1915 | | 1916 | | 1917 | | 1918 | | 1919 | | 1920 | |
| | | Potatoes | Corn | Potatoes | Corn | Soybeans | Potatoes | Corn | Soybeans | Potatoes | Corn | Soybeans | Potatoes | Corn | Soybeans | Potatoes | Corn | Soybeans | Potatoes | Corn | |
| 501 | 0..... | 30.1 | 55.9 | 24.0 | 13.3 | 45.0 | 22.8 | 22.0 | 64.8 | 22.0 | 42.4 | 22.0 | 22.0 | 42.4 | (2.96) | 17.1 | | | | | |
| 502 | M..... | 32.0 | 65.9 | 24.1 | 17.6 | 65.4 | 22.0 | 64.8 | 22.0 | 64.8 | 55.9 | 22.0 | 64.8 | 55.9 | (3.23) | 46.9 | | | | | |
| 503 | ML..... | 20.5 | 58.1 | 21.9 | 16.6 | 60.8 | 21.2 | 63.8 | 21.2 | 63.8 | 55.3 | 21.2 | 63.8 | 55.3 | (2.90) | 37.7 | | | | | |
| 504 | MLrP..... | 17.5 | 57.5 | 24.4 | 8.5 | 61.6 | 19.3 | 33.6 | 19.3 | 33.6 | 49.7 | 19.3 | 33.6 | 49.7 | (3.04) | 32.3 | | | | | |
| | | Soy-beans ¹ | | Potatoes | | Corn | | Soy-beans | | Potatoes | | Corn | | Soy-beans | | Potatoes | | Corn | | Stubble clover | |
| 601 | 0..... | (2.12) | 77.5 | 57.0 | 30.7 | 100.1 | 42.3 | (3.10) | 57.1 | 45.0 | 5.9 | (0.00) | | | | | | | | | |
| 602 | M..... | (2.02) | 67.1 | 60.2 | 31.7 | 110.0 | 41.9 | (3.18) | 69.8 | 73.2 | 6.6 | (0.00) | | | | | | | | | |
| 603 | ML..... | (2.17) | 53.1 | 63.8 | 34.6 | 132.3 | 45.6 | (3.22) | 68.5 | 89.4 | 10.8 | (1.53) | | | | | | | | | |
| 604 | MLrP..... | (1.90) | 67.9 | 51.9 | 30.7 | 90.6 | 43.5 | (3.58) | 59.1 | 86.9 | 7.8 | (1.56) | | | | | | | | | |
| | | Soy-beans ¹ | | Potatoes | | Corn | | Soy-beans | | Potatoes | | Corn | | Soy-beans | | Potatoes | | Corn | | Stubble clover | |
| 701 | 0..... | 48.2 | (2.93) | 35.3 | 13.0 | 11.8 | 63.3 | 59.6 | 37.3 | 23.0 | | | | | | | | | | | |
| 702 | M..... | 46.4 | (2.53) | 40.5 | 16.7 | 10.3 | 83.7 | 59.0 | 45.1 | 29.8 | | | | | | | | | | | |
| 703 | ML..... | 38.1 | (2.08) | 31.9 | 19.3 | 13.7 | 68.9 | 58.1 | 76.5 | 39.0 | | | | | | | | | | | |
| 704 | MLrP..... | 43.2 | (2.22) | 29.8 | 19.2 | 12.5 | 73.9 | 64.4 | 74.9 | 24.5 | | | | | | | | | | | |

¹Lime only.

TABLE 52.—LEBANON FIELD: SERIES 500, 600, 700 (1921-1924)

| Plot No. | Soil treatment applied | 1921 | 1922 | 1923 | 1924 | |
|----------|------------------------|------------------------|--------------|----------|-------|----------------|
| | | Oats | Sweet clover | Potatoes | Wheat | Stubble clover |
| 501W | 0 | 58.1 | (2.68) | 45.8 | 19.5 | (1.75) |
| 501E | aP | 58.4 | (2.65) | 52.0 | 28.7 | (2.07) |
| 502W | M | 33.8 | (3.35) | 70.5 | 30.0 | (2.04) |
| 502E | MaP | 37.8 | (2.83) | 62.8 | 33.3 | (2.33) |
| 503W | ML | 45.3 | (2.50) | 67.5 | 31.7 | (2.60) |
| 503E | MLaP | 49.1 | (2.80) | 63.0 | 38.0 | (2.70) |
| 504W | MLrP ¹ | 52.8 | (3.08) | 67.3 | 28.3 | (2.17) |
| 504E | MLrP | 43.1 | (3.10) | 60.8 | 36.7 | (2.64) |
| | | Soy-beans ² | | Potatoes | Wheat | Stubble clover |
| | | | | Potatoes | Wheat | Clover |
| 601W | 0 | 22.2 | | 20.8 | 30.0 | (1.03) |
| 601E | aP | 27.2 | | 22.7 | 25.0 | (1.10) |
| 602W | M | 21.2 | | 30.5 | 29.0 | (1.27) |
| 602E | MaP | 24.5 | | 34.3 | 23.5 | (.82) |
| 603W | ML | 25.3 | | 37.3 | 28.5 | (1.12) |
| 603E | MLaP | 26.0 | | 35.0 | 25.0 | (1.01) |
| 604W | MLrP ¹ | 21.8 | | 23.7 | 32.7 | (1.34) |
| 604E | MLrP | 23.5 | | 27.7 | 25.0 | (1.03) |
| | | | | Potatoes | Wheat | Sweet clover |
| | | | | Potatoes | Wheat | Potatoes |
| 701W | 0 | | | 47.0 | 32.5 | .50 |
| 701E | aP | | | 65.0 | 26.5 | .83 |
| 702W | M | | | 42.0 | 28.7 | .33 |
| 702E | MaP | | | 66.2 | 26.8 | .83 |
| 703W | ML | | | 44.7 | 29.2 | .33 |
| 703E | MLaP | | | 53.7 | 25.7 | .67 |
| 704W | MLrP ¹ | | | 52.0 | 36.2 | .33 |
| 704E | MLrP | | | 52.0 | 27.5 | .83 |

¹Residual phosphate on plots 504W, 604W, and 704W. ²No acid phosphate.

LINCOLN FIELD, LOGAN COUNTY

ESTABLISHED 1902—DISCONTINUED 1911

Location.—About three miles east of Lincoln on the farm of Mr. John Zeter. A part of the N.E. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 33, Twp. 20 N., R. 2 W. of the 3rd P. M.

Description.—This field consisted of 2.1 acres of dark-colored soil probably neutral or only slightly acid in reaction. The soil was described, when the field was established, as Black Prairie Loam characteristic of central Illinois. The land was level and uniform in nature. It was thoroly tile-drained. The field was plotted into one series of 13 tenth-acre plots.

History.—The field was leased from Mr. John Zeter. The soil had been well taken care of and was capable of producing good crops. Corn was grown in 1901.

Cropping and Soil Treatment.—This field was planned for what was called a complete fertility test. Nitrogen was applied in dried blood at the approximate annual rate of 700 pounds until 1907, when crop residues were substituted. Phosphorus was applied in steamed bone meal and potassium in potassium sulfate at approximately the annual acre rates of 200 pounds and 100 pounds respectively. In 1902 manure was applied to Plot 98 at the rate of 30 loads an acre, to Plot 99 at the rate of 20 loads an acre, and to Plot 100 at the rate of 10 loads an acre. This application was repeated in 1907. Slaked lime was applied in 1902 at the rate of 450 pounds an acre, and in 1903 at the rate of 700 pounds.

TABLE 53.—LINCOLN FIELD: SPECIAL FERTILITY TEST
Bushels or (tons) per acre

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|----------------------------|------------------------|------------------------|--------------|-----------------|--------------|--------------|--------------|----------------|--|
| | | 1902 Sugar beets | 1903 Sugar beets | 1904 Sugar beets | 1905 Oats | 1906 Cowpeas | 1907 Corn | 1908 Corn | 1909 Oats | 1910 Clover | |
| 98 | M (30 loads) | (14.1) | (10.7) | (6.2) | 67.2 | (2.01) | 78.5 | 45.2 | 62.8 | (2.73) | |
| 99 | M (20 loads) | (14.8) | (10.4) | (5.4) | 62.5 | (1.67) | 78.4 | 54.8 | 58.8 | (2.52) | |
| 100 | M (10 loads) | (12.9) | (11.9) | (6.7) | 60.9 | (1.83) | 65.5 | 41.0 | 51.3 | (2.61) | |
| 101 | 0 | (14.0) | (11.1) | (4.0) | 60.9 | (1.66) | 56.5 | 34.8 | 43.1 | (1.43) | |
| 102 | L | (14.0) | (10.7) | (4.5) | 65.6 | (1.58) | 60.6 | 39.0 | 49.1 | (1.30) | |
| 103 | LN | (15.0) | (9.9) | (5.8) | 76.6 | (1.60) | 63.6 | 42.6 | 50.0 | (1) | |
| 104 | LbP | (15.4) | (10.7) | (8.7) | 71.9 | (1.79) | 64.5 | 37.4 | 53.4 | (2.19) | |
| 105 | Lk | (16.4) | (9.5) | (3.7) | 60.9 | (1.62) | 61.0 | 39.2 | 46.3 | (1.81) | |
| 106 | LNbP | (15.3) | (10.4) | (7.3) | 73.4 | (1.89) | 67.1 | 47.4 | 56.3 | (1) | |
| 107 | LNk | (18.5) | (9.8) | (5.2) | 90.6 | (1.83) | 65.1 | 44.6 | 54.1 | (1) | |
| 108 | LbPK | (18.8) | (10.5) | (6.7) | 51.6 | (1.90) | 63.8 | 31.2 | 55.3 | (2.44) | |
| 109 | LNbPK | (20.0) | (11.7) | (9.3) | 73.4 | (2.08) | 66.6 | 35.0 | 58.4 | (1) | |
| 110 | NbPK | (19.0) | (10.2) | (8.7) | 59.4 | (2.12) | 64.5 | 30.2 | 53.4 | (1) | |

¹Growth plowed down in 1910.

OLD MANITO FIELD, MASON COUNTY

ESTABLISHED 1902—DISCONTINUED 1905

The Old Manito field was a cooperative field on the farm of Mr. Joseph Brenner near Manito. The soil was described as Deep Peat. The experiments were carried out on plots 2 rods wide and 80 rods long on areas of land covering one acre. No crop other than corn was grown on these plots. The treatments and the amounts applied to an acre are given in Table 53. Only two applications of these materials were made to the plots.

NEW MANITO FIELD, TAZEWELL COUNTY

ESTABLISHED 1907—DISCONTINUED 1913

Location.—About four miles east of Manito on the farm of Mr. W. N. Sunderland. A part of the S.E. $\frac{1}{4}$ of the N.W. $\frac{1}{4}$, Sec. 19, Twp. 23 N., R. 5 W. of the 3d P. M.

Description.—The field consisted of 12.6 acres, the soil of which was described as peaty alkali soil. The field was divided into three series containing 5 fourth-acre plots each.

History.—The land was leased from Mr. W. N. Sunderland. In 1906 the land was in corn. Some studies of the yields of this corn indicated variable results. Little other information is available in regard to the previous history of this field.

Cropping and Soil Treatment.—The rotation on this field was corn, oats, and wheat. Manure at the rate of 6 tons an acre to the west halves of the manure plots and 12 tons an acre to the east halves was applied to the corn once in each rotation. In 1907 potassium sulfate at the rate of 400 pounds an acre was applied to the potassium plots of all series. No further applications were made until 1910, when potassium sulfate was again applied to the potassium plots of all series at the approximate rate of 150 pounds an acre. These applications were repeated each year thereafter. One application of gypsum was made on Plot 4 of all series in 1907. It was applied in equal strips across the plots at the rate of 2, 4, 8, and 16 tons an acre.

TABLE 54.—OLD MANITO FIELD: SPECIAL FERTILITY TEST

| Plot No. | Bushels or (tons) per acre | | | | Soil treatment for 1904 | 1904 Corn | 1905 Corn |
|----------|---|-----------|-------------------|-----------|---|-----------|-----------|
| | Soil treatment for 1902 | | 1902 Corn | 1903 Corn | | | |
| 1 | None..... | None..... | 10.9 | 8.1 | None..... | 17.0 | 12.0 |
| 2 | None..... | None..... | 10.4 | 10.4 | Limestone, 4000 lbs. | 12.0 | 10.1 |
| 3 | Kainit, 600 lbs..... | None..... | 30.4 | 32.4 | Limestone, 4000 lbs. Kainit, 1200 lbs. | 49.6 | 47.3 |
| 4 | Kainit, 600 lbs. Acidulated bone, 350 lbs. | None..... | 30.3 | 33.3 | Kainit, 1200 lbs. Steamed bone, 395 lbs. | 53.5 | 47.6 |
| 5 | Potassium chlorid, 200 lbs. | None..... | 31.2 | 33.9 | Potassium chlorid, 400 lbs. | 48.5 | 52.7 |
| 6 | Sodium chlorid, 700 lbs. | None..... | 11.1 | 13.1 | None..... | 24.0 | 22.1 |
| 7 | Sodium chlorid, 700 lbs. | None..... | 13.3 | 14.5 | Kainit, 1200 lbs..... | 44.5 | 47.3 |
| 8 | Kainit, 600 lbs..... | None..... | 36.8 | 37.7 | Kainit, 600 lbs..... | 44.0 | 46.0 |
| 9 | Kainit, 300 lbs..... | None..... | 26.4 | 25.1 | Kainit, 300 lbs..... | 41.5 | 32.9 |
| 10 | None..... | None..... | 14.9 ¹ | 14.9 | None..... | 26.0 | 13.6 |

¹Estimated from 1903; no yield was taken in 1902 because of misunderstanding.

TABLE 55.—NEW MANITO FIELD: SERIES 100, 200, 300

| Plot No. | Soil treatment applied | Bushels per acre | | | | | | | | | |
|----------|------------------------|------------------|---------------------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|
| | | 1907 Wheat | 1907 Oats ¹ | 1908 Wheat | 1908 Corn | 1909 Wheat | 1909 Corn | 1910 Wheat | 1910 Oats | 1911 Wheat | 1912 Corn | 1913 Oats |
| 101 | None..... | 24.5 | 39.1 | 24.5 | 8.6 | 57.5 | 11.3 | 12.7 | 14.8 | 12.7 | 14.8 |
| 102W | Manure (6 tons)..... | 27.6 | 28.1 | 27.6 | {35.7} | 59.6 | 14.7 | {40.0} | 10.6 | {53.6} | 10.6 |
| 102E | Manure (12 tons)..... | 27.8 | 41.9 | 27.8 | {44.5} | 68.8 | 16.0 | 43.9 | 11.5 | 4.6 | 5.2 |
| 103 | Potassium sulfate..... | 20.1 | 25.4 | 20.1 | 31.6 | 39.8 | 5.7 | 4.6 | 1.9 | 8.6 | 1.9 |
| 104 | Gypsum..... | 21.5 | 19.3 | 21.5 | 2.1 | 37.5 | 6.0 | 8.6 | 8.6 | 8.6 | 8.6 |
| 105 | None..... | 19.3 | 19.3 | 21.5 | 4.6 | 37.5 | 6.0 | 8.6 | 8.6 | 8.6 | 8.6 |
| 201 | None..... | 19.9 | 8.8 | 19.9 | 13.5 | 8.0 | 5.6 | 35.1 | 2.0 | 35.1 | 2.0 |
| 202W | Manure (6 tons)..... | 24.0 | 43.5 | 24.0 | 22.7 | 67.5 | 14.4 | 53.4 | 9.7 | 53.4 | 9.7 |
| 202E | Manure (12 tons)..... | 23.8 | 64.9 | 23.8 | 24.1 | 75.5 | 15.6 | 57.3 | 11.6 | 57.3 | 11.6 |
| 203 | Potassium sulfate..... | 20.3 | 73.1 | 20.3 | 18.3 | 51.8 | 5.3 | 44.3 | 3.0 | 44.3 | 3.0 |
| 204 | Gypsum..... | 17.5 | 5.0 | 17.5 | 14.7 | 4.8 | 10.6 | 43.9 | 4.9 | 43.9 | 4.9 |
| 205 | None..... | 18.1 | 5.4 | 18.1 | 2.0 | 14.6 | 10.6 | 43.9 | 4.9 | 43.9 | 4.9 |
| 301 | None..... | 34.9 | ..... | 34.9 | 63.0 | 7.7 | 20.6 | 56.5 | 17.7 | 56.5 | 17.7 |
| 302W | Manure (6 tons)..... | 29.1 | ..... | 29.1 | {62.5} | 13.0 | 35.2 | 55.6 | 24.5 | 55.6 | 24.5 |
| 302E | Manure (12 tons)..... | 23.2 | ..... | 23.2 | {67.5} | 22.0 | 35.2 | 59.4 | 25.5 | 59.4 | 25.5 |
| 303 | Potassium sulfate..... | • 38.7 | ..... | • 38.7 | 62.6 | 7.0 | 15.7 | 48.5 | 16.5 | 48.5 | 16.5 |
| 304 | Gypsum..... | 13.4 | ..... | 13.4 | 63.8 | 7.7 | 18.8 | 48.3 | 19.3 | 48.3 | 19.3 |
| 305 | None..... | 10.3 | ..... | 10.3 | 65.3 | 7.7 | 18.8 | 48.3 | 19.3 | 48.3 | 19.3 |

¹No manure. ²Growth plowed down. ³Wheat winterkilled in 1912; oats grown as a substitute.

MASCOUTAH FIELD, ST. CLAIR COUNTY

ESTABLISHED 1902—DISCONTINUED 1913

Location.—About two miles northeast of Mascoutah on the farm of Mr. George Postel. A part of the S. $\frac{1}{2}$ of the S.W. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 17, Twp. 1 N., R. 6 W. of the 3d P. M.

Description.—The field consisted of 14.5 acres of land, the soil of which was described at the time the field was established as light prairie loam, clayey in nature, with a clay subsoil about 19 inches deep. This soil was probably somewhat similar to that now known as Gray Silt Loam On Tight Clay. The field was slightly rolling. No tile was used. The field was divided into six series, five of which contained 10 tenth-acre plots each and one of which comprized 12 fourth-acre plots. The latter series was known as the East field.

History.—The Mascoutah field was leased from Mr. George Postel. It had been cultivated a number of years previous, growing the crops common to the region, chiefly wheat and corn. In 1900 and 1901 this field produced 28 bushels of wheat to the acre.

Cropping and Soil Treatment.—The rotation practiced on Series 100, 200, 300, and 400 was corn, oats, wheat, and legumes. Catch crops of legumes were seeded on the residue plots in the corn when it was laid by, and in the stubble after the oats and wheat were harvested. For the first rotation an application of manure was made at the uniform rate of 8 tons an acre. Thereafter, it was applied in proportion to the amount of produce grown on the respective plots the preceding rotation. Phosphorus was applied in steamed bone meal at the annual rate of 200 pounds an acre, and potassium was applied in potassium sulfate at the annual rate of 100 pounds an acre.

Air-slaked lime was applied at the rate of 400 pounds an acre in 1902 and 700 pounds an acre in 1903. No more lime material was applied until 1909, when limestone at the rotation rate of $1\frac{1}{2}$ tons an acre was applied.

Series 500 was cropped with a rotation of corn, corn, oats, and wheat in what was called a complete fertility test. The nitrogen was supplied in 800 pounds of dried blood, the phosphorus in 200 pounds of steamed bone meal, and the potassium in 100 pounds of potassium sulfate an acre each year. The lime applications were similar to those on the first four series.

The plots of the East field were laid out to test the relative value of various phosphate carriers. The first application of the phosphates consisted of 400 pounds of steamed bone meal, 400 pounds of acid phosphate, 1,000 pounds of rock phosphate, and 400 pounds of basic slag an acre applied ahead of the corn in 1904. Subsequent applications were made at the annual acre rates of one-half these amounts. In 1904 potassium sulfate was applied to all plots at the rate of 200 pounds an acre, and subsequent applications of approximately 100 pounds an acre a year were made until 1908. In 1908 the practice of applying kainit once in the rotation in various amounts across all plots was instituted. Five 2-rod strips on each half-plot were so treated. The first received the kainit at the acre rate of 120 pounds, the second at 240 pounds, the third at 400 pounds, the fourth at 750 pounds, and the fifth at 1,075 pounds. During the next rotation approximately the same amounts were applied. Slaked lime was applied to the south half of the series in 1904 at the rate of one ton an acre.

TABLE 56.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|-------------------------|----------------------------|-----------|-----------|------------|-------------|-----------|-----------|------------|-------------|-----------------------------|
| | | 1902 Oats ¹ | 1903 Wheat ² | 1904 Cow-peas ³ | 1905 Corn | 1906 Oats | 1907 Wheat | 1908 Clover | 1909 Corn | 1910 Oats | 1911 Wheat | 1912 Clover | 1913 Soy-beans ⁴ |
| 301 | 0..... | 31.6 | 4.7 | .... | 41.7 | 20.9 | 18.3 | (.50) | 20.4 | 25.6 | 13.8 | (.43) | (.50) |
| 302 | Le..... | 37.2 | 5.0 | ..(9) | 56.8 | 32.2 | 24.5 | (.65) | 27.4 | 29.4 | 15.7 | (.71) | (.74) |
| 303 | Me..... | 41.6 | 4.8 | .... | 67.2 | 30.6 | 32.0 | (.22) | 42.0 | 38.1 | 18.8 | (.91) | (.91) |
| 304 | LeL..... | 43.8 | 7.5 | ..(9) | 60.0 | 36.2 | 20.2 | (1.39) | 46.4 | 28.1 | 17.0 | (.91) | (.91) |
| 305 | ML..... | 45.0 | 4.3 | ..(9) | 64.3 | 30.3 | 23.0 | (1.49) | 44.8 | 28.1 | 13.7 | (.91) | (.91) |
| 306 | LeLbP..... | 46.9 | 10.5 | ..(9) | 60.3 | 38.1 | 26.8 | (1.31) | 41.8 | 29.4 | 23.8 | (1.57) | (1.18) |
| 307 | MLbP..... | 46.3 | 4.7 | ..(9) | 65.3 | 29.7 | 23.2 | (1.39) | 41.8 | 25.3 | 21.3 | (1.57) | (1.18) |
| 308 | LeLbPK..... | 50.6 | 8.0 | ..(9) | 70.7 | 33.1 | 23.2 | (1.63) | 45.6 | 50.0 | 19.8 | (2.02) | (1.57) |
| 309 | MLbPK..... | 54.1 | 6.5 | .... | 67.2 | 26.6 | 24.0 | (1.63) | 44.6 | 54.4 | 22.7 | (2.05) | (1.86) |
| 310 | LbPK..... | 57.8 | 7.4 | .... | 63.5 | 28.4 | 25.8 | (1.41) | 44.0 | 56.3 | 22.2 | (2.05) | (1.86) |
| 401 | 0..... | 32.3 | 34.4 | 17.7 | .... | 49.6 | .... | 5.3 | (0.00) | 18.0 | 10.9 | 11.5 | (.46) |
| 402 | Le..... | 28.9 | 27.5 | 17.0 | ..(9) | 50.4 | .... | 6.2 | (.9) | 22.2 | 8.1 | 10.3 | (.85) |
| 403 | Me..... | 30.4 | 33.8 | 20.7 | .... | 54.0 | .... | 10.2 | (.50) | 34.0 | 16.3 | 14.5 | (.58) |
| 404 | LeL..... | 26.5 | 37.2 | 19.8 | ..(9) | 54.3 | .... | 14.2 | (.9) | 28.6 | 26.9 | 14.0 | (.84) |
| 405 | ML..... | 30.5 | 33.8 | 16.8 | .... | 52.8 | .... | 15.2 | (1.05) | 29.4 | 31.9 | 18.5 | (.84) |
| 406 | LeLbP..... | 39.6 | 39.7 | 25.5 | ..(9) | 57.1 | .... | 21.7 | (1.25) | 28.6 | 33.8 | 34.2 | (.71) |
| 407 | MLbP..... | 42.7 | 34.7 | 21.3 | .... | 54.1 | .... | 19.7 | (1.25) | 27.2 | 34.4 | 37.5 | (.71) |
| 408 | LeLbPK..... | 45.3 | 37.2 | 19.8 | ..(9) | 57.3 | .... | 18.2 | (.9) | 36.0 | 25.0 | 40.5 | (.74) |
| 409 | MLbPK..... | 47.1 | 37.2 | 19.8 | .... | 49.1 | .... | 16.7 | (1.40) | 35.2 | 25.0 | 36.0 | (.61) |
| 410 | LbPK..... | 48.1 | 40.9 | 22.8 | .... | 51.5 | .... | 18.5 | (0.00) | 33.8 | 21.6 | 29.0 | (2.80) |

¹No manure or legumes. ²Growth plowed down. ³All plots harvested together. ⁴Soybeans seeded after one crop of clover had been removed.

TABLE 57.—MASCOUTAH FIELD: SPECIAL FERTILITY TEST, SERIES 500

| Plot No. | Soil treatment applied | Bushels per acre | | | | | | | | | | |
|----------|------------------------|------------------|--------------|--------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|---------------------------|
| | | 1902 Corn | 1903 Corn | 1904 Oats | 1905 Wheat | 1906 Corn | 1907 Corn | 1908 Oats | 1909 Wheat | 1910 Corn | 1911 Corn | 1912 Oats ¹ | 1913 Wheat |
| 501 | 0 | 32.5 | 43.4 | 17.5 | 9.1 | 31.7 | 29.1 | 8.8 | 20.7 | 8.8 | 11.6 | 9.8 |
| 502 | L | 32.0 | 38.9 | 22.5 | 7.8 | 30.8 | 31.9 | 6.6 | 17.5 | 8.8 | 11.2 | 15.5 |
| 503 | LN | 24.2 | 47.1 | 40.0 | 16.7 | 53.1 | 45.8 | 12.2 | 20.8 | 12.4 | 19.8 | 32.5 |
| 504 | LbP | 34.4 | 39.3 | 68.7 | 15.0 | 21.6 | 24.8 | 9.1 | 20.2 | 6.8 | 14.6 | 14.5 |
| 505 | LK | 37.5 | 47.8 | 25.6 | 15.7 | 22.3 | 32.5 | 10.6 | 18.0 | 10.4 | 17.0 | 12.3 |
| 506 | LNbP | 46.1 | 69.9 | 44.1 | 25.3 | 56.7 | 58.8 | 28.8 | 32.7 | 32.4 | 39.2 | 33.5 |
| 507 | LNK | 59.6 | 77.4 | 43.1 | 30.2 | 59.6 | 70.0 | 37.2 | 30.7 | 32.0 | 48.8 | 27.0 |
| 508 | LbPK | 53.9 | 49.0 | 33.1 | 20.0 | 19.6 | 38.1 | 12.2 | 22.3 | 15.2 | 19.6 | 18.8 |
| 509 | LNbPK | 47.8 | 70.5 | 37.8 | 28.3 | 49.6 | 70.0 | 30.3 | 33.7 | 34.4 | 37.4 | 28.3 |
| 510 | NbPK | 47.7 | 52.6 | 35.9 | 26.3 | 42.9 | 65.3 | 32.2 | 33.7 | 34.8 | 28.6 | 30.5 |

¹Crop failure.

TABLE 58.—MASCOUTAH FIELD: COMPARATIVE PHOSPHATE TEST

| Plot No. | Soil treatment applied | Bushels per acre | | | | | | | | | |
|----------|------------------------|------------------|--------------|---------------|-------------------------------|--------------|--------------|-----------------------------|---------------|--------------|--|
| | | 1905 Corn | 1906 Oats | 1907 Wheat | 1908 Cow-peas ² | 1909 Corn | 1910 Oats | 1911 Clover ² | 1912 Wheat | 1913 Corn | |
| 95N | LbPK | 37.2 | 20.8 | 20.3 | ..... | 50.5 | 64.4 | ..... | 31.6 | 37.1 | |
| 95S | LbPK | 26.7 | ..... | ..... | ..... | 51.8 | 56.3 | ..... | 32.3 | 39.7 | |
| 96N | LeK | 32.3 | 17.9 | 19.0 | ..... | 48.5 | 36.6 | ..... | 26.2 | 29.0 | |
| 96S | LeLK | 28.4 | ..... | ..... | ..... | 49.9 | 56.4 | ..... | 28.1 | 26.2 | |
| 97N | LeaPK | 28.7 | 17.9 | 20.4 | ..... | 47.3 | 66.5 | ..... | 31.0 | 33.9 | |
| 97S | LeLaPK | 29.6 | ..... | ..... | ..... | 53.2 | 56.1 | ..... | 30.4 | 39.4 | |
| 98N | LerPK | 31.2 | 18.3 | 20.2 | ..... | 55.5 | 56.4 | ..... | 32.1 | 45.0 | |
| 98S | LeLrPK | 35.9 | ..... | ..... | ..... | 54.0 | 59.4 | ..... | 33.1 | 44.6 | |
| 99N | LeK | 30.8 | 17.0 | 20.1 | ..... | 50.2 | 44.9 | ..... | 21.3 | 36.5 | |
| 99S | LeLK | 34.0 | ..... | ..... | ..... | 49.2 | 64.0 | ..... | 30.1 | 24.3 | |
| 100N | LesPK | 30.4 | 19.6 | 17.5 | ..... | 59.0 | 48.0 | ..... | 34.0 | 59.5 | |
| 100S | LeLsPK | 34.3 | ..... | ..... | ..... | 52.4 | 66.4 | ..... | 35.5 | 42.4 | |

¹No potassium on Plots 96 and 99. ²Entire crop plowed down.

McNABB FIELD, PUTNAM COUNTY ESTABLISHED 1907

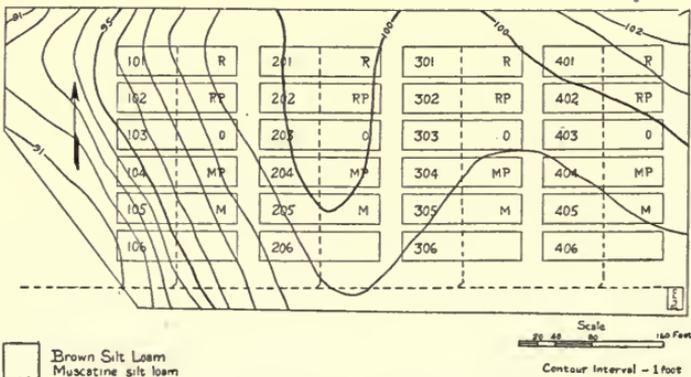
Location.—About 1½ miles south of McNabb on land belonging to the estate of Mr. John P. Swaney. A part of the N.E. ¼ of the S.W. ¼, Sec. 15, Twp. 31 N., R. 1 W. of the 3d P. M.

Description.—The field consists of 6 acres of dark-colored loessial upland soil of slight acidity. The field is fairly uniform in both soil and topography. Only one soil type has been mapped, namely, Brown Silt Loam (Muscatine silt loam). The southwest corner of the field has a somewhat prominent slope. The land is tile-drained and drains well. The field is divided into four series of 6 tenth-acre plots each.

History.—The McNabb field was first leased from Mr. John Swaney. Since his death the lease has been continued with the estate. The soil was very productive when the field was established. Previous to that time the field was in meadow for a number of years.

Cropping and Soil Treatment.—The rotation practiced on this field has been corn, oats, wheat, and clover, which has been handled similarly to the plans described in the introduction. Soybeans were grown as a cover crop for use as residues in the corn on Plots 1 and 2 until 1918, when they were discontinued. In 1919 it was planned to harvest from the residue plots a crop of clover hay as well as the seed. In 1921 the return of the oat straw was discontinued, and in 1922 the return of the wheat straw was also discontinued. Since that time all clover has been harvested as hay. In 1923 the rock phosphate was evened up to a total application of 5 tons on the phosphate plots, and no more will be applied for an indefinite period.

Plot 6 was added to each series in 1921. Thus far no soil treatment has been applied to this plot.



SOIL MAP OF McNABB FIELD

TABLE 59.—MCNABB FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | | | | | | |
|----------|------------------------|-------------------------------------|---------------------------|---------------------------|----------------------------|------------------------------------|--------------|--------------|---------------|-----------------------|--------------|--------------|---------------|----------------|--------------|--------------|---------------|----------------|--------------|-------|--|--|
| | | 1907 Cow- peas ^{1,2} | 1908 Corn ¹ | 1909 Oats ⁸ | 1910 Wheat ³ | 1911 Soy- beans ³ | 1912 Corn | 1913 Oats | 1914 Wheat | 1915 Soy- beans | 1916 Corn | 1917 Oats | 1918 Wheat | 1919 Clover | 1920 Corn | 1921 Oats | 1922 Wheat | 1923 Clover | 1924 Corn | | | |
| 101 | R..... | 73.6 | 30.0 | 36.8 | 27.7 | 67.0 | 45.3 | 26.5 | 19.8 | 31.0 | 62.8 | 33.0 | (1.24) | 58 | 44.4 | 30.0 | 26.0 | (1.68) | 61.4 | | | |
| 102 | RrP..... | 74.4 | 45.0 | 40.8 | 26.7 | 81.4 | 48.4 | 30.2 | 20.0 | 39.6 | 71.9 | 38.0 | (1.36) | .80 | 55.8 | 36.3 | 30.3 | (1.82) | 65.4 | | | |
| 103 | O..... | 80.4 | 41.3 | 42.5 | 27.5 | 74.8 | 50.0 | 30.2 | 17.7 | 38.8 | 92.8 | 36.7 | (3.19) | | 57.4 | 49.1 | 35.0 | (2.11) | 74.2 | | | |
| 104 | MrP..... | 69.6 | 39.4 | 34.2 | 24.5 | 73.4 | 48.8 | 30.2 | (2.16) | 41.0 | 94.4 | 34.0 | (2.26) | | 65.6 | 37.9 | 34.7 | (1.76) | 79.0 | | | |
| 105 | M..... | 53.8 | 32.2 | 30.8 | 18.8 | 70.8 | 49.1 | 22.7 | (1.96) | 36.4 | 85.3 | 30.7 | (2.17) | | 65.6 | 38.1 | 31.7 | (1.65) | 73.8 | | | |
| | | Soy- | | | | | | | | | | | | | | | | | | | | |
| | | Oats | | | Wheat | | | beans | | | Corn | | | Wheat | | | Oats | | | Wheat | | |
| 201 | R..... | 19.1 | 1.94 | 84.0 | 61.9 | 49.3 | (*) | 52.2 | 39.3 | (*) | 61.0 | 66.2 | (1.40) | 75.6 | 71.9 | 29.2 | (4.38) | | | | | |
| 202 | RrP..... | 20.0 | 2.17 | 93.2 | 60.9 | 48.1 | (*) | 59.4 | 42.2 | (*) | 67.8 | 66.9 | (1.40) | 81.0 | 75.0 | 32.2 | (4.00) | | | | | |
| 203 | O..... | 19.7 | (2.02) | 92.6 | 57.8 | 45.8 | (3.41) | 61.0 | 58.1 | 40.3 | (2.07) | 64.6 | 62.8 | (2.20) | 65.6 | 68.4 | 27.2 | (3.00) | | | | |
| 204 | MrP..... | 19.4 | (1.92) | 96.2 | 68.8 | 44.8 | (3.78) | 60.0 | 59.1 | 41.8 | (1.93) | 63.4 | 70.3 | (2.49) | 82.4 | 81.3 | 32.3 | (3.79) | | | | |
| 205 | M..... | 19.7 | (1.85) | 94.0 | 65.6 | 43.7 | (3.54) | 53.8 | 51.2 | 39.7 | (1.84) | 60.8 | 66.6 | (2.45) | 73.4 | 69.4 | 28.5 | (3.15) | | | | |
| | | Soy- | | | | | | | | | | | | | | | | | | | | |
| | | Oats | | | Wheat | | | beans | | | Corn | | | Wheat | | | Oats | | | Wheat | | |
| 301 | R..... | 20.9 | 41.0 | (*) | 111.4 | 63.1 | 9.7 | (*) | 63.8 | 33.8 | 16.7 | 68.0 | (1.06) | 78.4 | 59.7 | 32.7 | | | | | | |
| 302 | RrP..... | 22.2 | 42.5 | (*) | 111.2 | 61.6 | 11.8 | (*) | 61.2 | 42.2 | 36.7 | 73.2 | (1.20) | 77.6 | 65.6 | 38.8 | | | | | | |
| 303 | O..... | 22.5 | 39.8 | (2.85) | 112.2 | 67.5 | 10.0 | (4.25) | 59.2 | 42.2 | 38.3 | (1.44) | 69.0 | (2.92) | 79.8 | 61.3 | 41.7 | | | | | |
| 304 | MrP..... | 21.6 | 41.7 | (3.12) | 115.6 | 60.3 | 10.5 | (3.98) | 66.6 | 54.1 | 38.8 | (2.18) | 69.4 | (4.05) | 77.2 | 62.5 | 43.5 | | | | | |
| 305 | M..... | 18.4 | 31.7 | (2.54) | 96.8 | 57.2 | 10.0 | (3.72) | 57.6 | 49.7 | 38.2 | (1.85) | 65.8 | (2.94) | 79.6 | 61.6 | 41.0 | | | | | |
| | | Soy- | | | | | | | | | | | | | | | | | | | | |
| | | Oats | | | Wheat | | | Clover | | | Corn | | | Wheat | | | Oats | | | Wheat | | |
| 401 | R..... | 67.4 | 25.3 | 23.7 | 1.25 | 105.3 | 91.3 | 41.7 | 1.17 | 53.4 | 50.0 | 40.5 | (1.96) | .75 | 65.9 | 26.5 | (2.88) | 29.6 | 79.7 | | | |
| 402 | RrP..... | 66.9 | 23.8 | 25.5 | .83 | 113.4 | 98.1 | 38.3 | 1.17 | 59.0 | 52.2 | 43.2 | (2.21) | .87 | 69.3 | 29.0 | (2.72) | 35.4 | 87.8 | | | |
| 403 | O..... | 72.0 | 26.6 | 28.2 | (2.43) | 109.8 | 90.3 | 41.0 | (1.70) | 60.8 | 40.9 | 34.7 | (3.30) | | 68.4 | 29.8 | (1.78) | 30.8 | 67.8 | | | |
| 404 | MrP..... | 68.8 | 24.4 | 27.5 | (2.49) | 104.5 | 88.8 | 41.7 | (1.78) | 57.4 | 47.5 | 37.3 | (3.32) | | 62.2 | 35.8 | (2.76) | 43.8 | 76.6 | | | |
| 405 | M..... | 64.4 | 23.8 | 24.7 | (2.18) | 105.1 | 85.3 | 41.2 | (1.96) | 52.8 | 45.9 | 36.0 | (3.15) | | 66.6 | 35.8 | (2.37) | 35.0 | 75.0 | | | |

¹Phosphorus only. ²Removed but not weighed. ³No manure. ⁴No seed threshed.

MINONK FIELD, WOODFORD COUNTY

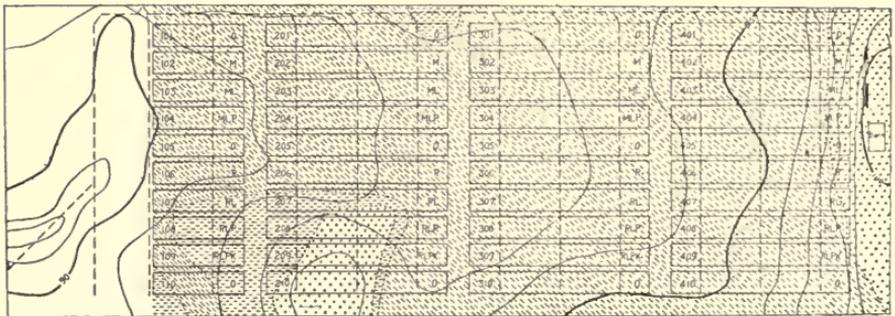
ESTABLISHED 1910

Location.—About one mile west of Minonk. A part of the N.E. ¼ of the N.E. ¼, Sec. 11, Twp. 28 N., R. 1 E. of the 3d P. M.

Description.—The field consists of 15 acres of dark-colored loessial and drift upland soil slightly acid. Four soil types have been mapped on this field: (1) Brown Silt Loam (Muscatine silt loam); (2) Brown Silt Loam On Calcareous Drift (Clarion silt loam); (3) Black Clay Loam, poorly drained phase, (Loessial Clyde clay loam); and (4) Brown Silt Loam On Calcareous Clay (Grundy silt loam, calcareous phase). The land is gently rolling with a general westward slope. It is thoroly tiled and drains well except in lower areas. The field is divided into four series of 10 plots each. All plots are one-fifth acre in size, except on Series 100, where they are one-tenth acre in size.

History.—The Minonk field was donated by Mr. and Mrs. Bela M. Stoddard to the University for experimental purposes. The year preceding the acquisition of the field, corn was grown on this land.

Cropping and Soil Treatment.—The somewhat standard rotation and soil treatment methods described in the introduction were established on all series of this field. These methods were followed without change until 1919, when it was planned to harvest from the residue plots a crop of clover hay as well as a seed crop. In 1921 the return of the oat straw was discontinued. At that time it was planned to harvest all clover as hay. In 1922 the return of the wheat straw was discontinued, as well as the application of limestone until such time as it may be needed. In 1923 the rotation was changed to corn, corn, oats, and wheat with a seeding of hubam clover in the oats on all plots and biennial sweet clover in the wheat on the residue plots. At that time the phosphate applications were evened up to 4 tons an acre, and no more will be applied for an indefinite time.



- Brown Silt Loam
Muscatine silt loam
- Brown Silt Loam On Calcareous Drift
Clarion silt loam

- Black Clay Loam, poorly drained phase
Loessial Clyde clay loam
- Brown Silt Loam On Calcareous Clay
Grundy silt loam, calcareous phase

SOIL MAP OF MINONK FIELD

TABLE 60.—Concluded

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------------------|-------------------------|-----------|-----------|----------------|------------|-----------|-----------|-------------|------------|-----------|-----------|------------|-----------|
| | | 1910 Oats ¹ | 1911 Clover ² | 1912 Wheat ⁴ | 1913 Corn | 1914 Oats | 1915 Soy-beans | 1916 Wheat | 1917 Corn | 1918 Oats | 1919 Clover | 1920 Wheat | 1921 Corn | 1922 Oats | 1923 wheat | 1924 Corn |
| 301 | O..... | 67.2 | (2.75) | 11.1 | 54.1 | 40.6 | (1.72) | 30.7 | 54.7 | 60.3 | (2.41) | 42.8 | 56.4 | 74.8 | 31.3 | 45.8 |
| 302 | ML..... | 66.9 | (2.65) | 11.3 | 63.9 | 42.0 | (1.70) | 37.7 | 63.8 | 65.3 | (2.72) | 47.5 | 75.8 | 81.4 | 37.9 | 68.8 |
| 303 | ML..... | 65.5 | (2.54) | 15.6 | 60.6 | 43.3 | (1.78) | 35.1 | 67.5 | 65.3 | (2.48) | 42.4 | 83.3 | 80.9 | 28.8 | 60.5 |
| 304 | MLrP..... | 62.8 | (2.65) | 17.9 | 65.2 | 44.8 | (1.70) | 38.0 | 69.3 | 64.7 | (2.67) | 46.0 | 85.4 | 76.9 | 37.3 | 56.2 |
| 305 | O..... | 58.3 | (2.82) | 15.3 | 57.9 | 45.0 | 19.7 | 34.5 | 46.4 | 58.6 | (1.75) | 42.8 | 70.4 | 66.1 | 30.8 | 40.6 |
| 306 | R..... | 58.3 | ..(9) | 17.8 | 64.0 | 44.5 | 18.6 | 38.3 | 60.6 | 60.9 | (1.54) | 40.2 | 77.6 | 69.7 | 36.8 | 53.3 |
| 307 | RL..... | 56.7 | ..(9) | 15.8 | 62.0 | 45.8 | 18.3 | 35.5 | 70.0 | 60.9 | (1.38) | 35.8 | 81.7 | 67.0 | 30.4 | 60.5 |
| 308 | RLrP..... | 56.9 | ..(9) | 18.0 | 58.7 | 42.5 | 20.7 | 34.4 | 68.7 | 63.1 | (1.21) | 39.0 | 77.5 | 70.5 | 29.9 | 67.2 |
| 309 | RLrPK..... | 61.9 | ..(9) | 13.3 | 59.2 | 38.8 | 19.2 | 31.8 | 69.9 | 64.5 | (1.13) | 35.6 | 80.3 | 69.2 | 30.9 | 56.2 |
| 310 | O..... | 64.2 | (2.05) | 6.7 | 44.5 | 29.2 | (1.63) | 28.2 | 52.9 | 59.5 | (1.81) | 33.5 | 61.2 | 63.3 | 23.6 | 38.4 |
| | | | Soy-beans ⁵ | | Corn | Oats | | Clover | Wheat | Corn | Oats | Clover | Wheat | Corn | Oats | Wheat |
| 401 | O..... | 52.0 | (1.27) | 33.8 | 19.9 | 89.4 | (2.07) | 9.9 | 60.9 | 60.9 | 52.0 | (.70) | 29.2 | 52.0 | 49.7 | 26.8 |
| 402 | ML..... | 48.0 | (1.54) | 31.8 | 22.6 | 93.0 | (2.06) | 14.0 | 70.5 | 70.5 | 49.2 | (.92) | 28.5 | 70.3 | 57.7 | 33.9 |
| 403 | ML..... | 50.9 | (1.10) | 27.9 | 18.7 | 93.4 | (1.82) | 11.2 | 75.6 | 75.6 | 49.5 | (1.24) | 29.3 | 71.3 | 57.2 | 39.6 |
| 404 | MLrP..... | 51.8 | (1.24) | 33.5 | 24.7 | 103.1 | (2.32) | 17.1 | 78.5 | 78.5 | 49.5 | (1.66) | 30.1 | 73.0 | 64.2 | 39.9 |
| 405 | O..... | 52.4 | 55.6 | 10.7 | 33.7 | 24.2 | 93.4 | .25 | 17.9 | 61.4 | 48.6 | (.54) | 28.2 | 54.8 | 50.5 | 33.8 |
| 406 | R..... | 49.6 | 56.4 | 10.6 | 39.2 | 33.8 | 88.1 | .08 | 23.9 | 71.4 | 48.8 | (1.11) | 29.4 | 74.1 | 55.2 | 35.0 |
| 407 | RL..... | 45.4 | 54.8 | 11.5 | 38.7 | 38.6 | 100.0 | 0.00 | 21.2 | 77.3 | 48.0 | (1.93) | 26.4 | 83.2 | 58.9 | 38.3 |
| 408 | RLrP..... | 45.0 | 55.5 | 11.5 | 41.2 | 35.8 | 101.9 | .08 | 22.8 | 78.3 | 49.4 | (2.09) | 28.8 | 87.3 | 64.5 | 41.1 |
| 409 | RLrPK..... | 51.6 | 53.3 | 11.4 | 44.0 | 35.9 | 105.5 | .08 | 21.5 | 70.0 | 49.2 | (1.89) | 32.7 | 78.7 | 65.0 | 41.2 |
| 410 | O..... | 45.4 | 53.4 | 13.0 | 36.7 | 27.5 | 106.0 | (2.30) | 12.1 | 58.0 | 45.2 | (1.28) | 30.7 | 55.2 | 61.3 | 32.0 |

¹No treatment. ²Residues only. ³Growth plowed down. ⁴No manure. ⁵Residues and limestone only.

MOMENCE FIELD, KANKAKEE COUNTY

ESTABLISHED 1902—DISCONTINUED 1915

Location.—About three miles south of Momence on the farm of Mr. C. C. Porter. A part of the N.E. $\frac{1}{4}$ of the N.W. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 6, Twp. 30 N., R. 11 W. of the 2d P. M. and a part of the S.W. $\frac{1}{4}$ of the S.W. $\frac{1}{4}$ of the N.E. $\frac{1}{4}$, Sec. 6, Twp. 30 N., R. 11 W. of the 2d P. M.

Description.—The field consisted of two areas, one containing $2\frac{1}{4}$ acres and one $3\frac{1}{2}$ acres. At the time the field was established the soil on the smaller field was described as Peaty Loam On Rock underlain with impure limestone at a depth of 2 or 3 feet, with about 12 inches of yellow sandy subsoil between the peaty soil and the underlying rock. The land on the larger area was described as somewhat similar but naturally more productive. The smaller area was plotted into one series of 10 tenth-acre plots known as Series 100, and the other area into two series of 10 tenth-acre plots each, known as Series 200 and 300.

History.—The land was leased from Mr. C. C. Porter. The smaller area was plotted in 1902. Previous to that time the soil was unproductive and grew only very small crops. The larger area was plotted in the fall of 1903. During that year the field was in oats.

Cropping and Soil Treatment.—Corn was grown continuously on Series 100 in what was called a complete fertility test. Fertilizers were applied at the following acre rates each year: nitrogen in about 800 pounds of dried blood, phosphorus in about 200 pounds of steamed bone meal, and potassium in about 150 pounds of potassium chlorid or potassium sulfate. In the beginning 475 pounds of air-slaked lime an acre was applied. No further applications of lime were made.

Series 200 and 300 were cropped with a rotation of corn, corn, oats, and clover. Nitrogen was supplied either in residues or in manure. The residues, including legume cover crops, were made use of from the beginning, but no manure was applied until 1908. The manure was applied in proportion to crop yields. The phosphorus was applied at the annual rate of 200 pounds of steamed bone meal an acre. No potassium was applied to Series 200, but it was applied to the whole of Series 300 at the annual rate of 150 pounds of potassium sulfate an acre. Common salt (sodium chlorid) was applied to the north half of all plots of Series 200 at the rate of 600 pounds an acre in 1908, and again in 1912.

TABLE 61.—MOMENCE FIELD: SPECIAL FERTILITY TEST, SERIES 100

| Plot No. | Soil treatment applied | Bushels per acre | | | | | | | | | | | | | |
|----------|------------------------|------------------|--------------|-------------------|-------------------|-------------------|-------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | 1902 Corn | 1903 Corn | 1904 Corn | 1905 Corn | 1906 Corn | 1907 Corn | 1908 Oats | 1909 Corn | 1910 Corn | 1911 Corn | 1912 Corn | 1913 Corn | 1914 Corn | 1915 Corn |
| 101 | 0..... | 6.9 | 14.9 | 4.8 | 6.8 | 6.8 | .3 | 16.3 | 8.4 | .3 | 9.2 | 5.8 | 7.0 | 1.0 | 2.8 |
| 102 | L..... | 5.5 | 7.1 | 20.1 ^a | 33.9 ^a | 52.6 ^a | 14.9 ^a | 23.1 | 16.0 | .9 | 15.2 | 7.4 | 9.0 | 1.0 | 3.0 |
| 103 | LN..... | 0.0 | 3.6 | 1.3 | 4.1 | 5.3 | .4 | 15.6 | 3.8 | 1.1 | 8.2 | 3.8 | 5.6 | 1.6 | 2.8 |
| 104 | LbP..... | 1.3 | 4.6 | .4 | 1.8 | 1.9 | .2 | 14.1 | 1.2 | 1.1 | 7.0 | 1.6 | 4.2 | .6 | .6 |
| 105 | LK..... | 23.7 | 72.2 | 34.6 | 41.4 | 50.0 | 16.2 | 21.6 | 39.2 | 20.2 | 62.0 | 36.2 | 48.0 | 21.2 | 19.0 |
| 106 | LNbP..... | 0.0 | 3.9 | .6 | 1.6 | 4.5 | .4 | 15.6 | 1.8 | 1.7 | 11.2 | 7.2 | 5.4 | 4.0 | 2.4 |
| 107 | LNK..... | 19.7 | 71.1 | 33.5 | 38.5 | 53.1 | 16.5 | 19.4 | 49.2 | 23.8 | 62.2 | 44.2 | 50.8 | 22.4 | 21.2 |
| 108 | LbPK..... | 32.0 | 73.1 | 42.0 | 36.3 | 59.4 | 19.9 | 20.3 | 55.8 | 37.4 | 70.4 | 51.4 | 55.4 | 22.6 | 21.6 |
| 109 | LNbPK..... | 25.2 | 66.8 | 39.2 | 42.9 | 65.6 | 25.1 | 26.6 | 66.2 | 40.4 | 81.8 | 69.0 | 60.6 | 34.6 | 41.6 |
| 110 | NbPK..... | 24.1 | 70.4 | 19.0 ^a | 24.8 ^a | 51.3 | 23.4 | 26.6 | 61.2 | 29.0 | 65.2 | 59.6 | 50.6 | 22.8 | 34.2 |

^aPotassium sulfate was applied to Plot 102 in 1904, 1905, 1906, and 1907. ^aNo potassium was applied to Plot 110 in 1904 and 1905.

TABLE 62.—MOMENCE FIELD: SERIES 200, 300

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|---------------------------|-------------------------------|--------------|--------------|---------------------------|----------------|--------------|--------------|--------------|------------------|
| | | 1904 Corn ¹ | 1905 Corn ¹ | 1906 Oats ¹ | 1907 ^{1,2} Clover | 1908 Corn | 1909 Corn | 1910 [*] Oats | 1911 Clover | 1912 Corn | 1913 Corn | 1914 Oats | 1915 Soybeans |
| 201 | 0..... | 14.2 | 11.4 | 29.4 | ..... | 9.2 | 19.0 | 36.9 | (.21) | 18.6 | 12.6 | 27.2 | 9.5 |
| 202 | R..... | 20.1 | 16.1 | 32.2 | ..... | 8.2 | 25.2 | 37.5 | (.9) | 32.2 | 24.4 | 27.5 | 11.3 |
| 203 | M..... | 13.4 | 10.1 | 24.4 | ..... | 11.8 | 27.8 | 38.8 | (.23) | 35.8 | 23.6 | 23.8 | 11.2 |
| 204 | MLe..... | 6.3 | 6.6 | 25.3 | ..... | 14.2 | 25.8 | 46.9 | (.44) | 36.6 | 17.0 | 34.1 | 10.3 |
| 205 | 0..... | 4.4 | 5.6 | 21.2 | ..... | 8.2 | 17.0 | 48.1 | (.29) | 16.2 | 9.4 | 33.4 | 9.8 |
| 206 | bP..... | 8.7 | 8.6 | 23.4 | ..... | 14.0 | 16.0 | 51.3 | (.45) | 18.2 | 15.2 | 37.2 | 9.8 |
| 207 | RbP..... | 10.9 | 10.1 | 30.6 | ..... | 6.0 | 17.6 | 42.8 | (.4) | 27.4 | 18.0 | 30.3 | 12.3 |
| 208 | MbP..... | 1.5 | 8.0 | 30.0 | ..... | 17.4 | 17.6 | 52.2 | (.80) | 41.8 | 12.6 | 35.6 | 11.7 |
| 209 | MLebP..... | 9.4 | 10.8 | 38.1 | ..... | 25.2 | 24.4 | 62.5 | (.58) | 51.6 | 23.6 | 41.9 | 12.3 |
| 210 | 0..... | 6.5 | 10.0 | 29.4 | ..... | 8.6 | 14.4 | 45.0 | (.29) | 17.8 | 11.2 | 27.2 | 9.8 |
| 301 | K..... | 34.0 | 41.5 | 36.6 | (.10) | 20.2 | 44.4 | 35.6 | (.26) | 39.4 | 41.6 | 20.9 | 11.5 |
| 302 | KR..... | 35.5 | 35.6 | 38.1 | (.28) | 12.4 | 54.0 | 38.8 | (.9) | 38.8 | 43.6 | 26.2 | 12.5 |
| 303 | KM..... | 41.1 | 44.1 | 40.3 | (.30) | 20.0 | 58.4 | 39.1 | (.67) | 49.8 | 47.4 | 26.9 | 12.0 |
| 304 | KLeM..... | 38.5 | 40.5 | 33.1 | (.10) | 22.6 | 47.2 | 40.0 | (.59) | 49.8 | 43.4 | 30.6 | 11.7 |
| 305 | K..... | 42.9 | 45.2 | 41.2 | (.48) | 25.6 | 48.2 | 43.8 | (.71) | 44.2 | 45.0 | 31.6 | 11.8 |
| 306 | KbP..... | 45.9 | 47.7 | 41.6 | (1.03) | 22.0 | 47.4 | 41.3 | (.95) | 52.0 | 42.2 | 30.0 | 12.3 |
| 307 | KbPR..... | 44.4 | 50.5 | 45.3 | (.40) | 15.8 | 53.6 | 40.0 | (.4) | 45.2 | 41.6 | 29.1 | 13.0 |
| 308 | KbPM..... | 54.4 | 54.9 | 44.7 | (.33) | 29.6 | 59.4 | 53.1 | (1.13) | 65.2 | 49.4 | 34.4 | 13.0 |
| 309 | KbPLeM..... | 52.2 | 55.5 | 45.9 | (.05) | 23.8 | 54.2 | 51.6 | (.98) | 57.8 | 45.4 | 39.1 | 11.5 |
| 310 | K..... | 30.3 | 37.5 | 35.3 | (.08) | 16.2 | 45.0 | 35.9 | (.20) | 33.6 | 36.0 | 27.5 | 11.8 |

¹No organic manure. ²Clover failed completely on Series 200 in 1907; on Series 300 a small crop was secured. Cowpeas were seeded late in the season on both series and plowed under. ³Plowed down.

MT. MORRIS FIELD, OGLE COUNTY
ESTABLISHED 1910

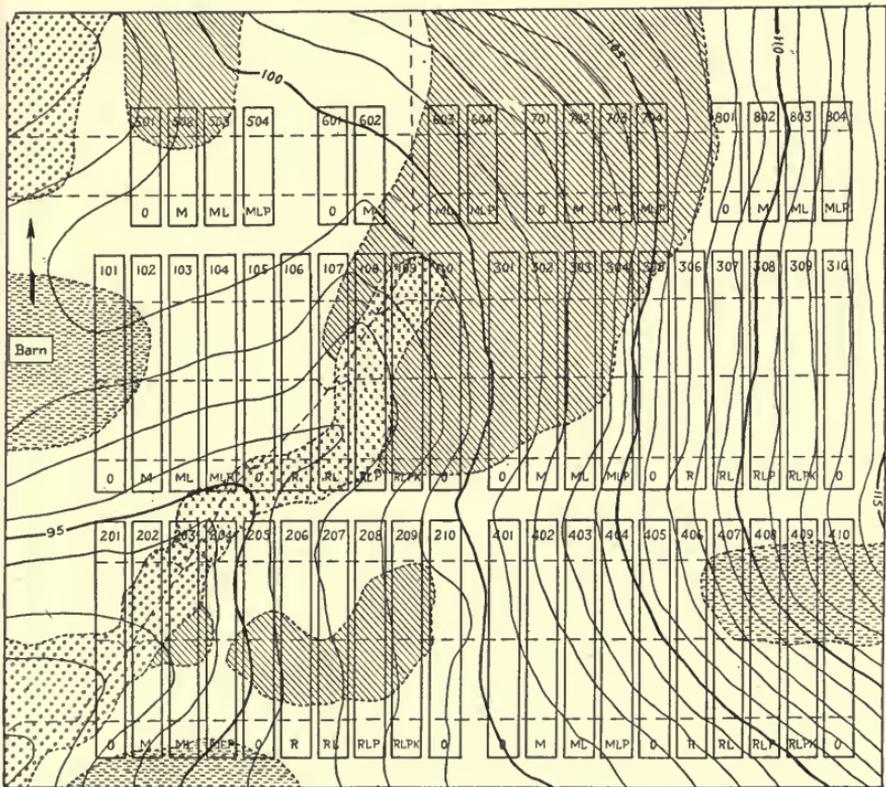
Location.—Just outside the residence district southeast of Mt. Morris. A part of the N. $\frac{1}{2}$ of the N.W. $\frac{1}{4}$, Sec. 35, Twp. 24 N., R. 9 E. of the 4th P. M.

Description.—The field consists of 20 acres of dark-colored loessial upland soil of medium acidity. Five soil types have been mapped on this field: (1) Light Brown Silt Loam, shallow phase (Tama silt loam, shallow phase); (2) Light Brown Silt Loam (Tama silt loam); (3) Light Brown Silt Loam, deep phase (Tama silt loam, deep phase); (4) Brown Silt Loam (Muscatine silt loam); and (5) Brown Silt Loam, deep phase (Muscatine silt loam, deep phase). The land is moderately rolling with a tendency to wash at some places. It is thoroly tile-drained and drains well except in some of the lower spots. The field is divided into eight series, four containing 10 fifth-acre plots each, and four containing 4 tenth-acre plots each.

History.—The land was purchased by Mt. Morris College and the citizens of Mt. Morris and vicinity and donated to the University for experimental purposes. Little is known of the previous history of the field except that it was in corn in 1909.

Cropping and Soil Treatment.—The somewhat standard rotation and soil treatment methods described in the introduction were established on Series 100, 200, 300, and 400. In 1920 a clover hay crop as well as the seed crop was harvested from the residue plots. Beginning with 1921 all clover was removed as hay and the return of the oat straw discontinued. In 1922 the return of the wheat straw was discontinued, as well as the applications of limestone until such time as its need should become apparent. In 1923 the rock phosphate applications were evened up to 4 tons an acre and no more will be applied for an indefinite period.

Until 1912 Series 500, 600, 700, and 800 were unplotted, at which time a rotation of potatoes two years and alfalfa six years was established on these series. Manure was applied at the rate of 15 tons an acre for each potato crop. In the beginning, 4 tons of limestone an acre was applied, and thereafter the applications were continued at the rate of $\frac{1}{2}$ ton each year, all applied before the alfalfa. Rock phosphate was applied at the annual rate of 500 pounds an acre before the first potato crop. In 1921 the rotation was changed to corn, barley, sweet clover, and alfalfa. The manure was evened up to 30 tons an acre, the limestone to 9 tons, and the phosphate to $3\frac{1}{2}$ tons, and for the present no more of these materials will be applied.



SOIL MAP OF MT. MORRIS FIELD

TABLE 63.—*Concluded*
Bushels or (tons) per acre

| Plo No. | Soil treatment applied | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 |
|---------|------------------------|-------------------|------------------------|---------------------|--------------------|------|--------|--------|-------|------|--------|-----------|-------|------|--------|--------|
| | | Oats ¹ | Soy-beans ² | Barley ³ | Corn | Oats | Clover | Wheat | Corn | Oats | Oats | Soy-beans | Wheat | Corn | Oats | Clover | Wheat |
| 301 | 0 | 54.2 | 13.7 | 32.2 | 57.5 | 57.3 | (4.35) | 13.3 | 28.9 | 77.8 | (1.36) | 34.4 | 57.6 | 68.4 | (1.31) | 33.9 |
| 302 | ML | 53.1 | 18.3 | 31.3 | 72.9 | 56.4 | (4.24) | 17.6 | 48.2 | 76.9 | (1.51) | 42.5 | 69.9 | 72.0 | (1.58) | 34.9 |
| 303 | ML | 50.8 | 16.0 | 35.8 | 70.7 | 55.5 | (4.18) | 19.8 | 56.2 | 74.4 | (1.88) | 46.2 | 70.2 | 82.2 | (2.08) | 43.7 |
| 304 | MLrP | 51.6 | 17.4 | 33.3 | 67.1 | 51.7 | (4.24) | 24.8 | 57.4 | 82.8 | (1.64) | 46.1 | 74.0 | 80.5 | (1.76) | 44.7 |
| 305 | 0 | 70.9 | 15.3 | 31.5 | 58.4 | 43.8 | .42 | 17.0 | 31.0 | 82.2 | 12.9 | 26.2 | 50.7 | 44.8 | (.90) | 29.6 |
| 306 | R | 68.7 | 18.5 | 30.2 | 66.1 | 50.0 | .50 | 19.7 | 38.0 | 78.4 | 15.2 | 31.8 | 46.6 | 56.6 | (1.36) | 34.0 |
| 307 | RL | 75.8 | 15.9 | 31.9 | 69.2 | 47.0 | .42 | 22.3 | 48.7 | 75.0 | 20.0 | 42.0 | 63.3 | 77.0 | (2.19) | 43.3 |
| 308 | RLrP | 62.5 | 19.6 | 33.4 | 76.8 | 56.2 | .17 | 26.8 | 51.7 | 76.9 | 20.0 | 48.3 | 64.7 | 76.1 | (2.50) | 45.2 |
| 309 | RLrPK | 78.1 | 16.9 | 39.3 | 68.9 | 54.2 | .08 | 28.7 | 56.4 | 70.3 | 19.7 | 48.5 | 69.1 | 83.3 | (2.45) | 38.0 |
| 310 | 0 | 62.5 | 18.2 | 29.8 | 51.5 | 53.1 | (3.37) | 21.2 | 30.0 | 75.2 | (1.45) | 32.8 | 43.7 | 45.0 | (1.01) | 32.5 |
| | | Corn ¹ | Oats ² | Clover ³ | Wheat ⁴ | Corn | Oats | Clover | Wheat | Corn | Oats | Clover | Wheat | Corn | Oats | Clover |
| 401 | 0 | 34.3 | 60.2 | (2.10) | 25.2 | 58.2 | 70.0 | (2.16) | 7.1 | 55.2 | 51.6 | (1.61) | 29.4 | 63.7 | 32.3 | (3.15) |
| 402 | M | 35.1 | 63.6 | (2.67) | 26.2 | 71.3 | 67.0 | (2.74) | 7.8 | 70.4 | 60.2 | (2.14) | 31.4 | 76.5 | 46.0 | (3.70) |
| 403 | ML | 36.9 | 60.3 | (2.87) | 29.5 | 73.6 | 67.0 | (3.09) | 11.5 | 74.1 | 52.3 | (2.91) | 33.3 | 74.8 | 57.7 | (4.39) |
| 404 | MLrP | 35.8 | 70.3 | (2.75) | 33.3 | 68.8 | 69.4 | (3.01) | 11.8 | 75.1 | 50.0 | (2.83) | 35.8 | 82.8 | 59.4 | (4.19) |
| 405 | 0 | 37.1 | 65.3 | (2.73) | 27.8 | 58.4 | 66.4 | .58 | 7.8 | 57.0 | 55.9 | (1.01) | 27.4 | 67.7 | 36.7 | (2.59) |
| 406 | R | 42.0 | 65.0 | 1.42 | 33.5 | 59.5 | 64.7 | .50 | 8.1 | 68.1 | 60.9 | (1.27) | 26.3 | 73.0 | 39.7 | (3.16) |
| 407 | RL | 41.2 | 71.1 | 1.42 | 32.0 | 64.5 | 57.7 | .67 | 11.5 | 74.1 | 64.4 | (1.59) | 29.7 | 80.5 | 54.4 | (4.04) |
| 408 | RLrP | 40.3 | 68.3 | 1.25 | 33.3 | 66.4 | 57.2 | .50 | 13.6 | 78.3 | 65.9 | (1.60) | 33.8 | 79.6 | 56.6 | (4.69) |
| 409 | RLrPK | 40.9 | 68.3 | 1.17 | 36.8 | 67.5 | 57.3 | .42 | 13.1 | 79.1 | 68.0 | (1.77) | 33.8 | 90.0 | 55.8 | (4.03) |
| 410 | 0 | 36.2 | 63.0 | (2.18) | 30.3 | 57.5 | 71.6 | (2.23) | 5.9 | 55.6 | 52.3 | (1.40) | 24.8 | 63.0 | 32.5 | (2.40) |

¹No manure. ²Residues only. ³No manure or lime. ⁴Wheat winterkilled; barley grown as a substitute crop. ⁵No manure.

TABLE 64.—MT. MORRIS FIELD: SERIES 500, 600, 700, 800

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|---------------|-----------------|--------------|---------------------------|--------------|--------------|-----------------|-------------|------------------------|-----------|-------------|
| | | 1913 Potatoes | 1914 Potatoes | 1915 Barley hay | 1916 Alfalfa | 1917 Alfalfa ³ | 1918 Alfalfa | 1919 Alfalfa | 1920 Alfalfa | 1921 Barley | 1922 Sweet clover seed | 1923 Corn | 1924 Barley |
| 501 | 0 | 112.5 | 78.3 | (.52) | (1.16) | | (1.47) | (3.18) | (2.66) | 22.1 | 2.92 | 61.2 | 29.4 |
| 502 | M | 163.2 | 158.0 | (2.33) | (3.88) | | (2.57) | (4.98) | (3.21) | 36.9 | 2.92 | 66.4 | 34.4 |
| 503 | ML | 184.3 | 173.8 | (1.96) | (5.33) | | (4.46) | (6.10) | (4.22) | 44.4 | 3.05 | 70.6 | 40.4 |
| 504 | MLrP | 207.7 | 175.0 | (1.79) | (5.10) | | (4.39) | (6.26) | (3.93) | 40.0 | 2.83 | 77.2 | 41.0 |
| | | Sweet clover seed | | | | | | | | | | | |
| | | Corn | | | | | | | | | | | |
| 601 | 0 | .... | (5.32) | 197.8 | 71.7 | (4.00) | (5.31) | (2.27) | 67.8 | 52.1 | 6.96 | 59.4 | |
| 602 | M | .... | (5.47) | 266.7 | 137.0 | (5.04) | (6.03) | (3.16) | 57.8 | 57.9 | 8.08 | 61.0 | |
| 603 | ML | .... | (6.32) | 252.5 | 145.0 | (5.37) | (5.08) | (3.68) | 74.0 | 60.0 | 6.28 | 66.4 | |
| 604 | MLrP | .... | (6.70) | 265.8 | 144.7 | (5.19) | (5.52) | (4.08) | 77.6 | 57.5 | 5.96 | 53.0 | |
| | | Sweet clover seed | | | | | | | | | | | |
| | | Corn | | | | | | | | | | | |
| | | Alfalfa | | | | | | | | | | | |
| 701 | 0 | .... | (5.78) | (5.01) | (4.98) | 94.8 | 101.0 | (3.03) | (3.61) | 86.0 | 37.5 | 1.67 | |
| 702 | M | .... | (5.95) | (5.16) | (5.77) | 130.3 | 154.2 | (3.74) | (3.78) | 88.8 | 52.3 | 1.83 | |
| 703 | ML | .... | (6.68) | (5.57) | (5.66) | 126.5 | 158.7 | (3.91) | (4.62) | 87.8 | 58.3 | .50 | |
| 704 | MLrP | .... | (6.67) | (5.61) | (5.57) | 119.8 | 150.2 | (4.06) | (4.54) | 88.2 | 59.2 | .50 | |
| | | Sweet clover seed | | | | | | | | | | | |
| | | Barley | | | | | | | | | | | |
| | | Alfalfa | | | | | | | | | | | |
| 801 | 0 | .... | (5.56) | (4.98) | (5.27) | .... | (3.50) | Potatoes | Alfalfa seeding | Alfalfa | Alfalfa | Alfalfa | |
| 802 | M | .... | (5.51) | (4.80) | (5.34) | .... | (3.73) | 46.7 | .... | (4.26) | (3.50) | (3.09) | |
| 803 | ML | .... | (5.42) | (4.55) | (5.40) | .... | (3.09) | 61.7 | .... | (4.90) | (4.40) | (3.33) | |
| 804 | MLrP | .... | (5.77) | (4.90) | (5.17) | .... | (3.26) | 71.7 | .... | (5.39) | (5.05) | (4.19) | |
| | | Potatoes | | | | | | | | | | | |
| | | Alfalfa | | | | | | | | | | | |
| | | Alfalfa | | | | | | | | | | | |

¹No manure. ²Series 600, 700, 800 harvested as a unit. ³Alfalfa winterkilled in 1917.

MYRTLE FIELD, OGLE COUNTY
ESTABLISHED 1904—DISCONTINUED 1909

Location.—About three miles northeast of Myrtle, on the farm of Mr. A. L. Hench. A part of the N.E. $\frac{1}{4}$ of the N.E. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 3, Twp. 25, R. 10 E. of the 4th P. M.

Description.—The field consisted of 13 acres of dark-colored upland soil described in the records as Brown Silt Loam of the rolling lands of the Iowan glaciation. The soil was described as uniform and sufficiently rolling to give it good drainage without washing. The field was divided into four series of 20 tenth-acre plots each.

History.—The field was leased from Mr. A. L. Hench. Previous to 1904 the land had been farmed in a general system of grain and stock farming in which a large amount of the produce had been fed to dairy cattle. In 1903 the field was in clover and timothy.

Cropping and Soil Treatment.—A rotation of corn, corn, oats, and clover was practiced on this field. The phosphorus was applied approximately at the annual rate of 500 pounds of rock phosphate an acre. The potassium was applied at the annual rate of 100 pounds of potassium sulfate an acre. Nitrogen was applied to Plot 19 at the annual acre rate of 200 pounds of dried blood. Manure was applied at the rate of 8 tons an acre for the rotation. The first manure was not applied until 1906. Only one application of limestone was made; this was in 1906 at the rate of 1,400 pounds an acre. Soybeans were seeded in the corn on the legume plots on Series 100 and 300, and cow-peas on Series 200 and 400 for use as residues.

TABLE 65.—MYRTLE FIELD: SERIES 100, 20³, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | 1908 Corn | 1909 Corn |
|----------|------------------------|----------------------------|------------------------|------------------------|--------------------------|-----------|-----------|
| | | 1904 Corn ¹ | 1905 Corn ² | 1906 Oats ³ | 1907 Clover ³ | | |
| 101 | L..... | 56.2 | 57.7 | 62.8 | (1.28) | 39.4 | 32.8 |
| 102 | LeL..... | 49.5 | 65.9 | 70.0 | (1.45) | 41.6 | 35.2 |
| 103 | ML..... | 53.0 | 67.5 | 70.0 | (1.33) | 47.2 | 37.0 |
| 104 | LeML..... | 43.0 | 66.1 | 64.4 | (1.45) | 48.0 | 34.8 |
| 105 | L..... | 43.8 | 62.4 | 63.1 | (1.42) | 43.6 | 34.8 |
| 106 | LrP..... | 49.5 | 66.1 | 69.7 | (1.85) | 54.0 | 35.0 |
| 107 | LeLrP..... | 47.0 | 65.7 | 75.0 | (2.07) | 54.0 | 38.0 |
| 108 | MLrP..... | 51.2 | 61.7 | 67.5 | (2.06) | 60.6 | 38.0 |
| 109 | LeMLrP..... | 47.5 | 65.9 | 70.0 | (2.20) | 59.4 | 41.6 |
| 110 | L..... | 46.5 | 63.1 | 60.6 | (1.51) | 47.6 | 33.6 |
| 111 | LrPK..... | 54.5 | 71.7 | 77.2 | (2.23) | 62.8 | 44.8 |
| 112 | LeLrPK..... | 50.7 | 72.9 | 73.7 | (2.20) | 61.6 | 49.0 |
| 113 | MLrPK..... | 54.0 | 75.1 | 82.8 | (2.29) | 65.8 | 51.6 |
| 114 | LeMLrPK..... | 62.5 | 69.3 | 77.2 | (2.25) | 62.6 | 52.8 |
| 115 | L..... | 54.2 | 63.3 | 75.0 | (1.96) | 50.4 | 39.2 |
| 116 | Le..... | 54.0 | 54.9 | 68.1 | (1.69) | 38.4 | 40.8 |
| 117 | LerP..... | 59.2 | 58.3 | 71.6 | (2.14) | 54.2 | 42.0 |
| 118 | LerPK..... | 54.0 | 57.6 | 68.7 | (2.45) | 56.2 | 46.4 |
| 119 | LeLrPK..... | 56.2 | 72.5 | 85.0 | (2.51) | 54.6 | 46.8 |
| 120 | O..... | 60.2 | 53.1 | 56.6 | (1.54) | 45.0 | 28.8 |

¹No lime, legumes, or manure. ²No lime or manure. ³No manure.

TABLE 65.—Continued

| Bushels or (tons) per acre | | | | | | | |
|----------------------------|------------------------|------------------------|------------------------|----------------------------|-----------|-----------|-------------------|
| Plot No. | Soil treatment applied | 1904 Corn ¹ | 1905 Oats ² | 1906 Clover ^{4,5} | 1907 Corn | 1908 Corn | 1909 Oats |
| 201 | L..... | 56.4 | 63.7 | (0.00) | 70.9 | 37.8 | 52.2 |
| 202 | LeL..... | 59.1 | 77.1 | (0.00) | 76.5 | 36.4 | 54.7 |
| 203 | ML..... | 54.8 | 76.6 | (0.00) | 83.9 | 42.0 | 50.9 |
| 204 | LeML..... | 50.5 | 76.9 | (.30) | 85.3 | 41.2 | 53.4 |
| 205 | L..... | 52.2 | 76.9 | (0.00) | 70.5 | 39.8 | 47.2 |
| 206 | LrP..... | 54.5 | 75.5 | (.44) | 70.0 | 42.4 | 49.7 |
| 207 | LeLrP..... | 52.2 | 75.5 | (.46) | 82.6 | 45.8 | 58.4 |
| 208 | MLrP..... | 54.8 | 77.6 | (.66) | 91.4 | 54.2 | 56.3 |
| 209 | LeMLrP..... | 55.6 | 76.4 | (.51) | 92.5 | 54.2 | 61.6 |
| 210 | L..... | 51.2 | 75.5 | (.30) | 73.4 | 43.8 | 50.0 |
| 211 | LrPK..... | 54.8 | 80.3 | (.49) | 80.1 | 53.0 | 54.7 |
| 212 | LeLrPK..... | 51.6 | 80.0 | (.49) | 85.0 | 52.8 | 60.3 |
| 213 | MLrPK..... | 57.1 | 75.5 | (.76) | 87.0 | 56.4 | 54.7 |
| 214 | LeMLrPK..... | 54.6 | 75.0 | (.81) | 87.9 | 52.2 | 59.7 |
| 215 | L..... | 53.4 | 69.4 | (0.00) | 80.3 | 42.0 | 50.3 |
| 216 | Le..... | 51.5 | 72.7 | (0.00) | 76.3 | 38.2 | 55.6 |
| 217 | LerP..... | 48.5 | 69.9 | (0.00) | 82.3 | 41.6 | 52.5 |
| 218 | LerPK..... | 41.9 | 69.1 | (0.00) | 84.4 | 41.6 | 47.8 |
| 219 | LeLrPK..... | 41.5 | 69.4 | (0.00) | 83.1 | 43.6 | 57.2 |
| 220 | 0..... | 44.5 | 58.6 | (0.00) | 61.0 | 31.6 | 47.2 |
| | | Oats ¹ | Soy beans ¹ | Corn | Corn | Oats | Clover |
| 301 | L..... | 52.5 | .. ⁽³⁾ | 79.4 | 52.9 | 37.2 | (.92) |
| 302 | LeL..... | 63.1 | 14.7 | 75.9 | 46.0 | 37.2 | .. ⁽⁶⁾ |
| 303 | ML..... | 57.4 | 17.7 | 78.0 | 47.1 | 40.3 | (.95) |
| 304 | LeML..... | 57.4 | 18.3 | 77.0 | 47.5 | 41.3 | (.99) |
| 305 | L..... | 56.8 | 16.8 | 69.0 | 39.8 | 38.4 | (.60) |
| 306 | LrP..... | 56.9 | 16.5 | 67.5 | 49.4 | 34.7 | (.85) |
| 307 | LeLrP..... | 59.7 | 16.3 | 72.0 | 49.3 | 40.6 | .. ⁽⁶⁾ |
| 308 | MLrP..... | 58.8 | 16.3 | 79.9 | 55.5 | 42.2 | (.89) |
| 309 | LeMLrP..... | 59.1 | 18.0 | 79.2 | 53.9 | 44.1 | (.71) |
| 310 | L..... | 59.1 | 18.3 | 76.5 | 43.5 | 40.3 | (.83) |
| 311 | LrPK..... | 62.2 | 17.7 | 69.6 | 48.6 | 40.0 | (1.18) |
| 312 | LeLrPK..... | 61.0 | 17.0 | 74.1 | 52.4 | 38.1 | .. ⁽⁶⁾ |
| 313 | MLrPK..... | 55.9 | 16.3 | 77.9 | 52.8 | 42.2 | (1.52) |
| 314 | LeMLrPK..... | 60.0 | 14.8 | 71.8 | 52.4 | 39.1 | (1.47) |
| 315 | L..... | 53.8 | 16.2 | 60.0 | 33.4 | 35.6 | (.79) |
| 316 | Le..... | 52.8 | 15.2 | 60.1 | 32.3 | 35.3 | .. ⁽⁶⁾ |
| 317 | LerP..... | 62.2 | 16.5 | 58.9 | 40.5 | 36.3 | .. ⁽⁶⁾ |
| 318 | LerPK..... | 56.3 | 15.3 | 55.9 | 35.8 | 30.3 | .. ⁽⁶⁾ |
| 319 | LeLrPK..... | 55.6 | 17.5 | 71.8 | 53.8 | 40.0 | .. ⁽⁶⁾ |
| 320 | 0..... | 54.4 | 12.3 | 60.0 | 36.0 | 35.0 | (.62) |

¹No lime, legumes or manure. ²No lime or manure. ³Crop destroyed by woodchucks. ⁴No manure. ⁵After harvesting clover, cowpeas were seeded and growth plowed down. ⁶Growth clipped and left on plots.

TABLE 65.—*Concluded*

Bushels or (tons) per acre

| Plot No. | Soil treatment applied | 1904 Timothy ¹ | 1905 Corn ¹ | 1906 Corn ² | 1907 Oats ² | 1908 Clover ² | 1909 Corn |
|----------|------------------------|------------------------------|---------------------------|---------------------------|---------------------------|-----------------------------|--------------|
| 401 | L..... | (1.90) | 60.9 | 63.4 | 30.6 | (1.98) | 37.2 |
| 402 | LeL..... | (2.21) | 59.5 | 60.1 | 30.6 | (1.98) | 38.6 |
| 403 | ML..... | (2.19) | 63.3 | 65.8 | 29.4 | (1.94) | 46.8 |
| 404 | LeML..... | (1.94) | 60.5 | 60.8 | 28.1 | (2.08) | 44.6 |
| 405 | L..... | (2.09) | 61.6 | 62.9 | 28.8 | (1.97) | 37.2 |
| 406 | LrP..... | (2.10) | 68.7 | 63.4 | 29.7 | (2.37) | 46.8 |
| 407 | LeLrP..... | (1.99) | 63.5 | 62.5 | 34.7 | (2.35) | 45.4 |
| 408 | MLrP..... | (1.97) | 69.1 | 68.1 | 30.9 | (2.27) | 49.4 |
| 409 | LeMLrP..... | (1.97) | 63.5 | 64.6 | 35.3 | (2.37) | 50.2 |
| 410 | L..... | (1.91) | 59.5 | 66.4 | 28.1 | (1.94) | 38.4 |
| 411 | LrPK..... | (1.81) | 69.2 | 63.0 | 30.6 | (2.47) | 51.4 |
| 412 | LeLrPK..... | (1.84) | 67.5 | 58.6 | 32.8 | (2.63) | 58.0 |
| 413 | MLrPK..... | (1.68) | 68.9 | 58.1 | 30.0 | (2.37) | 57.8 |
| 414 | LeMLrPK..... | (1.87) | 64.8 | 50.9 | 33.1 | (2.48) | 55.4 |
| 415 | L..... | (1.64) | 56.4 | 53.9 | 28.4 | (1.85) | 46.6 |
| 416 | Le..... | (1.68) | 52.1 | 46.3 | 28.1 | (2.03) | 44.8 |
| 417 | LerP..... | (1.55) | 57.3 | 52.4 | 34.7 | (2.39) | 47.2 |
| 418 | LerPK..... | (1.68) | 59.2 | 54.8 | 34.1 | (2.54) | 54.6 |
| 419 | LeLNrPK..... | (2.92) | 78.3 | 80.1 | 38.4 | (2.46) | 58.2 |
| 420 | 0..... | (1.61) | 62.0 | 66.4 | 31.3 | (2.15) | 45.4 |

¹No lime, legumes or manure. ²No manure.

NEWTON FIELD, JASPER COUNTY

ESTABLISHED 1912

Location.—About $1\frac{1}{2}$ miles west of Newton. A part of the E. $\frac{1}{2}$ of the N.W. $\frac{1}{4}$ of the N.E. $\frac{1}{4}$, Sec. 3, Twp. 6 N., R. 9 E. of the 3d P. M.

Description.—The field consists of 30 acres of light-colored loessial upland soil of strong acidity. The land is uniform in both soil and topography. Only one soil type is present, namely, Gray Silt Loam On Tight Clay. The land is tile-drained except Series 400. Owing to the impervious nature of the subsoil, the tile did not materially improve the drainage until the scheme was devised to use the tiles as sewers and conduct the surface water into them thru a system of ditches and catch basins. The field is divided into twelve series, six of which contain 19 tenth-acre plots, five of which contain 10 tenth-acre plots, and one of which contains 5 tenth-acre plots.

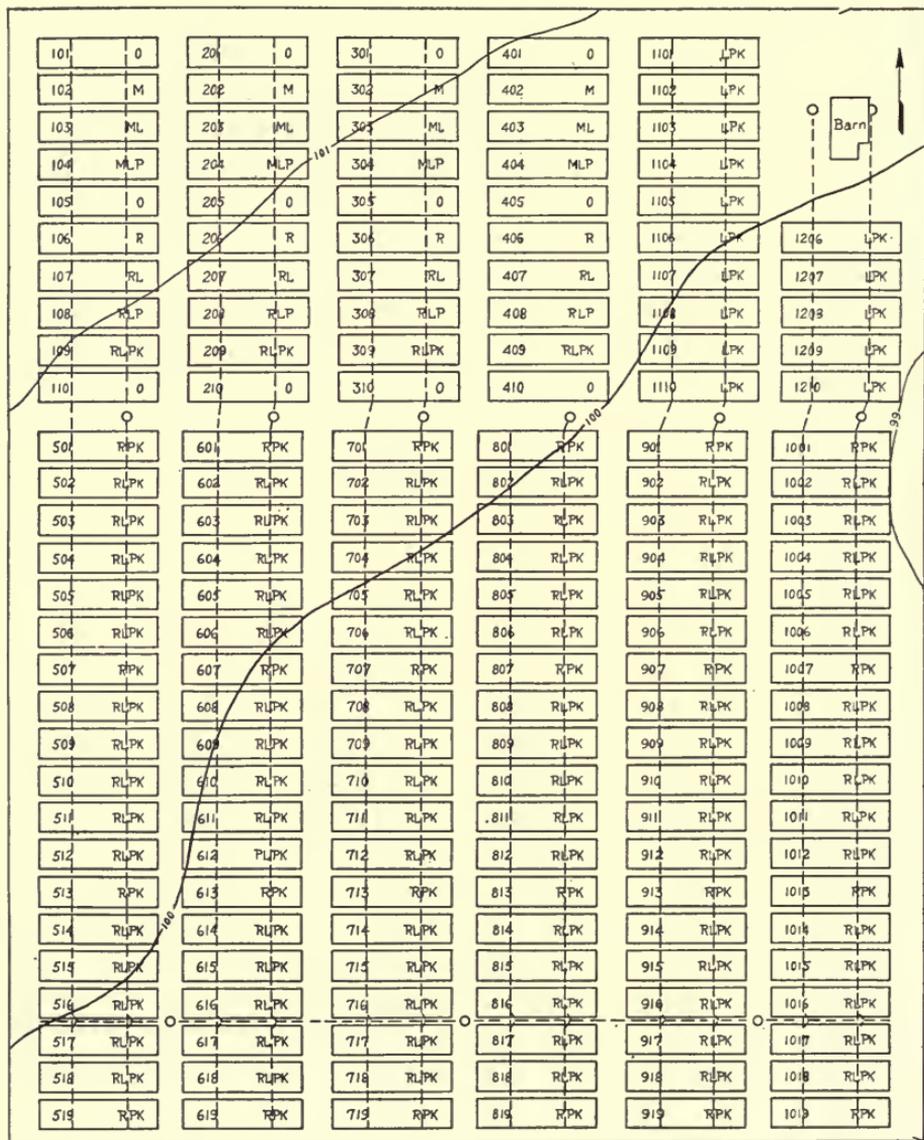
History.—The Newton field was purchased by Jasper county and the citizens of Newton and vicinity and donated to the University for experimental purposes. Little is known of the previous history of the field except that it had been in timothy meadow in 1911.

Cropping and Soil Treatment.—A rotation of corn, soybeans, and wheat, with sweet clover seeded on the residue plots when the land was in wheat, and cowpeas when in corn, was established on Series 100, 200, and 300. The same rotation was established on Series 400, which was not tile-drained. The soil treatment on these four series has been similar to that described in the introduction, except that dolomitic limestone passing a 10-mesh screen has been used entirely on the limestone plots. No large initial applications of limestone were made on these series. In 1920 the use of cowpeas in the corn was discontinued. In 1922 the return of wheat straw was discontinued, as well as the application of limestone until further need for it should become apparent.

A similar rotation was established on Series 500, 600, 700, 800, 900, and 1000, on which it was planned to study the effectiveness of different forms, kinds, amounts, and degrees of fineness of lime. The odd-numbered series (500, 700, 900) have received applications either of high-calcium limestone or of burnt lime, and the even-numbered series (600, 800, 1000) have received either dolomitic limestone or the corresponding burnt material. Plots 2, 3, 4, 5, and 6 on all series have received 500 pounds per acre per year; Plots 8, 9, 10, 11, and 12 have received 1,000 pounds, and Plots 14, 15, 16, 17, and 18 have received 2,000 pounds. All applications were based on the equivalent of pure calcium carbonate. In addition to the lime on these plots, all have received residues, rock phosphate, and kainit in the amounts and manner

described in the introduction. The main line of tile which runs between Plots 16 and 17 across these series may have some influence on the yields of adjacent plots. The above methods were followed until 1920, when the rotation was changed to corn, wheat, and sweet clover. Since this time the wheat straw and sweet clover chaff have been returned. The corn has been entirely removed. In 1922 the limestone was evened up to a total application of 3 tons on the plots receiving light applications, to 6 tons on the plots receiving medium applications, and to 12 tons an acre on the plots receiving heavy applications. No more will be applied until the sweet clover shows need for it. In 1923, soybeans were drilled with the corn on Series 700 and 800. The beans were harvested as hay after the corn had been cut and removed from the plots.

Series 1100 and 1200 were tile-drained and treated with limestone, rock phosphate, kainit, and residues in accordance with the methods described in the introduction. These plots have been used chiefly for plant breeding investigations.



 Gray Silt Loam On Tight Clay

Contour interval - 1 foot

Scale  100 Feet

SOIL MAP OF NEWTON FIELD

TABLE 66.—NEWTON FIELD: SERIES 100, 200, 300, LAND TILE-DRAINED

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|------------------------------------|----------------------------|--------------|-----------------------|---------------|--------------|-----------------------|---------------|--------------|-----------------------|---------------|--------------|--|
| | | 1912 Corn ¹ | 1913 Soy- beans ² | 1914 Wheat ⁴ | 1915 Corn | 1916 Soy- beans | 1917 Wheat | 1918 Corn | 1919 Soy- beans | 1920 Wheat | 1921 Corn | 1922 Soy- beans | 1923 Wheat | 1924 Corn | |
| 101 | 0..... | 22.4 | (.38) | .3 | 4.4 | (.72) | 0.0 | 17.2 | (.55) | .3 | 15.0 | 7.0 | .3 | 1.4 | |
| 102 | M..... | 20.4 | (.41) | 1.8 | 4.6 | (.78) | .3 | 23.2 | (.80) | 4.3 | 22.6 | 7.5 | .7 | 4.4 | |
| 103 | ML..... | 17.0 | (.42) | 1.8 | 15.6 | (1.10) | 12.3 | 27.2 | (1.05) | 4.3 | 21.6 | 11.3 | 6.3 | 32.2 | |
| 104 | MLrP..... | 28.4 | (.50) | 4.2 | 17.6 | (1.16) | 20.5 | 25.6 | (1.13) | 11.2 | 22.2 | 17.0 | 9.7 | 34.6 | |
| 105 | 0..... | 29.6 | 4.3 | 4.7 | 9.0 | 5.7 | 3.3 | 19.6 | (.86) | 4.3 | 16.0 | 5.0 | 2.3 | 4.8 | |
| 106 | R..... | 17.6 | 3.0 | 1.0 | 7.8 | 4.5 | 2.5 | 14.6 | (.8) | 1.7 | 12.4 | 6.0 | .3 | 3.8 | |
| 107 | RL..... | 14.2 | 3.2 | 1.8 | 15.6 | 5.3 | 11.3 | 15.2 | (.8) | 4.2 | 7.2 | 6.3 | 4.8 | 11.6 | |
| 108 | RLrP..... | 28.4 | 3.8 | 7.0 | 18.6 | 7.7 | 18.5 | 16.0 | (.9) | 11.8 | 16.6 | 11.3 | 6.5 | 18.4 | |
| 109 | RLrPK..... | 19.6 | 3.2 | 4.2 | 18.4 | 6.0 | 19.5 | 20.6 | (.9) | 10.3 | 13.2 | 11.8 | 6.7 | 28.0 | |
| 110 | 0..... | 15.0 | (.29) | .2 | 2.8 | (.57) | 0.0 | 13.6 | (.47) | .5 | 14.4 | 5.5 | 0.0 | 1.0 | |
| | | Cow-peas ^{1,2} | | Soy-beans | | Wheat | | Corn | | Soy-beans | | Wheat | | Soy-beans | |
| 201 | 0..... | ..... | 1.0 | 2.5 | .3 | 7.8 | (0.0) | 0.0 | .6 | (.60) | 2.7 | 19.0 | 7.7 | 0.0 | |
| 202 | M..... | ..... | 3.4 | (.57) | 4.5 | 12.2 | (0.0) | .3 | 2.6 | (.70) | 4.7 | 26.2 | 13.2 | 0.0 | |
| 203 | ML..... | ..... | 3.4 | (.67) | 4.8 | 13.8 | (.05) | 9.8 | 9.6 | (1.30) | 16.0 | 33.6 | 29.7 | 6.0 | |
| 204 | MLrP..... | ..... | 4.4 | (.62) | 12.7 | 13.8 | (.05) | 17.7 | 14.0 | (1.52) | 19.7 | 35.6 | 33.3 | 9.7 | |
| 205 | 0..... | ..... | 2.6 | 4.2 | .3 | 8.2 | (.07) | .2 | 2.2 | 4.2 | 2.3 | 21.4 | 14.0 | 0.0 | |
| 206 | R..... | ..... | 4.6 | 5.2 | .5 | 8.2 | 0.0 | .3 | 1.8 | 4.5 | 3.7 | 24.2 | 12.0 | 0.0 | |
| 207 | RL..... | ..... | 3.6 | 5.0 | 4.5 | 12.0 | 0.0 | 10.8 | 6.0 | 15.2 | 12.3 | 42.4 | 25.2 | 4.7 | |
| 208 | RLrP..... | ..... | 3.8 | 6.0 | 13.0 | 11.8 | 0.0 | 16.7 | 5.4 | 16.0 | 16.3 | 41.4 | 26.7 | 8.7 | |
| 209 | RLrPK..... | ..... | 4.0 | 4.8 | 15.0 | 11.2 | 0.0 | 17.7 | 6.4 | 19.8 | 20.3 | 44.2 | 32.0 | 17.2 | |
| 210 | 0..... | ..... | 1.2 | 2.2 | .5 | 7.4 | (.14) | 0.0 | .8 | (.45) | .5 | 11.4 | 12.0 | 0.0 | |

¹No soil treatment on Series 100; phosphorus and potassium only on Series 200. ²Plot yields not taken. ³Residues and lime only. ⁴No manure. ⁵Bloom destroyed by grasshoppers in 1919; no seed formed.

TABLE 66.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | |
|----------|------------------------|------------------------------|-------------------------|-----------|------------------|-----------|-----------|----------------|------------|-----------|----------------|------------|-----------|------------------|
| | | 1912 Cow-peas ^{1,2} | 1913 Wheat ³ | 1914 Corn | 1915 Soy-beans | 1916 Oats | 1917 Corn | 1918 Soy-beans | 1919 Wheat | 1920 Corn | 1921 Soy-beans | 1922 Wheat | 1923 Corn | 1924 Soybean hay |
| 301 | 0 | ..... | .3 | 23.2 | (.09) | 6.6 | 2.0 | (.88) | 1.7 | 18.2 | 4.5 | 0.0 | 22.8 | (.30) |
| 302 | M | ..... | .2 | 26.0 | (.09) | 6.2 | 7.4 | (1.73) | 1.3 | 21.2 | 7.3 | 0.0 | 33.2 | (.40) |
| 303 | ML | ..... | .5 | 25.6 | (.18) | 20.3 | 11.0 | (1.55) | 10.0 | 50.0 | 11.2 | 6.3 | 43.4 | (.90) |
| 304 | MLrP | ..... | 1.3 | 22.2 | (.24) | 26.2 | 12.6 | (1.54) | 14.0 | 52.4 | 10.7 | 10.7 | 44.8 | (.75) |
| 305 | 0 | ..... | .7 | 16.0 | (⁴) | 5.9 | 1.4 | 0.0 | .5 | 18.6 | 5.5 | 0.0 | 21.0 | (.40) |
| 306 | R | ..... | 2.0 | 16.2 | (⁴) | 10.3 | 2.6 | 1.3 | .5 | 23.4 | 7.0 | 0.0 | 24.6 | (.50) |
| 307 | RL | ..... | 1.7 | 15.8 | (⁴) | 18.1 | 5.0 | 6.5 | 5.8 | 39.0 | 9.7 | 6.5 | 29.4 | (.80) |
| 308 | RLrP | ..... | 2.8 | 16.4 | (⁴) | 25.9 | 4.0 | 5.2 | 15.2 | 39.0 | 10.2 | 14.7 | 20.2 | (.65) |
| 309 | RLrPK | ..... | 5.0 | 16.6 | (⁴) | 28.4 | 10.2 | 3.7 | 17.2 | 57.0 | 13.8 | 18.8 | 34.0 | (.85) |
| 310 | 0 | ..... | .7 | 12.2 | (.05) | 5.6 | .8 | (.60) | .3 | 18.2 | 5.2 | 0.0 | 8.4 | (.43) |

¹No treatment. ²Plot yields not taken. ³No seed matured. ⁴No seed matured.

TABLE 67.—NEWTON FIELD: SERIES 400, LAND NOT TILE-DRAINED

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | |
|----------|------------------------|----------------------------|-----------|----------------|------------------|-----------|------------------|------------|-----------|----------------|------------|-----------|----------------|------------|
| | | 1912 Cow-peas | 1913 Corn | 1914 Soy-beans | 1915 Wheat | 1916 Corn | 1917 Soy-beans | 1918 Wheat | 1919 Corn | 1920 Soy-beans | 1921 Wheat | 1922 Corn | 1923 Soy-beans | 1924 Wheat |
| 401 | 0 | ..... | 2.0 | 8.3 | (0.00) | 8.6 | (0.00) | 0.0 | 2.2 | (.85) | 4.0 | 20.2 | 13.5 | 0.0 |
| 402 | M | ..... | 3.8 | (.74) | (.26) | 9.6 | (.26) | 1.0 | 3.0 | (.99) | 9.5 | 27.8 | 18.2 | 0.0 |
| 403 | ML | ..... | 1.6 | (.77) | (.22) | 5.2 | (.22) | 4.8 | 7.8 | (1.12) | 17.5 | 37.2 | 25.2 | 5.7 |
| 404 | MLrP | ..... | 1.0 | (.74) | (.14) | 2.6 | (.14) | 5.2 | 5.6 | (1.20) | 21.5 | 29.0 | 27.5 | 5.0 |
| 405 | 0 | ..... | 1.4 | 7.0 | (.07) | 2.6 | (.07) | .2 | 1.2 | 8.3 | 4.0 | 18.6 | 13.0 | 0.0 |
| 406 | R | ..... | .6 | 7.8 | (⁴) | 2.4 | (⁴) | .3 | .4 | 8.3 | 3.0 | 15.4 | 15.0 | 0.0 |
| 407 | RL | ..... | 0.0 | 8.2 | (⁴) | 1.2 | (⁴) | 2.8 | 3.2 | 10.8 | 10.2 | 15.6 | 28.3 | 5.3 |
| 408 | RLrP | ..... | 0.0 | 8.2 | (⁴) | .4 | (⁴) | 5.0 | 2.2 | 11.3 | 22.7 | 10.8 | 29.2 | 9.7 |
| 409 | RLrPK | ..... | .2 | 8.5 | (⁴) | .8 | (⁴) | 4.3 | 4.6 | 14.2 | 28.0 | 13.8 | 33.2 | 19.0 |
| 410 | 0 | ..... | 0.0 | 5.8 | (.02) | .6 | (.02) | 0.0 | .6 | (.60) | 5.7 | 9.4 | 12.2 | 0.0 |

¹Phosphorus and potassium only; no plot yields taken. ²No seed matured in 1917.

TABLE 68.—NEWTON FIELD: LIME EXPERIMENTS, SERIES 500-1000

| Plot No. | Soil treatment applied | High-calcium limestone (meshes per inch) | Bushels or (tons) per acre | | | | | | | | | | | | |
|----------|------------------------|--|----------------------------|-----------------------------|------------|-----------|----------------|------------|-----------|-----------------------------|------------|-------------------|-----------|------------|-------------------|
| | | | 1912 Corn ¹ | 1913 Soy-beans ² | 1914 Wheat | 1915 Corn | 1916 Soy-beans | 1917 Wheat | 1918 Corn | 1919 Soy-beans ³ | 1920 Wheat | 1921 Sweet clover | 1922 Corn | 1923 Wheat | 1924 Sweet clover |
| 501 | RrPK..... | ..... | 15.4 | 4.3 | 4.7 | 7.8 | 3.2 | 9.0 | 18.8 | ..... | 3.2 | 0.00 | 24.6 | 8.3 | 0.00 |
| 502 | RrPKL..... | 4 down | 18.8 | 4.3 | 5.7 | 15.4 | 6.7 | 19.5 | 30.2 | ..... | 11.0 | 1.00 | 41.4 | 16.7 | 2.67 |
| 503 | RrPKL..... | 4 to 10 | 19.0 | 3.7 | 5.8 | 13.0 | 5.5 | 15.0 | 20.2 | ..... | 9.3 | 1.17 | 29.6 | 13.0 | 2.67 |
| 504 | RrPKL..... | 10 down | 20.0 | 3.3 | 5.2 | 15.0 | 5.5 | 18.3 | 20.4 | ..... | 11.2 | 1.17 | 34.8 | 14.2 | 2.50 |
| 505 | RrPKL..... | 50 down | 18.4 | 3.5 | 4.7 | 12.0 | 4.5 | 17.7 | 16.6 | ..... | 10.8 | 1.17 | 28.8 | 15.7 | 2.50 |
| 506 | RrPKL..... | Burnt | 18.4 | 3.2 | 5.2 | 8.4 | 3.5 | 16.2 | 11.8 | ..... | 8.7 | 1.33 | 20.6 | 15.3 | 2.83 |
| 507 | RrPK..... | ..... | 16.0 | 3.0 | 3.5 | 2.2 | 1.7 | 7.8 | 17.2 | ..... | 2.7 | 0.00 | 16.6 | 7.8 | 0.00 |
| 508 | RrPKL..... | 4 down | 19.6 | 3.2 | 4.8 | 7.4 | 4.2 | 16.0 | 20.0 | ..... | 7.8 | 1.67 | 29.8 | 16.8 | 2.83 |
| 509 | RrPKL..... | 4 to 10 | 18.8 | 4.0 | 3.2 | 7.2 | 4.2 | 17.2 | 21.0 | ..... | 5.0 | 1.83 | 31.0 | 14.0 | 2.83 |
| 510 | RrPKL..... | 10 down | 17.0 | 3.2 | 4.5 | 9.8 | 6.0 | 19.5 | 22.0 | ..... | 8.5 | 1.50 | 33.6 | 17.0 | 2.67 |
| 511 | RrPKL..... | 50 down | 14.0 | 5.0 | 6.3 | 10.2 | 5.7 | 18.3 | 26.6 | ..... | 8.7 | 1.17 | 37.2 | 17.2 | 2.83 |
| 512 | RrPKL..... | Burnt | 19.8 | 4.5 | 4.8 | 7.8 | 6.0 | 18.5 | 26.0 | ..... | 9.3 | 1.50 | 33.0 | 16.0 | 2.83 |
| 513 | RrPK..... | ..... | 11.4 | 4.7 | 2.3 | 3.0 | 3.3 | 6.5 | 18.2 | ..... | 1.0 | 0.00 | 20.0 | 6.0 | 0.00 |
| 514 | RrPKL..... | 4 down | 14.2 | 4.2 | 6.8 | 13.4 | 9.2 | 21.2 | 42.0 | ..... | 10.2 | 1.50 | 43.8 | 18.8 | 3.00 |
| 515 | RrPKL..... | 4 to 10 | 15.4 | 4.2 | 4.0 | 11.4 | 8.2 | 18.3 | 33.4 | ..... | 6.5 | 1.33 | 45.8 | 15.5 | 3.17 |
| 516 | RrPKL..... | 10 down | 14.8 | 4.8 | 8.8 | 16.4 | 8.0 | 23.5 | 29.4 | ..... | 11.0 | 1.17 | 43.2 | 21.2 | 3.00 |
| 517 | RrPKL..... | 50 down | 13.0 | 3.5 | 9.2 | 14.8 | 8.7 | 25.7 | 29.2 | ..... | 13.0 | 1.00 | 38.8 | 24.2 | 3.00 |
| 518 | RrPKL..... | Burnt | 11.6 | 4.5 | 11.5 | 12.0 | 8.3 | 21.5 | 27.8 | ..... | 13.3 | 1.83 | 33.2 | 24.2 | 3.33 |
| 519 | RrPK..... | ..... | 11.0 | 4.0 | 1.5 | 2.8 | 1.3 | 6.5 | 16.6 | ..... | .3 | 0.00 | 15.2 | 8.0 | 0.00 |

¹No treatment. ²No phosphorus or potassium. ³Grasshoppers destroyed the crop.

TABLE 68.—Continued
Bushels or (tons) per acre

| Plot No. | Soil treatment applied | High-calcium limestone (meshes per inch) | Cow-peas ¹ | 1913-1924 | | | | | | | | | | | | |
|----------|------------------------|--|-----------------------|------------------------|----------------|------------|-----------|-----------------------------|------------|-----------|------------------------|------------|-------------------|------------------------|------------|------|
| | | | | 1913 Corn ² | 1914 Soy-beans | 1915 Wheat | 1916 Corn | 1917 Soy-beans ³ | 1918 Wheat | 1919 Corn | 1920 Corn ³ | 1921 Wheat | 1922 Sweet clover | 1923 ⁴ Corn | 1924 Wheat | |
| 701 | R+PK | ..... | ..... | 2.0 | 9.8 | 7.0 | 9.8 | ..... | 10.8 | 13.6 | ..... | 12.3 | 0.00 | 14.4 | ..... | 7.5 |
| 702 | R+PKL | 4 down | ..... | 1.6 | 11.0 | 17.3 | 12.6 | ..... | 20.3 | 20.8 | ..... | 24.2 | 4.70 | 32.8 | (.60) | 19.5 |
| 703 | R+PKL | 4 to 10 | ..... | 1.6 | 10.7 | 14.7 | 11.4 | ..... | 20.2 | 24.8 | ..... | 25.3 | 6.00 | 32.8 | (1.30) | 16.0 |
| 704 | R+PKL | 10 down | ..... | 2.8 | 10.2 | 18.8 | 11.4 | ..... | 23.2 | 23.2 | ..... | 20.7 | 4.70 | 36.0 | (1.45) | 23.3 |
| 705 | R+PKL | 50 down | ..... | 1.0 | 9.7 | 18.7 | 8.8 | ..... | 21.3 | 17.8 | ..... | 20.0 | 5.58 | 29.6 | (1.40) | 23.0 |
| 706 | R+PKL | Burnt | ..... | .2 | 10.2 | 18.7 | 6.8 | ..... | 18.2 | 12.8 | ..... | 25.0 | 5.82 | 28.8 | (1.43) | 19.7 |
| 707 | R+PK | ..... | ..... | .2 | 9.5 | 10.3 | 4.8 | ..... | 12.0 | 9.4 | ..... | 26.0 | 0.00 | 14.4 | (.90) | 8.8 |
| 708 | R+PKL | 4 down | ..... | .2 | 11.5 | 16.0 | 5.4 | ..... | 16.3 | 13.2 | ..... | 25.5 | 4.87 | 19.2 | (1.65) | 17.7 |
| 709 | R+PKL | 4 to 10 | ..... | .2 | 11.5 | 13.5 | 4.4 | ..... | 13.2 | 11.4 | ..... | 26.2 | 4.17 | 23.2 | (1.53) | 15.7 |
| 710 | R+PKL | 10 down | ..... | .2 | 13.2 | 16.5 | 3.8 | ..... | 12.8 | 9.8 | ..... | 27.3 | 3.33 | 19.2 | (1.53) | 19.0 |
| 711 | R+PKL | 50 down | ..... | .4 | 11.2 | 17.0 | 3.2 | ..... | 15.2 | 9.2 | ..... | 26.8 | 3.57 | 20.8 | (1.33) | 20.3 |
| 712 | R+PKL | Burnt | ..... | .2 | 12.0 | 18.8 | 3.4 | ..... | 14.5 | 11.0 | ..... | 26.3 | 4.52 | 23.2 | (1.28) | 19.2 |
| 713 | R+PK | ..... | ..... | .4 | 10.5 | 4.0 | 3.2 | ..... | 9.0 | 7.4 | ..... | 27.3 | 1.07 | 17.6 | (1.00) | 6.3 |
| 714 | R+PKL | 4 down | ..... | .2 | 12.5 | 16.7 | 1.8 | ..... | 14.8 | 7.8 | ..... | 26.5 | 4.98 | 24.8 | (1.55) | 17.3 |
| 715 | R+PKL | 4 to 10 | ..... | .4 | 11.3 | 15.3 | 2.6 | ..... | 12.8 | 8.4 | ..... | 25.5 | 4.40 | 32.0 | (1.65) | 17.2 |
| 716 | R+PKL | 10 down | ..... | .2 | 11.7 | 17.5 | 3.0 | ..... | 17.7 | 9.0 | ..... | 26.8 | 5.23 | 28.0 | (1.33) | 16.3 |
| 717 | R+PKL | 50 down | ..... | .4 | 14.7 | 23.8 | 4.8 | ..... | 22.2 | 11.0 | ..... | 24.7 | 4.52 | 33.6 | (1.18) | 19.0 |
| 718 | R+PKL | Burnt | ..... | .8 | 12.3 | 23.3 | 6.4 | ..... | 23.3 | 13.8 | ..... | 27.5 | 6.00 | 30.4 | (1.38) | 18.8 |
| 719 | R+PK | ..... | ..... | .4 | 7.7 | 5.7 | 6.0 | ..... | 12.5 | 6.4 | ..... | 27.8 | .83 | 24.0 | (.95) | 7.5 |

¹Phosphorus and potassium only; entire crop of peas plowed down. ²Chinch bugs destroyed the crop. ³Heavy rains after seeding ruined the stand, and no yields were taken. ⁴Soybeans were drilled with the corn and harvested as hay after the corn was cut.

TABLE 68.—Continued

| Plot No. | Soil treatment applied | Dolomitic limestone (meshes per inch) | Bushels or (tons) per acre | | | | | | | | | | | | |
|----------|------------------------|---------------------------------------|----------------------------|------------------------|----------------|------------|-----------|-----------------------------|------------|-----------|------------------------|------------|-------------------|------------------------|------------|
| | | | 1912 Cow-peas ¹ | 1913 Corn ² | 1914 Soy-beans | 1915 Wheat | 1916 Corn | 1917 Soy-beans ³ | 1918 Wheat | 1919 Corn | 1920 Corn ² | 1921 Wheat | 1922 Sweet clover | 1923 ⁴ Corn | 1924 Wheat |
| 801 | RrPK | ..... | ..... | .2 | 9.8 | 11.2 | 3.4 | ..... | 10.5 | 8.6 | ..... | 0.00 | 24.6 | (.23) | 6.7 |
| 802 | RrPKL | 4 down | ..... | .2 | 10.2 | 14.0 | 3.2 | ..... | 10.8 | 11.8 | ..... | 3.08 | 43.2 | (.65) | 14.5 |
| 803 | RrPKL | 4 to 10 | ..... | .2 | 8.3 | 11.8 | 4.2 | ..... | 14.8 | 11.6 | ..... | 3.68 | 40.6 | (.65) | 7.7 |
| 804 | RrPKL | 10 down | ..... | 0.0 | 10.2 | 13.7 | 3.4 | ..... | 12.7 | 10.2 | ..... | 4.10 | 39.4 | (.83) | 13.0 |
| 805 | RrPKL | 50 down | ..... | .4 | 9.0 | 12.8 | 5.4 | ..... | 15.7 | 13.8 | ..... | 3.08 | 41.2 | (.73) | 10.7 |
| 805 | RrPKL | Burnt | ..... | .4 | 10.0 | 17.5 | 8.4 | ..... | 12.2 | 17.2 | ..... | 4.10 | 40.6 | (.95) | 11.7 |
| 807 | RrPK | ..... | ..... | .4 | 8.8 | 6.0 | 6.0 | ..... | 6.8 | 8.2 | ..... | 0.00 | 24.6 | (.38) | 2.3 |
| 808 | RrPKL | 4 down | ..... | .2 | 10.3 | 16.3 | 8.8 | ..... | 11.7 | 17.2 | ..... | 3.92 | 38.6 | (1.00) | 11.2 |
| 809 | RrPKL | 4 to 10 | ..... | .4 | 11.2 | 12.2 | 8.8 | ..... | 10.7 | 18.0 | ..... | 3.08 | 40.8 | (.95) | 9.5 |
| 810 | RrPKL | 10 down | ..... | .2 | 11.2 | 17.0 | 8.4 | ..... | 11.8 | 15.6 | ..... | 2.02 | 37.0 | (.78) | 12.8 |
| 811 | RrPKL | 50 down | ..... | .2 | 11.2 | 18.5 | 7.0 | ..... | 13.7 | 16.4 | ..... | 24.2 | 37.0 | (.80) | 14.2 |
| 812 | RrPKL | Burnt | ..... | .2 | 10.7 | 23.7 | 8.4 | ..... | 12.7 | 12.8 | ..... | 4.10 | 37.6 | (.88) | 17.3 |
| 813 | RrPK | ..... | ..... | .4 | 9.5 | 5.0 | 5.4 | ..... | 7.0 | 8.6 | ..... | 0.00 | 34.2 | (.38) | 2.7 |
| 814 | RrPKL | 4 down | ..... | .2 | 11.3 | 19.0 | 4.8 | ..... | 15.5 | 15.2 | ..... | 3.33 | 37.2 | (.98) | 17.7 |
| 815 | RrPKL | 4 to 10 | ..... | .4 | 11.0 | 12.8 | 6.6 | ..... | 16.8 | 15.2 | ..... | 2.50 | 40.0 | (.88) | 17.3 |
| 816 | RrPKL | 10 down | ..... | .4 | 12.2 | 18.3 | 6.2 | ..... | 20.2 | 13.2 | ..... | 3.08 | 29.6 | (1.00) | 18.5 |
| 817 | RrPKL | 50 down | ..... | .4 | 14.0 | 26.0 | 7.4 | ..... | 22.3 | 14.8 | ..... | 3.33 | 33.0 | (.80) | 21.0 |
| 818 | RrPKL | Burnt | ..... | 1.8 | 15.0 | 30.2 | 10.2 | ..... | 29.2 | 17.4 | ..... | 5.35 | 36.4 | (.83) | 24.2 |
| 819 | RrPK | ..... | ..... | 3.0 | 7.7 | 7.2 | 9.6 | ..... | 10.0 | 8.6 | ..... | 0.00 | 26.2 | (.40) | 7.2 |

¹Phosphorus and potassium only; entire crop plowed down. ²Chinch bugs destroyed the crop. ³Heavy rains ruined the crop; no yields taken. ⁴Soybeans drilled with the corn and harvested as hay after the corn was removed.

TABLE 68.—Continued

| Plot No. | Soil treatment applied | High-calcium limestone (meshes per inch) | 1912 Cow-peas ¹ | Bushels or (tons) per acre | | | | | | | | | | |
|----------|------------------------|--|----------------------------|----------------------------|-----------|-----------------------------|------------|-----------|----------------|------------|-------------------|-----------|------------|-------------------|
| | | | | 1913 Wheat | 1914 Corn | 1915 Soy-beans ² | 1916 Wheat | 1917 Corn | 1918 Soy-beans | 1919 Wheat | 1920 Sweet clover | 1921 Corn | 1922 Wheat | 1923 Sweet clover | 1924 Corn |
| 901 | RrPK..... | 4 down | ..... | 4.5 | 6.4 | ..... | ..... | 4.2 | 19.8 | 0.00 | 6.8 | 8.7 | 0.00 | 11.0 |
| 902 | RrPKL..... | 4 to 10 | ..... | 6.3 | 13.4 | ..... | ..... | 4.4 | 28.0 | 3.52 | 6.8 | 11.5 | .11 | 28.2 |
| 903 | RrPKL..... | 10 down | ..... | 7.5 | 17.6 | ..... | ..... | 2.8 | 21.5 | 1.70 | 7.6 | 9.2 | .05 | 30.2 |
| 904 | RrPKL..... | 50 down | ..... | 7.0 | 18.8 | ..... | ..... | 2.6 | 20.2 | 2.05 | 8.8 | 10.2 | .05 | 36.8 |
| 905 | RrPKL..... | Burnt | ..... | 8.0 | 21.6 | ..... | ..... | 4.0 | 18.5 | 2.05 | 13.6 | 8.8 | .05 | 41.4 |
| 906 | RrPKL..... | ..... | ..... | 9.3 | 19.6 | ..... | ..... | 4.6 | 24.8 | 2.78 | 4.4 | 10.0 | .13 | 43.4 |
| 907 | RrPK..... | ..... | ..... | 8.0 | 17.2 | ..... | ..... | 2.2 | 12.6 | 0.00 | 11.6 | 4.2 | 0.00 | 15.6 |
| 908 | RrPKL..... | 4 down | ..... | 9.0 | 20.0 | ..... | ..... | 4.8 | 20.8 | 3.15 | 11.8 | 9.2 | .13 | 45.4 |
| 909 | RrPKL..... | 4 to 10 | ..... | 9.0 | 19.4 | ..... | ..... | 1.6 | 20.3 | 4.23 | 12.2 | 9.2 | .11 | 41.6 |
| 910 | RrPKL..... | 10 down | ..... | 9.2 | 15.2 | ..... | ..... | 3.4 | 21.7 | 3.63 | 6.8 | 37.0 | .16 | 37.6 |
| 911 | RrPKL..... | 50 down | ..... | 12.2 | 11.4 | ..... | ..... | 4.4 | 23.7 | 5.08 | 5.2 | 9.7 | .11 | 38.4 |
| 912 | RrPKL..... | Burnt | ..... | 11.3 | 10.2 | ..... | ..... | 6.6 | 23.0 | 5.57 | 4.2 | 11.0 | .21 | 34.4 |
| 913 | RrPK..... | ..... | ..... | 8.5 | 12.8 | ..... | ..... | 3.2 | 19.2 | 0.97 | 17.0 | 8.7 | .19 | 14.4 |
| 914 | RrPKL..... | 4 down | ..... | 10.0 | 14.2 | ..... | ..... | 7.8 | 23.3 | 7.38 | 3.4 | 16.5 | .26 | 39.8 |
| 915 | RrPKL..... | 4 to 10 | ..... | 8.2 | 15.0 | ..... | ..... | 6.6 | 21.2 | 7.87 | 2.6 | 15.7 | .37 | 37.6 |
| 916 | RrPKL..... | 10 down | ..... | 12.8 | 16.8 | ..... | ..... | 9.0 | 25.7 | 6.90 | 4.0 | 20.8 | .48 | 39.6 |
| 917 | RrPKL..... | 50 down | ..... | 13.5 | 9.6 | ..... | ..... | 10.8 | 27.0 | 6.90 | 4.8 | 18.7 | .29 | 39.8 |
| 918 | RrPKL..... | Burnt | ..... | 14.2 | 17.2 | ..... | ..... | 12.0 | 24.8 | 5.82 | 10.6 | 16.0 | .11 | 57.6 |
| 919 | RrPK..... | ..... | ..... | 8.5 | 29.8 | ..... | ..... | 4.8 | 16.5 | .37 | 23.6 | 7.2 | 0.00 | 24.2 |

¹No treatment; entire crop plowed down.²Crop failure.

TABLE 68.—*Concluded*

| Plot No. | Soil treatment applied | Dolomitic limestone (meshes per inch) | 1912 Cow-peas ¹ | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|---------------------------------------|----------------------------|----------------------------|-----------|-----------------------------|-------------------------|-----------|----------------|------------|-------------------|-----------|------------|-------------------|-----------|
| | | | | 1913 Wheat | 1914 Corn | 1915 Soy-beans ² | 1916 Wheat ² | 1917 Corn | 1918 Soy-beans | 1919 Wheat | 1920 Sweet clover | 1921 Corn | 1922 Wheat | 1923 Sweet clover | 1924 Corn |
| 1001 | RrPK | ..... | ..... | 12.2 | 12.4 | ..... | ..... | 4.4 | 4.7 | 19.3 | 0.00 | 5.4 | 6.8 | 0.00 | 10.0 |
| 1002 | RrPKL | 4 down | ..... | 12.3 | 17.6 | ..... | ..... | 4.2 | 9.2 | 24.3 | 1.82 | 9.4 | 10.7 | .11 | 31.2 |
| 1003 | RrPKL | 4 to 10 | ..... | 13.3 | 22.6 | ..... | ..... | 4.8 | 10.2 | 20.7 | 1.70 | 13.4 | 9.8 | .05 | 37.0 |
| 1004 | RrPKL | 10 down | ..... | 12.3 | 23.4 | ..... | ..... | 5.2 | 10.3 | 20.7 | 2.90 | 11.6 | 10.0 | .11 | 44.0 |
| 1005 | RrPKL | 50 down | ..... | 11.2 | 21.6 | ..... | ..... | 5.2 | 10.3 | 18.8 | 2.18 | 11.4 | 8.8 | .05 | 41.0 |
| 1006 | RrPKL | Burnt | ..... | 13.5 | 20.6 | ..... | ..... | 7.2 | 12.0 | 24.8 | 2.55 | 14.4 | 10.7 | .05 | 43.2 |
| 1007 | RrPK | ..... | ..... | 13.7 | 28.0 | ..... | ..... | 5.4 | 7.0 | 16.7 | 0.00 | 16.6 | 6.5 | 0.00 | 20.8 |
| 1008 | RrPKL | 4 down | ..... | 15.7 | 35.0 | ..... | ..... | 9.0 | 12.0 | 21.7 | 3.88 | 23.0 | 9.3 | .13 | 50.4 |
| 1009 | RrPKL | 4 to 10 | ..... | 14.0 | 30.0 | ..... | ..... | 3.4 | 10.2 | 23.0 | 4.37 | 19.2 | 9.0 | .11 | 47.4 |
| 1010 | RrPKL | 10 down | ..... | 13.0 | 24.6 | ..... | ..... | 2.8 | 11.5 | 21.2 | 3.32 | 12.0 | 8.2 | .05 | 44.8 |
| 1011 | RrPKL | 50 down | ..... | 12.5 | 13.2 | ..... | ..... | 3.2 | 10.3 | 25.7 | 3.03 | 6.8 | 7.5 | .08 | 45.4 |
| 1012 | RrPKL | Burnt | ..... | 12.7 | 13.8 | ..... | ..... | 3.4 | 8.3 | 26.5 | 3.52 | 7.4 | 5.2 | .13 | 40.8 |
| 1013 | RrPK | ..... | ..... | 12.0 | 14.0 | ..... | ..... | 2.8 | 5.5 | 21.0 | .12 | 10.2 | 5.2 | .11 | 15.6 |
| 1014 | RrPKL | 4 down | ..... | 13.8 | 13.8 | ..... | ..... | 6.8 | 11.2 | 24.2 | 5.57 | 4.0 | 13.2 | .13 | 49.8 |
| 1015 | RrPKL | 4 to 10 | ..... | 15.2 | 17.2 | ..... | ..... | 10.0 | 7.8 | 24.7 | 4.23 | 13.0 | 12.5 | .16 | 53.8 |
| 1016 | RrPKL | 10 down | ..... | 19.0 | 18.8 | ..... | ..... | 16.2 | 11.3 | 22.7 | 4.23 | 12.4 | 17.3 | .11 | 53.6 |
| 1017 | RrPKL | 50 down | ..... | 17.2 | 14.0 | ..... | ..... | 10.4 | 9.7 | 22.8 | 5.57 | 8.0 | 18.0 | .21 | 42.8 |
| 1018 | RrPKL | Burnt | ..... | 16.2 | 22.6 | ..... | ..... | 11.8 | 10.7 | 24.3 | 5.33 | 12.6 | 16.3 | .24 | 51.8 |
| 1019 | RrPK | ..... | ..... | 17.2 | 28.2 | ..... | ..... | 5.4 | 5.2 | 19.8 | .97 | 18.8 | 9.7 | 0.00 | 17.4 |

¹No treatment; entire crop plowed down. ²Crop failure.

OBLONG FIELD, CRAWFORD COUNTY

ESTABLISHED 1912

Location.—About five blocks south of the railroad station in Oblong. A part of the S. $\frac{1}{2}$ of the N.E. $\frac{1}{4}$ of the N.E. $\frac{1}{4}$, Sec. 1, Twp. 6 N., R. 14 W. of the 2d P. M.

Description.—The field consists of 20 acres of light-colored loessial upland soil of strong acidity. The land is uniform from the standpoint of both soil and topography. Only one type of soil has been mapped on the field, namely, Gray Silt Loam On Tight Clay. A thoro system of tile drainage has been provided, but owing to the impervious nature of the subsoil, it does not drain easily. The field is divided into four series of 10 fifth-acre plots each. Four large plots, designated as A, B, C, and D, have been used for minor rotations.

History.—The Oblong field was purchased by the citizens of Oblong and vicinity and donated to the University for experimental purposes. Little is known of the previous history of the field except that in 1911 it was in timothy meadow.

Cropping and Soil Treatment.—The somewhat standard rotation and soil treatment methods described in the introduction were established on Series 100, 200, 300, and 400. These methods were followed without change until 1920, when sweet clover was substituted for alsike clover in the rotation. In 1922 the return of the wheat straw was discontinued. The following year the application of limestone was discontinued until need for it should become apparent. In 1924 the rock phosphate applications were evened up to 4 tons an acre, and no more will be applied for an indefinite period.

Until 1921, Plots A, B, C, and D were cropped with a rotation of potatoes, corn, and soybeans, with alfalfa on the fourth plot for one complete rotation of the three, when it was shifted. Manure was applied at the rate of 45 tons an acre for the potato crop. Limestone was applied initially at the rate of 4 tons an acre and thereafter at the annual rate of 1,000 pounds an acre to the soybeans, and 7,000 pounds an acre ahead of the alfalfa. Rock phosphate at the annual rate of 500 pounds an acre and kaintit at the rate of 200 pounds were applied preceding the potato crop. In 1921 the rotation was changed to wheat, corn, oats, and legumes. Since that time nothing has been applied to the soil except the green manure sweet clover plowed under for corn.

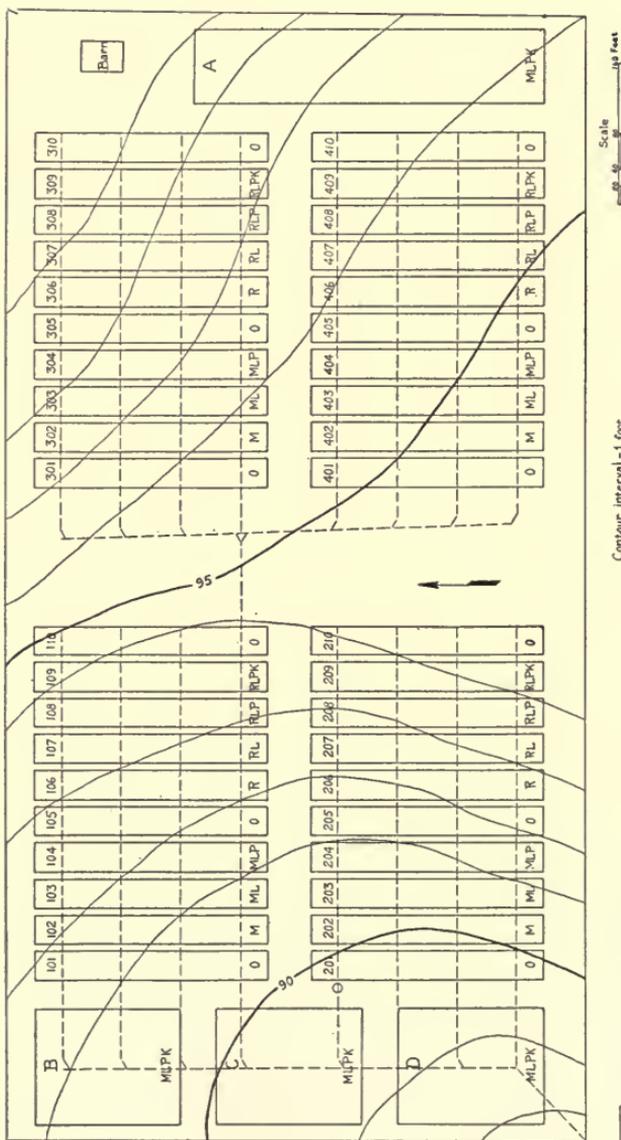


TABLE 69.—OBLONG FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------------------|------------|--------------------|-----------|-------------|------------|-----------|------------------------|---------------------|-------------------|------------|--------------|----------------|------|
| | | 1912 Oats ¹ | 1913 Clover ² | 1914 Wheat | 1915 Corn | 1916 Oats | 1917 Clover | 1918 Wheat | 1919 Corn | 1920 Oats ³ | 1920 Stubble clover | 1921 Sweet clover | 1922 Wheat | 1923 Corn | 1924 Soy-beans | |
| 101 | O..... | 12.0 | (0.00) | 4.6 | 39.8 | 13.1 | (0.00) | 9.6 | 13.4 | ..... | (0.00) | 0.00 | 3.6 | 32.5 | 10.0 | |
| 102 | M..... | 23.0 | (.27) | 25.0 | 50.2 | 23.9 | (.43) | 15.8 | 24.8 | ..... | (0.00) | 0.00 | 5.6 | 44.8 | 12.3 | |
| 103 | ML..... | 24.2 | (.32) | 26.8 | 53.0 | 30.8 | (.90) | 22.7 | 36.8 | ..... | (.34) | .67 | 13.8 | 52.2 | 14.2 | |
| 104 | MLrP..... | 25.0 | (.33) | 28.8 | 59.6 | 31.1 | (1.15) | 33.4 | 32.2 | ..... | (.71) | .33 | 16.1 | 51.7 | 15.4 | |
| 105 | O..... | 22.7 | 0.00 | 7.5 | 36.0 | 6.7 | 0.00 | 12.6 | 14.8 | ..... | (0.00) | 0.00 | 4.4 | 24.6 | 9.2 | |
| 106 | R..... | 24.7 | 0.00 | 8.3 | 37.4 | 16.4 | 0.00 | 13.2 | 16.0 | ..... | (0.00) | 0.00 | 6.2 | 33.1 | 10.4 | |
| 107 | RL..... | 26.7 | .25 | 21.7 | 46.6 | 30.2 | 2.92 | 30.5 | 31.0 | ..... | (.56) | .67 | 15.8 | 42.4 | 11.1 | |
| 108 | RLrP..... | 29.2 | .50 | 26.2 | 52.4 | 38.1 | 2.50 | 36.1 | 33.0 | ..... | (.62) | .50 | 20.0 | 41.4 | 12.9 | |
| 109 | RLrPK..... | 31.2 | .33 | 30.2 | 58.6 | 36.2 | 3.50 | 38.8 | 39.6 | ..... | (.89) | .75 | 23.5 | 59.7 | 15.2 | |
| 110 | O..... | 25.0 | (0.00) | 5.3 | 30.6 | 6.2 | (0.00) | 4.3 | 10.6 | ..... | (0.00) | 0.00 | 5.4 | 22.1 | 8.5 | |
| | | | Soy-beans ² | | Wheat ² | | Corn | Oats | Clover | Wheat | Corn | Stubble clover | Oats | Sweet clover | Wheat | Corn |
| 201 | O..... | 14.2 | 1.2 | 4.6 | 9.2 | 9.4 | 36.6 | (.64) | 15.6 | 13.7 | 8.6 | (0.00) | 8.6 | .08 | 4.2 | 16.3 |
| 202 | M..... | 27.3 | 1.7 | (.64) | 10.8 | 20.8 | 52.3 | (.75) | 20.8 | 14.0 | 10.3 | (0.00) | 10.3 | .58 | 10.8 | 33.6 |
| 203 | ML..... | 46.3 | 7.5 | (.95) | 11.1 | 29.8 | 59.4 | (1.05) | 26.2 | 39.5 | 25.8 | (1.13) | 25.8 | 1.00 | 18.3 | 56.1 |
| 204 | MLrP..... | 58.6 | 7.2 | (.86) | 16.2 | 33.4 | 64.7 | (1.19) | 32.1 | 39.4 | 27.7 | (1.18) | 27.7 | .83 | 23.3 | 60.7 |
| 205 | O..... | 45.3 | 5.5 | 7.4 | 5.7 | 22.0 | 49.2 | 1.00 | 19.3 | 15.4 | 13.4 | (0.00) | 13.4 | 0.00 | 6.3 | 23.7 |
| 206 | R..... | 37.7 | 6.4 | 7.0 | 8.8 | 22.6 | 52.3 | 1.25 | 21.3 | 18.8 | 14.8 | (0.00) | 14.8 | .29 | 8.0 | 26.8 |
| 207 | RL..... | 45.7 | 6.9 | 7.9 | 10.2 | 29.2 | 62.2 | 1.92 | 28.1 | 25.2 | 23.0 | (1.00) | 23.0 | .58 | 16.8 | 41.6 |
| 208 | RLrP..... | 49.3 | 5.2 | 7.1 | 13.7 | 23.0 | 67.0 | 2.00 | 31.3 | 20.3 | 24.1 | (1.14) | 24.1 | .75 | 29.0 | 36.8 |
| 209 | RLrPK..... | 53.9 | 5.2 | 7.8 | 15.8 | 28.6 | 67.7 | 1.08 | 31.8 | 27.8 | 31.3 | (1.34) | 31.3 | .79 | 22.8 | 52.4 |
| 210 | O..... | 43.7 | 1.9 | 6.9 | 3.1 | 10.0 | 36.1 | (.42) | 13.5 | 6.5 | 8.4 | (0.00) | 8.4 | 0.00 | 6.9 | 19.5 |

¹No manure or residues. ²No manure. ³Crop failure.

TABLE 69.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | 1924 Wheat |
|----------|------------------------|------------------------------|--------------|--------------|-----------------------|----------------------------|--------------|--------------|-----------------------|---------------|--------------|--------------|-------------------------|---------------|
| | | 1912 Wheat ^{1,2} | 1913 Corn | 1914 Oats | 1915 Soy- beans | 1916 Wheat ² | 1917 Corn | 1918 Oats | 1919 Soy- beans | 1920 Wheat | 1921 Corn | 1922 Oats | 1923 Sweet clover | |
| 301 | 0..... | ..... | 12.6 | 11.6 | (1.09) | ..... | 22.8 | 37.8 | (.89) | 3 | 28.0 | 7.2 | 0.00 | 9.8 |
| 302 | M..... | ..... | 11.9 | 14.8 | (1.44) | ..... | 34.0 | 48.6 | (1.16) | 1.0 | 35.2 | 8.9 | 0.00 | 10.5 |
| 303 | ML..... | ..... | 11.2 | 19.7 | (1.64) | ..... | 54.2 | 59.4 | (2.35) | 8.7 | 50.9 | 16.4 | .23 | 27.0 |
| 304 | MLrP..... | ..... | 10.1 | 21.9 | (1.85) | ..... | 54.8 | 56.9 | (2.40) | 17.2 | 52.0 | 18.8 | .17 | 32.6 |
| 305 | 0..... | ..... | 14.5 | 12.3 | 14.3 | ..... | 28.6 | 42.5 | 7.6 | 1.6 | 24.9 | 11.6 | .19 | 10.7 |
| 306 | R..... | ..... | 9.5 | 22.5 | 13.9 | ..... | 34.0 | 57.3 | 10.3 | 2.0 | 28.0 | 11.6 | 0.00 | 15.1 |
| 307 | RL..... | ..... | 10.0 | 26.9 | 15.8 | ..... | 36.8 | 53.4 | 14.6 | 12.2 | 45.7 | 17.2 | .33 | 29.9 |
| 308 | RLrP..... | ..... | 10.9 | 27.8 | 13.8 | ..... | 45.0 | 61.6 | 14.7 | 15.2 | 51.4 | 22.3 | .21 | 32.7 |
| 309 | RLrPK..... | ..... | 12.8 | 31.9 | 15.8 | ..... | 60.0 | 53.6 | 17.2 | 15.8 | 54.4 | 25.8 | .21 | 32.7 |
| 310 | 0..... | ..... | 14.4 | 13.4 | 13.3 | ..... | 33.0 | 46.4 | (1.60) | 2.8 | 40.0 | 13.1 | .15 | 17.3 |
| | | | | | | | | | | | | | | |
| | | Soy- beans ¹ | | | | | | | | | | | | |
| 401 | 0..... | (.42) | 8 | 15.2 | 28.3 | (.45) | 7.5 | 9.6 | 8.3 | (0.00) | 9.9 | 28.3 | 12.7 | (0.00) |
| 402 | M..... | (.45) | 1.5 | 16.5 | 43.4 | (.64) | 16.9 | 19.2 | 10.8 | (0.00) | 15.3 | 31.5 | 17.3 | (0.00) |
| 403 | ML..... | (.55) | 3.9 | 16.4 | 58.6 | (1.15) | 21.0 | 20.8 | 15.5 | (.88) | 16.8 | 49.7 | 31.6 | (1.00) |
| 404 | MLrP..... | (.71) | 6.9 | 20.1 | 57.0 | (1.52) | 30.1 | 30.4 | 16.6 | (1.00) | 25.0 | 50.8 | 35.2 | (.93) |
| 405 | 0..... | 7.7 | 3.1 | 20.1 | 39.4 | .50 | 14.4 | 17.6 | 12.3 | 0.00 | 13.8 | 26.5 | 17.7 | (0.00) |
| 406 | R..... | 8.2 | 3.2 | 23.7 | 36.1 | .40 | 20.4 | 23.8 | 11.7 | .77 | 17.1 | 31.8 | 23.0 | (0.00) |
| 407 | RL..... | 10.6 | 6.4 | 27.8 | 48.6 | 1.42 | 28.2 | 39.6 | 17.7 | 1.08 | 21.3 | 40.5 | 31.6 | (.89) |
| 408 | RLrP..... | 11.1 | 10.7 | 30.2 | 60.3 | 3.33 | 35.3 | 46.4 | 18.0 | .88 | 25.8 | 51.4 | 31.6 | (1.18) |
| 409 | RLrPK..... | 11.9 | 14.7 | 27.6 | 59.7 | 2.92 | 31.4 | 28.4 | 16.1 | .67 | 26.3 | 59.7 | 29.4 | (1.18) |
| 410 | 0..... | (.85) | 1.2 | 17.2 | 29.2 | (.44) | 13.4 | 17.2 | 10.6 | (0.00) | 13.2 | 29.3 | 14.7 | (0.00) |

¹No manure or residues. ²Crop failure. ³No manure.

TABLE 70.—OBLONG FIELD: PLOTS A, B, C, D

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | |
|----------|------------------------|----------------------------|------------------------|----------------------|------------------|-----------------|------------------|------------------|----------------------|---------------------|---------------|------------|------------------|-------------------|
| | | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 |
| A | MLrPK..... | Alfalfa ¹ | Alfalfa ¹ | Alfalfa ¹ | Alfalfa (3.62) | Alfalfa (1.82) | Potatoes 47.3 | Corn 30.9 | Soy-beans (2.33) | Soy-beans 15.6 | Wheat 21.0 | Oats 34.0 | Sweet clover .07 | Wheat 31.1 |
| | | Soy-beans ² | Soy-beans ² | Potatoes | Corn | Alfalfa seeding | Alfalfa (1.85) | Alfalfa (1.93) | Alfalfa ¹ | Sweet clover (1.04) | Soybeans 23.0 | Corn 49.0 | Oats 25.6 | Sweet clover 2.73 |
| B | MLrPK..... | Corn ² | Corn | Potatoes | Potatoes | Corn | Soy-beans (2.19) | Potatoes 27.5 | Alfalfa (1.32) | Corn 49.5 | Wheat 18.3 | Corn 49.5 | Soy-beans 12.8 | |
| | | Potatoes | Corn | Soy-beans | Potatoes | Corn | Soy-beans (2.19) | Potatoes 27.5 | Alfalfa (1.32) | Corn 49.5 | Wheat 18.3 | Corn 49.5 | Soy-beans 12.8 | |
| C | MLrPK..... | Potatoes | Corn | Soy-beans | Potatoes | Corn | Soy-beans (2.19) | Potatoes 27.5 | Alfalfa (1.32) | Corn 49.5 | Wheat 18.3 | Corn 49.5 | Soy-beans 12.8 | |
| | | Potatoes | Corn | Soy-beans | Potatoes | Corn | Soy-beans (2.19) | Potatoes 27.5 | Alfalfa (1.32) | Corn 49.5 | Wheat 18.3 | Corn 49.5 | Soy-beans 12.8 | |
| D | MLrPK..... | Soy-beans ² | Potatoes | Corn | Soy-beans | Potatoes | Corn | Soy-beans (2.19) | Potatoes 27.5 | Alfalfa (1.32) | Corn 49.5 | Wheat 18.3 | Corn 49.5 | |
| | | Soy-beans ² | Potatoes | Corn | Soy-beans | Potatoes | Corn | Soy-beans (2.19) | Potatoes 27.5 | Alfalfa (1.32) | Corn 49.5 | Wheat 18.3 | Corn 49.5 | |
| | | Stubble clover (1.70) | Oats 30.7 | Wheat 29.5 | Sweet clover .55 | Wheat 29.5 | Corn 54.3 | | | | | | | |

¹Winterkilled. ²No manure.

ODIN FIELD, MARION COUNTY

ESTABLISHED 1902

Location.—About one mile southwest of Odin on land owned by Mr. Charles Morrison of Odin. Chiefly in the S.W. $\frac{1}{4}$ of the S.W. $\frac{1}{4}$, Sec. 14, Twp. 2 N., R. 1 E. of the 3d P. M.

Description.—The field consists of 20 acres of light-colored loessial upland soil of strong acidity. Three soil types have been mapped on the field: (1) Gray Silt Loam On Tight Clay; (2) Gray Silt Loam On Plastic Reddish Brown Clay; and (3) Yellow Gray Silt Loam. The last named type is found only on a very small area, while the second named type is found in a larger area in the northeast part of this field. The land is fairly level. A part of the field is tile-drained, but owing to the impervious nature of the subsoil the tile has been unsatisfactory. The field is divided into eight series, four of which contain 10 fifth-acre plots each and four which contain 6 tenth-acre plots each.

History.—The Odin field was originally leased from Col. N. B. Morrison. Since his death the lease has been continued with his son, Mr. Charles Morrison. Little is known of the previous history of the field except that it had been in meadow for some time.

Cropping and Soil Treatment.—The rotation chiefly practiced on Series 100, 200, 300, and 400 has been corn, legumes (cowpeas, or soybeans), wheat, and clover. Until 1922 the clover was alsike, soybeans being substituted if the clover failed. Since that time sweet clover has been used instead of alsike. A part of the time cowpeas were seeded in the corn at the last cultivation. The first five plots in each series were not tile-drained, while the last five plots were tile-drained.

Phosphorus was applied at the annual rate of 200 pounds of steamed bone meal an acre until 1923, when the total application of the bone meal was evened up to 4,800 pounds an acre and was temporarily discontinued. Potassium was applied at the annual rate of 100 pounds an acre of potassium sulfate until 1923. At that time the total application was evened up to 2,500 pounds, and plans were made to continue the application at the normal rate only on the south-west halves of the plots. In 1902 slaked lime at the acre rate of 475 pounds was applied to the limed plots and in 1903 an additional 2 tons was applied to these plots. No more lime was applied until 1908, after which it was applied regularly at the annual rate of 500 pounds of limestone an acre to the northwest halves and 1,000 pounds an acre to the south-east halves of these plots. In 1922 these applications were temporarily discontinued until further need for lime appears. Crop residues and cover crops were regularly plowed down on the residue plots. The return of the wheat straw was discontinued in 1922. From 1907 to 1919 the northeast half of each plot was subsoiled when the ground was plowed for corn.

Series 500, 600, 700, and 800 were originally plotted as one series of six plots running the long way of the series for the purpose of studying the relative value of various carriers of phosphorus used in equal money values on limed and unlimed land. A rotation of corn, oats, and three years of clover-timothy meadow was first established on this series. Cowpeas were seeded in the corn for use as residues. The phosphates were applied at the annual acre rate of 200 pounds of steamed bone meal, 333 pounds of acid phosphate, 666 pounds of rock phosphate, and 250 pounds of slag phosphate. At that time these amounts were of equivalent money value. The first application of lime was at the acre rate of $1\frac{1}{2}$ tons to the southeast halves; subsequent applications were at the annual acre rate of 1,000 pounds. Potassium at the annual acre rate of 100 pounds of potassium sulfate was applied to all plots. These applications were discontinued in 1913.

In 1922 this land was replotted into the present Series 500, 600, 700, and 800. Limestone at the acre rate of 1 ton was applied for the first time to the originally unlimed areas. No more limestone will be applied to these plots until there appears to be further need for it. No limestone was applied to Series 700 and 800, which were originally limed. No phosphates have been applied since 1919 and no further applications will be made for an indefinite period. For the time being a rotation of corn and wheat with a sweet clover seeding will be practiced on Series 500 and 600 and repeated on Series 700 and 800.

In 1905 seven small plots were laid out along the southeast side of the field to test the value of sweet clover as a leguminous green manure. On the first three plots a rotation of corn, cowpeas or soybeans, and wheat has been practiced. Sweet clover has been seeded in both the corn and wheat and plowed down as a green manure for the succeeding crop. On the next four plots the rotation has been corn, cowpeas or soybeans, wheat, and sweet clover. In this rotation the sweet clover was allowed to stand over the second year for use as a seed crop. The sweet clover chaff and straw have been returned to the plots on which they were grown. Limestone and bone meal have been applied to these plots in a manner similar to their application on the larger series.

TABLE 71.—ODIN FIELD: SERIES 100, 200, 300, 400 (1902-1913)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|-----------------------|------------------------|----------------------------|------------------------|------------|---------------------------|-----------|--------------|------------|--------------|-----------|----------------|-------------------------|
| | | 1902 Corn ¹ | 1903 Oats ¹ | 1904 Wheat | 1905 Cowpeas ² | 1906 Corn | 1907 Cowpeas | 1908 Wheat | 1909 Cowpeas | 1910 Corn | 1911 Soy-beans | 1912 Wheat ³ | 1913 Clover^{3} |
| Land Not Tile-drained | | | | | | | | | | | | |
| 101 | 0..... | 12.1 | 6.9 | 7.9 | 31.6 | (.90) | 17.3 | (.65) | 25.3 | 7.4 | ..... | ..... |
| 102 | R..... | 7.2 | 5.2 | 5.4 | 28.6 | (.95) | 14.4 | (.67) | 28.8 | 8.3 | ..... | ..... |
| 103 | RL..... | 8.8 | 6.2 | 10.7 | 28.5 | (1.00) | 18.5 | (1.11) | 38.0 | 10.1 | ..... | ..... |
| 104 | RLbP..... | 4.9 | 8.6 | 21.6 | 30.8 | (1.08) | 26.6 | (1.30) | 36.6 | 6.9 | ..... | ..... |
| 105 | RLbPK..... | 14.4 | 25.8 | 24.4 | 35.3 | (1.80) | 32.6 | (1.52) | 81.0 | 13.7 | ..... | ..... |
| Land Tile-drained | | | | | | | | | | | | |
| 106 | 0..... | 11.5 | 8.1 | 6.7 | 31.7 | (.76) | 16.3 | (.67) | 26.1 | 8.1 | ..... | ..... |
| 107 | R..... | 13.5 | 8.8 | 8.5 | 40.1 | (1.00) | 21.2 | (.95) | 38.9 | 8.8 | ..... | ..... |
| 108 | RL..... | 9.7 | 7.2 | 9.6 | 34.5 | (.98) | 22.1 | (1.02) | 39.9 | 7.2 | ..... | ..... |
| 109 | RLbP..... | 9.5 | 12.3 | 21.5 | 33.7 | (1.01) | 28.9 | (1.61) | 42.0 | 7.2 | ..... | ..... |
| 110 | RLbPK..... | 20.7 | 28.9 | 25.4 | 43.9 | (1.32) | 34.8 | (1.99) | 84.5 | 12.6 | ..... | ..... |

(1914-1924)

| Plot No. | Soil treatment applied | 1914 Corn | 1915 Soy-beans | 1916 Wheat | 1917 Clover ² | 1918 Corn | 1919 Soy-beans ⁴ | 1920 Wheat | 1921 Sweet clover | 1922 Corn | 1923 Soy-beans | 1924 Wheat |
|-------------------|------------------------|-----------------------|----------------|------------|--------------------------|-----------|-----------------------------|------------|-------------------|-----------|----------------|------------|
| | | Land Not Tile-drained | | | | | | | | | | |
| 101 | 0..... | 4.0 | 5.3 | 1.2 | ..... | 4.4 | ..... | 4.8 | (0.00) | 0.00 | 17.2 | 18.4 |
| 102 | R..... | 2.9 | 4.7 | 3.7 | ..... | 6.2 | ..... | 8.8 | (0.00) | .17 | 21.2 | 1.5 |
| 103 | RL..... | 1.8 | 15.7 | 9.8 | ..... | 9.0 | ..... | 21.4 | (0.90) | 2.00 | 27.5 | 6.8 |
| 104 | RLbP..... | 2.3 | 16.7 | 15.8 | ..... | 10.0 | ..... | 26.2 | (0.86) | 1.83 | 27.8 | 12.5 |
| 105 | RLbPK..... | 3.9 | 16.6 | 24.0 | ..... | 17.7 | ..... | 22.5 | (1.79) | 2.67 | 35.2 | 20.4 |
| Land Tile-drained | | | | | | | | | | | | |
| 106 | 0..... | 4.3 | 10.2 | .2 | ..... | 5.8 | ..... | 2.3 | (0.00) | 0.00 | 18.8 | 15.4 |
| 107 | R..... | 4.8 | 8.2 | 5.4 | ..... | 7.5 | ..... | 10.4 | (0.00) | .58 | 24.3 | 18.9 |
| 108 | RL..... | 2.8 | 24.4 | 9.2 | ..... | 13.9 | ..... | 21.3 | (1.19) | 1.75 | 26.5 | 5.1 |
| 109 | RLbP..... | 2.0 | 15.3 | 17.1 | ..... | 15.6 | ..... | 26.3 | (1.13) | 3.33 | 25.5 | 7.5 |
| 110 | RLbPK..... | 4.1 | 10.1 | 21.6 | ..... | 21.8 | ..... | 22.4 | (1.57) | 4.25 | 38.4 | 27.0 |

¹No residues. ²Removed from Plots 1 and 6 and plowed under on others. ³Crop failure. ⁴Grasshoppers destroyed the crop.

TABLE 71.—Continued
(1902-1913)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|-----------------------|------------------------|----------------------------|------------|----------------------------|--------------|----------------|------------|---------------|-----------|----------------|------------|-------------------|
| | | 1902 Oats | 1903 Wheat | 1904 Cow-peas ² | 1905 Corn | 1906 Cowpeas | 1907 Wheat | 1908 Cow-peas | 1909 Corn | 1910 Soy-beans | 1911 Wheat | 1912 Soy-beans | 1913 Corn |
| Land Not Tile-drained | | | | | | | | | | | | |
| 201 | 0..... | | .4 | .... | 36.1 (.93) | 14.2 | 1.7 | 27.9 | 8.3 | 5.3 | 11.7 | 3.7 |
| 202 | R..... | 15.8 | .6 | .... | 46.7 (1.08) | 15.1 | 2.9 | 31.3 | 9.8 | 5.8 | 17.1 | 5.4 |
| 203 | RL..... | 16.1 | .7 | .... | 59.9 (.93) | 18.6 | 2.5 | 27.3 | 5.3 | 15.0 | 20.4 | 4.2 |
| 204 | RLbP..... | 16.7 | 5.8 | .... | 57.7 (1.25) | 26.8 | 2.3 | 35.2 | 8.8 | 16.6 | 21.5 | 4.3 |
| 205 | RLbPK..... | 18.8 | 14.0 | .... | 79.5 (2.47) | 29.8 | 4.6 | 69.1 | 11.7 | 19.2 | 27.9 | 11.7 |
| Land Tile-drained | | | | | | | | | | | | |
| 206 | 0..... | 12.2 | .6 | .... | 42.6 (.83) | 14.3 | 1.4 | 25.5 | 6.6 | 4.9 | 5.6 | 2.0 |
| 207 | R..... | 10.3 | .6 | .... | 37.4 (1.03) | 16.9 | 2.3 | 26.3 | 6.8 | 6.7 | 6.1 | 2.1 |
| 208 | RL..... | 11.7 | 2.1 | .... | 57.9 (1.30) | 21.1 | 2.7 | 30.4 | 9.6 | 9.4 | 12.4 | 4.0 |
| 209 | RLbP..... | 19.2 | 13.4 | .... | 65.8 (1.68) | 29.5 | 1.8 | 41.3 | 8.7 | 19.5 | 16.7 | 9.7 |
| 210 | RLbPK..... | 17.7 | 15.2 | .... | 71.6 (2.27) | 31.8 | 3.9 | 55.3 | 14.3 | 23.2 | 23.1 | 8.6 |
| (1914-1924) | | | | | | | | | | | | |
| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
| | | 1914 Soy-beans | 1915 Wheat | 1916 Clover | 1917 Corn | 1918 Soy-beans | 1919 Wheat | 1920 Clover | 1921 Corn | 1922 Soy-beans | 1923 Wheat | 1924 Sweet clover |
| Land Not Tile-drained | | | | | | | | | | | | |
| 201 | 0..... | 4.4 | 11.9 | .42 | 8.4 | 3.6 | 18.7 | (0.00) | 11.6 | 4.2 | 2.5 | 0.00 |
| 202 | R..... | 4.9 | 15.0 | 1.25 | 10.2 | 5.8 | 13.5 | (0.00) | 14.1 | 4.0 | 2.7 | 0.00 |
| 203 | RL..... | 5.0 | 16.0 | 1.67 | 7.5 | 7.4 | 26.7 | (1.66) | 10.4 | 6.6 | 6.3 | 1.17 |
| 204 | RLbP..... | 5.2 | 25.0 | 1.67 | 9.5 | 7.2 | 35.1 | (1.86) | 9.3 | 6.4 | 9.2 | .67 |
| 205 | RLbPK..... | 6.7 | 29.7 | 1.83 | 33.7 | 5.8 | 37.2 | (2.47) | 25.0 | 10.3 | 21.4 | 1.42 |
| Land Tile-drained | | | | | | | | | | | | |
| 206 | 0..... | 3.6 | 14.3 | .92 | 10.4 | 5.0 | 14.2 | (0.00) | 7.3 | 3.8 | 1.3 | 0.00 |
| 207 | R..... | 3.8 | 14.3 | 1.50 | 14.1 | 5.4 | 20.1 | (0.00) | 6.9 | 4.0 | 1.4 | .25 |
| 208 | RL..... | 7.8 | 25.9 | 3.08 | 15.5 | 7.8 | 33.5 | (1.64) | 9.7 | 8.3 | 7.8 | 1.92 |
| 209 | RLbP..... | 8.7 | 29.6 | 2.83 | 18.1 | 8.0 | 35.4 | (1.61) | 16.1 | 8.8 | 18.3 | 1.25 |
| 210 | RLbPK..... | 7.6 | 31.8 | 2.00 | 27.4 | 3.2 | 36.1 | (1.98) | 15.8 | 8.2 | 27.9 | 1.92 |

¹No residues. ²Removed from Plots 1 and 6 and plowed under on others.

TABLE 71.—Continued
(1902-1913)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|-----------------------|------------------------|----------------------------|----------------|-----------|----------------|--------------|-----------------------------|----------------|----------------|----------------|---------------------|-------------------|-----------|
| | | 1903 Cow-peas? | 1904 Corn | 1905 Oats | 1906 Wheat | 1907 Cowpeas | 1908 Corn | 1909 Soy-beans | 1910 Wheat | 1911 Soy-beans | 1912 Corn | 1913 Soy-beans | |
| Land Not Tile-drained | | | | | | | | | | | | | |
| 301 | 0..... | ..... | 53.1 | 23.0 | 12.1 | (1.24) | 39.3 | 7.4 | 11.7 | 11.3 | 30.3 | 3.0 | |
| 302 | R..... | ..... | 48.8 | 19.4 | 13.7 | (1.29) | 31.4 | 9.2 | 7.8 | 11.7 | 27.8 | 2.9 | |
| 303 | RL..... | ..... | 44.1 | 30.3 | 19.2 | (.87) | 33.0 | 5.0 | 26.3 | 6.9 | 44.2 | 2.4 | |
| 304 | RLbP..... | ..... | 44.1 | 39.2 | 21.1 | (.94) | 43.0 | 5.2 | 32.4 | 9.5 | 46.6 | 3.1 | |
| 305 | RLbPK..... | ..... | 66.6 | 31.9 | 29.2 | (2.13) | 66.4 | 2.8 | 34.1 | 14.0 | 63.0 | 3.8 | |
| Land Tile-drained | | | | | | | | | | | | | |
| 306 | 0..... | ..... | 29.4 | 24.8 | 11.2 | (1.24) | 28.6 | 3.4 | 6.3 | 6.1 | 27.7 | 3.4 | |
| 307 | R..... | ..... | 31.6 | 24.5 | 15.5 | (1.34) | 28.3 | 3.9 | 4.4 | 6.8 | 35.7 | 2.9 | |
| 308 | RL..... | ..... | 42.8 | 22.0 | 20.7 | (1.14) | 37.5 | 3.0 | 19.6 | 5.8 | 51.9 | 5.0 | |
| 309 | RLbP..... | ..... | 45.9 | 26.3 | 24.8 | (.94) | 42.6 | 1.4 | 31.3 | 7.0 | 55.9 | 4.6 | |
| 310 | RLbPK..... | ..... | 64.1 | 31.1 | 31.5 | (2.31) | 70.0 | 4.5 | 29.2 | 12.7 | 50.9 | 5.7 | |
| (1914-1924) | | | | | | | | | | | | | |
| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
| | | 1914 Wheat | 1915 Soy-beans | 1916 Corn | 1917 Soy-beans | 1918 Wheat | 1919 Soy-beans ³ | 1920 Corn | 1921 Soy-beans | 1922 Wheat | 1922 Stubble clover | 1923 Sweet clover | 1924 Corn |
| Land Not Tile-drained | | | | | | | | | | | | | |
| 301 | 0..... | 5.0 | 3.9 | 15.8 | 3.1 | 5.2 | | 25.1 | 8.3 | 13.1 | (0.00) | 0.00 | 6.3 |
| 302 | R..... | 2.7 | 2.0 | 18.0 | 4.2 | 5.5 | | 28.0 | 8.7 | 13.1 | (0.00) | .17 | 15.3 |
| 303 | RL..... | 14.9 | 7.6 | 22.8 | 5.7 | 20.8 | | 32.5 | 11.1 | 25.9 | (.85) | .17 | 48.0 |
| 304 | RLbP..... | 15.4 | 8.6 | 21.4 | 4.9 | 25.8 | | 27.4 | 9.8 | 23.3 | (.79) | .14 | 47.1 |
| 305 | RLbPK..... | 17.9 | 10.4 | 25.7 | 7.3 | 28.4 | | 43.6 | 11.6 | 24.8 | (.85) | .10 | 65.5 |
| Land Tile-drained | | | | | | | | | | | | | |
| 306 | 0..... | 2.4 | 4.3 | 10.0 | 4.4 | 1.0 | | 18.7 | 7.0 | 5.3 | (0.00) | 0.00 | 5.5 |
| 307 | R..... | 2.8 | 5.2 | 14.2 | 5.8 | 2.0 | | 19.1 | 7.3 | 5.3 | (0.00) | 0.00 | 15.2 |
| 308 | RL..... | 19.0 | 11.5 | 17.7 | 6.8 | 15.8 | | 22.2 | 9.1 | 24.8 | (.59) | .21 | 49.7 |
| 309 | RLbP..... | 20.0 | 10.3 | 18.0 | 6.9 | 23.1 | | 20.9 | 9.2 | 25.8 | (.63) | .20 | 46.2 |
| 310 | RLbPK..... | 20.8 | 10.7 | 33.2 | 8.5 | 29.0 | | 37.7 | 12.3 | 24.5 | (.80) | .14 | 59.4 |

¹No residues, ²Removed from Plots 1 and 6 and plowed down on others, ³Grasshoppers destroyed crop.

TABLE 71.—Concluded
(1902-1913)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|-----------------------|------------------------|------------------------------|-----------|----------------|------------|--------------------------|-----------|----------------|------------|---------------------|-------------------|----------------|----------------|
| | | 1902 Cow-peas ^{1,2} | 1903 Corn | 1904 Oats | 1905 Wheat | 1906 Clover | 1907 Corn | 1908 Soy-beans | 1909 Wheat | 1910 Cowpeas | 1911 Corn | 1912 Soy-beans | 1913 Wheat |
| Land Not Tile-drained | | | | | | | | | | | | | |
| 401 | 0 | (2.09) | 17.9 | 28.6 | 15.2 | (.22) | 48.8 | 8.6 | 14.6 | (.95) | 21.2 | 13.9 | 18.5 |
| 402 | R | ..... | 16.6 | 36.7 | 16.6 | (.28) | 44.4 | 11.7 | 15.3 | (.93) | 23.5 | 17.8 | 16.7 |
| 403 | RL | ..... | 20.2 | 41.4 | 24.8 | (.32) | 45.3 | 14.0 | 20.3 | (.66) | 22.3 | 18.2 | 28.2 |
| 404 | RLbP | ..... | 18.3 | 39.8 | 36.5 | (.34) | 45.7 | 16.8 | 27.2 | (.52) | 21.2 | 13.7 | 35.0 |
| 405 | RLbPK | ..... | 22.3 | 39.7 | 35.8 | (1.27) | 67.1 | 19.3 | 31.8 | (.96) | 43.4 | 13.4 | 33.2 |
| Land Tile-drained | | | | | | | | | | | | | |
| 406 | 0 | (1.88) | 8.7 | 25.1 | 10.8 | (.37) | 33.2 | 7.8 | 14.0 | (.65) | 8.9 | 8.8 | 16.2 |
| 407 | R | ..... | 12.8 | 33.4 | 18.7 | (.36) | 48.8 | 7.8 | 18.4 | (.65) | 15.4 | 11.4 | 24.2 |
| 408 | RL | ..... | 17.6 | 53.3 | 23.9 | (.50) | 49.3 | 11.8 | 19.4 | (.46) | 25.1 | 17.4 | 31.4 |
| 409 | RLbP | ..... | 15.9 | 44.8 | 35.3 | (.63) | 45.6 | 12.8 | 25.4 | (.41) | 21.5 | 18.7 | 36.9 |
| 410 | RLbPK | ..... | 15.0 | 43.1 | 28.4 | (1.31) | 62.3 | 13.0 | 27.8 | (.99) | 32.7 | 25.2 | 40.7 |
| (1914-1924) | | | | | | | | | | | | | |
| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
| | | 1914 Soy-beans | 1915 Corn | 1916 Soy-beans | 1917 Wheat | 1918 Clover ² | 1919 Corn | 1920 Soy-beans | 1921 Wheat | 1921 Stubble clover | 1922 Sweet clover | 1923 Corn | 1924 Soy-beans |
| Land Not Tile-drained | | | | | | | | | | | | | |
| 401 | 0 | 7.8 | 43.7 | 6.0 | 20.1 | ..... | .6 | 13.9 | 11.3 | (0.00) | 0.00 | 26.2 | 7.9 |
| 402 | R | 8.0 | 47.0 | 8.3 | 16.9 | ..... | .9 | 15.1 | 8.3 | (0.00) | 0.00 | 19.5 | 9.8 |
| 403 | RL | 14.2 | 46.3 | 7.6 | 26.0 | ..... | 4.0 | 17.8 | 20.3 | (.56) | 3.79 | 20.3 | 12.1 |
| 404 | RLbP | 12.3 | 43.5 | 4.8 | 28.2 | ..... | 2.1 | 15.8 | 25.0 | (.61) | 2.50 | 13.6 | 7.7 |
| 405 | RLbPK | 12.4 | 58.2 | 5.8 | 27.8 | ..... | 1.9 | 24.4 | 26.9 | (.94) | 3.75 | 46.2 | 15.0 |
| Land Tile-drained | | | | | | | | | | | | | |
| 406 | 0 | 5.9 | 23.4 | 5.6 | 11.0 | ..... | .2 | 8.5 | 11.8 | (0.00) | 0.00 | 19.9 | 2.8 |
| 407 | R | 9.4 | 36.7 | 7.1 | 21.6 | ..... | 1.7 | 15.4 | 15.0 | (0.00) | 0.00 | 24.2 | 7.5 |
| 408 | RL | 12.2 | 45.3 | 5.8 | 19.7 | ..... | 2.0 | 14.8 | 22.2 | (.22) | .83 | 9.7 | 10.4 |
| 409 | RLbP | 9.8 | 41.7 | 4.1 | 23.1 | ..... | 4.3 | 16.9 | 26.5 | (.33) | .83 | 12.2 | 10.0 |
| 410 | RLbPK | 8.2 | 49.2 | 7.5 | 24.8 | ..... | 4.3 | 18.4 | 26.9 | (.75) | 2.04 | 40.4 | 17.9 |

¹No residue. ²Removed on Plots 1 and 6 and plowed under on others.

TABLE 72.—ODIN FIELD: COMPARATIVE PHOSPHATE TEST, SERIES 500
(1904-1912)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|----------------------------|--------------|-----------------|-----------------|-------------------------------|--------------|--------------|-----------------|-----------------|--|
| | | 1904 Corn ¹ | 1905 Oats | 1906 Timothy | 1907 Timothy | 1908 Timothy and clover | 1909 Corn | 1910 Oats | 1911 Timothy | 1912 Timothy | |
| 501W | RK(bP) | 52.5 | 22.6 | (.82) | (1.06) | (1.09) | 39.1 | 55.6 | (.55) | (1.26) | |
| 501E | RKL(bP) | 53.8 | | (.85) | (1.64) | (1.88) | 45.3 | 55.5 | (.93) | (1.50) | |
| 502W | RK | 41.0 | 24.4 | (.64) | (.98) | (.72) | 39.5 | 44.1 | (.35) | (.67) | |
| 502E | RKL | 33.8 | | (.96) | (1.06) | (1.46) | 44.2 | 48.5 | (.92) | (1.31) | |
| 503W | RK(aP) | 50.0 | 27.1 | (.71) | (1.01) | (.70) | 38.3 | 53.9 | (.83) | (.93) | |
| 503E | RKL(aP) | 49.0 | | (1.06) | (1.19) | (1.45) | 39.9 | 42.8 | (1.05) | (1.39) | |
| 504W | RK(rP) | 46.8 | 26.4 | (.64) | (.91) | (.67) | 32.5 | 50.5 | (.59) | (.95) | |
| 504E | RKL(rP) | 49.5 | | (1.08) | (1.20) | (1.63) | 44.7 | 52.4 | (1.25) | (1.52) | |
| 505W | RK | 33.0 | 27.4 | (.57) | (.85) | (.47) | 31.1 | 40.1 | (.24) | (1.12) | |
| 505E | RKL | 38.5 | | (1.04) | (1.14) | (1.29) | 41.5 | 50.0 | (.99) | (1.24) | |
| 506W | RK(sP) | 46.0 | 25.2 | (.64) | (.94) | (.74) | 34.0 | 47.6 | (.48) | (1.13) | |
| 506E | RKL(sP) | 51.0 | | (.87) | (1.48) | (1.66) | 44.9 | 61.4 | (1.17) | (1.38) | |

| (1913-1921) | | | | | | | | | | |
|-------------|------------------------|---------|------|------|-----------------------|-----------------------|---------|-----------------------|-------|-------------------|
| Plot No. | Soil treatment applied | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 |
| | | Timothy | Corn | Oats | Timothy and clover | Timothy and clover | Timothy | Timothy and clover | Corn | Oats ² | Timothy and clover |
| 501W | RK(bP) | (.84) | 2.6 | 74.5 | (1.19) | (1.61) | (2.11) | 2 | ..... | (0.00) |
| 501E | RKL(bP) | (1.03) | 2.7 | 65.4 | (1.10) | (1.75) | (1.63) | 2.2 | ..... | (1.91) |
| 502W | RK | (.49) | 2.4 | 62.8 | (.49) | (.75) | (1.14) | 4.1 | ..... | (0.00) |
| 502E | RKL | (.73) | 2.2 | 58.9 | (.98) | (1.64) | (1.44) | 4.3 | ..... | (2.31) |
| 503W | RK(aP) | (.47) | 1.4 | 77.5 | (.57) | (.62) | (.93) | 3 | ..... | (0.00) |
| 503E | RKL(aP) | (1.00) | 1.8 | 60.6 | (1.00) | (1.73) | (1.44) | 4.0 | ..... | (1.91) |
| 504W | RK(rP) | (.55) | 1.6 | 79.8 | (.51) | (.76) | (1.18) | 1 | ..... | (0.00) |
| 504E | RKL(rP) | (1.02) | 2.6 | 66.4 | (1.09) | (1.67) | (1.44) | 5.1 | ..... | (1.67) |
| 505W | RK | (.41) | 1.0 | 55.8 | (.33) | (.44) | (.72) | 1 | ..... | (0.00) |
| 505E | RKL | (.76) | 1.8 | 66.9 | (1.03) | (1.47) | (1.37) | 5.4 | ..... | (1.75) |
| 506W | RK(sP) | (.72) | 1.8 | 78.0 | (.87) | (.83) | (1.13) | 5.1 | ..... | (.30) |
| 506E | RKL(sP) | (1.04) | 2.2 | 80.8 | (1.08) | (1.52) | (1.52) | 2.6 | ..... | (1.64) |

¹No residues. ²Crop failure.

TABLE 73.—ODIN FIELD: SERIES 500, 600, 700, 800
(Replotted from original Series 500)

| | | Bushels or (tons) per acre | | |
|----------|-------------------------------------|----------------------------|-------------------------|-----------|
| Plot No. | Soil treatment applied ¹ | 1922 Corn ² | 1923 Wheat ² | 1924 Corn |
| 501 | LeLK(bP)..... | 36.6 | 17.5 | 24.0 |
| 502 | LeLK..... | 24.6 | 6.0 | 27.4 |
| 503 | LeLK(aP)..... | 32.8 | 14.5 | 21.6 |
| 504 | LeLK(rP)..... | 32.6 | 13.3 | 29.2 |
| 505 | LeLK..... | 21.2 | 6.2 | 23.6 |
| 506 | LeLK(sP)..... | 30.2 | 16.0 | 42.4 |
| | | Oats ² | Corn | Wheat |
| 601 | LeLK(bP)..... | 1.9 | 10.8 | 22.5 |
| 602 | LeLK..... | 1.6 | 7.2 | 1.0 |
| 603 | LeLK(aP)..... | 1.9 | 9.8 | 18.8 |
| 604 | LeLK(rP)..... | 1.9 | 8.8 | 10.8 |
| 605 | LeLK..... | 1.9 | 10.2 | .7 |
| 606 | LeLK(sP)..... | 5.0 | 17.2 | 13.5 |
| | | Corn ² | Wheat ² | Corn |
| 701 | LeLK(bP)..... | 20.4 | 24.7 | 24.4 |
| 702 | LeLK..... | 20.0 | 24.2 | 28.0 |
| 703 | LeLK(aP)..... | 19.8 | 19.8 | 33.8 |
| 704 | LeLK(rP)..... | 19.6 | 18.0 | 40.8 |
| 705 | LeLK..... | 23.0 | 18.7 | 45.8 |
| 706 | LeLK(sP)..... | 25.2 | 21.2 | 26.4 |
| | | Oats ² | Corn | Wheat |
| 801 | LeLK(bP)..... | 6.6 | 35.6 | 17.2 |
| 802 | LeLK..... | 6.9 | 33.2 | 18.8 |
| 803 | LeLK(aP)..... | 7.8 | 35.0 | 17.2 |
| 804 | LeLK(rP)..... | 7.5 | 28.8 | 18.3 |
| 805 | LeLK..... | 10.6 | 29.2 | 15.8 |
| 806 | LeLK(sP)..... | 7.5 | 29.0 | 21.7 |

¹On all series potassium and phosphorus are residual. All plots of Series 700 and 800 have received a total of 16,000 pounds of limestone an acre since 1904, and no more lime will be applied on these plots until the sweet clover shows its need. All plots on Series 500 and 600 received an application of 2000 pounds of limestone an acre in 1922, and future applications will be governed by the growth of the sweet clover catch crop. ²No legume treatment.

TABLE 74.—ODIN FIELD: SWEET CLOVER PLOTS

| | | Bushels or (tons) per acre | | | | | | |
|------|------------------------|----------------------------|---------------------|-------------------|--------------------|---------------------|-------------------|-------------------|
| Year | Soil treatment applied | Three-year rotation | | | Four-year rotation | | | |
| | | Corn | Soybeans | Wheat | Corn | Soybeans | Wheat | Sweet clover |
| 1906 | RLbP..... | 38.3 | (1.90) ¹ | 28.3 | 24.0 | (1.60) ¹ | 32.7 | .. ⁽⁹⁾ |
| 1907 | RLbP..... | 46.8 | (1.27) ¹ | 24.0 | 51.5 | (1.39) ¹ | 30.0 | .. ⁽⁹⁾ |
| 1908 | RLbP..... | 48.0 | 9.6 | 30.7 | 58.3 | 8.8 | 27.7 | .. ⁽⁹⁾ |
| 1909 | RLbP..... | 24.4 | .7 | 23.3 | 39.2 | 1.5 | 25.5 | .. ⁽⁹⁾ |
| 1910 | RLbP..... | 32.7 | 3.9 | 39.4 ⁴ | 41.3 | 5.0 | 70.3 ⁴ | 6.90 |
| 1911 | RLbP..... | 25.3 | 8.0 | 12.8 | 59.5 | 7.1 | 17.2 | 3.60 |
| 1912 | RLbP..... | 54.4 | 11.1 | .. ⁽²⁾ | 68.4 | 18.6 | .. ⁽²⁾ | .. ⁽⁹⁾ |
| 1913 | RLbP..... | 7.3 | .. ⁽²⁾ | 22.7 | 10.3 | 3.9 | 40.8 | .. ⁽⁹⁾ |
| 1914 | RLbP..... | 7.3 | 2.2 | 12.8 | 2.0 | 4.4 | 23.3 | .. ⁽⁹⁾ |
| 1915 | RLbP..... | 42.0 | 1.7 | 27.8 | 59.7 | 1.7 | 24.7 | .83 |
| 1916 | RLbP..... | 18.4 | .6 | 2.2 | 19.8 | 8.0 | 2.2 | 2.78 |
| 1917 | RLbP..... | 14.0 | 5.0 | 10.0 | 19.7 | 11.1 | 39.2 | 1.25 |
| 1918 | RLbP..... | 5.5 | 3.3 | 24.4 | 2.6 | .8 | 23.0 | .. ⁽⁹⁾ |
| 1919 | RLbP..... | .7 | .. ⁽⁹⁾ | 32.8 | 7.7 | .. ⁽⁹⁾ | 26.7 | .. ⁽⁹⁾ |
| 1920 | RLbP..... | 54.7 | 19.4 | .. ⁽²⁾ | 66.7 | 21.1 | .. ⁽⁹⁾ | 1.94 |
| 1921 | RLbP..... | 20.7 | 8.3 | 26.1 | 24.0 | 11.1 | 28.1 | 6.11 |
| 1922 | RLbP..... | 19.7 | 7.2 | 17.2 | 22.3 | 6.4 | 35.3 | 3.42 |
| 1923 | RLbP..... | 49.3 | 12.5 | 16.1 | 41.7 | 23.9 | 12.2 | .36 |
| 1924 | RLbP..... | 47.3 | (.83) | 11.1 | 61.7 | 13.9 | 11.7 | .83 |

¹Cowpeas. ²Crop failure. ³Crop destroyed by grasshoppers. ⁴Oats grown as a substitute crop. ⁵Unthreshed sweet clover plowed down.

OQUAWKA FIELD, HENDERSON COUNTY

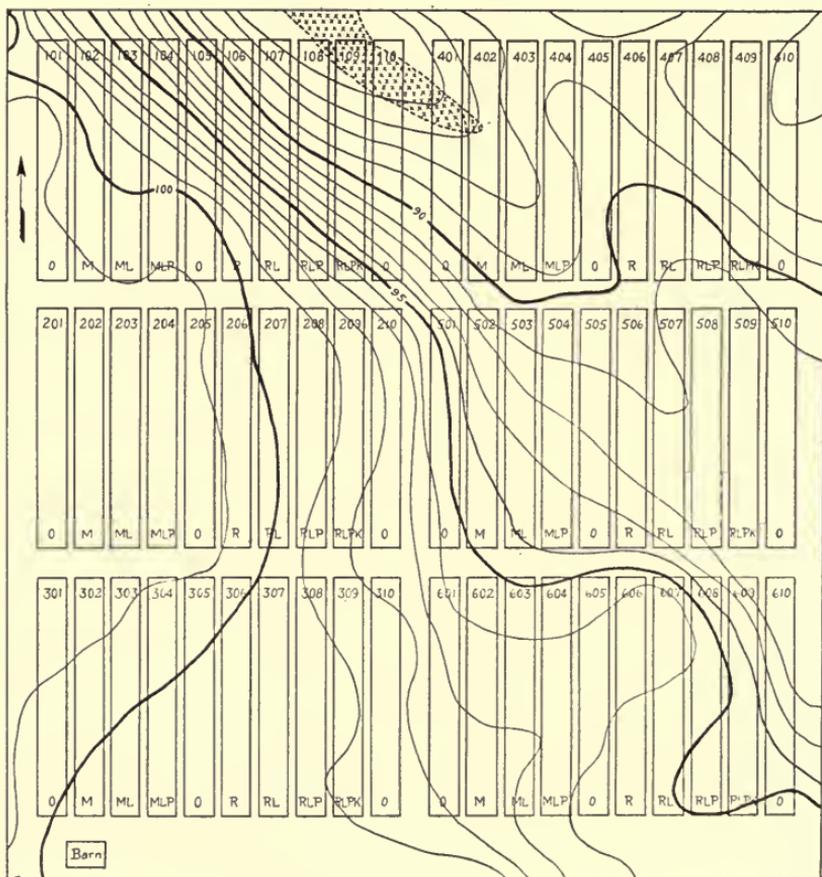
ESTABLISHED 1915

Location.—About one mile northeast of Oquawka. Chiefly in the N.W. $\frac{1}{4}$ of the N.W. $\frac{1}{4}$, Sec. 22, Twp. 11 N., R. 5 W. of the 4th P. M.

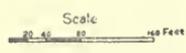
Description.—The field consists of 20 acres of terrace soil of strong acidity. The soil is mapped chiefly as Dune Sand, Terrace (Plainfield sand). A small area of Brown Sandy Loam, Terrace (Plainfield sandy loam) is present on the north side of the field. The general topography is gently rolling. The land slopes sharply on the north side of the field. The field is divided into six series of 10 fifth-acre plots each.

History.—The Oquawka field was donated by Mr. Alex Moir and others to the University for experimental purposes. No information is at hand regarding the previous history of the field.

Cropping and Soil Treatment.—A rotation of corn, soybeans, wheat, sweet clover, and rye with sweet clover seeded on the residue plots was established on five of the series, with alfalfa on the sixth. The alfalfa is allowed to remain on this series during one complete rotation of the five crops, when it is shifted to another series. Sand vetch was seeded in the corn on the residue plots until 1918, at which time the practice was discontinued. The soil treatments applied on this field are similar to those described in the introduction. The manure application is divided, a portion being applied ahead of the corn and another portion as a top dressing on the wheat.



- Dune Sand, Terrace
Plainfield sand
- Brown Sandy Loam, Terrace
Plainfield sandy loam



Contour interval-1-foot

SOIL MAP OF OQUAWKA FIELD

TABLE 75.—OQUAWKA FIELD: SERIES 100-600

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|------------------------------------|---------------------------|-------------------------|-----------------|----------------------------|-----------------|-----------------|-----------------|-----------------|------------------------------|-------|
| | | 1914 Corn ¹ | 1915 Soy- beans ² | 1916 Wheat | 1917 Sweet clover | 1918 Rye | 1919 Alfalfa | 1920 Alfalfa | 1921 Alfalfa | 1922 Alfalfa | 1923 Alfalfa | 1924 Alfalfa | |
| 101 | 0 | 25.3 | (1.16) | 10.4 | (0.00) | 12.1 | (0.00) | (.32) | (0.00) | (.50) | (.88) | (.88) | |
| 102 | ML | 21.0 | (1.24) | 13.1 | (0.00) | 13.9 | (0.00) | (.38) | (.91) | (.50) | (1.85) | (1.10) | |
| 103 | ML | 17.1 | (1.38) | 12.8 | (1.03) | 21.2 | (.80) | (.45) | (.88) | (2.25) | (3.45) | (3.45) | |
| 104 | MLrP | 23.5 | (1.53) | 14.2 | (1.47) | 26.9 | (.58) | (.49) | (.90) | (2.62) | (2.87) | (3.24) | |
| 105 | 0 | 22.7 | 8.2 | 14.3 | 0.00 | 14.0 | (0.00) | (.41) | (0.00) | (0.00) | (0.00) | (0.00) | |
| 106 | R | 24.6 | 8.5 | 13.1 | 0.00 | 13.8 | (0.00) | (.36) | (0.00) | (0.00) | (0.00) | (0.00) | |
| 107 | RL | 21.9 | 9.3 | 12.2 | 1.39 | 28.5 | (1.17) | (.41) | (1.10) | (1.66) | (1.83) | (2.73) | |
| 108 | RLrP | 24.1 | 10.0 | 15.8 | 1.48 | 34.3 | (.76) | (.49) | (.90) | (1.83) | (1.90) | (3.00) | |
| 109 | RLrPK | 26.6 | 11.7 | 10.2 | 2.52 | 32.1 | (.97) | (.60) | (1.53) | (2.04) | (1.98) | (2.97) | |
| 110 | 0 | 19.2 | (1.21) | 8.5 | (0.00) | 9.6 | (0.00) | (.19) | (0.00) | (0.00) | (0.00) | (.18) | |
| | | | | Soy- beans | Wheat ³ | Sweet clover | Soy- beans ⁴ | Rye | Corn | Soy- beans | Wheat | Sweet clover | Rye |
| 201 | 0 | 6.8 | 5.0 | (.28) | ..... | (0.00) | (.86) | 11.6 | 12.3 | 8.1 | 11.9 | 0.00 | 16.0 |
| 202 | ML | 6.5 | 11.8 | (.31) | ..... | (0.00) | (1.10) | 13.5 | 16.4 | 13.0 | 20.0 | 0.00 | 21.8 |
| 203 | ML | 6.7 | 14.6 | (.48) | ..... | (1.55) | (1.93) | 18.8 | 26.6 | 18.0 | 28.3 | 1.46 | 52.2 |
| 204 | MLrP | 7.4 | 14.0 | (.57) | ..... | (1.40) | (2.00) | 20.9 | 32.4 | 16.9 | 28.2 | 1.46 | 49.7 |
| 205 | 0 | 7.0 | 7.1 | 1.0 | ..... | (0.00) | 11.1 | 14.0 | 17.5 | 13.4 | 21.4 | 0.00 | 19.3 |
| 206 | R | 6.6 | 12.9 | 1.4 | ..... | (0.00) | 9.9 | 12.0 | 18.2 | 13.5 | 22.6 | 0.00 | 19.3 |
| 207 | RL | 6.2 | 9.2 | 2.2 | ..... | (1.10) | 14.6 | 17.2 | 50.3 | 13.1 | 25.2 | 2.04 | 44.6 |
| 208 | RLrP | 6.4 | 12.1 | 1.8 | ..... | (1.03) | 15.8 | 17.6 | 53.9 | 16.0 | 28.5 | 1.63 | 39.6 |
| 209 | RLrPK | 4.9 | 8.3 | 2.0 | ..... | (1.15) | 16.6 | 18.0 | 62.6 | 15.7 | 26.1 | 1.75 | 50.6 |
| 210 | 0 | 6.2 | 3.5 | (.22) | ..... | (0.00) | (.62) | 9.4 | 9.4 | 7.4 | 18.3 | 0.00 | 9.9 |
| | | | | Cow- peas ¹ | Rye ² | Wheat | Sweet clover | Rye | Corn | Soy- beans | Wheat | Sweet clover ⁵ | Rye |
| 301 | 0 | (.50) | 21.4 | 14.5 | (1.48) | 8.3 | (0.00) | (0.00) | 13.7 | 23.9 | 8.8 | 11.7 | ..... |
| 302 | ML | (.55) | 21.0 | 12.7 | (1.62) | 10.2 | (0.00) | (0.00) | 12.5 | 22.5 | 8.1 | 15.2 | ..... |
| 303 | ML | (.54) | 20.7 | 13.2 | (1.70) | 12.4 | (1.18) | (1.08) | 25.6 | 42.6 | 11.5 | 19.4 | ..... |
| 304 | MLrP | (.55) | 23.4 | 13.0 | (1.56) | 14.6 | (1.07) | (1.07) | 17.3 | 41.0 | 12.3 | 19.3 | ..... |
| 305 | 0 | 3.5 | 19.1 | 11.8 | 7.0 | 12.0 | 0.00 | 0.00 | 14.8 | 21.4 | 7.8 | 14.0 | ..... |
| 306 | R | 3.6 | 21.2 | 13.0 | 4.3 | 11.1 | 0.00 | 0.00 | 13.4 | 25.4 | 7.7 | 15.2 | ..... |
| 307 | RL | 4.8 | 21.7 | 12.6 | 8.2 | 12.3 | (.74) | 3.67 | 29.2 | 56.4 | 10.6 | 21.8 | ..... |
| 308 | RLrP | 4.5 | 21.8 | 12.1 | 8.2 | 11.5 | (.56) | 2.92 | 26.8 | 57.7 | 13.8 | 20.1 | ..... |
| 309 | RLrPK | 4.3 | 21.6 | 12.1 | 9.6 | 11.8 | (.60) | 3.17 | 25.9 | 62.7 | 14.0 | 18.7 | ..... |
| 310 | 0 | 3.9 | 17.9 | 7.5 | (1.18) | 7.2 | (0.00) | ..... | 8.3 | 22.6 | 5.3 | 11.2 | ..... |

¹Lime only. ²No manure. ³Crop failure. ⁴Soybeans seeded after sweet clover was removed in 1918. ⁵Sweet clover seed not harvested in 1924; growth plowed down on residue plots.

TABLE 75.—Concluded

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|-----------------------|------------------------|----------------------------|------------------------------|--------------------------|--------------|------------------|---------------|----------------------|-------------|--------------|------------------|---------------|
| | | 1914 Wheat ¹ | 1915 Cowpeas ² | 1916 Rye ³ | 1917 Corn | 1918 Soybeans | 1919 Wheat | 1920 Sweet clover | 1921 Rye | 1922 Corn | 1923 Soybeans | 1924 Wheat |
| 401 | 0..... | 6.2 | (1.28) | 21.2 | 24.6 | (1.44) | 12.6 | (0.00) | 12.1 | 32.9 | 7.3 | 18.4 |
| 402 | M..... | 5.4 | (1.44) | 23.2 | 30.8 | (1.44) | 15.7 | (0.00) | 13.4 | 41.2 | 8.0 | 25.7 |
| 403 | ML..... | 6.0 | (1.51) | 25.0 | 32.4 | (1.48) | 16.2 | (1.05) | 17.1 | 43.2 | 8.8 | 31.0 |
| 404 | MLrP..... | 7.8 | (1.53) | 26.3 | 34.1 | (1.53) | 16.2 | (1.09) | 16.0 | 40.8 | 9.8 | 32.2 |
| 405 | 0..... | 7.2 | 7.8 | 19.1 | 24.2 | 4.8 | 11.7 | (0.00) | 9.4 | 31.0 | 6.0 | 19.1 |
| 406 | R..... | 7.9 | 7.9 | 21.1 | 26.1 | 5.6 | 12.1 | (0.00) | 10.4 | 31.3 | 6.8 | 24.2 |
| 407 | RL..... | 7.1 | 8.3 | 22.0 | 28.5 | 8.6 | 13.8 | (1.09) | 21.8 | 46.1 | 11.8 | 27.3 |
| 408 | RLrP..... | 5.8 | 8.7 | 21.9 | 24.2 | 8.1 | 13.2 | (1.19) | 19.0 | 39.0 | 9.2 | 24.1 |
| 409 | RLrPK..... | 6.8 | 9.4 | 21.1 | 24.9 | 8.0 | 13.5 | (1.32) | 18.2 | 41.9 | 6.3 | 23.1 |
| 410 | 0..... | 7.0 | (1.22) | 17.4 | 21.0 | (.61) | 9.8 | (0.00) | 9.5 | 28.6 | 5.6 | 18.8 |
| Soybeans ¹ | | | | | | | | | | | | |
| 501 | 0..... | (.21) | 4.8 | (.46) | 11.2 | 7.1 | (.46) | 2.1 | 0.00 | 9.1 | 18.0 | 11.1 |
| 502 | M..... | (.22) | 6.2 | (.40) | 13.5 | 8.1 | (.80) | 3.3 | 0.00 | 9.4 | 21.8 | 18.3 |
| 503 | ML..... | (.22) | 10.1 | (.45) | 14.9 | 10.9 | (1.05) | 6.5 | .17 | 29.1 | 24.3 | 20.8 |
| 504 | MLrP..... | (.23) | 10.9 | (.43) | 12.9 | 6.7 | (.90) | 5.0 | .17 | 25.5 | 20.7 | 20.6 |
| 505 | 0..... | .7 | 4.6 | 2.0 | 12.1 | 5.3 | 1.7 | 1.6 | 0.00 | 7.7 | 18.0 | 8.5 |
| 506 | R..... | .8 | 8.3 | 2.2 | 17.2 | 10.5 | 2.3 | 4.2 | 0.00 | 11.3 | 29.3 | 12.3 |
| 507 | RL..... | .8 | 8.2 | .6 | 17.8 | 47.9 | 4.6 | 8.2 | .17 | 26.6 | 33.5 | 22.2 |
| 508 | RLrP..... | .8 | 11.5 | .3 | 18.2 | 50.0 | 5.6 | 10.3 | .17 | 29.6 | 33.2 | 20.6 |
| 509 | RLrPK..... | 1.2 | 10.1 | .3 | 18.8 | 52.8 | 4.7 | 10.8 | .33 | 34.7 | 36.8 | 20.4 |
| 510 | 0..... | (.22) | 8.2 | (.40) | 14.9 | 14.8 | (.60) | 4.6 | 0.00 | 15.3 | 33.3 | 8.2 |
| Sweet clover | | | | | | | | | | | | |
| 601 | 0..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 602 | M..... | ..... | ..... | ..... | ..... | (0.00) | 22.1 | (.80) | 4.3 | 0.00 | 11.8 | 10.1 |
| 603 | ML..... | ..... | ..... | ..... | ..... | (.88) | 33.3 | (.88) | 6.3 | 0.00 | 13.1 | 17.1 |
| 604 | MLrP..... | ..... | ..... | ..... | ..... | (4.43) | 42.8 | (1.62) | 14.9 | 1.54 | 32.2 | 30.0 |
| 605 | 0..... | ..... | ..... | ..... | ..... | (5.00) | 33.0 | (1.45) | 14.8 | 1.33 | 31.5 | 33.9 |
| 606 | R..... | ..... | ..... | ..... | ..... | (0.00) | 20.5 | 2.8 | 6.1 | 0.00 | 10.3 | 11.2 |
| 607 | RL..... | ..... | ..... | ..... | ..... | (0.00) | 21.6 | 3.9 | 5.8 | 0.00 | 12.1 | 12.9 |
| 608 | RLrP..... | ..... | ..... | ..... | ..... | (4.56) | 27.1 | 9.2 | 15.4 | 1.04 | 26.3 | 25.9 |
| 609 | RLrPK..... | ..... | ..... | ..... | ..... | (4.45) | 23.5 | 8.3 | 11.8 | 1.04 | 26.0 | 21.4 |
| 610 | 0..... | ..... | ..... | ..... | ..... | (4.01) | 35.7 | 5.8 | 10.8 | .83 | 29.4 | 22.4 |
|  |  | ..... | ..... | ..... | ..... | (0.00) | 12.0 | (.38) | 3.0 | 0.00 | 10.0 | 4.9 |

¹Lime only. ²Growth plowed down. ³No manure.

PALESTINE FIELD, CRAWFORD COUNTY

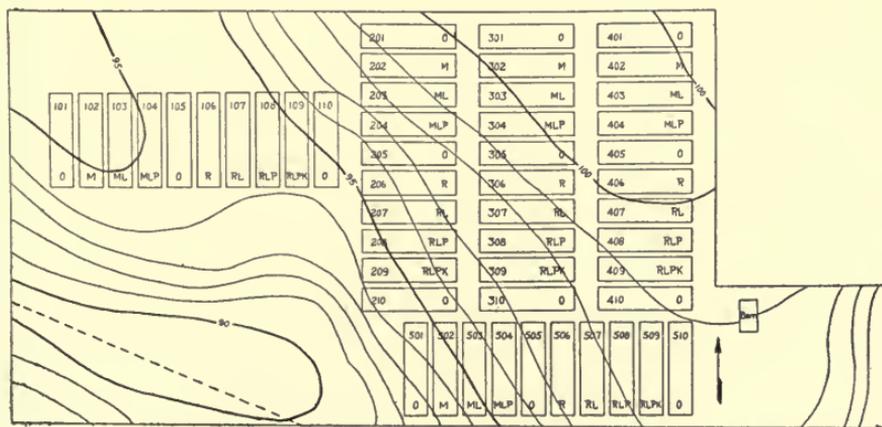
ESTABLISHED 1919

Location.—Just south of the Township High School in Palestine. A part of the S.W. $\frac{1}{4}$ of the S.W. $\frac{1}{4}$, Sec. 34, Twp. 7 N., R. 11 W. of the 2d P. M.

Description.—The field consists of 16 acres of terrace soil of strong acidity. Only one soil type has been mapped, namely, Brown Sandy Loam, Terrace (Plainfield sandy loam). The topography is undulating. The drainage is naturally good except for a deep hollow in the southwest corner, where no plots are laid. The field is divided into five series of 10 tenth-acre plots each.

History.—The Palestine field was donated by the schools of Palestine township to the University for experimental purposes. No information is at hand regarding the previous history of the field.

Cropping and Soil Treatment.—A rotation of corn, soybeans, rye, sweet clover, and wheat with sweet clover seeded on the residue plots was established on the five series. The soil treatments have been similar to those described in the introduction.



Contour interval - 1 foot
SOIL MAP OF PALESTINE FIELD

TABLE 76.—PALESTINE FIELD: SERIES 100-500

| | | Bushels or (tons) per acre | | | | |
|----------|------------------------|----------------------------|----------------------------|--------------|-------------------|--------------|
| Plot No. | Soil treatment applied | 1920 Corn ¹ | 1921 Soybeans ² | 1922 Rye | 1923 Sweet clover | 1924 Wheat |
| 101 | O..... | 25.2 | 6.3 | 9.8 | 0.00 | 7.8 |
| 102 | M..... | 25.2 | 8.2 | 10.0 | .10 | 10.2 |
| 103 | ML..... | 24.6 | 8.5 | 11.1 | .41 | 14.8 |
| 104 | MLrP..... | 21.2 | 9.2 | 10.9 | .38 | 16.7 |
| 105 | O..... | 21.2 | 7.8 | 9.3 | 0.00 | 8.2 |
| 106 | R..... | 22.2 | 8.3 | 10.2 | 0.00 | 9.3 |
| 107 | RL..... | 22.6 | 9.8 | 10.5 | .13 | 15.3 |
| 108 | RLrP..... | 29.2 | 11.0 | 12.1 | .31 | 17.8 |
| 109 | RLrPK..... | 31.0 | 9.8 | 11.8 | .41 | 17.0 |
| 110 | O..... | 24.2 | 8.7 | 9.6 | .10 | 7.7 |
| | | Wheat ¹ | Corn | Soybeans | Rye | Sweet clover |
| 201 | O..... | 6.8 | 22.4 | 6.0 | 10.9 | 0.00 |
| 202 | M..... | 6.0 | 21.0 | 7.7 | 12.1 | 0.00 |
| 203 | ML..... | 6.8 | 24.0 | 7.8 | 12.3 | 3.17 |
| 204 | MLrP..... | 6.7 | 22.2 | 7.2 | 12.7 | 1.83 |
| 205 | O..... | 4.7 | 19.2 | 7.0 | 8.9 | 0.00 |
| 206 | R..... | 6.0 | 20.4 | 7.2 | 9.3 | .17 |
| 207 | RL..... | 6.2 | 23.6 | 8.7 | 10.7 | 4.00 |
| 208 | RLrP..... | 5.5 | 19.8 | 7.7 | 11.8 | 6.00 |
| 209 | RLrPK..... | 5.0 | 25.8 | 8.3 | 11.9 | 6.17 |
| 210 | O..... | 4.5 | 19.8 | 6.0 | 10.5 | 0.00 |
| | | Soybeans ¹ | Wheat ² | Corn | Soybeans | Rye |
| 301 | O..... | (1.01) | 11.7 | 26.0 | 20.2 | 13.2 |
| 302 | M..... | (.89) | 10.8 | 24.4 | 20.3 | 13.8 |
| 303 | ML..... | (1.00) | 9.8 | 26.4 | 23.5 | 14.3 |
| 304 | MLrP..... | (.87) | 8.7 | 25.6 | 25.3 | 14.8 |
| 305 | O..... | 5.7 | 8.2 | 13.8 | 16.0 | 10.4 |
| 306 | R..... | 6.8 | 8.3 | 18.4 | 17.7 | 11.4 |
| 307 | RL..... | 10.2 | 11.3 | 33.0 | 26.5 | 15.3 |
| 308 | RLrP..... | 9.0 | 11.0 | 36.2 | 27.2 | 15.7 |
| 309 | RLrPK..... | 9.0 | 9.7 | 37.4 | 27.5 | 15.9 |
| 310 | O..... | (.90) | 9.5 | 21.6 | 17.0 | 12.0 |
| | | Rye ¹ | Sweet clover ² | Wheat | Corn | Soybeans |
| 401 | O..... | 18.6 | 0.00 | 25.0 | 15.4 | (1.05) |
| 402 | M..... | 17.1 | 0.00 | 22.8 | 10.8 | (1.10) |
| 403 | ML..... | 13.9 | .50 | 20.7 | 5.6 | (1.18) |
| 404 | MLrP..... | 16.8 | 1.50 | 24.2 | 5.0 | (1.28) |
| 405 | O..... | 15.0 | 0.00 | 18.0 | 9.0 | (1.05) |
| 406 | R..... | 13.0 | 0.00 | 15.5 | 15.0 | (1.10) |
| 407 | RL..... | 15.5 | .33 | 22.2 | 12.0 | (1.30) |
| 408 | RLrP..... | 15.7 | .17 | 22.0 | 12.0 | (1.33) |
| 409 | RLrPK..... | 17.7 | .83 | 23.3 | 12.2 | (1.48) |
| 410 | O..... | 13.9 | 0.00 | 17.3 | 13.8 | (1.03) |
| | | Soybeans ¹ | Rye ² | Sweet clover | Wheat | Corn |
| 501 | O..... | (.72) | 8.8 | 0.00 | 7.0 | 20.4 |
| 502 | M..... | (.80) | 8.9 | 0.00 | 9.5 | 26.2 |
| 503 | ML..... | (.85) | 9.5 | 2.17 | 19.8 | 33.4 |
| 504 | MLrP..... | (.80) | 11.4 | 2.50 | 25.0 | 38.2 |
| 505 | O..... | 5.0 | 12.1 | 0.00 | 11.5 | 25.0 |
| 506 | R..... | 5.0 | 10.7 | 0.00 | 12.2 | 27.0 |
| 507 | RL..... | 6.2 | 11.1 | 2.67 | 23.0 | 31.4 |
| 508 | RLrP..... | 6.0 | 10.0 | 2.50 | 25.6 | 32.6 |
| 509 | RLrPK..... | 6.3 | 11.3 | 2.67 | 26.0 | 33.8 |
| 510 | O..... | (.83) | 9.6 | 0.00 | 6.3 | 25.0 |

¹Minerals only. ²No manure.

PANA FIELD, CHRISTIAN COUNTY

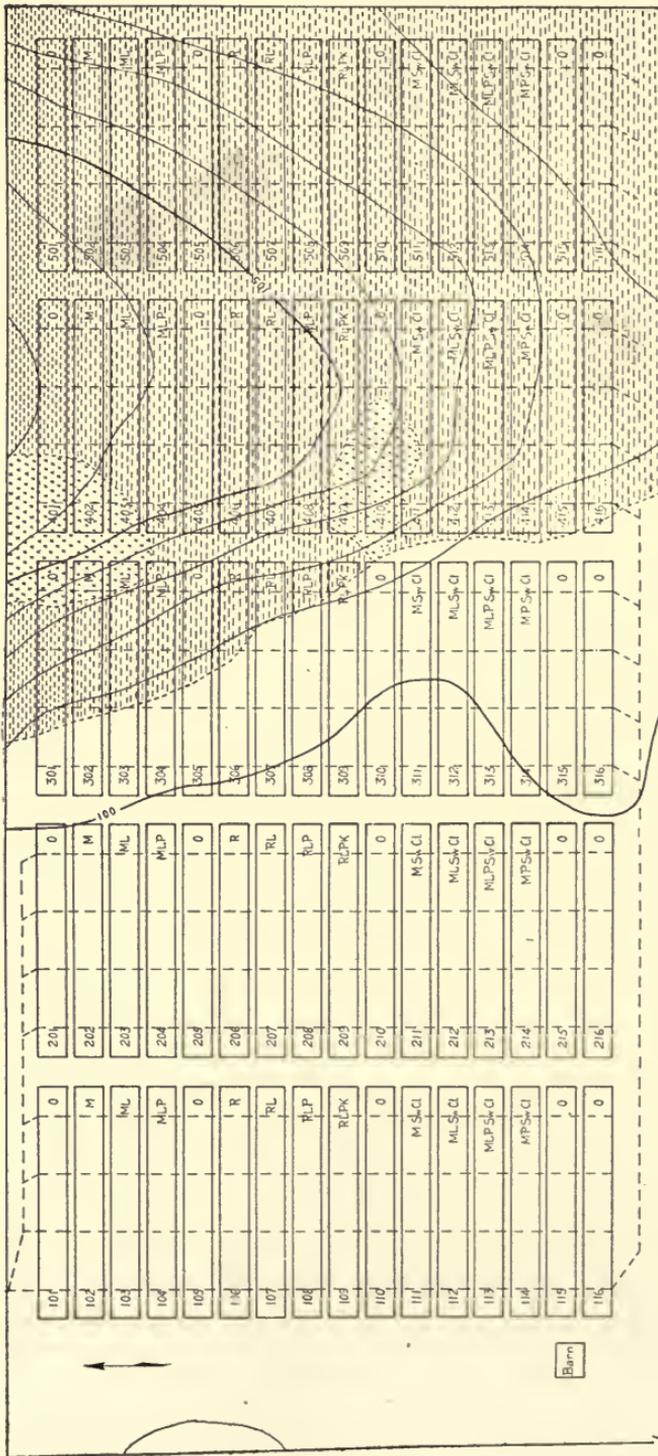
ESTABLISHED 1912—DISCONTINUED 1924

Location.—About a mile north and east of the Illinois Central and Big Four passenger station at Pana. A part of the N. $\frac{1}{2}$ of the N.W. $\frac{1}{4}$, Sec. 15, Twp. 11 N., R. 1 E. of the 3d P. M.

Description.—The field consisted of 29.31 acres of dark-colored loessial upland soil of medium to strong acidity. Three types of soil have been mapped on this field: (1) Brown-Gray Silt Loam On Tight Clay (Putnam silt loam); (2) Grayish Brown Silt Loam On Tight Clay (Grundy silt loam, grayish phase); and (3) Brown Silt Loam On Tight Clay (Grundy silt loam, tight phase). The land is gently rolling, flattening out toward the west. It was thoroly tilled, but did not drain well on account of the impervious nature of the sub-soil. The field was divided into five series, each of which contained 16 fifth-acre plots.

History.—The Pana field was donated by the late Captain Kitchell to the University for experimental purposes. Little is known of the previous history of the field except that it had been in timothy meadow before 1912.

Cropping and Soil Treatment.—The original rotation on this field was corn, oats, clover, and wheat on four series, with alfalfa on the fifth series during one complete rotation of the four crops, when the alfalfa was changed to another series. The soil treatment methods were similar to those described in the introduction except that the order of treatment on the last six plots was varied some. These methods were followed without change until 1921, when the return of the oat straw was discontinued. In 1922 a change was made in the rotation. Owing to the differences in soil type between the flatter and the more rolling parts of the field, corresponding somewhat to the land occupied by Series 100 and 200 on the one hand, and to that occupied by Series 300, 400, and 500 on the other hand, it seemed advisable to plan two distinct rotations. A rotation of corn and wheat was planned for Series 100 and 200, and a rotation of corn, oats, and wheat for the other three series. No manure or residues were returned to the land in either rotation since the change, excepting the legume residues grown for the purpose. Biennial sweet clover was seeded in the wheat on all plots in both rotations, and in the three-year rotation hubam clover was seeded in the oats. The application of limestone to the limed plots was discontinued. A single application at the acre rate of 2 tons was given to Plots 2, 6, 11, 14, and 16 of all series. In 1923 the phosphate applications were evened up to 4 tons an acre.



Scale
0 20 40 60 80 100 feet
Contour interval -1 foot

SOIL MAP OF PANA FIELD

TABLE 77.—PANA FIELD: SERIES 100-500

Bushels or (tons) per acre

| Plot No. | Soil treatment applied | 1912 | | 1913 | | 1914 | | 1915 | | 1916 | | 1917 | | 1918 | | 1919 | | 1920 | | 1921 | | 1922 | | 1923 | | 1924 | |
|----------|------------------------|-------------------|--------------------|---------------------|--------------------|------|--------|--------|--------|-------|-------|-------|-------|--------|--------|-------|-------|-------|----------------------|---------|-------|-------|--------|-------|-------|-------|-------|
| | | Oats ¹ | Wheat ² | Clover ² | Wheat ² | Oats | Wheat | Clover | Oats | Wheat | Oats | Wheat | Oats | Wheat | Oats | Wheat | Oats | Wheat | Alfalfa ³ | Alfalfa | Oats | Wheat | Clover | Wheat | Corn | Wheat | Corn |
| 101 | 0 | ..... | (.55) | 41.8 | 20.7 | 53.6 | (2.30) | 3.0 | (1.05) | ..... | ..... | ..... | ..... | (2.90) | 44.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 102 | ML | ..... | (.44) | 40.7 | 26.8 | 51.6 | (2.45) | 3.2 | (1.17) | ..... | ..... | ..... | ..... | (3.52) | 50.7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 103 | ML | ..... | (.38) | 42.1 | 27.6 | 58.9 | (2.19) | 6.2 | (1.37) | ..... | ..... | ..... | ..... | (3.73) | 61.1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 104 | MLrP | ..... | (.43) | 42.7 | 27.6 | 55.8 | (2.21) | 11.2 | (1.42) | ..... | ..... | ..... | ..... | (3.79) | 58.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 105 | 0 | ..... | .50 | 39.7 | 24.2 | 51.6 | .58 | 10.9 | (1.19) | ..... | ..... | ..... | ..... | (3.54) | 51.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 106 | R | ..... | 1.08 | 41.1 | 24.1 | 50.2 | .67 | 10.4 | (1.10) | ..... | ..... | ..... | ..... | (3.42) | 60.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 107 | RL | ..... | .92 | 43.3 | 28.0 | 57.6 | .50 | 14.5 | (1.40) | ..... | ..... | ..... | ..... | (3.44) | 58.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 108 | RLrP | ..... | .92 | 41.8 | 25.8 | 53.3 | .67 | 19.7 | (1.45) | ..... | ..... | ..... | ..... | (3.66) | 57.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 109 | RLrPK | ..... | .92 | 42.1 | 28.9 | 55.0 | .83 | 15.8 | (1.47) | ..... | ..... | ..... | ..... | (3.87) | 54.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 110 | 0 | ..... | (.38) | 39.3 | 23.8 | 52.2 | (2.33) | 9.2 | (1.14) | ..... | ..... | ..... | ..... | (3.31) | 55.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 111 | CvM | ..... | (.38) | 39.2 | 23.0 | 54.7 | (2.10) | 8.5 | (1.14) | ..... | ..... | ..... | ..... | (3.13) | 45.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 112 | CvM | ..... | (.34) | 39.4 | 27.4 | 50.3 | (2.05) | 11.8 | (1.30) | ..... | ..... | ..... | ..... | (3.52) | 53.6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 113 | CvMLrP | ..... | (.41) | 33.9 | 30.7 | 56.1 | (2.46) | 25.8 | (1.37) | ..... | ..... | ..... | ..... | (3.12) | 57.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 114 | CvMrP | ..... | (.46) | 39.8 | 25.6 | 60.5 | (2.28) | 27.0 | (1.28) | ..... | ..... | ..... | ..... | (1.59) | 66.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 115 | 0 | ..... | (.71) | 31.5 | 30.7 | 56.1 | (2.13) | 30.6 | (1.19) | ..... | ..... | ..... | ..... | (1.47) | 62.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 116 | 0 | ..... | (.63) | 36.2 | 31.1 | 46.1 | (2.19) | 18.4 | (1.21) | ..... | ..... | ..... | ..... | (1.22) | 60.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 201 | 0 | ..... | 23.6 | 11.1 | (.41) | 26.1 | 83.8 | (2.00) | 30.8 | 21.8 | 21.8 | 21.8 | 21.8 | 30.5 | (2.15) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 202 | ML | ..... | 24.0 | 11.1 | (.40) | 29.2 | 79.2 | (2.61) | 31.3 | 18.9 | 18.9 | 18.9 | 18.9 | 40.9 | (2.21) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 203 | ML | ..... | 21.0 | 11.4 | (.57) | 34.2 | 96.7 | (2.38) | 32.4 | 22.0 | 22.0 | 22.0 | 22.0 | 43.0 | (2.63) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 204 | MLrP | ..... | 21.3 | 11.7 | (.67) | 34.8 | 90.6 | (2.06) | 33.3 | 22.2 | 22.2 | 22.2 | 22.2 | 43.3 | (2.59) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 205 | 0 | ..... | 24.2 | 11.4 | .33 | 29.5 | 90.5 | (1.44) | 29.7 | 13.8 | 13.8 | 13.8 | 13.8 | 27.7 | (2.19) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 206 | R | ..... | 26.4 | 10.6 | .83 | 31.8 | 93.8 | (1.16) | 26.7 | 20.5 | 20.5 | 20.5 | 20.5 | 41.9 | (2.40) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 207 | RL | ..... | 26.3 | 11.4 | 1.17 | 33.5 | 94.8 | (1.04) | 31.9 | 17.7 | 17.7 | 17.7 | 17.7 | 58.1 | (3.23) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 208 | RLrP | ..... | 27.9 | 12.0 | 1.33 | 36.0 | 98.0 | (2.14) | 32.9 | 15.4 | 15.4 | 15.4 | 15.4 | 54.4 | (3.28) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 209 | RLrPK | ..... | 27.6 | 11.4 | 1.50 | 36.3 | 95.2 | (2.27) | 32.5 | 15.3 | 15.3 | 15.3 | 15.3 | 53.3 | (3.17) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 210 | 0 | ..... | 28.8 | 13.4 | (.81) | 36.4 | 88.1 | (1.91) | 26.7 | 21.2 | 21.2 | 21.2 | 21.2 | 38.8 | (2.47) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 211 | CvM | ..... | 28.7 | 9.5 | (.93) | 36.1 | 99.4 | (1.59) | 27.5 | 19.8 | 19.8 | 19.8 | 19.8 | 41.2 | (2.52) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 212 | CvML | ..... | 25.9 | 12.3 | (1.04) | 35.4 | 94.7 | (2.70) | 31.2 | 27.8 | 27.8 | 27.8 | 27.8 | 48.9 | (3.01) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 213 | CvMLrP | ..... | 31.0 | 10.6 | (1.32) | 36.2 | 99.5 | (2.77) | 30.9 | 21.3 | 21.3 | 21.3 | 21.3 | 50.8 | (2.94) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 214 | CvMrP | ..... | 30.5 | 10.2 | (1.08) | 35.5 | 100.8 | (2.82) | 30.2 | 27.1 | 27.1 | 27.1 | 27.1 | 45.6 | (2.76) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 215 | 0 | ..... | 30.1 | 8.4 | (.93) | 37.9 | 91.9 | (1.83) | 30.3 | 28.8 | 28.8 | 28.8 | 28.8 | 38.3 | (2.41) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 216 | 0 | ..... | 26.3 | 11.7 | (.83) | 38.7 | 91.9 | (2.02) | 29.8 | 26.3 | 26.3 | 26.3 | 26.3 | 41.1 | (2.18) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

¹No soil treatment. ²No residues or manure. ³No manure. ⁴Nurse crop for alfalfa seeding. ⁵Crop failure. ⁶Substituted for wheat.

TABLE 77.—Continued

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | Soil treatment applied | 1923 Wheat | 1924 Corn | |
|----------|------------------------|----------------------------|------------------------|--------------------|-------------|------------|-----------|-----------|----------------|------------|-----------|------------------------|------------|-----------|-------------------|
| | | 1912 Oats ¹ | 1913 Corn | 1914 Oats | 1915 Clover | 1916 Wheat | 1917 Corn | 1918 Oats | 1919 Soy-beans | 1920 Wheat | 1921 Corn | | | | 1922 Oats |
| 301 | 0 | ..... | 29.5 | 10.2 | (2.87) | 12.6 | 44.9 | 35.3 | (1.81) | 15.2 | 29.0 | 19.5 | Le | 10.6 | 34.7 |
| 302 | M | ..... | 28.4 | 6.7 | (3.43) | 12.9 | 47.5 | 44.2 | (1.98) | 14.8 | 24.0 | 28.1 | LeML | 10.7 | 49.4 |
| 303 | ML | ..... | 28.9 | 10.2 | (3.75) | 14.0 | 49.5 | 26.7 | (1.88) | 25.2 | 39.0 | 34.1 | LeML | 20.0 | 54.4 |
| 304 | MLrP | ..... | 33.7 | 4.5 | (3.43) | 8.0 | 44.7 | 40.8 | (1.92) | 22.8 | 35.9 | 33.0 | LeMLrP | 19.2 | 52.6 |
| 305 | 0 | ..... | 28.6 | 4.5 | 1.67 | 7.5 | 35.9 | 37.8 | (1.88) | 7.2 | 19.9 | 22.8 | Le | 9.3 | 46.6 |
| 306 | R | ..... | 31.8 | 6.4 | 1.67 | 10.8 | 48.0 | 45.5 | 11.8 | 7.5 | 28.3 | 25.0 | LeL | 12.6 | 44.6 |
| 307 | RL | ..... | 34.4 | 8.1 | 1.58 | 11.3 | 49.3 | 49.2 | 9.7 | 17.8 | 43.7 | 40.8 | LeL | 21.0 | 50.8 |
| 308 | RLrP | ..... | 34.0 | 11.2 | 1.83 | 10.0 | 53.7 | 37.3 | 9.2 | 20.8 | 39.6 | 40.8 | LeLrP | 21.9 | 57.6 |
| 309 | RLrPK | ..... | 35.3 | 10.0 | 1.75 | 17.1 | 54.7 | 44.1 | 10.3 | 15.0 | 44.8 | 42.5 | LeLrPK | 22.3 | 43.4 |
| 310 | 0 | ..... | 29.7 | 10.5 | (3.80) | 8.4 | 47.2 | 39.5 | (2.14) | 9.5 | 31.5 | 30.9 | Le | 10.5 | 40.6 |
| 311 | CvM | ..... | 21.8 | 12.0 | (3.91) | 17.8 | 52.4 | 42.3 | (2.03) | 13.8 | 37.9 | 35.9 | LeML | 12.4 | 48.8 |
| 312 | CvML | ..... | 24.5 | 11.7 | (3.79) | 9.2 | 51.4 | 35.8 | (1.94) | 19.3 | 39.2 | 41.6 | LeML | 17.7 | 48.8 |
| 313 | CvMLrP | ..... | 21.5 | 11.7 | (3.58) | 12.0 | 50.0 | 41.2 | (1.88) | 15.3 | 42.0 | 43.6 | LeMLrP | 19.1 | 54.6 |
| 314 | CvMrP | ..... | 19.9 | 10.5 | (3.96) | 11.1 | 42.2 | 42.0 | (1.80) | 11.7 | 31.3 | 34.8 | LeMLrP | 12.3 | 46.0 |
| 315 | 0 | ..... | 25.8 | 6.4 | (3.69) | 9.8 | 42.7 | 33.3 | (1.96) | 9.2 | 26.9 | 28.6 | Le | 8.5 | 52.4 |
| 316 | 0 | ..... | 26.1 | 6.4 | (3.62) | 13.3 | 43.6 | 35.0 | (1.47) | 11.3 | 22.1 | 29.2 | LeL | 10.8 | 53.2 |
| | | | Soy-beans ² | Wheat ² | Corn | Wheat | Wheat | Corn | Oats | Soy-beans | Wheat | Corn | | Oats | Oats ³ |
| 401 | 0 | ..... | 19.7 | 17.1 | 41.1 | (1.01) | 11.8 | 23.6 | 31.6 | (.33) | 18.1 | 18.7 | Le | 30.2 | 36.4 |
| 402 | M | ..... | 16.5 | 15.4 | 51.1 | (1.40) | 12.2 | 28.1 | 35.5 | (.23) | 28.8 | 11.0 | LeML | 34.5 | 43.1 |
| 403 | ML | ..... | 17.7 | 17.0 | 55.0 | (2.44) | 25.8 | 26.5 | 42.8 | (.95) | 37.7 | 22.7 | LeML | 47.8 | 62.0 |
| 404 | MLrP | ..... | 15.0 | 13.5 | 55.9 | (2.38) | 32.8 | 38.4 | 46.6 | (.80) | 34.7 | 28.3 | LeMLrP | 46.6 | 63.4 |
| 405 | 0 | ..... | 11.9 | 10.7 | 55.9 | 1.58 | 13.0 | 24.6 | 30.0 | 1.2 | 18.9 | 7.3 | Le | 29.1 | 35.8 |
| 406 | R | ..... | 16.6 | 12.7 | 37.8 | 2.25 | 20.7 | 30.4 | 40.8 | 3.2 | 20.7 | 29.1 | LeL | 33.1 | 51.4 |
| 407 | RL | ..... | 8.4 | 17.6 | 64.2 | 2.42 | 31.7 | 32.0 | 41.9 | 9.8 | 34.3 | 41.6 | LeL | 55.5 | 67.8 |
| 408 | RLrP | ..... | 23.4 | 28.9 | 61.1 | 2.08 | 44.2 | 33.9 | 51.2 | 9.5 | 37.9 | 45.1 | LeLrP | 58.4 | 70.0 |
| 409 | RLrPK | ..... | 9.3 | 21.2 | 70.5 | 2.00 | 38.7 | 26.3 | 51.9 | 9.1 | 36.8 | 39.3 | LeLrPK | 63.0 | 65.9 |
| 410 | 0 | ..... | 24.8 | 21.6 | 59.2 | (2.27) | 12.2 | 33.1 | 38.6 | (.89) | 20.2 | 22.3 | Le | 37.5 | 53.9 |
| 411 | CvM | ..... | 24.2 | 24.5 | 66.7 | (2.21) | 22.2 | 27.6 | 51.7 | (.75) | 19.8 | 24.2 | LeML | 28.9 | 53.4 |
| 412 | CvML | ..... | 21.8 | 21.9 | 56.9 | (2.66) | 26.6 | 30.7 | 43.0 | (1.35) | 32.8 | 35.2 | LeML | 56.4 | 69.5 |
| 413 | CvMLrP | ..... | 25.3 | 23.3 | 68.1 | (2.51) | 36.5 | 34.6 | 33.0 | (1.32) | 27.5 | 39.3 | LeMLrP | 59.5 | 63.4 |
| 414 | CvMrP | ..... | 19.4 | 19.4 | 54.1 | (2.14) | 35.2 | 30.1 | 48.0 | (.46) | 21.3 | 23.6 | LeMLrP | 52.3 | 55.8 |
| 415 | 0 | ..... | 20.1 | 17.0 | 63.3 | (1.82) | 13.5 | 22.3 | 34.0 | (.42) | 18.1 | 15.3 | Le | 31.7 | 43.4 |
| 416 | 0 | ..... | 15.7 | 18.1 | 55.6 | (1.54) | 12.6 | 20.5 | 31.1 | (.33) | 17.3 | 13.6 | LeL | 28.6 | 43.9 |

¹No soil treatment.²No manure. ³Wheat winterkilled; oats grown as a substitute crop.

TABLE 77.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | 1923 Corn | 1924 Oats |
|----------|------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------|--------------|-----------------------|---------------|---------------------------|--------------|--------------|
| | | 1913 Alfalfa ¹ | 1914 Alfalfa ¹ | 1915 Alfalfa ¹ | 1916 Alfalfa ¹ | 1917 Alfalfa ¹ | 1918 Alfalfa ¹ | 1919 Corn | 1920 Oats | 1921 Soy- beans | 1922 Wheat | Soil treatment applied | | |
| 501 | 0..... | ..... | ..... | (1.88) | ..... | (.16) | (.81) | 29.1 | 31.2 | 16.0 | 10.3 | Le..... | 19.0 | 43.8 |
| 502 | M..... | ..... | ..... | (1.59) | ..... | (.60) | (.92) | 26.7 | 38.9 | 16.7 | 12.6 | LeML..... | 23.2 | 43.4 |
| 503 | ML..... | ..... | ..... | (3.46) | ..... | (2.55) | (3.56) | 44.3 | 58.6 | 15.5 | 19.5 | LeML..... | 30.0 | 53.3 |
| 504 | MLP..... | ..... | ..... | (3.73) | ..... | (2.62) | (3.73) | 48.9 | 45.3 | 16.5 | 22.1 | LeMLP..... | 31.9 | 53.3 |
| 505 | 0..... | ..... | ..... | (1.87) | ..... | (.38) | (1.60) | 36.1 | 44.5 | 19.3 | 8.2 | Le..... | 15.1 | 43.6 |
| 506 | R..... | ..... | ..... | (1.92) | ..... | (.51) | (1.75) | 38.4 | 43.4 | 16.0 | 11.9 | LeL..... | 20.7 | 39.8 |
| 507 | RL..... | ..... | ..... | (3.41) | ..... | (2.68) | (3.19) | 39.3 | 53.1 | 20.8 | 22.9 | LeL..... | 34.7 | 48.9 |
| 508 | RLP..... | ..... | ..... | (3.89) | ..... | (3.39) | (3.68) | 41.0 | 56.2 | 15.0 | 25.6 | LeLP..... | 33.1 | 53.3 |
| 509 | RLPK..... | ..... | ..... | (4.10) | ..... | (3.45) | (3.74) | 35.0 | 50.3 | 18.9 | 20.0 | LeLPK..... | 30.4 | 49.8 |
| 510 | 0..... | ..... | ..... | (2.50) | ..... | (.41) | (1.87) | 33.2 | 50.8 | 16.5 | 10.9 | Le..... | 14.8 | 48.9 |
| 511 | CvM..... | ..... | ..... | (2.74) | ..... | (.35) | (1.88) | 43.6 | 55.5 | 19.8 | 14.9 | LeML..... | 17.5 | 54.2 |
| 512 | CvML..... | ..... | ..... | (3.47) | ..... | (2.46) | (3.63) | 41.0 | 49.1 | 20.4 | 20.0 | LeML..... | 18.0 | 52.2 |
| 513 | CvMLP..... | ..... | ..... | (3.70) | ..... | (2.99) | (2.61) | 44.3 | 62.5 | 13.1 | 25.6 | LeMLP..... | 42.0 | 56.3 |
| 514 | CvMLP..... | ..... | ..... | (2.63) | ..... | (.04) | (0.00) | 35.7 | 54.7 | 17.9 | 16.8 | LeMLP..... | 29.7 | 62.2 |
| 515 | 0..... | ..... | ..... | (1.69) | ..... | (0.00) | (0.00) | 28.7 | 29.7 | 14.9 | 6.1 | Le..... | 17.3 | 43.9 |
| 516 | 0..... | ..... | ..... | (1.93) | ..... | (0.00) | (0.00) | 25.4 | 31.2 | 14.6 | 4.8 | LeL..... | 18.6 | 42.0 |

¹No cover crop; no manure or residues on Plots 2 to 9, but 15 tons of manure an acre was applied to Plots 11 to 14 in 1912. Alfalfa winterkilled in 1913, 1914, and 1916.

RALEIGH FIELD, SALINE COUNTY

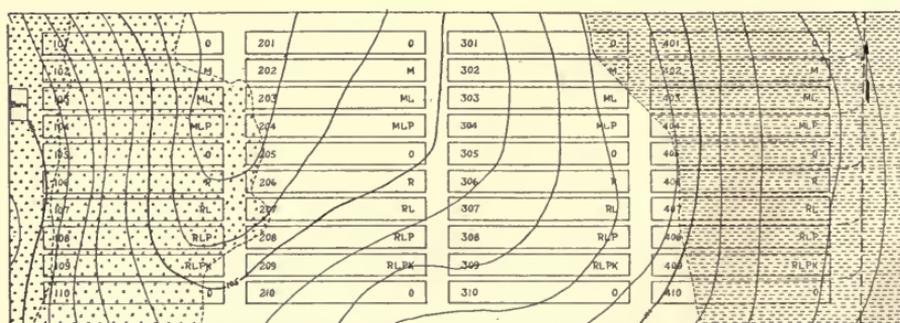
ESTABLISHED 1910

Location.—About one-half mile south of Raleigh. A part of the S. $\frac{1}{2}$ of the N.E. $\frac{1}{4}$ of the N.W. $\frac{1}{4}$, Sec. 22, Twp. 8 S., R. 6 E. of the 3d P. M.

Description.—The field consists of 14 acres of light-colored loessial upland soil of strong acidity. Four distinct soil types have been mapped on the field: (1) Gray Silt Loam On Orange Mottled Plastic Clay; (2) Yellow-Gray Silt Loam On Tight Clay; (3) Gray Silt Loam On Tight Clay; and (4) Deep Gray Silt Loam. The land is gently rolling, a part of it sloping to the east and a part of it to the west. It is partially tile-drained and drains fairly well except in the lower portions. The field is divided into four series of 10 fifth-acre plots each.

History.—The Raleigh field was purchased by the citizens of Raleigh, Galatia, and vicinity and donated to the University for experimental purposes. Little is known of the previous history of the field except that in 1909 the land was in clover which grew poorly.

Cropping and Soil Treatment.—The somewhat standard rotation and soil treatment methods described in the introduction were established on the four series. These methods were followed without change until 1920, when it was planned to harvest all clover as hay. In 1922 the return of the wheat straw was discontinued as well as the applications of limestone until such a time as it appears to be needed again. In 1923 the rock phosphate was evened up to $4\frac{1}{4}$ tons an acre and discontinued for an indefinite period.



 Gray Silt Loam On Orange Mottled Plastic Clay
 Yellow-Gray Silt Loam On Tight Clay

 Gray Silt Loam On Tight Clay
 Deep Gray Silt Loam

SOIL MAP OF RALEIGH FIELD

Contour interval - 1 foot

TABLE 78.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | |
|-----------------------|------------------------|----------------------------|--------------------------|-------------------------|-----------|-----------|----------------|------------|-----------|-----------|----------------|------------------------|-----------|-----------|----------------|------------|
| | | 1910 Oats ¹ | 1911 Clover ² | 1912 Wheat ² | 1913 Corn | 1914 Oats | 1915 Soy-beans | 1916 Wheat | 1917 Corn | 1918 Oats | 1919 Soy-beans | 1920 Oats ⁴ | 1921 Corn | 1922 Oats | 1923 Soy-beans | 1924 Wheat |
| 301 | 0..... | 18.1 | (.44) | 3.4 | 5.7 | 2.5 | 1.1 | .8 | 24.4 | 26.2 | (.24) | 11.9 | .6 | 2.2 | 6.9 | 3.3 |
| 302 | M..... | 17.3 | (.43) | 2.3 | 12.9 | 5.0 | (1.81) | 1.8 | 44.7 | 35.6 | (.28) | 15.5 | 6.3 | 2.8 | 11.0 | 3.2 |
| 303 | ML..... | 26.8 | (.61) | 7.1 | 17.2 | 8.1 | (2.16) | 7.8 | 57.5 | 47.5 | (.64) | 20.0 | 20.0 | 10.9 | 21.2 | 10.7 |
| 304 | MLP..... | 26.0 | (.68) | 7.8 | 17.1 | 7.8 | (2.30) | 9.8 | 58.9 | 47.3 | (.86) | 18.6 | 28.6 | 10.8 | 23.6 | 15.8 |
| 305 | 0..... | 15.0 | (.23) | 2.0 | 4.5 | 2.0 | 1.0 | .2 | 25.7 | 24.1 | 2.2 | 10.0 | 7.3 | 1.1 | 9.2 | 0.0 |
| 306 | R..... | 20.9 | (.6) | 2.8 | 9.4 | 4.1 | .8 | .7 | 19.9 | 31.6 | 2.8 | 12.2 | 12.6 | 1.9 | 12.7 | 1.2 |
| 307 | RL..... | 25.1 | (.6) | 7.4 | 17.5 | 9.5 | 3.4 | 6.7 | 45.1 | 55.9 | 6.7 | 18.0 | 28.5 | 11.4 | 20.3 | 7.3 |
| 308 | RLP..... | 25.1 | (.6) | 9.9 | 17.9 | 11.2 | 3.9 | 7.7 | 41.1 | 56.1 | 7.8 | 18.6 | 39.3 | 13.8 | 21.8 | 9.2 |
| 309 | RLrPK..... | 29.3 | (.6) | 14.1 | 15.9 | 10.3 | 3.9 | 6.6 | 63.4 | 55.2 | 9.1 | 18.9 | 50.9 | 12.2 | 24.1 | 14.0 |
| 310 | 0..... | 22.9 | (.6) | 4.7 | 7.4 | 5.0 | .4 | 1.8 | 35.1 | 29.8 | (.47) | 13.4 | 26.4 | 3.0 | 13.6 | 1.5 |
| Cow-peas ² | | | | | | | | | | | | | | | | |
| | | Corn ¹ | Oats ² | Wheat ² | Corn | Oats | Wheat | Clover | Wheat | Corn | Oats | Clover | Wheat | Corn | Oats | Clover |
| 401 | 0..... | 24.1 | 25.6 | (1.44) | 6.2 | 7.6 | 9.7 | (.56) | 6.3 | 13.2 | 9.2 | (0.00) | 8.2 | 18.9 | 9.5 | (0.00) |
| 402 | M..... | 18.1 | 19.2 | (1.05) | 4.2 | 13.2 | 8.9 | (.89) | 7.8 | 22.9 | 9.1 | (0.00) | 9.2 | 35.8 | 14.1 | (0.00) |
| 403 | ML..... | 40.1 | 38.0 | (2.79) | 20.7 | 16.3 | 23.6 | (1.44) | 41.2 | 22.9 | 20.8 | (1.28) | 25.8 | 66.6 | 28.0 | (1.31) |
| 404 | MLrP..... | 37.4 | 35.5 | (2.56) | 23.8 | 14.1 | 24.7 | (1.98) | 39.2 | 20.4 | 21.9 | (1.60) | 28.2 | 67.5 | 31.9 | (1.42) |
| 405 | 0..... | 24.9 | 18.4 | (.93) | 6.4 | 8.5 | 9.8 | (.4) | 11.2 | 14.9 | 7.5 | (0.00) | 9.2 | 23.2 | 12.8 | (0.00) |
| 406 | R..... | 31.1 | 24.1 | (.6) | 8.5 | 10.7 | 12.8 | (.4) | 15.2 | 17.8 | 11.9 | (0.00) | 11.2 | 27.1 | 11.7 | (0.00) |
| 407 | RL..... | 42.8 | 38.6 | (.9) | 29.8 | 14.4 | 23.1 | (.4) | 37.2 | 23.8 | 22.8 | (1.60) | 25.3 | 46.5 | 29.5 | (1.41) |
| 408 | RLP..... | 43.5 | 35.3 | (.9) | 32.9 | 16.4 | 22.5 | (.4) | 40.5 | 22.8 | 22.8 | (1.61) | 29.2 | 48.8 | 30.8 | (.57) |
| 409 | RLrPK..... | 43.0 | 32.8 | (.6) | 29.8 | 16.4 | 20.8 | (.4) | 46.4 | 23.7 | 25.0 | (1.79) | 32.5 | 57.2 | 30.6 | (1.25) |
| 410 | 0..... | 26.8 | 25.0 | (1.14) | 4.7 | 4.6 | 7.5 | (.83) | 5.3 | 12.8 | 8.6 | (0.00) | 9.0 | 20.6 | 13.4 | (0.00) |

¹No manure or residues. ²No manure. ³Growth plowed down. ⁴Seed lost before recleaning. ⁵Substitute for wheat.

ROCKFORD FIELD, WINNEBAGO COUNTY

ESTABLISHED 1904—DISCONTINUED 1919

Location.—About three miles northwest of Rockford on the farm of Mr. George F. Tullock. A part of the S. $\frac{1}{2}$ of the S.W. $\frac{1}{4}$, Sec. 34, Twp. 45 N., R. 1 E. of the 3d P. M.

Description.—The field contained 13 acres, the soil of which was described at the time the field was established as Sandy Loam Upland underlain by a subsoil containing considerable gravel. The land is gently rolling, sloping toward the east, not sufficiently to cause washing but sufficiently to insure good surface drainage. The field was divided into four series of 20 tenth-acre plots each.

History.—The Rockford field was leased from Mr. George F. Tullock. For a number of years previous to 1904 the land had been farmed in a livestock system of farming in which more or less manure had been used. The chief crops grown on the land were corn, oats, and clover and timothy meadows.

Cropping and Soil Treatment.—The rotation established on this field was corn, corn, oats, and clover. Soybeans were seeded in the corn on the residue plots of Series 100 and 300 and cowpeas on Series 200 and 400 for use as residues. These cover crops were also seeded on Plots 4, 9, and 14 until 1914, when they were discontinued. Beginning with 1914, only one crop of clover was removed as hay, the second being harvested as seed in order to furnish comparison with Plots 3, 8, and 13, from which two crops of clover hay were removed. The general soil treatment methods were similar to those described in the introduction except that no limestone was applied until 1906. At that time 1,300 pounds an acre was applied. No further applications were made until 1913, in which year and thereafter it was applied regularly at the annual acre rate of $\frac{1}{2}$ ton. Dried blood was applied to Plot 19 at approximately the annual rate of 200 pounds an acre. In 1916 the plot was divided, dried blood being applied to the east half at the usual rate, and gluten meal to the west half at the annual acre rate of 376 pounds.

TABLE 79.—ROCKFORD FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|------------------------|------------------------|--------------------------|-----------|-----------|-----------|----------------|-----------|-----------|-----------|-------------|-----------|-----------|-----------|-------------|
| | | 1904 Corn ¹ | 1905 Corn ² | 1906 Oats ³ | 1907 Clover ³ | 1908 Corn | 1909 Corn | 1910 Oats | 1911 Soy-beans | 1912 Corn | 1913 Corn | 1914 Oats | 1915 Clover | 1916 Corn | 1917 Corn | 1918 Oats | 1919 Clover |
| 101 | L..... | 64.7 | 65.1 | 53.7 | (1.95) | 63.4 | 47.0 | 67.5 | 17.3 | 49.4 | 41.0 | 52.8 | (3.18) | 42.8 | 24.6 | 90.9 | (2.14) |
| 102 | RL..... | 60.0 | 61.7 | 56.6 | (1.95) | 59.6 | 53.0 | 68.1 | 19.3 | 52.2 | 46.8 | 60.0 | .33 | 52.0 | 44.4 | 99.1 | (2.00) |
| 103 | ML..... | 72.2 | 60.5 | 51.9 | (1.94) | 72.8 | 59.4 | 72.5 | 17.2 | 78.0 | 48.8 | 57.8 | (3.69) | 65.8 | 50.6 | 91.9 | (3.32) |
| 104 | CvML..... | 67.5 | 61.9 | 51.6 | (1.96) | 70.0 | 58.4 | 73.8 | 16.8 | 78.0 | 46.2 | 47.5 | (3.78) | 65.6 | 51.0 | 86.2 | (1.78) |
| 105 | L..... | 65.6 | 63.9 | 48.7 | (1.86) | 60.6 | 52.0 | 67.5 | 20.2 | 59.4 | 36.8 | 40.6 | (3.00) | 43.4 | 21.2 | 85.9 | (1.77) |
| 106 | LrP..... | 69.6 | 69.3 | 58.1 | (2.36) | 79.4 | 58.8 | 78.1 | 22.0 | 58.8 | 37.6 | 60.3 | (3.97) | 45.8 | 27.0 | 96.0 | (3.14) |
| 107 | RLrP..... | 73.3 | 62.4 | 51.9 | (2.36) | 77.6 | 66.4 | 73.1 | 26.5 | 60.6 | 45.0 | 58.1 | .33 | 60.6 | 50.4 | 98.4 | (2.69) |
| 108 | MLrP..... | 70.6 | 69.2 | 53.7 | (2.35) | 86.2 | 64.6 | 80.6 | 22.7 | 78.0 | 49.6 | 58.1 | (4.27) | 69.4 | 57.6 | 93.4 | (3.70) |
| 109 | CvMLrP..... | 62.8 | 63.7 | 50.6 | (2.38) | 84.0 | 65.4 | 80.0 | 23.3 | 75.2 | 40.4 | 55.6 | (4.46) | 68.6 | 51.8 | 86.6 | (2.14) |
| 110 | L..... | 65.6 | 58.4 | 47.8 | (1.80) | 63.2 | 51.6 | 72.2 | 20.7 | 40.4 | 37.2 | 52.5 | (3.27) | 42.0 | 22.6 | 91.6 | (2.58) |
| 111 | LrPK..... | 69.5 | 65.9 | 49.4 | (2.51) | 81.2 | 68.8 | 74.1 | 24.2 | 68.4 | 47.2 | 56.2 | (4.27) | 62.0 | 49.2 | 91.2 | (3.60) |
| 112 | RLrPK..... | 68.0 | 62.9 | 50.3 | (2.46) | 76.2 | 71.4 | 74.7 | 25.0 | 63.2 | 52.2 | 60.0 | .17 | 57.8 | 78.2 | 96.9 | (2.37) |
| 113 | MLrPK..... | 66.1 | 65.7 | 47.8 | (2.45) | 85.4 | 68.0 | 77.9 | 23.2 | 70.2 | 48.6 | 54.4 | (4.46) | 63.0 | 59.6 | 91.9 | (3.70) |
| 114 | CvMLrPK..... | 65.4 | 62.8 | 53.7 | (2.55) | 82.2 | 69.2 | 84.4 | 22.2 | 70.8 | 47.8 | 55.6 | (4.68) | 63.8 | 50.8 | 89.1 | (2.05) |
| 115 | L..... | 65.5 | 61.3 | 45.0 | (2.06) | 65.2 | 51.8 | 68.4 | 21.3 | 45.6 | 37.4 | 47.5 | .33 | 53.8 | 25.8 | 90.0 | (1.37) |
| 116 | R..... | 65.5 | 64.3 | 49.4 | (2.25) | 57.2 | 65.2 | 78.4 | 24.2 | 51.0 | 46.0 | 53.1 | .33 | 56.0 | 42.2 | 94.7 | (2.14) |
| 117 | RrP..... | 67.8 | 61.9 | 53.1 | (2.35) | 75.0 | 65.8 | 75.3 | 23.7 | 55.4 | 50.6 | 64.4 | .17 | 68.6 | 51.8 | 96.2 | (1.91) |
| 118 | RrPK..... | 65.0 | 66.0 | 52.8 | (2.43) | 79.0 | 72.4 | 83.4 | 21.7 | 61.4 | 48.6 | 60.9 | .17 | 49.0 | 54.2 | 93.1 | (2.19) |
| 119 | RLrPK..... | 71.3 | 72.1 | 78.1 | (2.35) | 80.4 | 72.8 | 89.7 | 23.7 | 71.8 | 49.2 | 56.9 | .33 | 58.0 | 70.8 | 85.6 | (2.23) |
| 120 | O..... | 65.4 | 62.4 | 47.2 | (1.26) | 63.6 | 45.0 | 72.5 | 18.8 | 37.8 | 37.8 | 47.8 | (2.00) | 44.4 | 22.4 | 98.4 | (2.80) |

¹No lime, residues, manure, or cover crop. ²No lime or manure. ³No manure.

TABLE 79.—Continued
Bushels or (tons) per acre

| Plot No. | Soil treatment applied | 1904 | | 1905 | | 1906 | | 1907 | | 1908 | | 1909 | | 1910 | | 1911 | | 1912 | | 1913 | | 1914 | | 1915 | | 1916 | | 1917 | | 1918 | | 1919 | |
|----------|------------------------|-------------------|-------------------|---------------------|-------------------|-------------------|---------------------|--------|------|--------|------|------|--------|------|--------|--------|--------|--------|------|------|--------|--------|--------|------|--------|--------|------|------|--------|--------|--------|--------|--|
| | | Corn ¹ | Oats ² | Clover ³ | Corn ¹ | Oats ² | Clover ³ | Corn | Oats | Clover | Corn | Oats | Clover | Oats | Clover | Corn | Oats | Clover | Corn | Oats | Clover | Oats | Clover | Corn | Oats | Clover | Corn | Oats | Clover | Corn | Oats | Clover | |
| 201 | L..... | 62.9 | 82.5 | (1.09) | 67.8 | 55.2 | 85.3 | (1.60) | 64.2 | 61.0 | 43.8 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 202 | RL..... | 61.8 | 78.4 | (.84) | 67.3 | 51.2 | 90.3 | (.4) | 68.8 | 65.8 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | | |
| 203 | ML..... | 69.2 | 75.3 | (.82) | 78.4 | 66.2 | 88.8 | (1.64) | 81.6 | 69.2 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | | |
| 204 | CvML..... | 69.4 | 77.2 | (1.07) | 75.5 | 64.8 | 90.9 | (1.75) | 80.0 | 68.6 | 47.8 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | 41.9 | (4.11) | 28.0 | 30.2 | 86.9 | (2.02) | 85.8 | 85.8 | 85.8 | 85.8 | (3.00) | | | |
| 205 | L..... | 65.3 | 77.5 | (1.13) | 69.6 | 55.8 | 83.4 | (1.80) | 72.4 | 54.4 | 41.9 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | 41.9 | (4.11) | 28.0 | 30.2 | 86.9 | (2.02) | 85.8 | 85.8 | 85.8 | 85.8 | (3.00) | | | |
| 206 | LrP..... | 62.4 | 78.4 | (1.40) | 72.9 | 61.6 | 95.0 | (2.13) | 74.0 | 62.6 | 51.2 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 207 | RrP..... | 61.2 | 70.9 | (1.25) | 71.9 | 63.6 | 84.7 | (.4) | 78.6 | 71.6 | 52.8 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 208 | MlRrP..... | 69.6 | 82.2 | (1.35) | 81.2 | 73.6 | 95.6 | (2.08) | 81.4 | 67.3 | 50.6 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 209 | CvMLrP..... | 68.0 | 80.0 | (1.35) | 80.4 | 69.6 | 90.3 | (2.11) | 79.8 | 70.4 | 50.6 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 210 | L..... | 65.2 | 80.3 | (1.26) | 71.5 | 51.8 | 86.3 | (1.51) | 73.4 | 49.6 | 42.2 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 211 | LrPK..... | 63.8 | 82.2 | (1.42) | 81.5 | 69.6 | 85.3 | (2.17) | 81.8 | 69.0 | 49.7 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 212 | RlRrPK..... | 64.7 | 77.2 | (1.33) | 78.7 | 68.4 | 84.7 | (.4) | 79.8 | 75.0 | 50.0 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 213 | MlRrPK..... | 66.8 | 73.1 | (1.26) | 83.3 | 80.0 | 80.3 | (2.26) | 84.2 | 73.6 | 50.0 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 214 | CvMLrPK..... | 70.8 | 73.9 | (1.44) | 84.7 | 79.0 | 90.9 | (2.37) | 86.0 | 71.2 | 50.3 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 215 | L..... | 72.5 | 78.1 | (1.39) | 76.6 | 58.8 | 85.6 | (1.93) | 72.0 | 51.8 | 43.8 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 216 | R..... | 66.1 | 75.9 | (1.34) | 69.4 | 59.0 | 84.4 | (.4) | 78.4 | 68.4 | 47.5 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 217 | RrP..... | 65.2 | 73.4 | (1.33) | 74.9 | 67.2 | 81.9 | (.4) | 78.0 | 67.4 | 52.5 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 218 | RrPK..... | 64.2 | 77.5 | (1.34) | 77.0 | 72.8 | 90.6 | (.4) | 76.2 | 71.0 | 54.7 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 219 | RLRrPK..... | 70.1 | 83.4 | (1.62) | 76.1 | 70.2 | 86.6 | (.4) | 78.4 | 75.2 | 59.4 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |
| 220 | 0..... | 62.4 | 79.4 | (.99) | 63.5 | 53.0 | 83.4 | (1.17) | 68.8 | 49.2 | 49.7 | 49.1 | 33 | 36.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | 28.2 | 42.6 | 81.6 | (2.00) | 80.0 | 76.9 | 48.0 | 43.8 | (4.27) | | |

¹No lime, residues, manure, or cover crop. ²No lime or manure. ³No manure. ⁴Growth plowed down in 1910. ⁵Yield of first crop only; the second crop yielded clover seed at the rate of .17 bushels an acre. ⁶Damaged by white grubs.

TABLE 79.—Continued
Bushels or (tons) per acre

| Plot No. | Soil treatment applied | 1904 | 1905 | 1906 | | 1907 | | 1908 | | 1909 | | 1910 | | 1911 | | 1912 | | 1913 | | 1914 | | 1915 | | 1916 | | 1917 | | 1918 | | 1919 | |
|----------|------------------------|-------------------|------------------------|------|------|------|------|------|-------|--------|------|------|------|------|------|--------|--------|------|------|--------|------|------|------|------|------|------|------|--------|------|------|------|
| | | Oats ¹ | Soy-beans ¹ | Corn | Corn | Oats | Oats | Corn | Corn | Clover | Corn | Corn | Oats | Oats | Corn | Corn | Clover | Corn | Corn | Clover | Corn | Corn | Corn | Oats | Oats | Corn | Corn | Clover | Corn | Corn | Corn |
| 301 | L..... | 59.7 | (1.99) | 84.4 | 49.4 | 40.3 | 55.0 | 52.0 | 69.2 | 27.6 | 83.4 | 27.6 | 83.4 | 27.6 | 83.4 | (1.28) | 25.4 | 58.8 | | | | | | | | | | | | | |
| 302 | RL..... | 60.8 | (2.04) | 82.0 | 51.8 | 40.3 | 57.6 | 66.0 | 81.6 | 40.2 | 81.9 | 40.2 | 81.9 | 40.2 | 81.9 | (.50) | 56.4 | 72.0 | | | | | | | | | | | | | |
| 303 | ML..... | 60.6 | (2.07) | 83.7 | 55.6 | 41.6 | 67.6 | 64.8 | 92.8 | 48.2 | 92.5 | 48.2 | 92.5 | 48.2 | 92.5 | (2.18) | 60.6 | 81.4 | | | | | | | | | | | | | |
| 304 | CvML..... | 58.1 | (1.81) | 83.5 | 52.9 | 38.1 | 69.4 | 60.0 | 92.0 | 48.4 | 93.4 | 48.4 | 93.4 | 48.4 | 93.4 | (3.58) | 60.6 | 80.8 | | | | | | | | | | | | | |
| 305 | L..... | 55.6 | (1.62) | 77.5 | 44.7 | 33.1 | 56.0 | 47.2 | 73.6 | 24.2 | 78.8 | 24.2 | 78.8 | 24.2 | 78.8 | (3.12) | 35.6 | 62.2 | | | | | | | | | | | | | |
| 306 | LrP..... | 53.8 | (1.88) | 77.4 | 45.7 | 33.8 | 59.8 | 56.2 | 81.2 | 26.4 | 94.1 | 26.4 | 94.1 | 26.4 | 94.1 | (3.60) | 38.6 | 54.6 | | | | | | | | | | | | | |
| 307 | RLrP..... | 57.0 | (1.88) | 78.4 | 48.4 | 35.0 | 63.0 | 69.6 | 88.4 | 38.0 | 84.4 | 38.0 | 84.4 | 38.0 | 84.4 | 1.83 | 75.2 | 71.8 | | | | | | | | | | | | | |
| 308 | MLrP..... | 55.8 | (1.87) | 88.6 | 52.5 | 35.0 | 67.0 | 68.0 | 95.2 | 49.6 | 90.3 | 49.6 | 90.3 | 49.6 | 90.3 | (3.91) | 65.8 | 75.8 | | | | | | | | | | | | | |
| 309 | CvMLrP..... | 58.9 | (1.87) | 85.6 | 54.3 | 35.3 | 68.0 | 66.4 | 93.6 | 49.0 | 91.6 | 49.0 | 91.6 | 49.0 | 91.6 | (3.87) | 68.0 | 73.8 | | | | | | | | | | | | | |
| 310 | L..... | 60.3 | (1.66) | 74.9 | 42.9 | 33.1 | 54.4 | 48.4 | 73.4 | 21.2 | 79.4 | 21.2 | 79.4 | 21.2 | 79.4 | (2.98) | 45.8 | 64.4 | | | | | | | | | | | | | |
| 311 | LrPK..... | 58.8 | (1.84) | 84.9 | 46.4 | 35.9 | 66.8 | 69.8 | 94.4 | 39.4 | 79.7 | 39.4 | 79.7 | 39.4 | 79.7 | (3.97) | 63.4 | 70.2 | | | | | | | | | | | | | |
| 312 | RLrPK..... | 58.3 | (1.96) | 81.0 | 49.3 | 36.3 | 69.0 | 72.4 | 99.6 | 44.6 | 82.8 | 44.6 | 82.8 | 44.6 | 82.8 | 1.83 | 78.4 | 75.4 | | | | | | | | | | | | | |
| 313 | MLrPK..... | 60.3 | (1.97) | 84.9 | 50.1 | 32.2 | 67.0 | 74.6 | 100.0 | 48.2 | 89.4 | 48.2 | 89.4 | 48.2 | 89.4 | (4.03) | 75.4 | 83.2 | | | | | | | | | | | | | |
| 314 | CvMLrPK..... | 61.2 | (2.09) | 85.2 | 53.2 | 33.8 | 69.0 | 70.2 | 100.0 | 47.4 | 89.7 | 47.4 | 89.7 | 47.4 | 89.7 | (4.20) | 72.8 | 83.8 | | | | | | | | | | | | | |
| 315 | L..... | 58.6 | (1.96) | 81.9 | 46.7 | 31.6 | 62.4 | 53.6 | 72.4 | 30.4 | 80.0 | 30.4 | 80.0 | 30.4 | 80.0 | 2.83 | 60.4 | 75.0 | | | | | | | | | | | | | |
| 316 | R..... | 59.6 | (2.00) | 82.0 | 53.3 | 33.1 | 65.0 | 68.0 | 87.4 | 40.4 | 85.6 | 40.4 | 85.6 | 40.4 | 85.6 | 2.33 | 68.4 | 72.4 | | | | | | | | | | | | | |
| 317 | RrP..... | 56.3 | (2.26) | 87.1 | 58.3 | 37.8 | 66.6 | 68.2 | 99.6 | 40.2 | 81.9 | 40.2 | 81.9 | 40.2 | 81.9 | 2.17 | 73.0 | 69.4 | | | | | | | | | | | | | |
| 318 | RrPK..... | 57.5 | (2.32) | 93.5 | 60.6 | 36.9 | 69.4 | 68.4 | 100.0 | 43.4 | 83.8 | 43.4 | 83.8 | 43.4 | 83.8 | 1.83 | 83.4 | 76.4 | | | | | | | | | | | | | |
| 319 | RLNPK..... | 73.4 | (2.62) | 96.6 | 62.5 | 44.7 | 67.6 | 72.0 | 100.0 | 49.0 | 61.0 | 49.0 | 61.0 | 49.0 | 61.0 | 2.00 | 72.0 | 81.8 | | | | | | | | | | | | | |
| 320 | 0..... | 54.1 | (1.87) | 81.4 | 43.9 | 40.9 | 59.2 | 51.4 | 71.2 | 23.4 | 72.8 | 23.4 | 72.8 | 23.4 | 72.8 | (3.68) | 46.0 | 67.2 | | | | | | | | | | | | | |

¹No lime, residues, manure, or cover crop. ²Yield of first crop only; the second crop was harvested as seed. No seed was secured from Plots 4 and 14, but Plot 9 yielded .17 bushel an acre.

TABLE 79.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | |
|----------|------------------------|-----------------------------------|---------------------------|---------------------------|---------------------------|-----------------------------|--------------|--------------|--------------|-----------------------|--------------|--------------|--------------|---------------------|--------------|--------------|--------------|
| | | 1904 Timo- thy ¹ | 1905 Corn ¹ | 1906 Corn ² | 1907 Oats ² | 1908 Clover ² | 1909 Corn | 1910 Corn | 1911 Oats | 1912 Soy- beans | 1913 Corn | 1914 Corn | 1915 Oats | 1916 Clover | 1917 Corn | 1918 Corn | 1919 Oats |
| 401 | L..... | (1.65) | 67.3 | 60.8 | 34.4 | (2.06) | 60.6 | 38.6 | 60.0 | 9.3 | 36.2 | 47.0 | 70.0 | (1.77) | 29.8 | 41.8 | 29.7 |
| 402 | RL..... | (1.66) | 64.0 | 54.6 | 33.8 | (2.10) | 64.2 | 49.6 | 60.6 | 10.5 | 44.6 | 72.4 | 73.4 | .33 | 48.8 | 58.4 | 36.2 |
| 403 | ML..... | (1.65) | 69.1 | 63.6 | 33.8 | (2.22) | 81.6 | 46.0 | 69.4 | 10.5 | 51.4 | 72.0 | 86.2 | (2.30) | 59.2 | 63.6 | 39.4 |
| 404 | CvML..... | (1.59) | 60.8 | 61.0 | 33.8 | (2.13) | 78.0 | 46.6 | 58.8 | 10.7 | 49.2 | 72.6 | 86.6 | (1.70) ³ | 60.4 | 69.6 | 38.4 |
| 405 | L..... | (1.59) | 70.3 | 65.2 | 33.1 | (2.09) | 66.0 | 49.0 | 60.6 | 9.0 | 41.2 | 47.8 | 73.8 | (2.13) | 29.6 | 34.8 | 28.4 |
| 406 | LrP..... | (1.44) | 70.8 | 67.9 | 36.6 | (2.10) | 69.6 | 33.6 | 58.8 | 11.3 | 40.2 | 53.2 | 87.8 | (2.44) | 40.6 | 36.0 | 37.8 |
| 407 | RLrP..... | (1.52) | 70.7 | 71.0 | 39.4 | (2.27) | 73.4 | 41.2 | 64.1 | 10.7 | 45.8 | 80.2 | 65.6 | .50 | 51.4 | 63.4 | 40.0 |
| 408 | MLrP..... | (1.47) | 70.7 | 71.4 | 34.7 | (1.95) | 86.0 | 48.4 | 60.3 | 12.7 | 52.0 | 86.4 | 88.4 | (2.80) | 65.2 | 82.0 | 47.5 |
| 409 | CvMLrP..... | (1.45) | 66.4 | 72.1 | 38.8 | (2.15) | 83.8 | 41.2 | 69.4 | 14.2 | 45.6 | 87.4 | 90.9 | (1.75) ³ | 68.6 | 74.4 | 47.2 |
| 410 | L..... | (1.47) | 67.6 | 66.0 | 33.1 | (2.13) | 68.2 | 38.2 | 60.3 | 11.2 | 37.4 | 55.4 | 71.9 | (2.51) | 32.4 | 42.4 | 41.9 |
| 411 | LrPK..... | (1.57) | 68.9 | 73.8 | 38.4 | (2.23) | 85.2 | 43.4 | 69.7 | 12.2 | 51.0 | 82.8 | 78.8 | (2.99) | 54.8 | 68.8 | 42.5 |
| 412 | RLrPK..... | (1.53) | 73.1 | 67.0 | 40.6 | (2.20) | 85.2 | 49.8 | 70.9 | 9.5 | 45.6 | 85.4 | 78.4 | 1.17 | 60.4 | 84.2 | 39.1 |
| 413 | MLrPK..... | (1.43) | 68.3 | 65.4 | 37.5 | (2.21) | 86.4 | 63.8 | 71.3 | 11.7 | 47.2 | 89.4 | 85.0 | (3.66) | 57.0 | 81.8 | 41.2 |
| 414 | CvMLrPK..... | (1.41) | 69.9 | 67.0 | 38.8 | (2.21) | 87.2 | 51.8 | 72.8 | 10.3 | 56.4 | 90.8 | 82.8 | (2.20) ³ | 62.6 | 85.0 | 37.8 |
| 415 | L..... | (1.62) | 68.8 | 66.3 | 34.1 | (2.18) | 69.2 | 45.0 | 61.6 | 11.0 | 41.2 | 58.2 | 74.1 | (2.28) | 35.4 | 50.4 | 30.3 |
| 416 | R..... | (1.65) | 66.9 | 64.1 | 34.7 | (2.24) | 68.6 | 50.6 | 70.6 | 12.7 | 43.0 | 77.4 | 73.4 | 1.00 | 46.2 | 66.2 | 33.4 |
| 417 | RrP..... | (1.62) | 65.3 | 71.0 | 40.3 | (2.26) | 75.2 | 49.0 | 70.3 | 11.0 | 47.6 | 73.6 | 78.1 | 1.33 | 53.0 | 68.6 | 41.9 |
| 418 | RrPK..... | (1.45) | 63.2 | 66.3 | 38.8 | (2.04) | 83.6 | 49.8 | 71.3 | 8.2 | 47.4 | 83.2 | 73.4 | .67 | 52.2 | 74.0 | 38.8 |
| 419 | RLN+PK..... | (2.46) | 69.3 | 83.0 | 43.8 | (2.27) | 83.8 | 55.2 | 66.9 | 7.3 | 49.0 | 92.8 | 82.2 | .50 | 55.8 | 74.4 | 35.9 |
| 420 | 0..... | (1.40) | 54.7 | 47.6 | 31.3 | (2.07) | 59.0 | 35.6 | 66.9 | 13.0 | 39.4 | 52.4 | 67.2 | .33 | 25.8 | 37.2 | 33.8 |

¹No lime, residues, manure, or cover crop. ²No manure. ³Yield of first crop only; second crop was harvested as seed, Plot 4 yielding 1 bushel, Plot 9, 1.33 bushels, and Plot 14, 1.67 bushels an acre.

SIBLEY FIELD, FORD COUNTY
ESTABLISHED 1902—DISCONTINUED 1914

Location.—About one mile southeast of Sibley on land owned by the Hiram Sibley estate. A part of the S.W. $\frac{1}{4}$ of the S.W. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 35, Twp. 25 N., R. 7 E. of the 3d P. M.

Description.—The field consisted of $7\frac{1}{2}$ acres of soil described at the time the field was established as black prairie loam underlain by a clay subsoil. A strip 6 or 8 rods wide along the south side of the field and a strip about 10 rods wide along the west side were described as consisting of lighter soil than the rest of the field. Several ridges of lighter colored soil were also described as existing in other parts of the field. The land is sufficiently rolling to give it good surface drainage. It was also tilled. The field was divided into four series of 10 tenth-acre plots each.

History.—The Sibley field was leased from the estate of Hiram Sibley. Previous to 1902 the land had been cropped for many years with corn and oats under a tenant system of farming.

Cropping and Soil Treatment.—Series 100 was cropped with a rotation of corn, corn, oats, and wheat in what was called a complete fertility test. Nitrogen was supplied in approximately 800 pounds of dried blood annually, potassium in 100 pounds of potassium sulfate, and phosphorus in 200 pounds of steam bone meal an acre. Slaked lime was applied at the acre rate of 295 pounds in the beginning, no further applications being made.

A rotation of corn, oats, and clover was established on Series 200, 300, and 400. In 1905, 1906, and 1907 manure was applied at the acre rotation rate of 6 tons. Thereafter it was applied in proportion to the produce grown. Phosphorus and potassium were applied similarly to the application on Series 100. Legumes were seeded in the corn for green manure on the residue plots in addition to the other residues produced and used.

TABLE 80.—SIBLEY FIELD: SPECIAL FERTILITY TEST, SERIES 100

| Plot No. | Soil treatment applied | Bushels per acre | | | | | | | | | | | |
|----------|------------------------|------------------|--------------|--------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|---------------|
| | | 1902 Corn | 1903 Corn | 1904 Oats | 1905 Wheat | 1906 Corn | 1907 Corn | 1908 Oats | 1909 Wheat | 1910 Corn | 1911 Corn | 1912 Oats | 1913 Wheat |
| 101 | O | 57.3 | 50.4 | 74.4 | 29.5 | 36.7 | 33.9 | 25.9 | 25.3 | 26.6 | 20.7 | 84.4 | 5.5 |
| 102 | L | 60.0 | 54.0 | 74.7 | 31.7 | 39.2 | 38.9 | 24.7 | 28.8 | 34.0 | 22.2 | 85.6 | 6.8 |
| 103 | LN | 60.0 | 54.3 | 77.5 | 32.8 | 41.7 | 48.1 | 36.3 | 19.0 | 29.0 | 22.4 | 25.3 | 18.3 |
| 104 | LbP | 61.3 | 62.3 | 92.5 | 36.3 | 44.8 | 43.5 | 25.6 | 32.2 | 52.0 | 31.6 | 92.3 | 10.7 |
| 105 | LK | 56.0 | 49.9 | 74.4 | 30.2 | 37.5 | 34.9 | 22.2 | 23.2 | 34.2 | 21.6 | 83.1 | 7.5 |
| 106 | LNbP | 57.3 | 69.1 | 88.4 | 45.2 | 68.5 | 72.3 | 45.6 | 33.3 | 55.6 | 35.3 | 42.2 | 24.7 |
| 107 | LNK | 53.3 | 51.4 | 75.9 | 37.7 | 39.7 | 51.1 | 42.2 | 25.8 | 46.2 | 20.1 | 55.6 | 19.2 |
| 108 | LbPK | 58.7 | 60.9 | 80.0 | 39.8 | 41.5 | 39.8 | 27.2 | 28.5 | 43.0 | 31.8 | 79.7 | 11.8 |
| 109 | LNbPK | 58.7 | 65.9 | 82.5 | 48.0 | 69.5 | 80.1 | 52.8 | 35.0 | 58.0 | 35.7 | 57.2 | 24.5 |
| 110 | NbPK | 60.0 | 60.1 | 85.0 | 48.5 | 63.3 | 72.3 | 44.1 | 30.8 | 64.4 | 31.5 | 54.1 | 18.0 |

SIDELL FIELD, VERMILION COUNTY

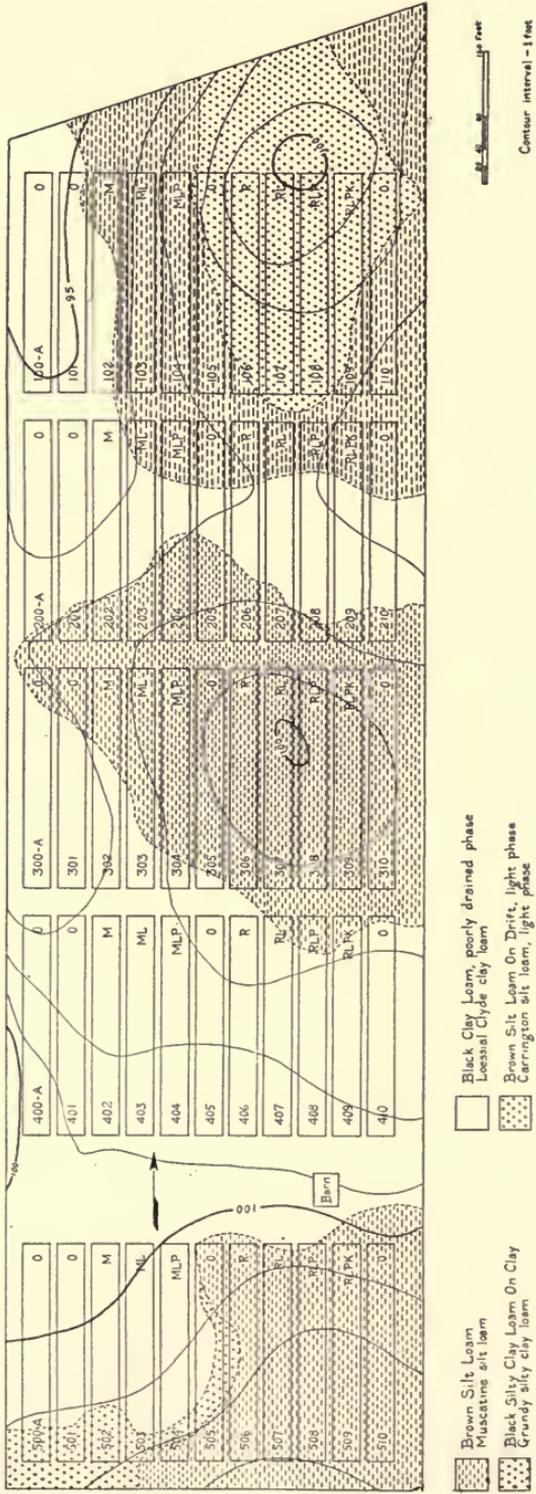
ESTABLISHED 1912

Location.—About one mile east of Sidell. A part of the E. $\frac{1}{2}$ of the S.E. $\frac{1}{4}$, Sec. 22, Twp. 17 N., R. 13 W. of the 2d P. M.

Description.—The field consists of 20 acres of dark-colored loessial and drift upland soils of slight acidity. Four soil types have been mapped on the field: (1) Brown Silt Loam (Muscatine silt loam); (2) Black Silty Clay Loam On Clay (Grundy silty clay loam); (3) Brown Silt Loam On Drift, light phase (Carrington silt loam, light phase); and (4) Black Clay Loam, poorly drained phase (Loessial Clyde clay loam). The land is comparatively level. The drainage is good, tho tile has not been used. The field is divided into five series of 10 fifth-acre plots each.

History.—The Sidell field was purchased by the citizens of Sidell and vicinity and donated to the University for experimental purposes. Little is known of the previous history of the field, except that it was in oats in 1911.

Cropping and Soil Treatment.—The somewhat standard rotation with alfalfa and soil treatment methods described in the introduction were established on the five series. These methods were followed without change until 1921, when it was planned to harvest all clover as hay. At that time an additional plot, designated as Plot A, was added to the west end of each series. In 1922 the return of the wheat straw was discontinued, and also the application of limestone until need for it becomes apparent. In 1923 the rock phosphate was evened up to 4 tons an acre, and no more will be applied for an indefinite period.



SOIL MAP OF SIDELL FIELD

TABLE 82.—SIDEHILL FIELD: SERIES 100, 200, 300, 400, 500

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------------------|-------------------------|------------------------|-----------|----------------|--------------------|--------------|---------------------------|--------------|--------------|--------------|-----------|------|-------------------|------|
| | | 1912 Oats ¹ | 1913 Clover ² | 1914 Wheat ³ | 1915 Corn | 1916 Oats | 1917 Soy-beans | 1918 Wheat | 1919 Alfalfa | 1920 Alfalfa ⁴ | 1921 Alfalfa | 1922 Alfalfa | 1923 Alfalfa | 1924 Corn | | | |
| 101 | 0 | 30.0 | (1.11) | 34.0 | 48.1 | 56.9 | (1.74) | 12.6 | (.61) | ..... | (2.46) | (3.25) | (2.54) | 49.8 | | | |
| 102 | M | 32.0 | (1.14) | 34.0 | 54.8 | 63.9 | (1.88) | 13.2 | (.59) | ..... | (2.53) | (3.30) | (2.47) | 54.6 | | | |
| 103 | ML | 42.7 | (1.30) | 31.2 | 58.5 | 61.4 | (1.88) | 12.2 | (.67) | ..... | (2.46) | (3.20) | (2.46) | 60.8 | | | |
| 104 | MLrP | 34.1 | (1.04) | 36.9 | 71.2 | 66.1 | (1.82) | 19.2 | (1.03) | ..... | (2.76) | (4.11) | (3.15) | 62.6 | | | |
| 105 | 0 | 47.2 | 1.00 | 33.2 | 47.5 | 50.2 | (1.23) | 7.8 | (.61) | ..... | (2.26) | (2.80) | (2.13) | 47.8 | | | |
| 106 | R | 50.0 | .83 | 34.8 | 47.6 | 51.1 | (.3) | 9.2 | (.71) | ..... | (2.47) | (3.38) | (2.34) | 54.6 | | | |
| 107 | RL | 46.4 | .92 | 34.9 | 52.1 | 54.2 | (.3) | 14.3 | (1.31) | ..... | (2.82) | (3.88) | (2.83) | 59.4 | | | |
| 108 | RLrP | 44.8 | .83 | 38.8 | 52.5 | 56.9 | (.3) | 19.8 | (1.69) | ..... | (3.33) | (4.57) | (3.74) | 60.4 | | | |
| 109 | RLrPK | 38.4 | 1.00 | 41.2 | 51.4 | 57.2 | (.3) | 18.4 | (2.11) | ..... | (3.56) | (4.57) | (3.57) | 61.4 | | | |
| 110 | 0 | 49.8 | (1.31) | 30.5 | 48.0 | 54.5 | (1.44) | 11.9 | (.57) | ..... | (2.74) | (3.21) | (2.50) | 26.8 | | | |
| | | Corn ¹ | | | Soy-beans ² | | | Wheat ³ | | | Soy-beans | | | Wheat | | Oats ⁵ | |
| | | Oats | Oats | Wheat | Oats | Oats | Wheat | Oats | Oats | Wheat | Oats | Oats | Corn | Wheat | Oats | Corn | Oats |
| 201 | 0 | 48.4 | 3.4 | 12.2 | 28.9 | 80.6 | (3.66) | 28.2 | (3.66) | 39.0 | 39.1 | 15.0 | 22.3 | 38.6 | | | |
| 202 | M | 39.7 | 2.7 | (1.58) | 31.6 | 80.3 | (3.85) | 27.6 | (3.85) | 46.5 | 45.9 | 13.0 | 26.5 | 40.2 | | | |
| 203 | ML | 39.5 | 2.7 | (1.67) | 31.9 | 80.5 | (3.47) | 24.2 | (3.47) | 54.6 | 41.7 | 14.8 | 27.4 | 39.8 | | | |
| 204 | MLrP | 40.7 | 3.0 | (1.57) | 33.1 | 84.5 | (4.11) | 29.4 | (4.11) | 55.6 | 44.8 | 15.3 | 31.8 | 40.3 | | | |
| 205 | 0 | 38.7 | 2.3 | 11.0 | 25.9 | 74.1 | (.3) | 27.9 | (.3) | 54.5 | 39.8 | 12.0 | 24.3 | 40.2 | | | |
| 206 | R | 42.7 | 1.9 | 11.4 | 34.7 | 75.2 | (.3) | 26.8 | (.3) | 45.6 | 35.5 | 13.6 | 25.1 | 38.9 | | | |
| 207 | RL | 24.8 | 2.7 | 10.0 | 33.6 | 73.6 | (.3) | 24.3 | (.3) | 50.5 | 36.1 | 16.6 | 25.7 | 38.8 | | | |
| 208 | RLrP | 42.6 | 2.3 | 9.2 | 34.8 | 76.9 | (.3) | 25.2 | (.3) | 52.7 | 33.8 | 13.8 | 29.4 | 41.1 | | | |
| 209 | RLrPK | 42.7 | 3.0 | 8.6 | 35.3 | 73.0 | (.3) | 27.7 | (.3) | 57.4 | 34.8 | 16.4 | 32.8 | 36.7 | | | |
| 210 | 0 | 43.2 | 3.1 | 9.2 | 24.9 | 65.2 | (3.66) | 29.2 | (3.66) | 43.2 | 39.8 | 17.2 | 22.1 | 29.8 | | | |
| | | Oats ¹ | | Soy-beans | | Wheat | | Oats | | Wheat | | Oats | | Clover | | Wheat | |
| | | Oats | Oats | Oats | Oats | Oats | Oats | Oats | Oats | Oats | Oats | Oats | Oats | Oats | Oats | Oats | Oats |
| 301 | 0 | 52.5 | 40.9 | 46.2 | (1.42) | 65.1 | 59.2 | (1.80) | 18.4 | 60.3 | 42.0 | 44.4 | 29.7 | (.69) | 29.2 | 37.3 | |
| 302 | M | 53.7 | 34.6 | 44.5 | (1.20) | 66.6 | 57.2 | (1.60) | 15.0 | 58.8 | 44.5 | 58.4 | 30.8 | (1.00) | 30.8 | 37.4 | |
| 303 | ML | 52.0 | 33.3 | 42.5 | (1.30) | 63.3 | 56.2 | (1.33) | 14.1 | 58.4 | 49.5 | 58.4 | 39.8 | (1.49) | 39.8 | 37.8 | |
| 304 | MLrP | 53.6 | 35.5 | 44.5 | (1.22) | 59.8 | 56.9 | (1.76) | 14.9 | 61.0 | 47.0 | 61.0 | 39.6 | (1.81) | 39.6 | 39.6 | |
| 305 | 0 | 55.0 | 28.8 | 37.7 | 17.4 | 47.1 | 44.2 | .33 | 10.4 | 44.4 | 29.7 | 44.4 | 29.2 | (.69) | 29.2 | 37.3 | |
| 306 | R | 53.6 | 31.9 | 38.3 | 15.6 | 49.4 | 42.8 | .42 | 9.6 | 50.6 | 30.8 | 44.4 | 29.2 | (1.07) | 29.2 | 37.3 | |
| 307 | RL | 51.2 | 33.4 | 36.1 | 15.0 | 43.0 | 46.2 | .46 | 8.0 | 53.9 | 38.4 | 44.4 | 29.2 | (1.19) | 29.2 | 37.3 | |
| 308 | RLrP | 48.8 | 32.4 | 35.2 | 16.7 | 48.0 | 52.0 | .48 | 14.2 | 55.9 | 39.5 | 44.4 | 29.2 | (1.58) | 29.2 | 37.3 | |
| 309 | RLrPK | 50.0 | 31.8 | 43.0 | 17.8 | 49.9 | 54.7 | .38 | 14.9 | 57.8 | 44.8 | 44.4 | 29.2 | (1.62) | 29.2 | 37.3 | |
| 310 | 0 | 47.2 | 23.4 | 40.8 | 15.4 | 43.1 | 45.8 | (1.62) | 13.2 | 43.1 | 30.8 | 44.4 | 29.2 | (.97) | 29.2 | 37.3 | |

¹No soil treatment. ²No manure. ³Crop plowed down. ⁴Crop failure. ⁵Nurse crop for alfalfa.

TABLE 82.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|---------------|--------------|--------------|----------------|
| | | 1913 Wheat ² | 1914 Corn | 1915 Oats | 1916 Clover | 1917 Wheat | 1918 Corn | 1919 Oats | 1920 Soy- beans | 1921 Wheat | 1922 Corn | 1923 Oats | 1924 Clover |
| 401 | 0..... | 38.1 | 47.6 | 63.6 | (2.75) | 34.2 | 58.8 | 41.4 | (2.10) | 41.0 | 55.3 | 40.3 | (2.98) |
| 402 | M..... | (2.26) | 45.7 | 69.2 | (2.70) | 42.2 | 64.0 | 37.5 | (2.30) | 44.3 | 59.5 | 39.8 | (2.98) |
| 403 | ML..... | (2.14) | 43.8 | 73.6 | (2.69) | 34.8 | 65.8 | 36.7 | (2.11) | 42.1 | 60.8 | 37.2 | (3.08) |
| 404 | MLrP..... | (1.77) | 46.4 | 74.2 | (2.43) | 37.2 | 63.8 | 35.9 | (1.90) | 43.3 | 65.0 | 31.9 | (2.96) |
| 405 | 0..... | 28.8 | 37.5 | 68.1 | 2.67 | 34.8 | 53.8 | 39.5 | 10.8 | 36.3 | 54.1 | 31.1 | (2.01) |
| 406 | R..... | 12.0 | 41.0 | 62.0 | 2.58 | 33.8 | 58.6 | 42.7 | 11.8 | 37.7 | 58.6 | 27.8 | (1.91) |
| 407 | RJ..... | 24.9 | 42.6 | 61.6 | 2.75 | 29.6 | 61.3 | 37.3 | 12.3 | 35.9 | 65.2 | 42.2 | (1.85) |
| 408 | RLrP..... | 10.8 | 41.6 | 63.4 | 3.08 | 36.2 | 58.7 | 39.8 | 14.2 | 40.4 | 66.5 | 38.1 | (2.45) |
| 409 | RLrPK..... | 13.3 | 43.7 | 62.2 | 2.92 | 32.9 | 53.5 | 37.8 | 10.8 | 40.5 | 65.7 | 30.4 | (3.55) |
| 410 | 0..... | (1.54) | 33.9 | 67.5 | (2.23) | 28.2 | 42.2 | 36.9 | (1.29) | 34.6 | 48.6 | 32.5 | (1.83) |
| | | | Alfalfa ³ | Alfalfa^{3} | Alfalfa^{3} | Alfalfa^{3} | Alfalfa^{3} | Alfalfa^{3} | Oats | Clover | Wheat | Corn | Oats |
| 501 | 0..... | (2.92) | (3.78) | (4.06) | (2.50) | (4.20) | (2.06) | 56.7 | 78.6 | (.39) | 35.4 | 47.3 | 67.5 |
| 502 | M..... | (3.20) | (4.02) | (4.34) | (2.73) | (4.28) | (1.61) | 60.0 | 86.1 | (1.23) | 37.0 | 59.0 | 71.3 |
| 503 | ML..... | (3.78) | (4.20) | (4.17) | (2.68) | (3.80) | (2.26) | 64.9 | 80.6 | (1.02) | 35.8 | 51.4 | 68.0 |
| 504 | MLrP..... | (4.20) | (4.49) | (4.13) | (3.24) | (4.55) | (2.70) | 64.7 | 82.7 | (1.18) | 35.7 | 56.4 | 70.5 |
| 505 | 0..... | (1.44) | (3.23) | (3.67) | (2.55) | (3.47) | (2.36) | 60.0 | 68.8 | (.84) | 36.9 | 34.2 | 65.8 |
| 506 | R..... | (1.17) | (3.14) | (3.65) | (2.73) | (3.29) | (2.14) | 54.2 | 69.7 | (.72) | 38.3 | 50.0 | 66.9 |
| 507 | RL..... | (1.83) | (3.42) | (3.36) | (2.37) | (3.07) | (2.37) | 50.8 | 67.3 | (.76) | 39.3 | 52.4 | 77.5 |
| 508 | RLrP..... | (3.06) | (3.85) | (4.07) | (2.68) | (4.00) | (2.14) | 51.6 | 68.9 | (1.01) | 39.9 | 49.3 | 78.6 |
| 509 | RLrPK..... | (3.50) | (4.49) | (4.79) | (2.83) | (4.16) | (2.01) | 54.2 | 76.7 | (1.07) | 38.9 | 55.1 | 82.7 |
| 510 | 0..... | (1.22) | (3.51) | (3.84) | (2.33) | (2.68) | (1.31) | 38.5 | 68.1 | (.82) | 36.2 | 31.9 | 63.4 |

¹No soil treatment. ²No manure. ³No residues.

SPARTA FIELD, RANDOLPH COUNTY

ESTABLISHED 1916

Location.—Immediately north of the city of Sparta. A part of the S.E. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 36 Twp. 4 S., R. 6 W. of the 3d P. M.

Description.—The field consists of 20 acres of light-colored loessial upland soil of strong acidity. Four soil types have been mapped on the field: (1) Light Gray Silt Loam On Tight Clay; (2) Yellow-Gray Silt Loam On Tight Clay; (3) Yellow-Gray Silt Loam; (4) Deep Gray Silt Loam. The land is comparatively level on part of the field, somewhat rolling in other parts, and is rough in the southwest corner. It is not tile-drained but owing to its rolling nature drains fairly well. The field is divided into eight series, four of which contain 10 tenth-acre plots, and four which contain 6 tenth-acre plots; and 6 larger plots known as Plots A, B, C, D, E, and F.

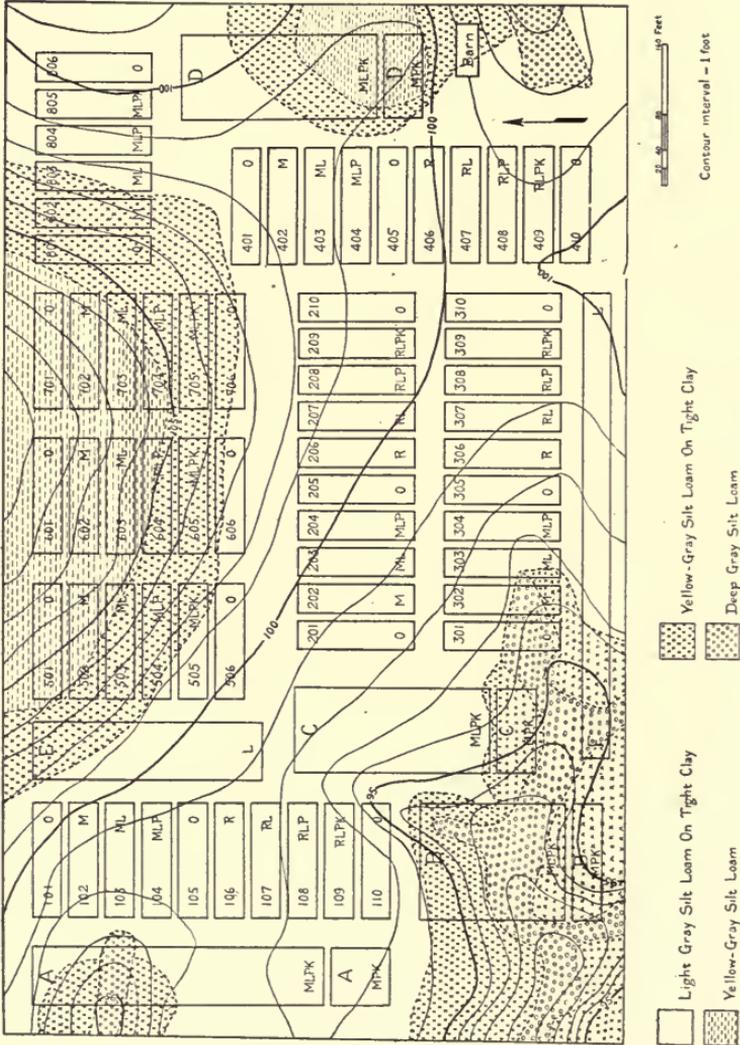
History.—The Sparta field was purchased by the citizens of Sparta and vicinity and donated to the University for experimental purposes. No information is available in regard to the previous history of the field.

Cropping and Soil Treatment.—A rotation of corn, soybeans, wheat, and clover, chiefly sweet clover, was established on Series 100, 200, 300, and 400. Until 1921 cowpeas were seeded in the corn as a cover crop on the residue plots. Their use was discontinued at that time. The soil treatments applied have been similar to those described in the introduction, with the exception that the initial application of limestone was at the acre rate of 5 tons. In 1922 the regular applications of limestone were discontinued until the need for more becomes apparent.

The original rotation on Series 500, 600, 700, and 800 was potatoes, wheat, and clover on three series, while alfalfa grew on the fourth series for six years, after which it was shifted. The soil treatment has been similar to that on the first four series. In 1921 the rotation was changed to wheat, oats, sweet clover, potatoes, with sweet clover seeded on all wheat plots. In 1922 the regular applications of limestone were discontinued until again needed. In 1924 the rotation was changed to one of corn, cowpeas, clover-timothy mixture, and wheat, with sweet clover seeded on all wheat plots for use as a green manure for corn.

The original rotation on Plots A, B, C, and D was wheat, winter oats, and sweet clover on three of them, while alfalfa was grown on the fourth for four years. In 1921 spring oats were substituted for the winter oats. The soil treatment methods have been similar to those on the other plots of the field. The regular applications of limestone were discontinued in 1922.

Plots E and F were laid out in 1920 and limestone applied at the acre rate of 5 tons. No definite cropping system has been planned for these plots; thus far they have been used for wheat and sweet clover.



SOIL MAP OF SPARTA FIELD.

TABLE 83.—SPARTA FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | 1924 Corn |
|----------|------------------------|----------------------------|----------------------------|-------------------------|----------------------------|-----------|---------------|------------|-------------------|--------------|
| | | 1916 Corn ¹ | 1917 Soybeans ³ | 1918 Wheat ² | 1918 Soybeans ³ | 1920 Corn | 1921 Soybeans | 1922 Wheat | 1923 Sweet clover | |
| 101 | 0..... | 14.8 | (.99) | 7.3 | (.85) | 8.6 | 5.5 | 11.2 | 0.00 | 2.0 |
| 102 | M..... | 18.2 | (1.05) | 7.7 | (.92) | 13.6 | 5.8 | 8.5 | 0.00 | .3 |
| 103 | ML..... | 16.8 | (1.33) | 12.3 | (1.38) | 21.6 | 11.7 | 15.7 | .50 | 17.4 |
| 104 | MLP..... | 19.8 | (1.36) | 15.3 | (1.38) | 21.8 | 10.5 | 15.8 | .41 | 17.2 |
| 105 | 0..... | 13.8 | 5.8 | 2.7 | .. ⁽³⁾ | 11.0 | 4.7 | 4.2 | 0.00 | .3 |
| 106 | R..... | 16.6 | 9.2 | 5.2 | .. ⁽³⁾ | 13.8 | 6.0 | 4.2 | 0.00 | .9 |
| 107 | RL..... | 21.2 | 9.8 | 13.2 | .. ⁽³⁾ | 11.4 | 10.8 | 13.7 | .41 | 27.8 |
| 108 | RLP..... | 20.0 | 9.5 | 13.0 | .. ⁽³⁾ | 8.6 | 9.5 | 12.0 | .22 | 27.8 |
| 109 | RLrPK..... | 18.6 | 11.3 | 16.7 | .. ⁽³⁾ | 20.6 | 10.0 | 16.0 | .44 | 32.0 |
| 110 | 0..... | 17.4 | (.99) | 4.2 | (.75) | 9.4 | 5.5 | 3.5 | 0.00 | 1.2 |
| | | Soybeans ¹ | Corn | Soybeans | Wheat | Clover | Corn | Soybeans | Wheat | Sweet clover |
| 201 | 0..... | (1.37) | 28.0 | (.58) | 2.8 | (0.00) | 34.2 | 3.5 | 2.7 | 0.00 |
| 202 | M..... | (1.16) | 31.4 | (.80) | 3.2 | (0.00) | 30.6 | 5.0 | 4.2 | 0.00 |
| 203 | ML..... | (1.41) | 48.4 | (1.15) | 20.2 | (1.66) | 42.0 | 8.3 | 14.0 | .50 |
| 204 | MLrP..... | (1.60) | 49.4 | (1.05) | 20.0 | (1.73) | 41.8 | 8.3 | 13.8 | .17 |
| 205 | 0..... | 7.7 | 28.2 | 7.0 | 2.7 | 0.00 | 22.8 | 3.3 | 2.2 | 0.00 |
| 206 | R..... | 7.2 | 36.0 | 6.3 | 2.3 | 0.00 | 28.2 | 3.7 | 2.0 | 0.00 |
| 207 | RL..... | 10.3 | 35.0 | 9.7 | 20.0 | 1.50 | 22.4 | 8.3 | 10.0 | .17 |
| 208 | RLP..... | 8.8 | 39.0 | 11.0 | 22.5 | 1.87 | 22.2 | 8.5 | 11.7 | .17 |
| 209 | RLrPK..... | 9.7 | 47.0 | 9.3 | 21.0 | 1.69 | 23.8 | 8.7 | 17.8 | .33 |
| 210 | 0..... | (.96) | 28.0 | (.55) | 2.8 | (0.00) | 2.8 | 3.2 | 3.7 | 0.00 |

¹Lime and phosphorus only. ²No manure. ³Harvested for seed but destroyed by continuous rain.

TABLE 83.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|----------------------------|-------------------------------|--------------|-------------------|---------------|-------------------------|-----------------|------------------|---------------|--|
| | | 1916 Wheat ¹ | 1917 Soybeans ² | 1918 Corn | 1919 Soybeans | 1920 Wheat | 1921 Sweet clover | 1922 Corn | 1923 Soybeans | 1924 Wheat | |
| 301 | 0..... | 6.3 | (.76) | 1.0 | (1.12) | 10.8 | 0.00 | 19.4 | 9.3 | 8 | |
| 302 | M..... | 6.7 | (.85) | 3.2 | (1.40) | 20.5 | 0.00 | 23.8 | 12.0 | 2.0 | |
| 303 | ML..... | 9.0 | (.70) | 5.0 | (2.00) | 27.2 | 1.00 | 33.0 | 25.7 | 2.8 | |
| 304 | MLrP..... | 8.2 | (.63) | 4.4 | (2.02) | 27.5 | 1.33 | 31.8 | 24.5 | 3.5 | |
| 305 | 0..... | 1.8 | 3.3 | .4 | .. ⁽⁴⁾ | 8.8 | 0.00 | 6.4 | 3.5 | .3 | |
| 306 | R..... | 3.7 | 4.7 | .4 | .. ⁽⁴⁾ | 9.7 | 0.00 | 11.2 | 7.3 | .5 | |
| 307 | RL..... | 8.8 | 8.8 | .2 | .. ⁽⁴⁾ | 20.8 | .83 | 19.8 | 22.7 | 6.5 | |
| 308 | RLrP..... | 9.2 | 9.7 | .2 | .. ⁽⁴⁾ | 22.2 | .83 | 19.2 | 25.7 | 5.7 | |
| 309 | RLrPK..... | 11.0 | 8.3 | .2 | .. ⁽⁴⁾ | 26.7 | 1.00 | 19.8 | 21.7 | 7.2 | |
| 310 | 0..... | 5.0 | (.66) | .1 | (.42) | 5.2 | 0.00 | 8.4 | 5.0 | .5 | |
| | | | | | | | | Sweet clover | Corn | Soybeans | |
| 401 | 0..... | (.48) | 10.5 | (0.00) | 5.4 | (.48) | 6.7 | 0.00 | 15.0 | 2.0 | |
| 402 | M..... | (.67) | 15.0 | (0.00) | 4.6 | (.62) | 9.2 | 0.00 | 28.0 | 4.7 | |
| 403 | ML..... | (.73) | 24.2 | (1.15) | 3.0 | (.88) | 19.0 | 2.83 | 42.8 | 14.3 | |
| 404 | MLrP..... | (.80) | 27.2 | (1.55) | 4.4 | (1.00) | 17.8 | 3.00 | 44.2 | 14.8 | |
| 405 | 0..... | 5.2 | 18.8 | 0.00 | 9.0 | 6.7 | 12.5 | 0.00 | 23.0 | 4.5 | |
| 406 | R..... | 6.3 | 17.2 | 0.00 | 9.8 | 6.2 | 11.2 | 0.00 | 23.8 | 4.5 | |
| 407 | RL..... | 8.0 | 23.5 | 2.92 | 10.6 | 11.3 | 17.5 | 2.17 | 34.0 | 11.5 | |
| 408 | RLrP..... | 6.0 | 25.3 | 2.75 | 10.2 | 12.8 | 19.2 | 3.00 | 32.4 | 11.8 | |
| 409 | RLrPK..... | 6.5 | 23.5 | 3.67 | 14.6 | 14.8 | 17.2 | 3.00 | 39.2 | 14.8 | |
| 410 | 0..... | (.61) | 16.2 | (0.00) | 9.6 | 5.2 | 11.0 | 0.00 | 25.8 | 2.0 | |

¹No residues or manure. ²No residues, manure, or potassium. ³No manure. ⁴Harvested for seed but destroyed by continuous rain.

TABLE 85.—SPARTA FIELD: PLOTS A, B, C, D, E, F

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|---|------------------------------|------------------------------|------------------------------|------------------------------|-------------------------------|-----------------|-----------------|-----------------|--|
| | | 1916 Alfalfa seeding ¹ | 1917 Alfalfa ¹ | 1918 Alfalfa ¹ | 1919 Alfalfa ¹ | 1920 Alfalfa ¹ | 1921 Soybeans ¹ | 1922 Wheat | 1923 Oats | 1924 Corn | |
| A | MLrPK..... | ..... | (2.72) | (3.12) | (.94) | (.27) | 13.7 | 18.9 | 27.6 | 23.8 | |
| A | MrPK..... | ..... | (0.00) | (0.00) | (0.00) | (0.00) | 4.0 | 13.2 | 5.3 | .5 | |
| | | Wheat ¹ | Winter oats ¹ | Sweet clover ¹ | Wheat | Winter oats | Sweet clover | Alfalfa | Alfalfa | Alfalfa | |
| B | MLrPK..... | 5.0 | 2.4 | (1.50) | 17.7 | 37.8 | 1.57 | (2.89) | (3.45) | (2.61) | |
| B | MrPK..... | 5.5 | 2.5 | (0.00) | 10.3 | 38.8 | .33 | (1.20) | (1.62) | (1.45) | |
| | | Soybeans ¹ | Wheat | Winter oats ² | Sweet clover | Wheat | Winter oats | Sweet clover | Wheat | Alfalfa | |
| C | MLrPK..... | 5.3 | 33.5 | ..... | (1.58) | 24.7 | 53.1 | 3.30 | 25.5 | (2.97) | |
| C | MrPK..... | 5.7 | 21.3 | ..... | (0.00) | 12.2 | 29.4 | .97 | 9.5 | (2.13) | |
| | | Oats ¹ | Sweet clover ¹ | Wheat | Winter oats | Sweet clover | Wheat | Oats | Sweet clover | Wheat | |
| D | MLrPK..... | 15.2 | (1.21) | 22.4 | 39.5 | .67 | 23.8 | 6.9 | .68 | 16.8 | |
| D | MrPK..... | 25.0 | (0.00) | 18.2 | 36.2 | 0.00 | 15.5 | 4.7 | .65 | 14.2 | |
| E | L..... | ..... | ..... | ..... | ..... | Oat hay | Sweet clover | Soybeans | Wheat | Sweet clover | |
|  |  | ..... | ..... | ..... | ..... | (.17) | .63 | 8.0 | 17.8 | 2.75 | |
| F | L..... | ..... | ..... | ..... | ..... | Winter barley | Sweet clover | Wheat | Sweet clover | Wheat | |
|  |  | ..... | ..... | ..... | ..... | 18.1 | .67 | 14.5 | .64 | 12.0 | |

¹No manure. ²Crop failure.

SPRING VALLEY FIELD, BUREAU COUNTY

ESTABLISHED 1915

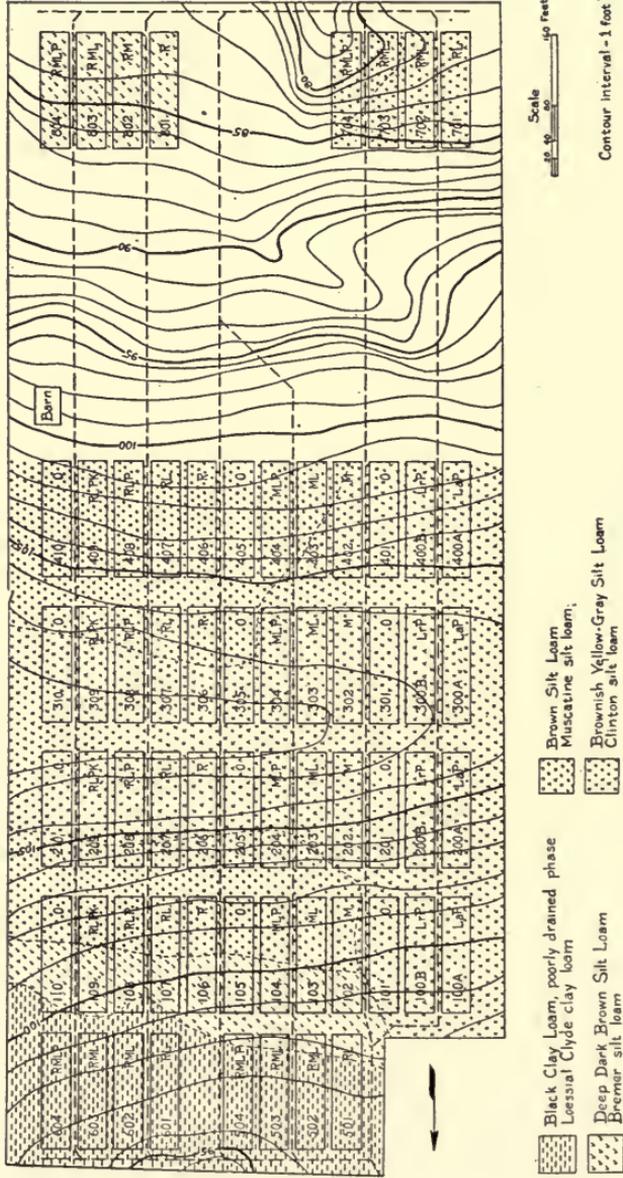
Location.—About one-half mile west of Spring Valley. A part of the W. $\frac{1}{2}$ of the S.W. $\frac{1}{4}$, Sec. 34, Twp. 16 N., R. 11 E. of the 4th P. M.

Description.—The field consists of 17 acres of dark- and light-colored loessial soils of various degrees of acidity. The field is located on an area the character of which has been influenced to an observable extent by both timber and prairie vegetation. It is not considered representative of any considerable area in the state. Four soil types have been mapped on the field: (1) Black Clay Loam, poorly drained phase (Loessial Clyde clay loam); (2) Deep Dark Brown Silt Loam (Bremer silt loam); (3) Brown Silt Loam (Muscatine silt loam); and (4) Brownish Yellow-Gray Silt Loam (Clinton silt loam). The land is more or less rolling, sloping sharply to the north and south with a tendency to wash on some of the unplotted land. It is tile-drained and drains well except in some of the low spots. The field is divided into eight series, four of which contain 12 tenth-acre plots each and four which contain 4 tenth-acre plots each.

History.—The Spring Valley field was donated by the Hall Township High School to the University for experimental purposes. Little is known concerning the previous history of the field except that oats and some timothy were grown on it in 1914.

Cropping and Soil Treatment.—The somewhat standard rotation and soil treatment methods described in the introduction were established on Series 100, 200, 300, and 400. In 1917 Plots A and B were added to each series. Plot A has received acid phosphate at the annual acre rate of 200 pounds applied twice in the rotation, and Plot B has received rock phosphate ground to a fineness of 200 mesh, at the annual acre rate of 400 pounds applied once in the rotation. These methods were followed without change until 1918, when it was planned to harvest the clover hay as well as the seed crop on the residue plots. Beginning in 1921 all clover has been harvested as hay and the return of oat straw was discontinued. In 1922 the return of the wheat straw was discontinued as well as the regular applications of limestone. Future applications of limestone will be made when needed.

On Series 500, 600, 700, and 800 a rotation of corn, corn, and oats was established on three of the series, with alfalfa on the fourth for a period of four years. Sweet clover has been seeded in the oats on Plots 2, 3, and 4 for use as a green manure for the corn. The soil treatments given these plots have been similar to those described in the introduction with the exception that the cornstalks from the first corn crop are plowed down on Plots 2, 3, and 4. In 1921 the manure was discontinued and in 1922 the limestone was discontinued.



SOIL MAP OF SPRING VALLEY FIELD

TABLE 86.—SPRING VALLEY FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|--------------|--------------|----------------|---------------|--------------|--------------|
| | | 1915 Corn ² | 1916 Oats ³ | 1917 Clover ³ | 1918 Wheat ³ | 1919 Corn | 1920 Oats | 1921 Clover | 1922 Wheat | 1923 Corn | 1924 Oats |
| 100A | LeLaP ¹ | ..... | ..... | (.55) | 47.3 | 28.4 | 25.0 | (2.33) | 37.3 | 36.2 | 51.6 |
| 100B | LeLrP ¹ | ..... | ..... | (.83) | 51.2 | 31.6 | 36.6 | (2.54) | 36.0 | 47.2 | 47.5 |
| 101 | O..... | 34.8 | 35.9 | (2.26) | 53.2 | 41.6 | 55.3 | (2.31) | 40.2 | 26.0 | 56.3 |
| 102 | M..... | 27.8 | 32.5 | (1.83) | 46.0 | 42.4 | 51.6 | (2.46) | 40.3 | 32.8 | 63.4 |
| 103 | ML..... | 26.4 | 29.7 | (2.36) | 51.0 | 47.6 | 50.6 | (3.00) | 40.8 | 60.6 | 68.8 |
| 104 | MLrP..... | 34.4 | 35.9 | (2.40) | 50.3 | 55.6 | 60.0 | (3.06) | 42.8 | 64.4 | 66.6 |
| 105 | O..... | 35.0 | 26.9 | .03 | 55.3 | 43.6 | 50.6 | (2.82) | 45.7 | 48.0 | 59.1 |
| 106 | R..... | 30.4 | 31.2 | .05 | 55.0 | 54.4 | 40.0 | (3.01) | 45.0 | 42.2 | 59.1 |
| 107 | RL..... | 31.2 | 34.4 | .03 | 56.3 | 57.2 | 46.9 | (2.85) | 44.7 | 38.2 | 68.8 |
| 108 | RLrP..... | 30.2 | 38.1 | .05 | 57.2 | 56.8 | 52.2 | (2.63) | 45.2 | 42.8 | 67.8 |
| 109 | RLrPK..... | 33.0 | 36.9 | .03 | 49.7 | 66.0 | 58.8 | (3.09) | 42.5 | 43.2 | 65.0 |
| 110 | O..... | 35.0 | 35.9 | (1.34) | 45.2 | 30.8 | 48.1 | (2.35) | 40.8 | 40.4 | 66.9 |
| 200A | LeLaP ¹ | ..... | ..... | 26.6 | (4.08) | 28.8 | 43.4 | 60.3 | (2.58) | 39.7 | 40.0 |
| 200B | LeLrP ¹ | ..... | ..... | 33.4 | (3.51) | 28.0 | 43.6 | 50.6 | (2.46) | 38.0 | 38.2 |
| 201 | O..... | 19.0 | 25.8 | 56.2 | (3.84) | 33.5 | 38.2 | 52.2 | (2.38) | 35.5 | 29.6 |
| 202 | M..... | 8.2 | 13.8 | 44.1 | (4.26) | 32.5 | 54.0 | 57.2 | (3.23) | 43.3 | 44.0 |
| 203 | ML..... | 6.3 | 10.4 | 39.1 | (4.20) | 32.7 | 53.8 | 54.7 | (3.13) | 43.3 | 50.8 |
| 204 | MLrP..... | 15.5 | 17.8 | 49.7 | (4.57) | 34.3 | 55.0 | 60.9 | (3.20) | 43.7 | 52.2 |
| 205 | O..... | 15.8 | 14.6 | 40.9 | (3.11) | .25 | 39.0 | 51.6 | (2.77) | 42.8 | 37.6 |
| 206 | R..... | 15.5 | 19.8 | 39.7 | (3.37) | .42 | 47.4 | 50.0 | (3.00) | 43.8 | 43.2 |
| 207 | RL..... | 21.2 | 30.0 | 47.8 | (3.35) | .67 | 50.6 | 54.1 | (3.06) | 42.7 | 45.6 |
| 208 | RLrP..... | 20.8 | 26.2 | 55.6 | (3.77) | 1.17 | 53.0 | 50.6 | (3.37) | 44.2 | 49.2 |
| 209 | RLrPK..... | 18.8 | 25.0 | 42.2 | (3.38) | .50 | 53.4 | 48.8 | (3.21) | 46.2 | 55.6 |
| 210 | O..... | 13.5 | 20.2 | 42.5 | (4.56) | 31.5 | 35.6 | 42.8 | (2.34) | 38.2 | 39.0 |

¹No phosphate applied until 1921. ²Lime only. ³No manure.

TABLE 86.—*Concluded*
Bushels or (tons) per acre

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | |
|----------|------------------------|-----------------------------|-------------------------|-----------|-----------|-------------|------------|-----------|-----------|-------------|------------|
| | | 1915 Soy-beans ^a | 1916 Wheat ^a | 1917 Corn | 1918 Oats | 1919 Clover | 1920 Wheat | 1921 Corn | 1922 Oats | 1923 Clover | 1924 Wheat |
| 300A | LeLaP ¹ | ..... | ..... | 26.8 | 46.6 | (2.48) | 22.5 | 49.2 | 51.9 | (.35) | 33.2 |
| 300B | LeLrP ¹ | ..... | ..... | 36.2 | 48.1 | (2.79) | 28.5 | 51.6 | 51.3 | (.52) | 34.2 |
| 301 | 0..... | 17.5 | 26.0 | 23.6 | 46.6 | (2.87) | 25.3 | 49.0 | 41.6 | (.41) | 29.7 |
| 302 | M..... | (1.36) | 17.3 | 32.4 | 45.9 | (2.94) | 23.8 | 61.6 | 53.1 | (.86) | 40.8 |
| 303 | ML..... | (1.40) | 16.3 | 29.6 | 37.5 | (2.72) | 26.7 | 51.2 | 55.0 | (1.19) | 43.2 |
| 304 | MLrP..... | (1.54) | 21.2 | 44.0 | 50.0 | (3.42) | 29.3 | 54.8 | 60.0 | (1.18) | 46.3 |
| 305 | 0..... | 16.5 | 20.7 | 23.8 | 39.4 | (1.58) | 21.7 | 44.6 | 55.3 | (.54) | 30.5 |
| 306 | R..... | 17.2 | 17.2 | 46.2 | 54.7 | (2.04) | 24.3 | 56.0 | 52.8 | (1.13) | 41.3 |
| 307 | RL..... | 17.3 | 23.8 | 48.0 | 55.0 | (2.00) | 33.8 | 55.2 | 68.8 | (1.42) | 41.0 |
| 308 | RLrP..... | 17.5 | 19.2 | 45.6 | 62.2 | (1.81) | 33.5 | 56.6 | 64.4 | (1.25) | 43.0 |
| 309 | RLrPK..... | 17.0 | 14.3 | 50.4 | 50.0 | (1.95) | 26.7 | 63.4 | 70.6 | (1.49) | 38.8 |
| 310 | 0..... | 16.5 | 16.7 | 20.0 | 35.9 | (2.70) | 21.2 | 48.4 | 63.1 | (.85) | 35.5 |
| 400A | LeLaP ¹ | ..... | ..... | 16.7 | 31.2 | 15.9 | (1.86) | 23.7 | 52.2 | 44.7 | (3.24) |
| 400B | LeLrP ¹ | ..... | ..... | 21.8 | 41.6 | 22.8 | (2.09) | 26.7 | 64.0 | 55.3 | (4.22) |
| 401 | 0..... | 41.2 | (2.31) | 36.5 | 54.4 | 36.9 | (2.23) | 34.3 | 46.6 | 47.8 | (3.28) |
| 402 | M..... | 38.4 | (2.00) | 33.0 | 58.0 | 38.8 | (2.48) | 34.7 | 60.0 | 53.8 | (3.75) |
| 403 | ML..... | 32.1 | (1.92) | 32.8 | 57.2 | 39.1 | (2.22) | 29.3 | 66.8 | 56.9 | (3.97) |
| 404 | MLrP..... | 33.7 | (2.33) | 38.2 | 63.6 | 40.9 | (2.50) | 34.7 | 62.6 | 60.3 | (4.00) |
| 405 | 0..... | 33.8 | .10 | 35.0 | 50.4 | 36.6 | (1.46) | 33.0 | 53.4 | 49.7 | (3.37) |
| 406 | R..... | 28.8 | .17 | 37.3 | 57.2 | 34.7 | (1.58) | 34.0 | 71.0 | 56.6 | (3.70) |
| 407 | RL..... | 38.1 | .12 | 39.3 | 67.6 | 54.1 | (1.58) | 34.2 | 67.6 | 58.4 | (3.82) |
| 408 | RLrP..... | 32.5 | .15 | 41.8 | 64.0 | 45.9 | (1.68) | 32.7 | 67.2 | 60.9 | (3.96) |
| 409 | RLrPK..... | 38.8 | .15 | 39.0 | 76.8 | 48.8 | (1.47) | 28.2 | 70.6 | 62.8 | (4.32) |
| 410 | 0..... | 31.9 | (2.33) | 35.0 | 59.2 | 45.6 | (2.39) | 26.8 | 55.0 | 57.5 | (4.00) |

¹No phosphorus applied until 1921. ²Lime only. ³No manure.

TABLE 87.—SPRING VALLEY FIELD: SERIES 500, 600, 700, 800

| Plot No. | Soil treatment applied* | Bushels or (tons) per acre | | | | | | | | | | | | | | | |
|------------------|-------------------------|----------------------------|-------------------|----------------------|-------------------|-----------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | | 1917 | | 1918 | | 1919 | | 1920 | | 1921 | | 1922 | | 1923 | | 1924 | |
| | | Corn ³ | Oats ⁴ | Corn ³ | Oats ⁴ | Corn ³ | Oats ⁴ | Corn ³ | Oats ⁴ | Corn ³ | Oats ⁴ | Corn ³ | Oats ⁴ | Corn ³ | Oats ⁴ | Corn ³ | Oats ⁴ |
| 501 | L..... | 50.6 | 72.8 | 38.1 | 44.0 | 45.8 | 69.4 | 46.6 | 40.0 | | | | | | | | |
| 502 | LM..... | 52.4 | 79.2 | 47.2 | 62.6 | 63.4 | 81.9 | 51.8 | 55.2 | | | | | | | | |
| 503 | LM..... | 57.6 | 74.6 | 40.0 | 61.8 | 65.2 | 80.0 | 40.0 | 57.4 | | | | | | | | |
| 504 ¹ | LMrP..... | 52.6 | 34.4 | 23.7 | 62.8 | 61.0 | 69.1 | 44.0 | 55.0 | | | | | | | | |
| | | Corn ³ | | Oats ⁴ | | Corn ³ | | Oats ⁴ | | Corn ³ | | Oats ⁴ | | Corn ³ | | Oats ⁴ | |
| 601 | L..... | 57.4 | 55.0 | 60.4 | 62.0 | 57.8 | 68.6 | 42.6 | 50.0 | | | | | | | | |
| 602 | LM..... | 55.0 | 60.0 | 55.8 | 57.0 | 57.2 | 73.6 | 51.0 | 71.9 | | | | | | | | |
| 603 | LM..... | 58.4 | 52.5 | 60.8 | 54.8 | 51.3 | 77.2 | 57.0 | 69.7 | | | | | | | | |
| 604 | LMrP..... | 56.0 | 59.1 | 63.2 | 57.6 | 50.3 | 76.8 | 57.6 | 56.6 | | | | | | | | |
| | | Oats ³ | | Corn | | Oats | | Alfalfa | | Alfalfa | | Alfalfa | | Soybeans | | | |
| 701 | L..... | 34.1 | 68.0 | 37.6 | 41.2 | (3.89) | (3.45) | (3.37) | (1.12) | | | | | | | | |
| 702 | LM..... | 52.5 | 84.6 | 52.8 | 56.6 | (4.77) | (4.38) | (3.66) | (1.95) | | | | | | | | |
| 703 | LM..... | 58.4 | 74.4 | 47.6 | 62.2 | (4.38) | (4.72) | (4.58) | (1.70) | | | | | | | | |
| 704 | LMrP..... | 71.9 | 66.8 | 37.8 | 65.0 | (4.91) | (4.46) | (4.25) | (1.72) | | | | | | | | |
| | | Alfalfa ⁴ | | Alfalfa ⁴ | | Soybeans ⁴ | | Corn | | Oats | | Corn | | Oats | | Corn | |
| 801 | O..... | ..... | (4.54) | (4.86) | (2.49) | 63.6 | 70.2 | 62.2 | 58.0 | | | | | | | | |
| 802 | M..... | ..... | (4.58) | (5.70) | (2.56) | 67.4 | 75.0 | 70.3 | 67.4 | | | | | | | | |
| 803 | ML..... | ..... | (4.38) | (4.78) | (2.54) | 66.2 | 75.8 | 69.7 | 65.2 | | | | | | | | |
| 804 | MLrP..... | ..... | (4.74) | (4.99) | (2.45) | 63.2 | 73.8 | 69.1 | 65.4 | | | | | | | | |

¹Plot 504 lies in a basin, or depression, and the drainage is poor. ²On plots 1 and 2 of Series 500, 600, and 700, limestone has been applied only once—in 1915, at the rate of 4 tons an acre. ³Lime only. ⁴No manure.

TAMPICO FIELD, WHITESIDE COUNTY
ESTABLISHED IN 1902—DISCONTINUED 1904

Location.—About five miles northeast of Tampico on the farm of Mr. J. H. Milligan. A part of the N. side of the N.E. $\frac{1}{4}$ of the S.W. $\frac{1}{4}$, Sec. 6, Twp. 19 N., R. 7 E. of the 4th P. M.

Description.—The field consisted of about one acre of land divided into 10 tenth-acre plots. The soil was described as black peaty material rich in organic matter to a depth of 16 inches. Between 16 and 30 inches the material was lighter in color and sandy with little organic matter. Corn was grown continuously in what was called a complete fertilizer test. Nitrogen was supplied in 800 pounds of dried blood, phosphorus in 200 pounds of steamed bone meal, and potassium in 160 pounds of potassium sulfate an acre each year. Slaked lime was applied at the acre rate of 450 pounds in 1902.

TABLE 88.—TAMPICO FIELD: SPECIAL FERTILITY TEST, SERIES 100

| | | Bushels per acre | | |
|----------|---|------------------|--------------|-------------------|
| Plot No. | Soil treatment applied | 1902 Corn | 1903 Corn | 1904 Corn |
| 101 | None..... | 0.0 | 0.0 | 0.0 |
| 102 | Lime (and K after 2 years)..... | 0.0 | 0.0 | 26.9 ¹ |
| 103 | Lime, nitrogen..... | 0.0 | 0.0 | 0.0 |
| 104 | Lime, bone meal..... | 0.0 | 0.0 | 0.0 |
| 105 | Lime, potassium..... | 34.1 | 45.4 | 45.2 |
| 106 | Lime, nitrogen, bone meal..... | 0.0 | 0.0 | 0.0 |
| 107 | Lime, nitrogen, potassium..... | 37.6 | 58.7 | 44.1 |
| 108 | Lime, bone meal, potassium..... | 35.3 | 46.8 | 43.0 |
| 109 | Lime, nitrogen, bone meal, potassium..... | 56.5 | 65.9 | 44.0 |
| 110 | Nitrogen, potassium, bone meal..... | 49.4 | 58.6 | 35.6 ² |

¹125 pounds potassium sulfate per acre was applied to Plot 102 in 1904. ²No potassium was applied to Plot 110 in 1904.

TOLEDO FIELD, CUMBERLAND COUNTY

ESTABLISHED 1913

Location.—About one-half mile south of the courthouse in Toledo. A part of the S. side of the N.E. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 31, Twp. 10 N., R. 9 E. of the 3d P. M.

Description.—The field consists of 17 acres of light-colored loessial upland soil of strong acidity. Only one soil type has been mapped on the field, namely, Gray Silt Loam On Tight Clay. The land is almost level. A part of the field is tile-drained but, owing to the impervious nature of the subsoil, does not drain well. The field is divided into eight series, four of which contain 10 fifth-acre plots each and four which contain 4 tenth-acre plots each.

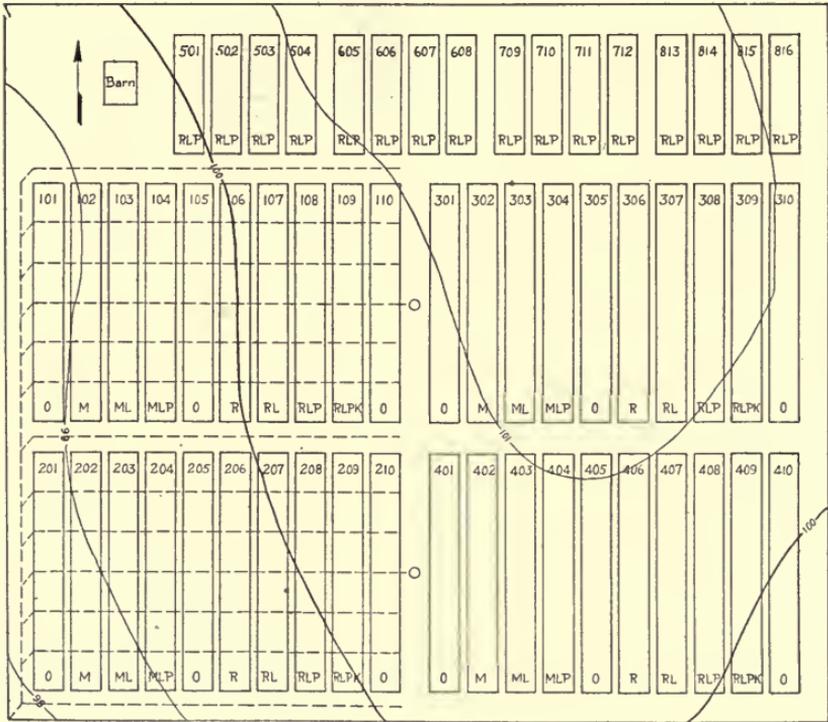
History.—The Toledo field was purchased by Cumberland county and donated to the University for experimental purposes. Little is known of the previous history of the field, except that it had been in timothy and redtop sod in 1912.

Cropping and Soil Treatment.—The somewhat standard rotation and soil treatment methods described in the introduction were established on Series 100, 200, 300, and 400. Series 100 and 200 were tile-drained in 1918, while the rest of the field was left untilled. Cowpeas were seeded in the corn at the last cultivation on the residue plots until 1921, when this practice was abandoned. In 1922 sweet clover was substituted for the regular clover crop and at that time the regular application of limestone was discontinued until further need for it becomes apparent. In 1923 the return of the wheat straw was discontinued.

On Series 500, 600, 700, and 800 a rotation of corn, soybeans, wheat, and sweet clover was established with a view of comparing the effects of subsoiling, deep tillage, and subsoil dynamiting, with that of ordinary plowing. The sweet clover stubble was plowed late in the fall for corn. Rock phosphate at the acre rate of 1 ton was applied to all plots in 1914 and again in the fall of 1918. Limestone at the acre rate of 4 tons was applied to all plots in 1913, at the rate of 3 tons in 1917, and 2 tons in 1921.

In plowing the land for corn, Plot 1 on all series was plowed at an average depth of 7 inches, Plot 2 was subsoiled 14 inches deep, Plot 3 was deep-tilled 14 inches, and Plot 4 was dynamited. The subsoiling, deep tilling, and dynamiting was done in the late fall preceding the corn crop.¹ These experiments were discontinued in 1922. Since that time the land has been used for crop variety studies.

¹For more complete information concerning this work, see Bulletin 258, entitled "Experiments with Subsoiling, Deep Tilling and Subsoil Dynamiting."



 Gray Silt Loam On Tight Clay

Contour interval—1 foot

Scale
 100 Feet

SOIL MAP OF TOLEDO FIELD

TABLE 89.—TOLEDO FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|-----------------------------|-------------------------|-----------|-----------|----------------|------------|-----------|-----------|-------------|------------|-----------|-----------|
| | | 1913 Soy-beans ¹ | 1914 Wheat ² | 1915 Corn | 1916 Oats | 1917 Soy-beans | 1918 Wheat | 1919 Corn | 1920 Oats | 1921 Clover | 1922 Wheat | 1923 Corn | 1924 Oats |
| 101 | O..... | (.54) | 11.2 | 33.7 | 28.4 | (1.09) | 5.1 | 20.8 | 19.5 | (.09) | 10.8 | 39.8 | 25.9 |
| 102 | ML..... | (.35) | 11.4 | 31.4 | 27.8 | (1.06) | 7.8 | 23.9 | 23.4 | (.33) | 12.1 | 30.4 | 39.1 |
| 103 | ML..... | (.54) | 15.1 | 38.1 | 38.6 | (1.62) | 14.2 | 32.8 | 31.6 | (1.15) | 21.9 | 59.0 | 64.4 |
| 104 | MLrP..... | (.49) | 17.0 | 41.1 | 40.3 | (1.56) | 16.2 | 31.4 | 35.9 | (1.16) | 22.2 | 53.4 | 65.0 |
| 105 | O..... | 2.5 | 8.3 | 28.7 | 26.1 | 4.9 | 7.9 | 12.8 | 18.0 | (.06) | 7.6 | 25.8 | 28.8 |
| 106 | R..... | 3.7 | 8.2 | 28.2 | 21.9 | 7.3 | 7.4 | 18.2 | 18.0 | (.21) | 7.3 | 36.6 | 29.1 |
| 107 | RL..... | 3.6 | 10.0 | 29.0 | 35.8 | 10.0 | 14.6 | 31.0 | 33.6 | (1.18) | 17.7 | 39.8 | 61.9 |
| 108 | RLrP..... | 3.2 | 12.6 | 24.6 | 34.5 | 12.5 | 10.2 | 30.9 | 38.8 | (1.30) | 20.9 | 30.2 | 66.3 |
| 109 | RLrPK..... | 3.5 | 15.7 | 38.1 | 42.0 | 14.1 | 16.7 | 42.2 | 34.4 | (1.41) | 23.0 | 51.0 | 69.4 |
| 110 | O..... | (.53) | 7.0 | 22.0 | 24.1 | (.74) | 6.1 | 9.9 | 8.3 | (.05) | 9.1 | 11.4 | 31.3 |
| 201 | O..... | 1.1 | 10.8 | 6.2 | 26.6 | 5.2 | (.56) | 7.8 | 27.0 | 14.8 | .17 | 8.0 | 9.4 |
| 202 | M..... | 1.2 | (.50) | 4.7 | 29.1 | 5.6 | (.52) | 6.5 | 35.3 | 17.0 | .58 | 6.9 | 12.8 |
| 203 | ML..... | .0 | (.46) | 12.0 | 32.2 | 25.6 | (1.16) | 16.5 | 49.8 | 16.6 | 3.33 | 19.2 | 32.8 |
| 204 | MLrP..... | .8 | (.48) | 14.4 | 29.8 | 37.8 | (.90) | 20.2 | 44.0 | 22.7 | 4.16 | 19.8 | 31.8 |
| 205 | O..... | .5 | 5.2 | 2.7 | 19.4 | 5.8 | 2.3 | 1.9 | 9.2 | 8.6 | .50 | 4.8 | 9.2 |
| 206 | R..... | .9 | 5.0 | 3.0 | 14.4 | 17.5 | 2.8 | 4.7 | 15.4 | 10.5 | 1.50 | 6.3 | 7.8 |
| 207 | RL..... | 1.1 | 7.0 | 12.0 | 22.3 | 29.7 | 6.3 | 16.4 | 30.5 | 21.4 | 2.33 | 17.5 | 27.6 |
| 208 | RLrP..... | 1.9 | 7.4 | 17.7 | 21.1 | 37.0 | 6.6 | 21.5 | 34.8 | 22.7 | 3.00 | 20.4 | 38.0 |
| 209 | RLrPK..... | .6 | 7.0 | 25.9 | 22.8 | 53.3 | 7.1 | 23.1 | 47.9 | 21.7 | 3.42 | 26.8 | 45.6 |
| 210 | O..... | 1.1 | 6.7 | 8.8 | 17.6 | 16.1 | (.28) | 3.8 | 13.4 | 6.3 | .46 | 8.8 | 8.4 |

Lime only. ²No manure.

TABLE 89.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|------------------------------------|----------------------------|--------------|--------------|-----------------------|---------------------------|--------------|--------------|-------------------------|---------------|
| | | 1913 Corn ¹ | 1914 Oats ² | 1915 Soy- beans ² | 1916 Wheat ² | 1917 Corn | 1918 Oats | 1919 Soy- beans | 1920 Oats ² | 1921 Corn | 1922 Oats | 1923 Sweet clover | 1924 Wheat |
| 301 | O..... | 3.8 | 0.0 | (.62) | .1 | 5.6 | 33.8 | (.44) | 5.0 | 20.8 | 2.2 | .15 | 12.2 |
| 302 | M..... | 3.6 | .2 | (.66) | .1 | 12.1 | 41.6 | (.58) | 6.6 | 35.6 | 4.8 | .13 | 16.7 |
| 303 | ML..... | 5.1 | .8 | (.96) | .7 | 17.2 | 60.5 | (1.02) | 14.2 | 45.3 | 11.4 | .19 | 34.8 |
| 304 | MLrP..... | 5.4 | .6 | (1.02) | 2.6 | 18.2 | 61.6 | (1.16) | 10.6 | 50.5 | 11.7 | .16 | 35.5 |
| 305 | O..... | 3.0 | .2 | 7.2 | .1 | 6.1 | 29.2 | 4.1 | 4.2 | 28.6 | 3.4 | .28 | 17.8 |
| 306 | R..... | 3.7 | .2 | 7.4 | .2 | 6.2 | 34.7 | 4.1 | 2.3 | 21.7 | 2.8 | .10 | 7.2 |
| 307 | RL..... | 5.5 | .6 | 13.2 | 3.2 | 19.5 | 72.3 | 11.8 | 4.7 | 36.9 | 15.2 | .16 | 31.7 |
| 308 | RLrP..... | 3.9 | .5 | 12.6 | 3.8 | 22.4 | 73.8 | 12.3 | 7.5 | 42.3 | 14.1 | .16 | 44.0 |
| 309 | RLrPK..... | 4.4 | .8 | 12.3 | 10.8 | 25.3 | 73.9 | 14.3 | 10.2 | 49.3 | 19.8 | .18 | 36.7 |
| 310 | O..... | 3.6 | .3 | (.87) | .1 | 6.6 | 43.8 | (.58) | 2.7 | 19.6 | 6.7 | .06 | 8.0 |
| 401 | O..... | .9 | 24.7 | 22.0 | (.16) | 9.8 | 18.8 | 11.6 | (0.00) | 6.7 | 13.3 | 13.4 | (0.00) |
| 402 | M..... | .9 | 27.5 | 21.6 | (.37) | 12.8 | 22.2 | 10.5 | (0.00) | 7.0 | 27.9 | 19.7 | (0.00) |
| 403 | ML..... | 1.1 | 30.3 | 27.2 | (.82) | 27.5 | 32.7 | 14.4 | (.36) | 14.7 | 46.4 | 40.6 | (1.22) |
| 404 | MLrP..... | .9 | 32.5 | 26.9 | (.88) | 33.6 | 33.2 | 17.0 | (.47) | 19.6 | 51.6 | 39.5 | (1.37) |
| 405 | O..... | .8 | 25.8 | 18.9 | .08 | 7.6 | 17.7 | 11.1 | 0.00 | 5.4 | 10.7 | 17.5 | (.05) |
| 406 | R..... | .8 | 27.5 | 23.6 | .25 | 13.8 | 18.2 | 12.2 | 0.00 | 10.5 | 16.2 | 15.6 | (.44) |
| 407 | RL..... | .8 | 25.1 | 30.5 | .67 | 30.2 | 26.4 | 16.7 | 1.42 | 17.7 | 26.1 | 36.9 | (1.47) |
| 408 | RLrP..... | .9 | 27.6 | 29.4 | 1.42 | 33.2 | 29.6 | 21.2 | 1.67 | 20.1 | 31.5 | 41.7 | (1.52) |
| 409 | RLrPK..... | .6 | 28.4 | 38.6 | 1.92 | 35.8 | 34.8 | 18.6 | 1.58 | 19.3 | 55.6 | 40.8 | (1.37) |
| 410 | O..... | .8 | 25.2 | 20.3 | (.64) | 2.5 | 17.1 | 12.5 | (0.00) | 4.0 | 14.8 | 13.3 | (0.00) |

¹Lime only. ²No manure. ³Oats substituted for wheat in 1920.

TABLE 90.—TOLEDO FIELD: COMPARISON OF DIFFERENT METHODS OF SUBSOILING AND DEEP-TILLING WITH ORDINARY PLOWING

| Plot No. | 1913 | | 1914 | | 1915 | | 1916 | | 1917 | | 1918 | | 1919 | | 1920 | | 1921 | | 1922 | |
|----------|---------------|------|-----------|-------|-----------|------|--------------------|-------|--------------|----------|--------------|-------|--------------|----------|-------------------|----------|--------------|--------------|-----------|--------------|
| | Soybeans | Corn | Soybeans | Wheat | Soybeans | Corn | Soybeans | Wheat | Wheat | Soybeans | Sweet clover | Wheat | Corn | Soybeans | Wheat | Soybeans | Wheat | Sweet clover | Wheat | Sweet clover |
| 1 | 8.2 | | 13.2 | | O.P. 37.6 | | 11.5 | | 22.5 | | 3.00 | | O.P. 49.6 | | 20.7 | | 21.1 | | 1.00 | |
| 2 | 8.8 | | 11.0 | | S.S. 40.0 | | 13.0 | | 15.3 | | 4.17 | | S.S. 44.0 | | 19.7 | | 19.5 | | 1.00 | |
| 3 | 9.6 | | 11.7 | | D.T. 36.8 | | 11.5 | | 11.0 | | 3.33 | | D.T. 49.6 | | 19.0 | | 16.6 | | 1.25 | |
| 4 | 7.8 | | 11.6 | | D. 37.8 | | 12.5 | | 12.2 | | 4.67 | | D. 45.4 | | 19.0 | | 16.8 | | 1.83 | |
| | Soybeans | | Wheat | | Soybeans | | Corn | | Soybeans | | Wheat | | Sweet clover | | Corn | | Soybeans | | Wheat | |
| 5 | 1.5 | | 2.6 | | 17.2 | | O.P. 40.4 | | 8.8 | | 4.2 | | 6.50 | | O.P. 46.0 | | 29.3 | | 9.7 | |
| 6 | 2.5 | | 11.5 | | 17.5 | | S.S. 37.6 | | 8.8 | | 3.7 | | 5.33 | | S.S. 50.8 | | 28.7 | | 12.0 | |
| 7 | 3.0 | | 11.7 | | 16.8 | | D.T. 36.4 | | 9.3 | | 5.5 | | 4.17 | | D.T. 30.0 | | 27.8 | | 7.2 | |
| 8 | 2.6 | | 10.9 | | 16.2 | | D. 41.6 | | 11.6 | | 8.7 | | 3.50 | | D. 44.2 | | 28.8 | | 5.9 | |
| | Oats | | Corn | | Wheat | | Sweet clover | | Corn | | Soybeans | | Wheat | | Sweet clover | | Corn | | Soybeans | |
| 9 | Not harvested | | O.P. 34.6 | | 7.5 | | ... | | O.P. 21.4 | | 10.3 | | 16.3 | | 7.25 | | O.P. 52.4 | | 17.6 | |
| 10 | | | S.S. 36.1 | | 7.5 | | ... | | S.S. 21.4 | | 9.0 | | 19.7 | | 6.42 | | S.S. 49.2 | | 15.6 | |
| 11 | | | D.T. 36.7 | | 8.3 | | ... | | D.T. 14.8 | | 4.5 | | 16.0 | | 5.67 | | D.T. 41.5 | | 16.6 | |
| 12 | | | D. 35.1 | | 8.0 | | ... | | D. 17.2 | | 9.2 | | 18.7 | | 9.33 | | D. 42.7 | | 17.8 | |
| | Oats | | Corn | | Soybeans | | Wheat ¹ | | Sweet clover | | Corn | | Soybeans | | Oats ² | | Sweet clover | | Corn | |
| 13 | Not harvested | | 30.6 | | 13.3 | | ... | | 3.17 | | O.P. 30.4 | | 16.0 | | 21.9 | | 1.17 | | O.P. 49.7 | |
| 14 | | | 35.8 | | 11.5 | | ... | | 3.83 | | S.S. 40.5 | | 18.3 | | 25.0 | | 1.17 | | S.S. 56.8 | |
| 15 | | | 35.6 | | 13.2 | | ... | | 3.50 | | D.T. 39.0 | | 17.5 | | 28.1 | | 1.17 | | D.T. 51.4 | |
| 16 | | | 35.9 | | 11.5 | | ... | | 3.19 | | D. 48.6 | | 16.2 | | 22.2 | | 1.00 | | D. 49.9 | |

Note: O.P.=ordinary plowing, S.S.=subsoiled, D.T.=deep tilled, D.=dynamited.
¹Crop plowed down. ²Crop failure. ³Oats substituted for wheat in 1920.

UNION GROVE FIELD, WHITESIDE COUNTY
ESTABLISHED 1907—DISCONTINUED 1923

Location.—About $1\frac{1}{2}$ miles northwest of Union Grove, on the farm of Mr. A. N. Abbott. The N. $\frac{1}{2}$ of the N.E. $\frac{1}{4}$ of the N.E. $\frac{1}{4}$, Sec. 5, Twp. 21 N., R. 4 E. of the 4th P. M.

Description.—The field consisted of 19 acres of dark-colored soil of medium acidity described, at the time the field was established, as a brown silt loam over sandy loess. The land was comparatively level and drained well without the use of tile. The field was divided into five series, two of which contained 20 fifth-acre plots each, and three of which contained 4 fifth-acre plots.

History.—The Union Grove field was leased from Mr. A. N. Abbott. Previous to the establishment of the field, the land had been farmed under a general system of livestock and grain farming. In 1906 the land was in oats with clover seeding.

Cropping and Soil Treatment.—A rotation of corn, corn, oats or barley, and clover was established on Series 100 and 200. The soil treatments were similar to those described in the introduction except that potassium was supplied in 100 pounds of potassium sulfate an acre a year and commercial nitrogen in the form of dried blood was supplied annually to Plot 19 at the rate of 200 pounds an acre. In 1916 the plot was divided, dried blood being applied to the east half and gluten meal at the annual acre rate of 376 pounds to the west half.

In 1919 it was planned to harvest the first crop of clover as hay on all plots and the second crop as seed on the residue plots. The limestone applications were discontinued in 1920. Beginning in 1921 all clover was harvested as hay and the return of the straws discontinued. In 1922 the application of manure was discontinued on Plot 4, as was also the application of phosphate to Plots 9 and 14.

Series 300, 400, and 500 were plotted in 1913 and discontinued in 1919. A nine-year rotation of potatoes and alfalfa was established on them, the potatoes growing three years on a given series and the alfalfa six years. The soil treatment methods were similar to those on the larger series except that 15 tons of manure an acre was applied for each potato crop.

TABLE 91.—UNION GROVE FIELD: SERIES 100, 200

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|-----------------------------|---------------------------|---------------------------|--------------|----------------|--------------|--------------|----------------|-----------------------|--------------|--------------|----------------|----------------|--------------|--------------|
| | | 1907 Corn ¹ | 1908 Oats ² | 1909 Clover ² | 1910 Corn ⁴ | 1911 Corn ⁴ | 1912 Oats | 1913 Clover | 1914 Corn | 1915 Corn | 1916 Barley | 1917 Soy- beans | 1918 Corn | 1919 Corn | 1920 Barley | 1921 Clover | 1922 Corn | 1923 Corn |
| 101 | L..... | 31.7 | 35.8 | (2.49) | 30.1 | 40.9 | 52.0 | (4.00) | 40.8 | 16.9 | 44.7 | (1.55) | 36.1 | 31.1 | 19.3 | (2.11) | 40.3 | 42.0 |
| 102 | RL..... | 36.4 | 43.0 | (^e) | 43.2 | 58.1 | 63.6 | (.75) | 64.7 | 32.3 | 53.9 | 17.7 | 64.8 | 63.8 | 25.0 | (2.92) | 58.2 | 39.1 |
| 103 | ML..... | 35.1 | 40.0 | (2.79) | 43.0 | 56.8 | 61.3 | (4.38) | 67.2 | 42.7 | 60.2 | (2.41) | 70.6 | 73.9 | 26.7 | (3.07) | 77.9 | 57.8 |
| 104 | CvML..... | 39.4 | 49.5 | (2.85) | 52.7 | 52.4 | 60.5 | (3.95) | 63.8 | 35.8 | 55.9 | (2.38) | 71.9 | 71.2 | 30.4 | (3.29) | 58.2 | 41.8 |
| 105 | L..... | 33.9 | 45.5 | (2.85) | 29.0 | 38.6 | 37.0 | (3.64) | 46.8 | 15.3 | 41.7 | (1.50) | 22.6 | 27.1 | 20.1 | (2.17) | 32.8 | 30.5 |
| 106 | LrP..... | 33.8 | 43.8 | (2.83) | 30.4 | 46.4 | 50.9 | (3.77) | 43.8 | 19.9 | 54.9 | (1.30) | 38.0 | 31.3 | 20.8 | (2.41) | 34.8 | 36.5 |
| 107 | RLrP..... | 45.1 | 52.2 | (^e) | 39.3 | 68.3 | 70.8 | (1.08) | 71.5 | 37.9 | 62.2 | 14.8 | 67.7 | 61.4 | 28.5 | (2.97) | 51.4 | 43.6 |
| 108 | MLrP..... | 39.4 | 49.8 | (2.70) | 45.7 | 61.3 | 48.6 | (3.38) | 74.3 | 38.7 | 61.5 | (2.20) | 70.2 | 63.1 | 31.2 | (3.22) | 83.2 | 53.7 |
| 109 | CvMLrP..... | 40.4 | 49.4 | (2.85) | 41.0 | 59.8 | 60.0 | (3.88) | 72.1 | 45.6 | 57.7 | (2.30) | 71.3 | 63.6 | 27.5 | (3.56) | 87.3 | 57.6 |
| 110 | L..... | 36.9 | 46.9 | (2.83) | 33.0 | 48.9 | 50.8 | (4.44) | 53.4 | 18.7 | 47.7 | (1.62) | 35.4 | 33.3 | 22.5 | (2.57) | 37.9 | 38.1 |
| 111 | LrPK..... | 40.9 | 49.5 | (3.37) | 44.0 | 66.3 | 57.7 | (4.60) | 74.0 | 38.2 | 60.9 | (1.60) | 68.4 | 64.9 | 28.1 | (3.72) | 74.2 | 56.0 |
| 112 | RLrPK..... | 54.4 | 53.9 | (^e) | 54.8 | 77.2 | 69.8 | (.67) | 79.6 | 40.7 | 64.3 | 16.8 | 76.5 | 70.7 | 30.0 | (4.06) | 89.2 | 56.3 |
| 113 | MLrPK..... | 50.6 | 53.4 | (3.01) | 51.8 | 70.4 | 54.8 | (3.29) | 72.0 | 42.1 | 56.7 | (2.25) | 72.0 | 82.3 | 37.6 | (4.00) | 90.2 | 64.8 |
| 114 | CvMLrPK..... | 52.0 | 46.7 | (2.79) | 47.7 | 68.8 | 59.2 | (3.17) | 73.1 | 36.3 | 61.9 | (2.18) | 74.0 | 72.9 | 29.2 | (3.93) | 89.0 | 65.4 |
| 115 | L..... | 43.3 | 43.3 | (2.06) | 30.0 | 39.0 | 46.4 | 1.17 | 51.3 | 16.4 | 45.0 | 14.2 | 25.1 | 25.9 | 19.2 | (1.61) | 36.8 | 37.2 |
| 116 | R..... | 42.3 | 40.3 | (^e) | 42.0 | 59.1 | 59.4 | 1.50 | 63.4 | 26.4 | 54.5 | 15.9 | 51.6 | 52.1 | 24.5 | (1.74) | 42.3 | 42.0 |
| 117 | RrP..... | 42.9 | 42.8 | (^e) | 42.6 | 60.3 | 67.2 | 1.92 | 70.3 | 38.2 | 58.6 | 12.7 | 56.9 | 56.1 | 25.0 | (2.24) | 47.0 | 43.0 |
| 118 | RrPK..... | 47.3 | 44.1 | (^e) | 54.2 | 72.1 | 69.7 | 1.58 | 77.9 | 42.9 | 58.8 | 16.4 | 64.5 | 59.0 | 31.8 | (3.39) | 76.7 | 47.6 |
| 119 | RLrPK..... | 50.6 | 53.3 | (^e) | 56.7 | 74.2 | 70.5 | .83 | 76.2 | 41.2 | 57.6 | 17.1 | 75.4 | 69.1 | 31.4 | (3.65) | 92.9 | 67.8 |
| 120 | 0..... | 33.1 | 35.2 | (2.12) | 28.6 | 35.6 | 54.1 | (2.97) | 44.7 | 14.5 | 45.5 | (1.08) | 29.3 | 33.4 | 12.3 | (0.00) | 38.8 | 33.5 |

¹Nitrogen, phosphorus, and potassium only. ²No lime or manure. ³Growth plowed down. ⁴No lime.

TABLE 91.—Concluded

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | | |
|----------|------------------------|-----------------------------|---------------------------|---------------------------|---------------------------|------------------------------------|--------------|--------------|--------------|----------------|--------------|--------------|----------------|----------------|--------------|--------------|----------------|-----------------------|
| | | 1907 Clover ¹ | 1908 Corn ² | 1909 Corn ³ | 1910 Oats ³ | 1911 Soy- beans ³ | 1912 Corn | 1913 Corn | 1914 Oats | 1915 Clover | 1916 Corn | 1917 Corn | 1918 Barley | 1919 Clover | 1920 Corn | 1921 Corn | 1922 Barley | 1923 Soy- beans |
| 201 | L..... | ..... | 63.6 | 57.6 | 68.3 | 23.1 | 54.5 | 35.9 | 51.6 | (3.12) | 36.8 | 33.0 | 39.0 | (4.05) | 42.2 | 43.6 | 27.0 | 4.8 |
| 202 | RL..... | ..... | 56.6 | 61.5 | 74.2 | 25.3 | 73.4 | 45.1 | 49.8 | 1.42 | 50.4 | 43.9 | 52.8 | (2.45) | 63.2 | 61.7 | 36.2 | 8.2 |
| 203 | ML..... | ..... | 61.2 | 60.6 | 67.8 | 24.1 | 84.9 | 51.5 | 48.3 | (3.34) | 50.0 | 50.7 | 55.2 | (4.31) | 63.3 | 71.9 | 47.3 | 7.0 |
| 204 | CvML..... | ..... | 56.1 | 59.9 | 72.3 | 25.0 | 85.5 | 48.9 | 45.3 | (2.98) | 52.1 | 50.9 | 55.2 | (4.51) | 71.3 | 74.9 | 46.3 | 7.2 |
| 205 | L..... | ..... | 58.8 | 61.6 | 64.5 | 23.0 | 55.7 | 34.7 | 47.2 | (2.59) | 34.9 | 32.1 | 38.8 | (4.10) | 49.5 | 40.1 | 29.8 | 4.8 |
| 206 | LrP..... | ..... | 54.4 | 60.0 | 65.5 | 23.8 | 66.5 | 34.7 | 51.7 | (3.00) | 35.2 | 38.4 | 50.0 | (4.13) | 45.3 | 41.3 | 32.5 | 3.7 |
| 207 | RLrP..... | ..... | 55.9 | 56.1 | 81.3 | 25.2 | 76.4 | 46.0 | 59.8 | 1.25 | 49.3 | 48.8 | 59.2 | (2.55) | 59.6 | 59.0 | 39.4 | 6.9 |
| 208 | MLrP..... | ..... | 57.5 | 61.6 | 73.0 | 24.8 | 88.0 | 50.4 | 45.6 | (3.65) | 49.0 | 54.2 | 54.8 | (3.83) | 62.2 | 77.6 | 46.0 | 9.5 |
| 209 | CvMLrP..... | ..... | 55.9 | 61.0 | 80.0 | 24.9 | 85.6 | 51.4 | 50.2 | (3.42) | 51.6 | 54.2 | 53.4 | (3.34) | 67.1 | 79.9 | 49.4 | 9.8 |
| 210 | L..... | ..... | 55.1 | 51.2 | 57.7 | 22.8 | 58.3 | 30.7 | 50.3 | (2.68) | 34.1 | 33.4 | 37.9 | (3.57) | 45.8 | 44.4 | 26.1 | 5.9 |
| 211 | LrPK..... | ..... | 55.1 | 52.2 | 55.0 | 23.0 | 69.9 | 44.1 | 50.3 | (3.28) | 47.1 | 51.3 | 39.5 | (3.33) | 63.2 | 78.1 | 38.2 | 10.2 |
| 212 | RLrPK..... | ..... | 56.5 | 49.1 | 65.3 | 23.5 | 77.7 | 49.4 | 61.7 | .92 | 55.1 | 64.6 | 55.0 | (2.00) | 70.2 | 70.1 | 41.7 | 10.0 |
| 213 | MLrPK..... | ..... | 51.8 | 45.9 | 58.8 | 22.8 | 88.0 | 50.6 | 55.8 | (3.05) | 53.5 | 60.2 | 51.6 | (3.72) | 67.5 | 69.6 | 54.8 | 13.4 |
| 214 | CvMLrPK..... | ..... | 39.0 | 41.2 | 60.8 | 22.8 | 85.5 | 50.8 | 50.6 | (3.04) | 52.6 | 57.0 | 50.7 | (3.46) | 71.2 | 71.5 | 49.9 | 12.6 |
| 215 | L..... | ..... | 30.2 | 33.6 | 55.0 | 21.8 | 20.1 | 19.1 | 48.9 | 1.58 | 28.1 | 22.7 | 34.2 | (3.32) | 33.3 | 35.7 | 27.9 | 2.3 |
| 216 | R..... | ..... | 31.2 | 36.6 | 60.6 | 23.8 | 54.1 | 28.8 | 57.0 | 1.33 | 39.2 | 35.8 | 54.7 | (2.21) | 43.4 | 51.7 | 32.9 | 7.2 |
| 217 | RLrP..... | ..... | 32.2 | 37.2 | 67.5 | 22.9 | 68.5 | 29.3 | 65.8 | .92 | 44.5 | 41.3 | 47.2 | (2.21) | 46.8 | 49.5 | 37.7 | 6.5 |
| 218 | RrPK..... | ..... | 49.5 | 40.2 | 66.4 | 24.5 | 77.4 | 41.1 | 63.3 | .92 | 48.7 | 50.5 | 49.2 | (2.42) | 61.3 | 63.2 | 42.8 | 9.9 |
| 219 | RLNtPK..... | ..... | 51.1 | 47.6 | 73.0 | 24.5 | 81.7 | 47.2 | 62.2 | 1.50 | 54.3 | 57.3 | 58.9 | (2.52) | 59.8 | 66.3 | 47.7 | 12.0 |
| 220 | 0..... | ..... | 30.4 | 32.2 | 49.5 | 21.4 | 27.2 | 19.5 | 55.0 | (1.69) | 23.5 | 23.2 | 39.4 | (3.26) | 36.9 | 33.4 | 25.2 | 5.4 |

¹No lime or manure. ²Nitrogen, phosphorus and potassium together. ³Nitrogen, phosphorus and potassium only. ⁴No lime or manure.

TABLE 92.—UNION GROVE FIELD: SERIES 300, 400, 500

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | |
|----------|------------------------|----------------------------|----------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|----------|----------|
| | | 1913 | | 1914 | | 1915 | | 1916 | | 1917 | | 1918 | | 1919 |
| | | Potatoes | Potatoes | Potatoes | Potatoes | Potatoes | Potatoes | Alfalfa ³ | Alfalfa | Alfalfa ³ | Alfalfa | Alfalfa seeding | Alfalfa | Alfalfa |
| 301 | 0..... | 46.8 | 59.2 | 66.8 | (1.60) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | (.60) | ..... |
| 302 | M..... | 112.2 | 142.3 | 265.0 | (5.35) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | (1.37) | ..... |
| 303 | ML..... | 83.7 | 113.6 | 237.4 | (5.54) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | (1.42) | ..... |
| 304 | MLrP..... | 91.7 | 117.5 | 251.8 | (5.67) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | (2.11) | ..... |
| | | Alfalfa ² | | Alfalfa ¹ | Alfalfa ¹ | Potatoes | Potatoes | Potatoes | Potatoes | Potatoes | Potatoes | Potatoes | Alfalfa | Alfalfa |
| 401 | 0..... | ..... | (3.30) | (4.74) | 68.4 | 54.6 | 18.7 | ..... | ..... | ..... | ..... | ..... | (1.22) | ..... |
| 402 | M..... | ..... | (3.55) | (4.72) | 143.5 | 149.2 | 107.8 | ..... | ..... | ..... | ..... | ..... | (2.07) | ..... |
| 403 | ML..... | ..... | (3.81) | (4.87) | 123.3 | 152.5 | 97.9 | ..... | ..... | ..... | ..... | ..... | (2.22) | ..... |
| 404 | MLrP..... | ..... | (3.58) | (5.00) | 115.2 | 134.2 | 105.6 | ..... | ..... | ..... | ..... | ..... | (2.37) | ..... |
| | | Alfalfa ² | | Alfalfa ¹ | Soybeans ¹ | Potatoes | Potatoes |
| 501 | 0..... | ..... | (3.03) | (4.47) | (4.12) | ..... | ..... | ..... | ..... | ..... | ..... | (3.00) | 25.2 | ..... |
| 502 | M..... | ..... | (3.32) | (4.50) | (4.12) | ..... | ..... | ..... | ..... | ..... | ..... | (3.22) | 42.3 | ..... |
| 503 | ML..... | ..... | (4.40) | (5.24) | (4.99) | ..... | ..... | ..... | ..... | ..... | ..... | (3.33) | 34.5 | ..... |
| 504 | MLrP..... | ..... | (5.34) | (5.57) | (5.88) | ..... | ..... | ..... | ..... | ..... | ..... | (4.40) | 35.2 | ..... |

¹No manure. ²All plots harvested together; the yield was 5.57 tons per acre. ³Killed by a heavy freeze in April.

UNIONVILLE FIELD, MASSAC COUNTY

ESTABLISHED 1911

Location.—Immediately north of Unionville and about five miles east of Brookport. A part of the south side of the N.W. $\frac{1}{4}$ of the N.W. $\frac{1}{4}$, Sec. 15, Twp. 16 S., R. 6 E. of the 3d P. M.

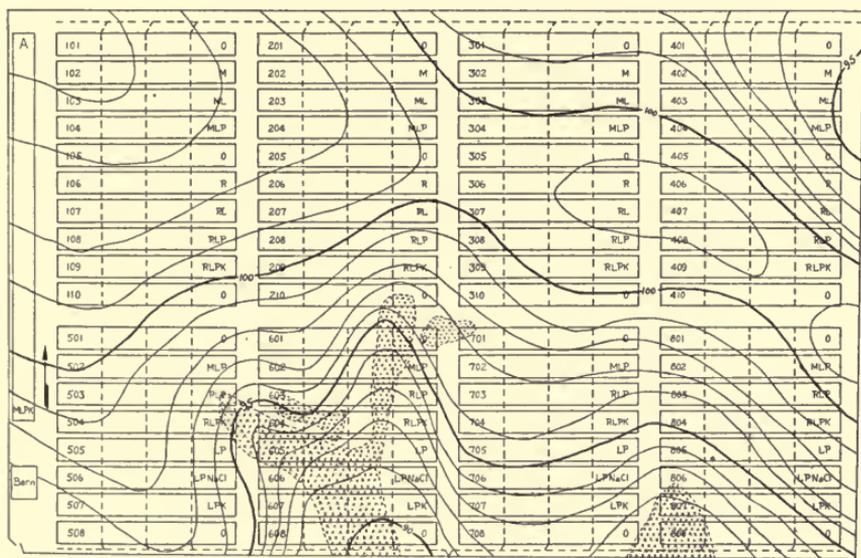
Description.—The field consists of $24\frac{1}{2}$ acres of light-colored loessial upland soil of strong acidity. Three soil types have been mapped on this field: (1) Yellow-Gray Silt Loam, deep phase; (2) Yellow Silt Loam; and (3) Yellow-Gray Silt Loam. The prevailing type on this field is tentatively classified as Yellow-Gray Silt Loam. The land is undulating in topography. It is thoroly tile-drained and drains fairly well. The field is divided into eight series, four of which contain 10 fifth-acre plots each, and four which contain 8 fifth-acre plots each.

History.—The Unionville field was purchased by citizens of Massac county and the southern part of Pope county, and donated to the University for experimental purposes. Little is known of the previous history of the field except that it was in wheat and rye in 1910.

Cropping and Soil Treatment.—A rotation of corn, cowpeas, wheat, and cotton was originally established on Series 100, 200, 300, and 400. Sweet clover was seeded in the wheat residue plots and cowpeas on the same plots in the corn for use as green manure and residues. The soil treatments given these series were similar to those described in the introduction. In 1920 the seeding of cowpeas in the corn was discontinued. In 1922 the rotation was changed to corn, rye, cowpeas, and wheat, with the sweet clover seeding continued on the residue plots. In 1924 the rotation was changed to one of corn, cotton, cowpeas, and wheat, with the sweet clover seeding on the residue plots. At this time the rock phosphate applications were evened up to 4 tons an acre, and no more will be applied for an indefinite period.

The original rotation established on Series 500, 600, 700, and 800 was wheat, clover, and potatoes on three of them, while alfalfa grew on the fourth for four years, after which it was changed. From 1917 to 1922 winter oats displaced wheat in the rotation. In 1923 the rotation was changed to corn, soybeans, timothy-clover hay, and wheat with sweet clover seeded on the residue plots for use as residues. Until 1918 only Plots 2, 3, and 4 of these series received soil treatment. The rates and methods of applying these treatments were similar to those on the larger series. In 1919 on Series 700 and in 1920 on the other series, Plots 5, 6, and 7 were also given soil treatment. Plot 5 was treated like Plot 4 except that potash shale at the annual acre rate of 500 pounds was applied instead of kainit at the rate of 200 pounds. (Some of the potash applications on Plot 4 were made with Nebraska potash salts, which carry the potassium mainly as carbonate.) Plot 6 has

been treated like Plot 3 except that common salt (sodium chlorid) has been applied at the annual acre rate of 200 pounds in addition to the other treatments. Plot 7 has been treated like Plot 3 except that Nebraska potash salts at the annual acre rate of 87 pounds has been applied in addition to the other treatments. The first application of the shale was made in 1922. At that time the application of limestone were discontinued.



 Yellow-Gray Silt Loam, deep phase
 Yellow Silt Loam

 Yellow-Gray Silt Loam

SOIL MAP OF UNIONVILLE FIELD

Scale
0 25 50 75 100 feet

Contour interval—1 foot

TABLE 93.—UNIONVILLE FIELD: SERIES 100, 200, 300, 400

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | |
|----------|------------------------|------------------------------------|------------------------|----------------------------|-------------------------|-----------------------|------------------|---------------|------------|----------------------------|------------------|---------------|------------|-----------|-----------------------|
| | | 1911 Seed cotton ¹ lbs. | 1912 Corn ¹ | 1913 Cow-peas ² | 1914 Wheat ⁴ | 1915 Seed cotton lbs. | 1916 Corn | 1917 Cow-peas | 1918 Wheat | 1919 Cow-peas ² | 1920 Corn | 1921 Cow-peas | 1922 Wheat | 1923 Corn | 1924 Seed cotton lbs. |
| 101 | 0 | 1120 | 36.6 | (1.19) | 13.6 | 340 | 44.1 | (.83) | 12.0 | (.66) | 29.7 | 4.3 | 7.8 | 25.1 | 164 |
| 102 | M | 793 | 30.8 | (.70) | 13.4 | 325 | 47.9 | (1.07) | 14.2 | (.80) | 35.4 | 3.9 | 10.5 | 29.9 | 195 |
| 103 | ML | 710 | 46.5 | (1.20) | 20.4 | 935 | 61.2 | (1.50) | 23.3 | (1.05) | 49.4 | 5.5 | 18.9 | 33.0 | 408 |
| 104 | MLrP | 625 | 47.2 | (1.01) | 20.5 | 775 | 54.0 | (1.32) | 24.9 | (1.06) | 48.3 | 5.1 | 20.2 | 28.7 | 358 |
| 105 | 0 | 450 | 36.3 | 5.1 | 11.7 | 155 | 37.2 | 4.4 | 13.1 | 6.1 | 25.2 | 3.3 | 7.6 | 20.0 | 69 |
| 106 | R | 440 | 37.1 | 6.4 | 14.7 | 65 | 38.1 | 4.2 | 13.3 | 9.2 | 37.1 | 3.5 | 11.8 | 26.3 | 138 |
| 107 | RL | 403 | 56.7 | 6.2 | 23.2 | 390 | 56.8 | 4.6 | 22.5 | 12.1 | 59.5 | 4.8 | 19.8 | 38.4 | 154 |
| 108 | RLrP | 350 | 53.8 | 7.0 | 25.2 | 430 | 60.5 | 3.7 | 26.2 | 13.1 | 57.6 | 4.7 | 25.5 | 40.0 | 94 |
| 109 | RLrPK | 483 | 53.1 | 8.1 | 26.7 | 575 | 59.8 | 5.0 | 26.1 | 16.1 | 65.3 | 6.3 | 24.9 | 44.0 | 355 |
| 110 | 0 | 323 | 28.1 | (.64) | 8.8 | 265 | 32.0 | (.80) | 11.6 | (.51) | 23.0 | 2.8 | 8.0 | 17.0 | 70 |
| | | Seed cotton lbs. | Wheat ² | Corn | Cow-peas | Wheat | Seed cotton lbs. | Corn | Cow-peas | Wheat | Seed cotton lbs. | Corn | Oats | Wheat | Corn |
| 201 | 0 | 15.8 | 22 | 18.2 | (.34) | 9.8 | 485 | 21.0 | (.50) | 7.3 | 75 | 6.9 | .8 | 3.1 | 3.8 |
| 202 | M | 16.3 | 32 | 24.9 | (.24) | 11.6 | 490 | 23.6 | (.77) | 10.1 | 205 | 18.0 | 1.7 | 5.1 | 10.6 |
| 203 | ML | 15.9 | 150 | 31.4 | (.23) | 18.7 | 590 | 30.1 | (1.34) | 18.2 | 455 | 8.8 | 3.4 | 8.0 | 25.9 |
| 204 | MLrP | 17.6 | 170 | 34.5 | (.29) | 22.5 | 600 | 35.7 | (1.42) | 26.3 | 495 | 14.0 | 3.3 | 8.3 | 24.4 |
| 205 | 0 | 16.6 | 45 | 21.0 | .8 | 11.0 | 490 | 20.6 | 3.9 | 9.2 | 80 | 7.4 | .8 | 4.2 | 5.8 |
| 206 | R | 14.0 | 25 | 17.1 | 3.8 | 12.8 | 365 | 24.4 | 4.2 | 11.0 | 70 | 6.5 | .6 | 5.3 | 10.5 |
| 207 | RL | 15.2 | 55 | 23.3 | 2.2 | 19.2 | 363 | 48.3 | 3.3 | 24.3 | 385 | 14.8 | 3.4 | 10.3 | 35.3 |
| 208 | RLrP | 14.3 | 82 | 27.1 | 2.5 | 26.3 | 600 | 47.9 | 3.4 | 26.7 | 280 | 20.9 | 2.8 | 10.7 | 42.4 |
| 209 | RLrPK | 17.8 | 178 | 33.0 | 4.4 | 30.8 | 820 | 56.8 | 5.1 | 24.2 | 710 | 30.3 | 2.2 | 12.8 | 55.3 |
| 210 | 0 | 12.8 | 35 | 19.6 | (.34) | 11.1 | 290 | 24.4 | (.61) | 9.8 | 145 | 12.4 | .5 | 4.6 | 11.7 |

¹Lime only. ²No manure or residues. ³Lime and residues only. ⁴No manure. ⁵Cowpeas grown in 1919 as a substitute for cotton.

TABLE 93.—Concluded

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|-------------------------|-----------------------|------------------|---------------|------------|-----------------------|------------------|---------------|------------|-----------------------|---------------|---------------|------------|--|
| | | 1911 Cow-peas ¹ | 1912 Wheat ² | 1913 Seed cotton lbs. | 1914 Corn | 1915 Cow-peas | 1916 Wheat | 1917 Seed cotton lbs. | 1918 Corn | 1919 Cow-peas | 1920 Wheat | 1921 Seed cotton lbs. | 1922 Cow-peas | 1923 Cow-peas | 1924 Wheat | |
| 301 | 0 | 5.5 | 4.1 | 265 | 6.6 | (.50) | 3.8 | 60 | 5.2 | (.72) | 4.8 | 160 | (.58) | (1.28) | 3.7 | |
| 302 | M | 5.0 | 3.0 | 532 | 5.1 | (.56) | 7.5 | 90 | 5.3 | (1.02) | 5.6 | 420 | (.74) | (1.21) | 5.1 | |
| 303 | ML | 5.7 | 6.2 | 690 | 4.6 | (.94) | 14.9 | 385 | 9.1 | (1.32) | 5.2 | 510 | (1.04) | (1.06) | 11.3 | |
| 304 | MLrP | 6.6 | 7.4 | 960 | 4.9 | (2.33) | 22.3 | 325 | 11.3 | (1.65) | 9.8 | 685 | (1.35) | (1.31) | 14.5 | |
| 305 | 0 | 5.7 | 4.0 | 212 | 3.0 | .3 | 4.8 | 50 | 2.0 | 10.3 | 2.0 | 160 | (.46) | (1.16) | 3.6 | |
| 306 | R | 7.3 | 3.9 | 192 | 3.0 | .3 | 5.7 | 55 | 1.8 | 9.8 | 4.2 | 155 | (.52) | (1.21) | 3.2 | |
| 307 | RL | 6.0 | 5.6 | 188 | 6.2 | .6 | 12.8 | 210 | 5.3 | 14.4 | 9.4 | 470 | (.65) | (1.11) | 13.1 | |
| 308 | RLrP | 7.8 | 8.1 | 232 | 5.0 | .5 | 19.2 | 210 | 6.8 | 16.5 | 12.3 | 375 | (.85) | (1.15) | 18.8 | |
| 309 | RLrPK | 8.0 | 12.6 | 365 | 5.6 | .8 | 24.5 | 355 | 8.5 | 16.9 | 11.9 | 680 | (1.06) | (1.30) | 20.6 | |
| 310 | 0 | 5.5 | 5.1 | 162 | 3.9 | (.44) | 5.7 | 65 | 2.5 | (.82) | 3.2 | 190 | (.50) | (1.18) | 5.1 | |
| | | | | | Seed cotton lbs. | | Wheat | | Seed cotton lbs. | | Wheat | | Corn | | Cow-peas | |
| 401 | 0 | 31.5 | (.54) | 2.8 | 235 | 35.2 | (.77) | 4.3 | 90 | 17.7 | (.88) | 5.5 | 4.6 | 2.0 | (.30) | |
| 402 | M | 36.1 | (.55) | 4.0 | 430 | 50.2 | (1.03) | 8.7 | 230 | 29.6 | (.96) | 6.9 | 7.6 | 4.3 | (.40) | |
| 403 | ML | 36.9 | (.71) | 9.8 | 530 | 54.2 | (1.34) | 15.4 | 295 | 46.6 | (1.24) | 12.1 | 21.4 | 8.7 | (.79) | |
| 404 | MLrP | 34.0 | (.78) | 12.5 | 435 | 53.4 | (1.50) | 19.3 | 420 | 47.6 | (1.39) | 14.7 | 27.0 | 8.8 | (.85) | |
| 405 | 0 | 27.8 | (.54) | 2.3 | 215 | 34.7 | .5 | 4.9 | 65 | 16.5 | 4.8 | 5.7 | 7.8 | 2.1 | (.29) | |
| 406 | R | 26.4 | (.6) | 1.8 | 245 | 36.6 | .5 | 5.3 | 65 | 20.3 | 4.9 | 6.8 | 15.9 | 2.3 | (.40) | |
| 407 | RL | 30.4 | (.6) | 10.9 | 200 | 46.8 | .4 | 15.6 | 90 | 33.4 | 5.9 | 15.4 | 48.3 | 8.4 | (.63) | |
| 408 | RLrP | 31.1 | (.6) | 13.2 | 250 | 53.6 | .5 | 17.0 | 100 | 40.3 | 6.8 | 18.8 | 48.4 | 13.1 | (.95) | |
| 409 | RLrPK | 36.2 | (.6) | 15.2 | 355 | 56.2 | .6 | 19.6 | 195 | 50.4 | 8.8 | 22.9 | 45.9 | 14.0 | (1.51) | |
| 410 | 0 | 27.1 | (.50) | 1.1 | 310 | 33.1 | (.77) | 3.2 | 85 | 17.6 | (.84) | 7.9 | 7.6 | 2.0 | (.28) | |

Lime only. ¹No manure. ²No manure, phosphate, or potassium. ³Crop plowed under.

TABLE 95.—UNIONVILLE FIELD: SERIES 500, 600, 700, 800 (1920-1924)

| | | Bushels or (tons) per acre | | | | |
|----------|------------------------|----------------------------|----------------------|-------------|----------------|--------------|
| Plot No. | Soil treatment applied | 1920 Potatoes ¹ | 1921 Winter oats | 1922 Corn | 1923 Soy-beans | 1924 Timothy |
| 501 | 0 | .8 | 13.3 | 15.2 | 10.7 | (.29) |
| 502 | MLrP | 10.9 | 50.3 | 51.5 | 32.0 | (3.01) |
| 503 | RLrP | 1.5 | 20.6 | 48.9 | 27.3 | (2.16) |
| 504 | RLrPK (Kainit) | 1.7 | 22.5 | 43.7 | 31.8 | (2.03) |
| 505 | RLrP, Shale | .7 | 16.9 | 40.8 | 22.6 | (1.38) |
| 506 | RLrP, Common salt | 1.4 | 22.5 | 43.2 | 21.4 | (1.55) |
| 507 | RLrPK (Omaha salt) | 1.1 | 23.9 | 45.4 | 25.4 | (1.90) |
| 508 | 0 | .4 | 16.4 | 17.1 | 13.0 | (.59) |
| | | Soy-beans ¹ | Potatoes | Winter oats | Corn | Soy-beans |
| 601 | 0 | (.62) | 12.1 | 31.1 | 18.1 | 4.4 |
| 602 | MLrP | (1.53) | 28.1 | 25.3 | 49.5 | 18.3 |
| 603 | RLrP | 8.9 | 10.8 | 41.9 | 33.4 | 15.2 |
| 604 | RLrPK (Kainit) | 11.5 | 8.8 | 44.2 | 38.4 | 18.5 |
| 605 | RLrP, Shale | 5.6 | 13.0 | 37.8 | 42.8 | 17.3 |
| 606 | RLrP, Common salt | 9.0 | 12.8 | 37.8 | 48.2 | 16.4 |
| 607 | RLrPK (Omaha salt) | 9.7 | 17.4 | 38.4 | 47.5 | 14.8 |
| 608 | 0 | 7.1 | 13.9 | 35.0 | 32.7 | 7.8 |
| | | Alfalfa ¹ | Alfalfa ² | Alfalfa | Wheat | Corn |
| 701 | 0 | (0.00) | .... | (.49) | 8.3 | 15.6 |
| 702 | MLrP | (3.49) | .... | (3.36) | 34.3 | 47.2 |
| 703 | RLrP | (3.11) | .... | (1.60) | 25.5 | 47.5 |
| 704 | RLrPK (Kainit) | (3.52) | .... | (2.21) | 26.6 | 54.2 |
| 705 | RLrP, Shale | (1.87) | .... | (1.58) | 21.8 | 45.4 |
| 706 | RLrP, Common salt | (1.97) | .... | (1.80) | 21.6 | 47.2 |
| 707 | RLrPK (Omaha salt) | (2.81) | .... | (1.84) | 20.0 | 44.7 |
| 708 | 0 | (0.00) | .... | (.49) | 7.5 | 18.3 |
| | | Winter oats ¹ | Clover | Soy-beans | Timothy | Wheat |
| 801 | 0 | 1.6 | (0.00) | (.06) | (1.41) | 8.5 |
| 802 | MLrP | 35.1 | (1.42) | (0.00) | (3.13) | 27.2 |
| 803 | RLrP | 24.7 | (1.31) | (.49) | (2.63) | 21.9 |
| 804 | RLrPK (Kainit) | 35.8 | (1.38) | (.57) | (2.83) | 24.3 |
| 805 | RLrP, Shale | 0.0 | (.63) | (.23) | (2.00) | 12.5 |
| 806 | RLrP, Common salt | 0.0 | (.58) | (.24) | (1.85) | 8.8 |
| 807 | RLrPK (Omaha salt) | 0.0 | (.63) | (.22) | (1.78) | 7.9 |
| 808 | 0 | 0.0 | (.25) | (.20) | (1.55) | 8.8 |

¹No shale. ²Alfalfa winterkilled in 1921.

URBANA FIELD, MORROW PLOTS, CHAMPAIGN COUNTY
ESTABLISHED 1876¹

Location.—University campus, just a few rods north of the New Agricultural Building.

Description.—The Morrow Plots consist of three main plots each divided into 4 twentieth-acre plots. The soil is classified as Brown Silt Loam (Muscatine silt loam), and is of medium acidity. The land is gently undulating and is drained by tile placed across the center of each main plot. The drainage is good.

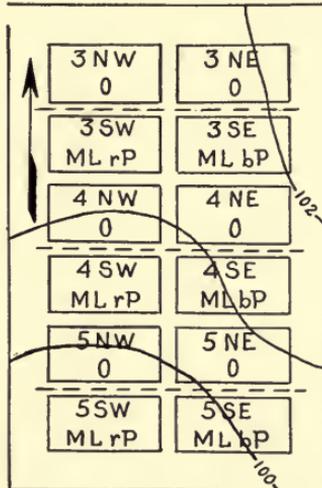
History.—So far as is known, the Morrow Plots are the oldest experimental plots in America. The plots were named for Professor George E. Morrow, who was Professor of Agriculture for many years in the early history of the Experiment Station. No information is available in regard to the previous history of this field.

Cropping and Soil Treatment.—The present Morrow Plots originally existed as three plots of a larger series containing a half-acre each and were known as Plots 3, 4, and 5. Corn was grown continuously on Plot 3; corn and oats alternately on Plot 4; and corn 2 years, oats 1 year, meadow (clover, timothy, or both) 3 years on Plot 5. No manure or commercial fertilizers of any kind were used on these three plots. After the Experiment Station was established in 1888, these cropping plans were continued with the exception that the rotation on Plot 5 was change to the simpler three-year rotation of corn, oats, and clover.

In 1904 the three plots were divided into halves and the halves subdivided into quarters, according to the arrangement indicated by the following map. The cropping plans have been continued. On all plots the two north quarters have received no soil treatments. All the vegetation produced on them has been removed. The two south quarters on each plot, however, have received soil treatment since 1904. Manure has been applied for the corn crop on these plots in proportion to the total produce grown on them. Until 1919 rock phosphate was applied to the west quarter at the annual acre rate of 600 pounds, and bone meal to the east quarter at the annual acre rate of 200 pounds. At that time the total application of rock phosphate on the west quarters was evened up to four times the amount of bone meal used on the east quarters. Since this time the two phosphates have been applied in this ratio. In 1925 the bone meal was evened up to a total of 3,300 pounds an acre and the rock phosphate to a total of 13,200 pounds.

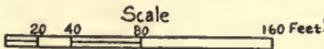
¹It appears from the early bulletins of the Experiment Station that work actually began on these plots in 1876, altho according to the published records of the Board of Trustees of the University official sanction was first given these experiments in 1879.

No more will be applied for an indefinite time. In 1904 limestone at the acre rate of 1,700 pounds was applied to the south quarters of all plots. In 1919 it was again applied at the acre rate of 5 tons. No more has been applied since. From 1903 to 1920 legumes (cowpeas, vetch, or clovers, including sweet clover) were seeded in the corn at the last cultivation on the south quarters of all plots. Legumes have been seeded in the oats on the two south quarters of the two-year rotation since 1904 for use as a green manure for the following corn crop. Red clover was the principal legume until 1918. Since that time sweet clover has been consistently used.



Contour interval - 1 foot

Brown Silt Loam
 Muscatine silt loam



SOIL MAP OF
MORROW PLOTS

TABLE 96.—URBANA FIELD, MORROW PLOTS
(1879-1912)

| Years | Soil treatment applied | Bushels or (tons) per acre | | | | | |
|-------------------|------------------------|----------------------------|-------------------|-------|---------------------|-------|---------------------|
| | | Corn every year Corn | Two-year rotation | | Three-year rotation | | |
| | | | Corn | Oats | Corn | Oats | Clover |
| 1879-87 | None..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1888 | None..... | 54.3 | 49.5 | ..... | ..... | 48.6 | ..... |
| 1889 | None..... | 43.2 | ..... | 37.4 | ..... | ..... | (4.04) |
| 1890 | None..... | 48.7 | 54.3 | ..... | ..... | ..... | (1.51) |
| 1891 | None..... | 28.6 | 33.2 | ..... | ..... | ..... | (1.46) |
| 1892 | None..... | 33.1 | ..... | 37.2 | 70.2 | ..... | ..... |
| 1893 | None..... | 21.7 | 29.6 | ..... | 34.1 | ..... | ..... |
| 1894 | None..... | 34.8 | ..... | 57.2 | ..... | 65.1 | ..... |
| 1895 | None..... | 42.2 | 41.6 | ..... | ..... | 22.2 | ..... |
| 1896 ¹ | None..... | 62.3 | ..... | 34.5 | ..... | ..... | ..... |
| 1897 ¹ | None..... | 40.1 | 47.0 | ..... | ..... | ..... | ..... |
| 1898 ² | None..... | 18.1 | ..... | ..... | ..... | ..... | ..... |
| 1899 | None..... | 50.1 | 44.4 | ..... | 53.5 | ..... | ..... |
| 1900 ¹ | None..... | 48.0 | ..... | 41.5 | ..... | ..... | ..... |
| 1901 | None..... | 23.7 | 33.7 | ..... | 34.3 | ..... | ..... |
| 1902 | None..... | 60.2 | ..... | 56.3 | ..... | 54.6 | ..... |
| 1903 | None..... | 26.0 | 35.9 | ..... | ..... | ..... | (1.11) |
| 1904 | 0..... | 21.1 | ..... | 17.5 | 51.4 | ..... | ..... |
| | MLrP..... | 16.1 | ..... | 22.5 | 76.4 | ..... | ..... |
| | 0..... | 22.5 | ..... | 17.5 | 67.1 | ..... | ..... |
| | MLbP..... | 19.3 | ..... | 28.1 | 81.4 | ..... | ..... |
| 1905 | 0..... | 22.5 | 48.0 | ..... | ..... | 35.6 | ..... |
| | MLrP..... | 26.8 | 40.0 | ..... | ..... | 45.0 | ..... |
| | 0..... | 27.0 | 52.0 | ..... | ..... | 49.0 | ..... |
| | MLbP..... | 36.0 | 49.8 | ..... | ..... | 56.2 | ..... |
| 1906 | 0..... | 25.3 | ..... | 30.6 | ..... | ..... | (1.36) ³ |
| | MLrP..... | 32.5 | ..... | 44.3 | ..... | ..... | (1.88) ³ |
| | 0..... | 28.9 | ..... | 38.7 | ..... | ..... | (1.49) ³ |
| | MLbP..... | 39.1 | ..... | 60.6 | ..... | ..... | (1.60) ³ |
| 1907 | 0..... | 28.5 | 43.9 | ..... | 77.4 | ..... | ..... |
| | MLrP..... | 40.8 | 81.4 | ..... | 91.4 | ..... | ..... |
| | 0..... | 29.4 | 51.7 | ..... | 83.6 | ..... | ..... |
| | MLbP..... | 56.5 | 93.8 | ..... | 95.8 | ..... | ..... |
| 1908 | 0..... | 10.9 | ..... | 31.9 | ..... | 38.8 | ..... |
| | MLrP..... | 24.8 | ..... | 46.9 | ..... | 43.8 | ..... |
| | 0..... | 15.9 | ..... | 33.8 | ..... | 41.3 | ..... |
| | MLbP..... | 31.1 | ..... | 43.1 | ..... | 45.0 | ..... |
| 1909 | 0..... | 26.4 | 31.6 | ..... | ..... | ..... | (.40) .52 |
| | MLrP..... | 30.4 | 60.4 | ..... | ..... | ..... | (1.72) 1.17 |
| | 0..... | 26.8 | 34.4 | ..... | ..... | ..... | (.90) .75 |
| | MLbP..... | 32.8 | 69.2 | ..... | ..... | ..... | (1.75) 1.17 |
| 1910 | 0..... | 32.6 | ..... | 31.3 | 52.3 | ..... | ..... |
| | MLrP..... | 48.9 | ..... | 51.9 | 78.3 | ..... | ..... |
| | 0..... | 39.1 | ..... | 36.3 | 64.9 | ..... | ..... |
| | MLbP..... | 60.3 | ..... | 66.9 | 88.3 | ..... | ..... |
| 1911 ⁷ | 0..... | 20.7 | 26.6 | ..... | ..... | 16.0 | ..... |
| | MLrP..... | 29.0 | 44.4 | ..... | ..... | 37.8 | ..... |
| | 0..... | 23.0 | 30.6 | ..... | ..... | 25.1 | ..... |
| | MLbP..... | 34.0 | 48.2 | ..... | ..... | 38.2 | ..... |
| 1912 | 0..... | 40.0 | ..... | 52.8 | ..... | ..... | (1.20) ⁴ |
| | MLrP..... | 64.4 | ..... | 81.2 | ..... | ..... | (1.85) ⁴ |
| | 0..... | 46.4 | ..... | 57.1 | ..... | ..... | (1.50) ⁴ |
| | MLbP..... | 64.0 | ..... | 80.9 | ..... | ..... | (1.55) ⁴ |

For footnotes, see page following.

TABLE 96.—*Concluded*
(1913-1924)

Bushels or (tons) per acre

| Years | Soil treatment applied | Corn every year Corn | Two-year rotation | | Three-year rotation | | |
|-------|------------------------|-------------------------------|-------------------|------|---------------------|------|---------------------|
| | | | Corn | Oats | Corn | Oats | Clover |
| 1913 | 0..... | 17.6 | 26.8 | .... | 29.6 | .... | .... |
| | MLrP..... | 32.4 | 22.0 | .... | 45.2 | .... | .... |
| | 0..... | 21.2 | 31.6 | .... | 38.0 | .... | .... |
| | MLbP..... | 31.6 | 28.0 | .... | 50.4 | .... | .... |
| 1914 | 0..... | 28.8 | .... | 32.9 | .... | 33.9 | .... |
| | MLrP..... | 37.2 | .... | 56.9 | .... | 53.9 | .... |
| | 0..... | 34.4 | .... | 34.2 | .... | 45.3 | .... |
| | MLbP..... | 41.6 | .... | 59.6 | .... | 62.0 | .... |
| 1915 | 0..... | 37.6 | 48.0 | .... | .... | .... | (1.75) ⁴ |
| | MLrP..... | 62.8 | 80.8 | .... | .... | .... | (1.99) ⁴ |
| | 0..... | 42.4 | 50.0 | .... | .... | .... | (1.94) ⁴ |
| | MLbP..... | 69.2 | 81.6 | .... | .... | .... | (1.94) ⁴ |
| 1916 | 0..... | 10.8 | .... | 33.8 | 26.8 | .... | .... |
| | MLrP..... | 9.6 | .... | 62.5 | 37.6 | .... | .... |
| | 0..... | 11.6 | .... | 41.2 | 28.8 | .... | .... |
| | MLbP..... | 12.0 | .... | 66.9 | 43.6 | .... | .... |
| 1917 | 0..... | 40.8 | 44.4 | .... | .... | 59.4 | .... |
| | MLrP..... | 60.4 | 77.6 | .... | .... | 82.5 | .... |
| | 0..... | 39.2 | 52.4 | .... | .... | 77.5 | .... |
| | MLbP..... | 73.6 | 85.2 | .... | .... | 91.2 | .... |
| 1918 | 0..... | 13.2 | .... | 25.6 | .... | .... | (2.37) |
| | MLrP..... | 29.6 | .... | 53.1 | .... | .... | (4.05) |
| | 0..... | 14.0 | .... | 28.8 | .... | .... | (2.79) |
| | MLbP..... | 35.6 | .... | 65.6 | .... | .... | (4.04) |
| 1919 | 0..... | 21.6 | 30.0 | .... | 51.6 | .... | .... |
| | MLrP..... | 41.2 | 65.6 | .... | 69.2 | .... | .... |
| | 0..... | 26.4 | 31.6 | .... | 52.8 | .... | .... |
| | MLbP..... | 45.6 | 66.8 | .... | 72.4 | .... | .... |
| 1920 | 0..... | 26.8 | .... | 36.2 | .... | 47.5 | .... |
| | MLrP..... | 52.0 | .... | 48.1 | .... | 73.8 | .... |
| | 0..... | 29.6 | .... | 38.1 | .... | 56.9 | .... |
| | MLbP..... | 56.8 | .... | 55.0 | .... | 65.6 | .... |
| 1921 | 0..... | 16.0 | 26.8 | .... | .... | .... | (.17) .30 |
| | MLrP..... | 38.4 | 68.0 | .... | .... | .... | (1.47) .80 |
| | 0..... | 23.6 | 34.4 | .... | .... | .... | (.35) .77 |
| | MLbP..... | 46.0 | 68.8 | .... | .... | .... | (1.18) .90 |
| 1922 | 0..... | 21.3 | .... | 37.5 | 45.1 | .... | .... |
| | MLrP..... | 38.5 | .... | 56.3 | 67.3 | .... | .... |
| | 0..... | 27.8 | .... | 41.3 | 53.2 | .... | .... |
| | MLbP..... | 39.2 | .... | 55.0 | 73.2 | .... | .... |
| 1923 | 0..... | 13.2 | 16.4 | .... | .... | 50.0 | .... |
| | MLrP..... | 32.0 | 50.4 | .... | .... | 67.5 | .... |
| | 0..... | 16.8 | 18.0 | .... | .... | 56.9 | .... |
| | MLbP..... | 30.8 | 42.4 | .... | .... | 65.6 | .... |
| 1924 | 0..... | 27.2 | .... | 34.4 | .... | .... | (1.67) |
| | MLrP..... | 40.4 | .... | 68.1 | .... | .... | (4.29) ⁵ |
| | 0..... | 28.8 | .... | 37.5 | .... | .... | (1.98) |
| | MLbP..... | 35.6 | .... | 68.8 | .... | .... | (4.54) ⁵ |

¹No records for crops in the three-year rotation in 1896, 1897, and 1900. ²No records for crops in the two-year and three-year rotation in 1898. ³Cowpea hay in 1906. ⁴Soybean hay in 1912 and 1915. ⁵Hay contaminated with sweet clover in 1924.

URBANA FIELD, DAVENPORT PLOTS,
CHAMPAIGN COUNTY

ESTABLISHED 1895

Location.—On the University campus, directly east of the Morrow Plots.

Description.—The Davenport Plots now consist of five series, each containing 10 tenth-acre plots divided into halves. Three soil types have been mapped on the field: (1) Brown Silt Loam (Muscatine silt loam); (2) Brown Silt Loam On Drift (Carrington silt loam); and (3) Black Clay Loam, poorly drained phase (Loessial Clyde clay loam). The unlimed soils give a reaction for medium acidity. The land is gently rolling, is thoroly tile-drained, and drains well. Originally these plots consisted of seven series of 10 tenth-acre plots each.

History.—The Davenport Plots were named for Dean Eugene Davenport, who laid them out in 1895 when he was Professor of Agriculture at the University. Previous to this time the land on which these plots were placed had been in pasture for about eighteen years.

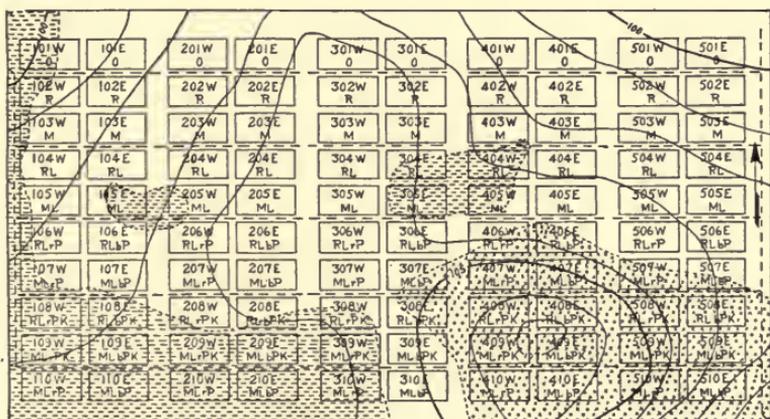
Cropping and Soil Treatment.—No definite program of soil treatment was started on these plots until 1902. In the meantime, however, from 1895, the plots were cropped in such manner that all plots of a given series grew the same kind of crop in any year, and yields were recorded by individual plots. In 1902 a rotation of corn, oats, and clover was established on Series 100, 200, and 300; a rotation of corn and oats on Series 400 and 500, and continuous corn on Series 600 and 700. These cropping plans were continued until 1911, when Series 100, 200, 300, 400, and 500 were combined into a four-year rotation of corn, oats, clover, and wheat on four series, while alfalfa was grown on the fifth for five years, after which it was changed to another series. Series 700 was discontinued in 1913 and Series 600 in 1914.

Manure was applied at the rotation rate of 6 tons in the three-year rotation and 4 tons an acre in the two-year rotation in 1905, 1906, and 1907; legume cover crops were seeded in the corn for use as residues until 1919. These manures and residues were handled as described in the introduction. In 1923 the return of the oat and wheat straw was discontinued.

Bone meal was applied at the annual acre rate of 200 pounds until 1908, when it was planned to use 600 pounds of rock phosphate instead of the steamed bone meal on the west half of each phosphate plot. In 1918 the two phosphates were evened up to make the rock phosphate applications four times as large as the bone meal. Thereafter rock phosphate was applied at the annual acre rate of 200 pounds and steamed bone meal at 50 pounds. In 1925 the applications were evened to 13,200 pounds of rock phosphate and 3,300 pounds of steamed bone meal and discontinued for an indefinite time. Beginning with 1906,

Plot 10 received about five times as much phosphorus and manure as the other plots; in 1921 the manure application was reduced to normal amounts, and in 1925 the applications of both manure and phosphate were discontinued.

The soil treatments on Series 600 and 700 were designed for a so-called complete fertility test. Nitrogen was applied in approximately 800 pounds of dried blood, phosphorus in 200 pounds of steamed bone meal, and potassium in 100 pounds of potassium sulfate an acre annually. Beginning with 1909, rock phosphate was applied to the west halves of Plots 607 and 608 at the annual acre rate of 600 pounds. Beginning with 1906, manure was applied annually to Plots 709 and 710 at the rate of 20 tons per acre. At this time the application of bone meal was increased to the annual acre rate of 1,000 pounds on the east halves of the plots and rock phosphate was applied to the west halves of the plots at the rate of 3,000 pounds annually. Beginning with 1909, rock phosphate was applied to the west halves of 701, 702, 705, 706, 707, and 708 at the rate of 600 pounds per acre annually. Slaked lime was applied at the acre rate of 400 pounds in 1901 and 251 pounds in 1902; in 1903 limestone was used at the rate of 600 pounds an acre. No further applications were made until 1911, when 2 tons of limestone was applied.



Brown Silt Loam On Drift Carrington silt loam
 Black Clay Loam, poorly drained phase Loessial Clyde clay loam
 Brown Silt Loam Muscatine silt loam

Contour interval - 1 foot
Scale 1/4" = 100 feet

SOIL MAP OF DAVENPORT PLOTS, URBANA
(Map of present plots)

TABLE 98.—URBANA FIELD, DAVENPORT PLOTS: SERIES 400, 500
(1895-1907)

| Plot No. | No soil treatment | Bushels per acre | | | | | | | | | | | | | | |
|----------|-------------------|------------------|-------|------|------|------|------|------|------------------------|-------------------|-------------------|-------------------|-------------------|------|------|------|
| | | 1895 | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 | Soil treatment applied | | 1902 | 1903 | 1904 | 1905 | 1906 | 1907 |
| | | Corn | Corn | Corn | Corn | Corn | Corn | Corn | Corn | Corn | Oats ¹ | Corn ² | Oats ² | Corn | Oats | Corn |
| 401 | | 31.4 | 88.2 | 69.2 | 55.1 | 63.0 | 59.7 | 38.9 | 0..... | 52.8 | 47.0 | 35.0 | 69.4 | 59.7 | 68.4 | |
| 402 | | 31.4 | 85.3 | 67.0 | 53.5 | 58.7 | 57.0 | 33.6 | R..... | 57.5 | 42.9 | 38.4 | 62.9 | 54.4 | 69.9 | |
| 403 | | 27.1 | 87.6 | 68.8 | 55.9 | 61.9 | 55.0 | 33.1 | M..... | 59.6 | 50.2 | 34.1 | 69.4 | 57.5 | 69.4 | |
| 404 | | 30.0 | 89.8 | 71.7 | 55.2 | 64.0 | 63.9 | 35.2 | RL..... | 61.2 | 45.1 | 39.6 | 64.1 | 58.7 | 75.9 | |
| 405 | | 32.9 | 96.5 | 72.0 | 56.9 | 61.9 | 55.7 | 36.0 | ML..... | 62.1 | 48.0 | 36.8 | 72.0 | 63.1 | 66.6 | |
| 406 | | 37.1 | 99.8 | 75.7 | 58.1 | 64.3 | 58.0 | 35.1 | RLbP..... | 67.1 | 61.1 ³ | 53.7 | 68.0 | 74.1 | 84.6 | |
| 407 | | 35.7 | 99.1 | 74.3 | 52.7 | 69.4 | 58.7 | 29.9 | MLbP..... | 62.5 | 58.6 ³ | 42.8 | 71.4 | 63.1 | 68.6 | |
| 408 | | 25.7 | 94.1 | 69.2 | 37.2 | 62.0 | 52.4 | 32.9 | RLbPK..... | 62.1 | 60.4 ³ | 44.6 | 58.0 | 62.8 | 84.1 | |
| 409 | | 21.4 | 100.4 | 72.3 | 50.6 | 65.1 | 54.1 | 34.7 | MLbPK..... | 66.5 | 48.9 | 36.5 | 74.1 | 58.4 | 71.4 | |
| 410 | | 22.3 | 98.1 | 76.6 | 65.6 | 63.6 | 56.9 | 37.5 | Mx5LPx5..... | 66.2 | 46.0 | 39.1 | 67.0 | 58.7 | 95.6 | |
| | | Corn | Corn | Corn | Corn | Corn | Corn | Oats | | Corn ³ | Oats ² | Corn ² | Oats ² | Corn | Oats | |
| 501 | | 37.7 | 88.6 | 69.6 | 59.5 | 64.9 | 58.7 | 48.5 | 0..... | 57.6 | 42.5 | 59.0 | 52.5 | 58.3 | 28.4 | |
| 502 | | 31.4 | 88.1 | 69.7 | 57.0 | 62.0 | 54.1 | 46.0 | R..... | 58.4 | 43.2 | 52.6 | 55.6 | 51.9 | 29.4 | |
| 503 | | 29.4 | 86.2 | 68.3 | 54.4 | 61.9 | 51.4 | 44.8 | M..... | 55.3 | 43.2 | 46.2 | 51.6 | 54.3 | 29.7 | |
| 504 | | 27.4 | 85.9 | 67.4 | 51.7 | 61.3 | 51.4 | 45.9 | RL..... | 54.6 | 46.9 | 46.0 | 52.8 | 48.0 | 29.1 | |
| 505 | | 29.1 | 96.0 | 72.4 | 57.1 | 64.0 | 57.3 | 50.4 | ML..... | 57.2 | 52.1 | 48.9 | 58.1 | 57.8 | 33.8 | |
| 506 | | 28.6 | 94.3 | 74.7 | 64.7 | 67.0 | 57.3 | 53.6 | RLbP..... | 61.6 | 63.4 | 71.6 | 64.4 | 63.3 | 38.8 | |
| 507 | | 24.3 | 98.9 | 74.4 | 58.1 | 71.1 | 60.9 | 58.3 | MLbP..... | 66.2 | 73.1 | 63.2 | 63.8 | 61.8 | 41.3 | |
| 508 | | 23.4 | 92.8 | 70.2 | 40.4 | 70.4 | 61.1 | 53.0 | RLbPK..... | 68.4 | 68.8 | 63.6 | 61.2 | 58.3 | 39.1 | |
| 509 | | 24.0 | 95.9 | 73.5 | 40.7 | 70.0 | 63.1 | 52.0 | MLbPK..... | 70.0 | 67.1 | 63.0 | 56.6 | 49.6 | 36.6 | |
| 510 | | 22.9 | 96.9 | 69.7 | 43.6 | 68.7 | 53.9 | 48.8 | Mx5LPx5..... | 65.3 | 62.8 | 57.1 | 42.2 | 64.9 | 38.5 | |

¹No residues or manure. ²No manure. ³Estimated; error in harvesting in 1903.

TABLE 99.—URBANA FIELD, DAVENPORT PLOTS: SERIES 100-500 (1908-1924)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------|----------------|---------------|--------------|--------------|-----------------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------|--------------|----------------|---------------|
| | | 1908 Corn | 1909 Oats | 1910 Clover | 1911 Wheat | 1912 Corn | 1913 Oats | 1914 Soy- beans | 1915 Wheat | 1916 Alfalfa | 1917 Alfalfa | 1918 Alfalfa | 1919 Alfalfa | 1920 Alfalfa | 1921 Corn | 1922 Oats | 1923 Clover | 1924 Wheat |
| 101W | 0..... | 75.5 | 40.6 | (3.59) | 40.1 | 86.4 | 30.6 | (1.70) | 39.3 | (2.39) | (3.38) | (2.68) | (3.17) | (3.97) | 68.4 | 74.2 | (2.81) | 40.0 |
| 102W | R..... | 72.0 | 45.0 | 1.83 | 42.6 | 86.4 | 30.2 | 21.3 | 41.1 | (2.74) | (3.73) | (3.41) | (3.57) | (4.59) | 62.4 | 75.3 | .90 | 43.0 |
| 103W | M..... | 84.0 | 51.9 | (3.45) | 37.9 | 99.2 | 32.4 | (1.60) | 44.2 | (2.86) | (3.50) | (3.43) | (3.68) | (4.87) | 64.4 | 71.6 | (2.90) | 43.0 |
| 104W | RL..... | 66.8 | 48.8 | 1.92 | 37.4 | 83.6 | 25.8 | 18.3 | 35.2 | (3.81) | (3.79) | (3.70) | (3.64) | (4.52) | 65.6 | 67.7 | 1.23 | 43.7 |
| 105W | ML..... | 82.3 | 51.3 | (3.86) | 39.2 | 95.2 | 32.9 | (1.58) | 39.7 | (4.21) | (3.88) | (3.82) | (3.49) | (4.33) | 66.0 | 69.7 | (2.79) | 41.3 |
| 106W | RLrP..... | 73.5 | 51.3 | 1.30 | 39.1 | 91.6 | 33.9 | 21.7 | 44.8 | (4.67) | (4.05) | (4.20) | (3.58) | (4.12) | 60.0 | 68.3 | .37 | 44.0 |
| 107W | MLrP..... | 75.5 | 50.0 | (3.23) | 44.0 | 94.8 | 40.9 | (1.76) | 44.5 | (4.73) | (4.12) | (4.51) | (3.72) | (4.37) | 57.6 | 69.9 | (3.36) | 43.0 |
| 108W | RLrPK..... | 73.8 | 45.6 | 1.64 | 43.4 | 84.4 | 32.8 | 23.0 | 46.9 | (4.51) | (4.30) | (4.44) | (3.44) | (4.38) | 59.2 | 63.7 | .23 | 43.0 |
| 109W | MLrPK..... | 80.3 | 49.4 | (4.70) | 48.5 | 93.6 | 43.9 | (1.78) | 45.9 | (4.68) | (4.03) | (4.27) | (3.35) | (3.94) | 61.2 | 68.0 | (3.76) | 39.3 |
| 110W | Mx5LrPx5..... | 77.5 | 46.3 | (4.58) | 48.2 | 110.0 | 47.3 | (1.88) | 36.9 | (4.79) | (3.88) | (4.09) | (3.65) | (4.13) | 60.0 | 77.1 | (3.69) | 42.7 |
| 101E | 0..... | 57.5 | 50.6 | (2.44) | 26.1 | 77.6 | 26.2 | (1.52) | 35.8 | (1.55) | (2.61) | (1.76) | (1.89) | (2.44) | 63.6 | 68.8 | (2.24) | 34.0 |
| 102E | R..... | 68.0 | 53.1 | 1.17 | 35.7 | 85.6 | 25.8 | 21.7 | 36.9 | (2.27) | (2.78) | (2.33) | (2.32) | (2.92) | 54.0 | 73.4 | 1.23 | 37.0 |
| 103E | M..... | 83.8 | 53.8 | (3.43) | 38.3 | 99.2 | 40.6 | (1.67) | 41.7 | (2.89) | (3.35) | (2.70) | (2.73) | (3.63) | 62.8 | 72.8 | (2.75) | 40.0 |
| 104E | RL..... | 71.0 | 50.0 | 1.76 | 43.7 | 92.0 | 34.2 | 21.3 | 36.8 | (3.94) | (3.82) | (3.16) | (3.10) | (3.78) | 63.2 | 71.1 | 1.00 | 42.3 |
| 105E | ML..... | 83.8 | 51.9 | (4.07) | 43.6 | 94.4 | 35.8 | (1.71) | 41.9 | (4.25) | (3.78) | (3.20) | (3.34) | (3.91) | 71.2 | 73.2 | (2.67) | 42.3 |
| 106E | RLbP..... | 80.5 | 54.4 | 1.86 | 48.6 | 95.2 | 40.6 | 24.7 | 47.0 | (4.65) | (3.82) | (4.75) | (3.44) | (3.77) | 72.4 | 74.6 | .47 | 46.3 |
| 107E | MLbP..... | 81.5 | 60.0 | (5.40) | 52.0 | 102.0 | 44.9 | (1.90) | 46.1 | (4.54) | (4.27) | (4.17) | (3.87) | (4.33) | 71.6 | 76.6 | (3.53) | 43.3 |
| 108E | RLbPK..... | 77.0 | 53.1 | 2.00 | 45.2 | 91.2 | 44.7 | 25.3 | 46.3 | (4.73) | (4.53) | (4.55) | (3.72) | (4.70) | 71.2 | 75.6 | .27 | 44.3 |
| 109E | MLbPK..... | 84.0 | 52.5 | (5.28) | 45.7 | 100.8 | 50.5 | (2.30) | 45.2 | (4.72) | (4.39) | (4.33) | (3.36) | (4.36) | 67.6 | 69.8 | (3.80) | 42.0 |
| 110E | Mx5LbPx5..... | 73.3 | 48.8 | (4.48) | 45.0 | 101.6 | 47.8 | (2.30) | 43.7 | (4.21) | (4.46) | (3.92) | (3.39) | (4.33) | 63.2 | 66.8 | (4.21) | 41.0 |

TABLE 99.—Continued

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | | |
|----------|------------------------|-------------------------------------|--------------|--------------|-----------------------|-----------------------|--------------|--------------|-----------------------|-----------------------|--------------|--------------|----------------|---------------|-----------------|-----------------|-----------------|---------------------------|
| | | 1908 Clover ¹ Corn | 1909 Corn | 1910 Oats | 1911 Soy- beans | 1912 Wheat Corn | 1913 Corn | 1914 Oats | 1915 Soy- beans | 1916 Wheat Corn | 1917 Corn | 1918 Oats | 1919 Clover | 1920 Wheat | 1921 Alfalfa | 1922 Alfalfa | 1923 Alfalfa | 1924 Oats ² |
| 201W | O..... | (2.06) | 38.0 | 42.5 | 21.1 | 5.0 | 44.0 | 38.8 | 23.0 | 26.7 | 69.6 | 48.8 | (2.47) | 36.6 | (2.06) | (3.15) | (2.88) | 61.9 |
| 202W | R..... | 2.89 | 28.4 | 46.9 | 21.8 | 6.2 | 44.0 | 40.0 | 24.8 | 29.7 | 71.2 | 50.0 | 2.65 | 35.9 | (2.65) | (3.46) | (2.30) | 66.3 |
| 203W | M..... | (2.36) | 48.8 | 50.0 | 22.3 | 4.9 | 56.4 | 48.8 | 25.5 | 32.3 | 83.2 | 59.4 | (2.74) | 40.3 | (2.12) | (2.84) | (2.03) | 63.8 |
| 204W | RL..... | 2.83 | 34.8 | 50.6 | 19.6 | 5.7 | 43.2 | 38.1 | 26.1 | 25.7 | 84.4 | 58.1 | 1.92 | 38.6 | (2.89) | (2.94) | (2.45) | 68.1 |
| 205W | ML..... | (2.54) | 55.6 | 52.5 | 22.4 | 5.0 | 51.2 | 48.1 | 26.8 | 54.0 | 90.4 | 63.8 | (2.63) | 37.7 | (2.60) | (3.01) | (2.36) | 68.1 |
| 206W | RLrP..... | 4.08 | 70.8 | 63.1 | 24.9 | 20.1 | 38.4 | 58.8 | 27.4 | 50.3 | 91.6 | 65.6 | 1.62 | 49.3 | (4.34) | (4.26) | (2.86) | 79.4 |
| 207W | MLrP..... | (4.10) | 81.6 | 65.6 | 22.5 | 21.5 | 52.0 | 60.0 | 29.1 | 49.7 | 94.4 | 75.0 | (3.17) | 51.2 | (4.35) | (4.61) | (3.28) | 81.3 |
| 208W | RLrPK..... | 3.14 | 84.0 | 69.3 | 24.8 | 23.9 | 47.2 | 66.9 | 29.6 | 48.7 | 98.0 | 73.1 | 1.52 | 45.7 | (4.91) | (5.26) | (3.34) | 80.6 |
| 209W | MLrPK..... | (3.77) | 90.4 | 69.4 | 25.8 | 24.1 | 54.0 | 68.1 | 30.7 | 50.7 | 89.6 | 72.5 | (2.90) | 45.8 | (4.58) | (5.11) | (3.28) | 75.6 |
| 210W | Mx5LrPx5..... | (3.71) | 68.4 | 66.3 | 27.4 | 35.1 | 45.2 | 72.5 | 29.9 | 46.7 | 110.4 | 66.2 | (2.78) | 45.1 | (4.63) | (5.35) | (4.18) | 82.5 |
| 201E | O..... | (2.06) | 32.8 | 39.4 | 21.9 | 5.7 | 44.8 | 38.8 | 21.0 | 17.3 | 68.4 | 46.2 | (2.30) | 33.5 | (1.59) | (2.23) | (2.91) | 59.4 |
| 202E | R..... | 2.89 | 26.8 | 48.8 | 23.6 | 4.9 | 44.8 | 45.6 | 24.5 | 22.3 | 74.4 | 54.4 | 1.75 | 31.6 | (2.42) | (3.21) | (2.94) | 63.1 |
| 203E | M..... | (2.36) | 50.8 | 46.9 | 22.4 | 4.3 | 54.0 | 53.8 | 25.1 | 31.0 | 81.6 | 62.5 | (2.75) | 40.6 | (2.00) | (2.76) | (2.70) | 63.1 |
| 204E | RL..... | 2.83 | 34.8 | 50.0 | 23.0 | 7.5 | 44.0 | 43.1 | 25.8 | 30.0 | 87.6 | 61.9 | 1.98 | 40.9 | (3.17) | (3.52) | (2.43) | 71.3 |
| 205E | ML..... | (2.54) | 57.2 | 53.1 | 25.1 | 7.3 | 48.0 | 54.4 | 26.9 | 44.0 | 85.2 | 64.4 | (2.81) | 42.8 | (3.01) | (3.53) | (2.50) | 59.4 |
| 206E | RLbP..... | 4.08 | 86.4 | 65.0 | 25.6 | 25.8 | 54.8 | 73.8 | 27.0 | 51.7 | 95.2 | 66.9 | 1.72 | 53.2 | (4.96) | (5.09) | (3.06) | 81.9 |
| 207E | MLbP..... | (4.10) | 91.2 | 61.9 | 23.2 | 26.0 | 60.0 | 73.8 | 27.4 | 52.7 | 96.8 | 76.9 | (3.18) | 50.9 | (4.81) | (5.18) | (3.25) | 83.1 |
| 208E | RLbPK..... | 3.14 | 83.2 | 62.5 | 26.9 | 30.3 | 47.2 | 75.0 | 31.1 | 51.3 | 100.0 | 75.0 | 2.05 | 44.9 | (4.92) | (5.70) | (3.51) | 82.5 |
| 209E | MLbPK..... | (3.77) | 92.0 | 63.8 | 29.2 | 25.3 | 49.2 | 81.2 | 31.6 | 51.3 | 92.0 | 70.0 | (3.31) | 46.6 | (4.72) | (5.08) | (3.90) | 78.8 |
| 210E | Mx5LbPx5..... | (3.71) | 69.6 | 63.8 | 29.0 | 31.2 | 45.6 | 81.2 | 32.4 | 44.7 | 103.2 | 64.4 | (2.89) | 42.0 | (4.75) | (3.91) | (4.09) | 80.0 |

¹West and east halves of plots harvested together. ²Alfalfa so badly damaged by insect pests that it was plowed up after the second crop had been removed.

³Oats seeded as a nurse crop for alfalfa.

TABLE 99.—Continued

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|-------------|-----------|-----------|----------------|------------|-----------|-----------|---------------------|------------|-----------|-----------|-----------|----------------|------------|-----------|-----------|
| | | 1908 Oats | 1909 Clover | 1910 Corn | 1911 Oats | 1912 Soy-beans | 1913 Wheat | 1914 Corn | 1915 Oats | 1915 Stubble clover | 1916 Wheat | 1917 Corn | 1918 Corn | 1919 Oats | 1920 Soy-beans | 1921 Wheat | 1922 Corn | 1923 Oats | 1924 Clover |
| 301W | 0 | 35.9 | (1.80) | 43.2 | 25.8 | 15.9 | 11.0 | 50.8 | 74.1 | (.78) | 24.3 | 55.6 | 36.2 | 13.9 | 18.2 | 46.0 | 50.0 | (1.04) |
| 302W | R | 33.1 | 1.50 | 54.8 | 28.3 | 16.9 | 12.3 | 49.6 | 77.7 | 1.33 | 41.7 | 50.0 | 43.8 | 13.7 | 22.5 | 45.3 | 56.9 | (.48) |
| 303W | M | 37.2 | (1.90) | 74.8 | 35.8 | 16.1 | 14.2 | 52.4 | 79.5 | (.84) | 15.7 | 60.4 | 48.8 | (1.41) | 29.6 | 60.6 | 64.4 | (1.78) |
| 304W | RL | 37.5 | 1.30 | 67.2 | 35.4 | 15.3 | 15.6 | 55.6 | 76.0 | 1.00 | 44.3 | 74.4 | 46.2 | 15.9 | 25.1 | 62.2 | 60.0 | (1.59) |
| 305W | ML | 38.1 | (2.34) | 83.6 | 44.3 | 14.0 | 21.5 | 52.4 | 78.5 | (.96) | 25.7 | 86.8 | 46.2 | (1.14) | 36.8 | 72.0 | 70.6 | (3.81) |
| 306W | RLrP | 46.6 | 3.10 | 95.2 | 53.6 | 14.7 | 30.3 | 70.0 | 83.6 | 1.00 | 50.3 | 82.8 | 47.5 | 26.8 | 29.9 | 76.3 | 78.1 | (2.51) |
| 307W | MLrP | 47.5 | (3.24) | 94.8 | 56.3 | 13.4 | 31.1 | 66.8 | 79.2 | (1.16) | 35.7 | 82.0 | 45.6 | (2.14) | 39.3 | 77.1 | 71.3 | (4.02) |
| 308W | RLrPK | 46.6 | 1.00 | 99.2 | 53.4 | 15.7 | 29.9 | 64.4 | 83.0 | 1.00 | 55.7 | 84.8 | 50.0 | 33.4 | 27.1 | 72.6 | 78.8 | (2.64) |
| 309W | MLrPK | 43.1 | (2.78) | 98.0 | 60.0 | 16.3 | 29.1 | 55.2 | 86.4 | (.22) | 35.0 | 76.4 | 45.0 | (2.68) | 34.5 | 71.3 | 69.4 | (4.02) |
| 310W | Mx5LrPx5 | 50.3 | (3.08) | 94.4 | 66.1 | 16.4 | 43.2 | 38.8 | 94.6 | (1.30) | 42.3 | 76.4 | 38.7 | 30.4 | 40.4 | 63.1 | 70.0 | (4.05) |
| 301E | 0 | 35.9 | (1.84) | 49.2 | 25.8 | 15.1 | 11.4 | 48.0 | 70.2 | (.81) | 16.7 | 60.0 | 37.5 | 14.7 | 16.9 | 44.7 | 49.4 | (.63) |
| 302E | R | 33.1 | 1.30 | 59.2 | 26.2 | 15.3 | 11.9 | 52.4 | 75.4 | 1.33 | 39.0 | 49.6 | 42.5 | 14.6 | 17.4 | 47.0 | 48.8 | (.32) |
| 303E | M | 37.2 | (1.69) | 73.6 | 31.9 | 15.1 | 16.2 | 49.2 | 75.7 | (.69) | 17.3 | 70.4 | 45.6 | (1.42) | 28.2 | 64.3 | 61.3 | (2.17) |
| 304E | RL | 37.5 | 1.70 | 74.0 | 35.6 | 16.5 | 18.8 | 57.2 | 78.9 | 1.33 | 45.7 | 76.0 | 48.1 | 21.0 | 25.2 | 58.0 | 63.1 | (1.73) |
| 305E | ML | 38.1 | (2.28) | 86.8 | 48.3 | 14.9 | 23.0 | 57.2 | 82.1 | (.78) | 23.7 | 81.2 | 44.4 | (1.86) | 32.7 | 75.8 | 68.1 | (3.30) |
| 306E | RLbP | 46.6 | 1.40 | 96.4 | 54.6 | 14.4 | 41.7 | 65.6 | 90.4 | 1.67 | 51.0 | 87.2 | 40.6 | 27.9 | 31.9 | 73.8 | 77.5 | (2.45) |
| 307E | MLbP | 47.5 | (2.96) | 94.8 | 56.5 | 14.0 | 35.4 | 69.6 | 82.0 | (1.13) | 39.7 | 79.6 | 43.8 | (2.19) | 39.7 | 75.5 | 76.9 | (4.18) |
| 308E | RLbPK | 46.6 | 1.00 | 102.8 | 53.6 | 17.5 | 34.4 | 69.6 | 88.7 | 1.00 | 45.7 | 86.8 | 48.1 | 27.0 | 31.0 | 78.4 | 79.4 | (2.54) |
| 309E | MLbPK | 43.1 | (3.07) | 100.8 | 57.3 | 17.9 | 33.5 | 67.2 | 86.5 | (1.15) | 40.7 | 86.0 | 48.1 | (2.59) | 38.6 | 76.7 | 73.6 | (3.90) |
| 310E | Mx5LbPx5 | 50.3 | (3.14) | 104.8 | 63.5 | 14.8 | 49.4 | 47.2 | 92.9 | (1.31) | 35.7 | 74.0 | 40.0 | 31.5 | 41.2 | 71.1 | 71.9 | (4.33) |

West and east halves of plots harvested together.

TABLE 99.—Continued
Bushels or (tons) per acre

| Plot No. | Soil treatment applied | 1908 | | 1909 | | 1910 | | 1911 | | 1912 | | 1913 | | 1914 | | 1915 | | 1916 | | 1917 | | 1918 | | 1919 | | 1920 | | 1921 | | 1922 | | 1923 | | 1924 | | | |
|----------|---------------------------|-------------------|-------------------|------|------|------|------|------|--------|------|------|------|--------|--------|------|-------|--------|------|--------|------|--------|-------|------|-------|------|------|------|------|------|--------|-------|------|------|------|--|--|--|
| | | Oats ¹ | Oats ² | Corn | Oats | Oats | Corn | Oats | Corn | Oats | Corn | Oats | Corn | Clover | Oats | Wheat | Corn | Oats | Corn | Oats | Clover | Wheat | Corn | Wheat | Corn | Corn | Oats | Corn | Oats | Clover | Wheat | Corn | Oats | | | | |
| 401W | O..... | 38.4 | 40.8 | 54.4 | 40.8 | 54.4 | 23.3 | 63.1 | (1.35) | 16.7 | 63.2 | 51.9 | (1.20) | 40.0 | 47.2 | 43.9 | (.71) | 34.5 | (1.01) | 33.3 | 52.5 | | | | | | | | | | | | | | | | |
| 402W | R..... | 36.9 | 23.2 | 51.9 | 23.2 | 51.9 | 27.9 | 54.0 | 43 | 15.0 | 61.2 | 48.1 | 4.7 | 37.0 | 48.0 | 37.4 | (.80) | 31.5 | (.71) | 34.7 | 51.9 | | | | | | | | | | | | | | | | |
| 403W | M..... | 35.9 | 48.0 | 53.8 | 35.9 | 53.8 | 31.7 | 71.7 | (1.30) | 18.0 | 82.8 | 75.6 | (1.81) | 38.3 | 66.4 | 58.6 | (1.35) | 40.2 | (.80) | 61.9 | 63.8 | | | | | | | | | | | | | | | | |
| 404W | RL..... | 34.7 | 52.4 | 63.8 | 34.7 | 63.8 | 41.4 | 68.1 | 1.20 | 29.3 | 74.8 | 65.0 | 1.33 | 48.0 | 71.6 | 61.3 | (1.46) | 40.5 | (.80) | 58.3 | 68.1 | | | | | | | | | | | | | | | | |
| 405W | ML..... | 39.7 | 50.8 | 62.1 | 39.7 | 62.1 | 36.9 | 75.7 | (2.32) | 32.0 | 84.8 | 81.9 | (2.39) | 40.7 | 68.4 | 76.5 | (2.26) | 43.1 | (.80) | 62.7 | 66.9 | | | | | | | | | | | | | | | | |
| 406W | RLrP..... | 49.1 | 59.2 | 66.3 | 49.1 | 66.3 | 36.9 | 76.9 | 2.10 | 43.0 | 74.8 | 78.8 | 2.27 | 56.7 | 68.8 | 79.6 | (1.40) | 42.0 | (.80) | 56.7 | 88.1 | | | | | | | | | | | | | | | | |
| 407W | MLrP..... | 45.3 | 42.8 | 64.4 | 45.3 | 64.4 | 30.4 | 77.3 | (2.81) | 36.0 | 79.2 | 85.0 | (2.79) | 45.0 | 78.8 | 76.7 | (2.39) | 44.3 | (.80) | 56.2 | 78.1 | | | | | | | | | | | | | | | | |
| 408W | RLrPK..... | 49.4 | 63.2 | 66.3 | 49.4 | 66.3 | 36.2 | 73.3 | 1.43 | 34.7 | 80.4 | 82.5 | 1.83 | 47.3 | 70.0 | 75.4 | (1.58) | 42.4 | (.80) | 70.8 | 77.5 | | | | | | | | | | | | | | | | |
| 409W | MLrPK..... | 45.9 | 55.2 | 67.5 | 45.9 | 67.5 | 31.1 | 79.8 | (3.02) | 33.0 | 82.4 | 88.1 | (2.49) | 48.7 | 78.0 | 82.4 | (2.71) | 41.4 | (.80) | 64.8 | 86.3 | | | | | | | | | | | | | | | | |
| 410W | MX5LrP ⁵ | 55.3 | 72.8 | 65.6 | 55.3 | 65.6 | 30.0 | 80.0 | (3.14) | 47.7 | 80.4 | 86.9 | (3.08) | 43.7 | 58.0 | 77.8 | (.80) | 34.2 | (.80) | 63.7 | 72.5 | | | | | | | | | | | | | | | | |
| 401E | O..... | 38.4 | 51.6 | 51.3 | 38.4 | 51.3 | 32.4 | 69.6 | (2.06) | 30.7 | 69.6 | 60.6 | (1.78) | 48.7 | 59.6 | 55.8 | (1.22) | 33.6 | (.80) | 42.7 | 64.4 | | | | | | | | | | | | | | | | |
| 402E | R..... | 36.9 | 54.0 | 53.1 | 36.9 | 53.1 | 39.8 | 73.8 | 1.05 | 28.7 | 72.4 | 62.5 | 1.90 | 45.7 | 67.2 | 56.2 | (.94) | 36.5 | (.80) | 45.8 | 60.0 | | | | | | | | | | | | | | | | |
| 403E | M..... | 35.9 | 48.8 | 55.6 | 35.9 | 55.6 | 32.4 | 75.9 | (1.57) | 28.3 | 78.8 | 81.9 | (2.55) | 47.3 | 70.4 | 72.9 | (1.63) | 35.1 | (.80) | 61.0 | 63.8 | | | | | | | | | | | | | | | | |
| 404E | RL..... | 34.7 | 34.8 | 51.9 | 34.7 | 51.9 | 28.4 | 61.6 | .87 | 20.0 | 71.6 | 56.2 | 1.83 | 42.0 | 71.2 | 54.6 | (1.28) | 36.7 | (.80) | 53.6 | 59.4 | | | | | | | | | | | | | | | | |
| 405E | ML..... | 39.7 | 43.6 | 54.3 | 39.7 | 54.3 | 33.6 | 73.1 | (1.56) | 27.7 | 80.4 | 80.0 | (2.91) | 45.7 | 83.6 | 65.4 | (2.13) | 41.9 | (.80) | 62.6 | 64.4 | | | | | | | | | | | | | | | | |
| 406E | RLbP..... | 49.1 | 56.0 | 70.6 | 49.1 | 70.6 | 45.1 | 77.9 | 2.86 | 50.7 | 86.8 | 84.4 | 2.40 | 51.0 | 70.8 | 80.3 | (1.48) | 44.6 | (.80) | 67.8 | 78.8 | | | | | | | | | | | | | | | | |
| 407E | MLbP..... | 45.3 | 49.2 | 65.0 | 45.3 | 65.0 | 36.6 | 77.9 | (2.98) | 47.0 | 86.0 | 88.8 | (3.66) | 53.0 | 79.6 | 50.0 | (2.61) | 44.6 | (.80) | 62.1 | 78.1 | | | | | | | | | | | | | | | | |
| 408E | RLbPK..... | 49.4 | 54.4 | 64.4 | 49.4 | 64.4 | 34.7 | 73.6 | 1.40 | 46.7 | 81.6 | 82.5 | 1.60 | 48.0 | 70.4 | 99.6 | (1.58) | 43.0 | (.80) | 69.6 | 79.4 | | | | | | | | | | | | | | | | |
| 409E | MLbPK..... | 45.9 | 48.0 | 62.1 | 45.9 | 62.1 | 25.8 | 79.0 | (2.43) | 43.0 | 86.4 | 90.0 | (3.28) | 52.7 | 74.0 | 70.9 | (2.42) | 41.7 | (.80) | 64.4 | 70.6 | | | | | | | | | | | | | | | | |
| 410E | MX5LbP ⁵ | 55.3 | 72.4 | 50.0 | 55.3 | 50.0 | 27.2 | 79.0 | (2.74) | 48.3 | 83.0 | 90.0 | (3.00) | 45.0 | 61.6 | 67.4 | (.80) | 34.5 | (.80) | 61.7 | 78.8 | | | | | | | | | | | | | | | | |

¹West and east halves of plots harvested together. ²Growth on Plot 410 all weeds in 1921.

TABLE 99.—*Concluded*

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------|--------------|----------------------------|-----------------|-----------------|-----------------|-----------------|--------------|--------------|----------------|---------------|--------------|--------------|----------------|---------------|--------------|
| | | 1908 Corn | 1909 Oats | 1910 Corn | 1911 Alfalfa seeding | 1912 Alfalfa | 1913 Alfalfa | 1914 Alfalfa | 1915 Alfalfa | 1916 Corn | 1917 Oats | 1918 Clover | 1919 Wheat | 1920 Corn | 1921 Oats | 1922 Clover | 1923 Wheat | 1924 Corn |
| 501W | O..... | 35.5 | 41.9 | 51.2 | ..... | (.33) | (2.32) | (2.94) | (4.31) | 39.6 | 86.2 | (3.03) | 27.3 | 63.6 | 50.3 | (.80) | 21.7 | 36.8 |
| 502W | R..... | 45.5 | 48.8 | 54.8 | ..... | (.08) | (2.33) | (2.37) | (4.10) | 36.8 | 86.2 | (2.32) | 28.0 | 64.4 | 41.6 | 1.27 | 25.7 | 35.2 |
| 503W | ML..... | 33.0 | 49.4 | 56.8 | ..... | (.07) | (2.07) | (2.56) | (4.11) | 48.4 | 89.4 | (3.56) | 25.3 | 80.8 | 58.3 | (1.15) | 27.6 | 45.2 |
| 504W | RL..... | 42.8 | 45.6 | 52.0 | ..... | (.37) | (2.24) | (2.68) | (3.82) | 38.0 | 82.5 | (2.16) | 30.7 | 82.0 | 47.5 | 2.37 | 31.3 | 50.8 |
| 505W | ML..... | 40.8 | 50.0 | 61.2 | ..... | (.05) | (3.28) | (3.78) | (4.88) | 44.0 | 96.9 | (3.60) | 25.3 | 86.4 | 60.4 | (2.17) | 39.7 | 60.0 |
| 506W | RLrP..... | 79.5 | 54.4 | 92.4 | ..... | (1.05) | (5.27) | (4.44) | (5.75) | 49.6 | 103.1 | (2.69) | 27.3 | 90.0 | 56.6 | 1.10 | 43.3 | 60.0 |
| 507W | MLrP..... | 46.3 | 56.9 | 67.6 | ..... | (.99) | (5.04) | (4.36) | (5.79) | 44.0 | 97.5 | (3.86) | 18.0 | 93.6 | 66.3 | (2.69) | 47.0 | 69.6 |
| 508W | RLrPK..... | 71.0 | 53.8 | 97.2 | ..... | (1.21) | (5.15) | (4.20) | (5.72) | 48.0 | 115.0 | (2.27) | 21.3 | 88.8 | 57.4 | (2.90) | 38.7 | 70.4 |
| 509W | MLrPK..... | 40.8 | 54.4 | 61.2 | ..... | (1.67) | (5.04) | (4.20) | (5.83) | 42.4 | 89.4 | (3.66) | 18.0 | 94.4 | 67.1 | (2.90) | 49.0 | 62.8 |
| 510W | Mx5LrPxs..... | 75.5 | 52.5 | 103.2 | ..... | (.51) | (5.08) | (4.17) | (5.79) | 33.6 | 86.2 | (3.18) | 17.3 | 83.2 | 67.4 | (3.13) | 40.0 | 61.2 |
| 501E | O..... | 39.5 | 48.8 | 58.0 | ..... | (.08) | (3.23) | (4.21) | (4.87) | 38.4 | 88.0 | (3.66) | 26.3 | 71.2 | 55.8 | (1.29) | 27.3 | 39.6 |
| 502E | R..... | 44.5 | 38.1 | 62.4 | ..... | (.06) | (2.61) | (2.75) | (4.28) | 38.4 | 88.1 | (2.44) | 28.3 | 77.2 | 52.4 | 2.40 | 33.0 | 39.2 |
| 503E | ML..... | 33.3 | 46.9 | 54.0 | ..... | (.05) | (1.87) | (2.41) | (3.64) | 44.8 | 96.9 | (3.36) | 27.7 | 83.6 | 58.7 | (1.19) | 28.7 | 53.6 |
| 504E | RL..... | 35.8 | 45.6 | 53.6 | ..... | (.27) | (2.50) | (2.51) | (3.91) | 40.8 | 80.6 | (2.23) | 31.3 | 78.0 | 46.8 | 2.43 | 35.0 | 54.8 |
| 505E | ML..... | 38.5 | 45.0 | 57.6 | ..... | (.73) | (2.57) | (3.09) | (4.27) | 43.0 | 89.4 | (3.61) | 30.7 | 88.4 | 61.4 | (1.92) | 40.3 | 68.0 |
| 506E | RLbP..... | 72.8 | 50.6 | 92.8 | ..... | (.94) | (5.25) | (4.36) | (5.48) | 42.4 | 106.2 | (2.39) | 27.0 | 92.0 | 59.8 | 1.43 | 39.7 | 58.8 |
| 507E | MLbP..... | 46.0 | 52.5 | 70.0 | ..... | (1.04) | (4.93) | (4.13) | (5.70) | 43.6 | 84.4 | (4.00) | 20.7 | 92.8 | 65.6 | (2.68) | 50.0 | 63.2 |
| 508E | RLbPK..... | 77.3 | 51.3 | 100.8 | ..... | (1.14) | (5.37) | (4.13) | (5.91) | 42.0 | 104.4 | (2.51) | 22.7 | 92.8 | 65.9 | 1.00 | 39.0 | 74.0 |
| 509E | MLbPK..... | 38.8 | 48.8 | 64.0 | ..... | (1.72) | (5.43) | (4.29) | (5.97) | 32.8 | 90.6 | (4.00) | 21.3 | 92.8 | 67.1 | (3.48) | 48.0 | 61.2 |
| 510E | Mx5LbPxs..... | 74.5 | 45.6 | 95.6 | ..... | (.73) | (5.76) | (4.32) | (6.02) | 20.4 | 85.0 | (3.70) | 20.0 | 86.8 | 65.9 | (3.54) | 38.0 | 60.4 |

TABLE 100.—URBANA FIELD, DAVENPORT PLOTS: SPECIAL FERTILITY TEST, SERIES 600
(1895-1908)

| Plot No. | No soil treatment | Bushels per acre | | | | | | | | | | | | | | |
|----------|-------------------|------------------|--------------|--------------|--------------|--------------|--------------|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | 1895 Corn | 1896 Corn | 1897 Corn | 1898 Corn | 1899 Corn | 1900 Corn | Soil treat- ment applied | 1901 Corn | 1902 Corn | 1903 Corn | 1904 Corn | 1905 Corn | 1906 Corn | 1907 Corn | 1908 Corn |
| 601 | | 28.6 | 80.8 | 66.2 | 52.7 | 61.0 | 56.9 | 0..... | 29.6 | 51.8 | 41.9 | 44.6 | 43.4 | 37.0 | 40.6 | 17.6 |
| 602 | | 28.6 | 86.5 | 64.3 | 50.7 | 56.3 | 53.7 | 0..... | 26.9 | 51.2 | 42.2 | 36.0 | 38.3 | 30.8 | 34.6 | 8.1 |
| 603 | | 30.6 | 81.8 | 67.0 | 52.7 | 60.0 | 57.4 | L..... | 31.9 | 52.6 | 41.9 | 45.2 | 45.0 | 33.8 | 37.1 | 12.0 |
| 604 | | 28.6 | 83.5 | 71.4 | 47.2 | 64.9 | 60.4 | L..... | 33.2 | 54.3 | 43.5 | 49.1 | 48.9 | 42.4 | 37.1 | 17.1 |
| 605 | | 32.0 | 94.6 | 72.4 | 55.9 | 64.7 | 60.3 | LN..... | 30.9 | 55.9 | 46.6 | 49.4 | 52.9 | 52.1 | 52.0 | 32.0 |
| 606 | | 34.3 | 93.2 | 73.9 | 59.2 | 66.3 | 60.4 | LN..... | 33.9 | 54.8 | 47.6 | 52.9 | 53.5 | 54.6 | 54.1 | 33.3 |
| 607 | | 30.0 | 94.0 | 71.1 | 48.9 | 61.9 | 56.6 | LbP..... | 33.6 | 62.0 | 44.9 | 56.9 | 43.1 | 47.1 | 35.3 | 23.3 |
| 608 | | 27.1 | 91.6 | 66.1 | 42.6 | 58.4 | 50.7 | LbP..... | 32.0 | 63.3 | 52.2 | 45.8 | 39.5 | 44.9 | 32.0 | 20.8 |
| 609 | | 27.1 | 92.4 | 69.3 | 53.9 | 59.1 | 54.0 | LK..... | 32.7 | 54.7 | 42.9 | 39.1 | 42.8 | 34.3 | 32.3 | 14.0 |
| 610 | | 30.0 | 96.5 | 72.4 | 63.5 | 63.6 | 58.7 | LK..... | 35.6 | 55.5 | 45.8 | 50.4 | 47.1 | 38.8 | 37.9 | 21.5 |

TABLE 101.—URBANA FIELD, DAVENPORT PLOTS: SERIES 600
(1909-1914)

Bushels per acre

| Plot No. | Soil treatment applied | 1909 Corn | 1910 Corn | 1911 Corn | 1912 Corn | 1913 Corn | 1914 Corn |
|----------|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 601W | 0..... | 31.6 | 38.8 | 13.5 | 53.6 | 16.8 | 28.0 |
| 601E | 0..... | 26.0 | 33.2 | 12.6 | 50.0 | 16.0 | 28.0 |
| 602W | 0..... | 23.3 | 31.2 | 7.4 | 44.4 | 11.2 | 20.0 |
| 602E | 0..... | 23.3 | 30.4 | 11.0 | 44.4 | 11.6 | 26.0 |
| 603W | L..... | 21.6 | 38.0 | 9.7 | 50.8 | 17.2 | 26.4 |
| 603E | L..... | 24.0 | 32.4 | 10.4 | 51.2 | 11.2 | 26.4 |
| 604W | L..... | 18.8 | 41.6 | 10.8 | 57.2 | 20.8 | 31.6 |
| 604E | L..... | 24.4 | 38.4 | 11.0 | 52.8 | 15.2 | 28.8 |
| 605W | LN..... | 27.2 | 30.0 | 16.8 | 62.8 | 24.0 | 31.2 |
| 605E | LN..... | 35.6 | 35.2 | 23.2 | 63.6 | 20.8 | 32.0 |
| 606W | LN..... | 26.4 | 33.2 | 16.0 | 67.6 | 24.4 | 31.6 |
| 606E | LN..... | 24.0 | 34.8 | 25.5 | 68.8 | 24.4 | 32.4 |
| 607W | LrP..... | 20.4 | 46.8 | 18.2 | 60.0 | 20.8 | 34.0 |
| 607E | LbP..... | 25.6 | 49.2 | 29.0 | 66.0 | 24.8 | 37.2 |
| 608W | LrP..... | 18.4 | 45.2 | 17.6 | 58.8 | 21.6 | 33.2 |
| 608E | LbP..... | 22.4 | 47.2 | 22.8 | 58.4 | 21.2 | 35.2 |
| 609W | LK..... | 18.0 | 39.6 | 12.3 | 47.2 | 16.4 | 26.8 |
| 609E | LK..... | 20.0 | 32.4 | 15.0 | 46.8 | 14.8 | 28.8 |
| 610W | LK..... | 17.6 | 39.6 | 19.4 | 54.0 | 19.2 | 31.6 |
| 610E | LK..... | 28.4 | 37.2 | 17.9 | 51.6 | 16.4 | 28.4 |

TABLE 102.—URBANA FIELD, DAVENPORT PLOTS: SPECIAL FERTILITY TEST
(1896-1905)

| Plot No. | Bushels per acre | | | | | | | | | | | | | | | | | | | | |
|----------|------------------|------|------|------|------|-------|-------|-------|-------|-------|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1896 | | 1897 | | 1898 | | 1899 | | 1900 | | Soil treatment applied | 1901 | | 1902 | | 1903 | | 1904 | | 1905 | |
| | Corn | | Corn | Corn | | Corn | Corn | | Corn | Corn | | | Corn | Corn | | Corn | Corn | | Corn | Corn | |
| 701 | 82.9 | 70.5 | 60.8 | 62.4 | 60.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | | | | | | | | | | | LNbP | 33.6 | 63.0 | 54.0 | 74.5 | 64.0 | 54.0 | 74.5 | 64.0 | 54.0 | 74.5 |
| 702 | 83.5 | 74.4 | 61.3 | 62.9 | 54.9 | ..... | ..... | ..... | ..... | ..... | ..... | 37.3 | 61.6 | 54.3 | 73.0 | 56.8 | 54.3 | 73.0 | 56.8 | 54.3 | 73.0 |
| | | | | | | | | | | | LNbP | 36.5 | 68.0 | 55.3 | 75.7 | 60.0 | 55.3 | 75.7 | 60.0 | 55.3 | 75.7 |
| 703 | 81.8 | 74.9 | 48.0 | 60.4 | 62.1 | ..... | ..... | ..... | ..... | ..... | ..... | 41.1 | 66.6 | 56.3 | 81.0 | 57.5 | 56.3 | 81.0 | 57.5 | 56.3 | 81.0 |
| | | | | | | | | | | | LNbP | 41.1 | 60.8 | 48.8 | 64.8 | 65.3 | 48.8 | 64.8 | 65.3 | 48.8 | 64.8 |
| 704 | 84.3 | 79.6 | 30.5 | 60.7 | 62.9 | ..... | ..... | ..... | ..... | ..... | ..... | 45.6 | 62.2 | 59.3 | 80.0 | 62.5 | 59.3 | 80.0 | 62.5 | 59.3 | 80.0 |
| | | | | | | | | | | | LNK | 38.9 | 60.2 | 55.0 | 64.8 | 63.3 | 55.0 | 64.8 | 63.3 | 55.0 | 64.8 |
| 705 | 89.4 | 77.8 | 30.1 | 60.4 | 63.9 | ..... | ..... | ..... | ..... | ..... | ..... | 46.7 | 58.4 | 53.8 | 79.5 | 63.0 | 53.8 | 79.5 | 63.0 | 53.8 | 79.5 |
| | | | | | | | | | | | LNK | 42.9 | 62.6 | 48.0 | 60.2 | 52.8 | 48.0 | 60.2 | 52.8 | 48.0 | 60.2 |
| 706 | 86.1 | 79.1 | 55.8 | 59.1 | 60.3 | ..... | ..... | ..... | ..... | ..... | ..... | 42.9 | 64.2 | 46.8 | 58.8 | 45.8 | 46.8 | 58.8 | 45.8 | 46.8 | 58.8 |
| | | | | | | | | | | | LbPK | 39.2 | 66.4 | 50.8 | 68.7 | 51.8 | 50.8 | 68.7 | 51.8 | 50.8 | 68.7 |
| 707 | 82.5 | 78.7 | 76.6 | 63.1 | 58.1 | ..... | ..... | ..... | ..... | ..... | ..... | 41.9 | 66.4 | 58.5 | 79.2 | 59.8 | 58.5 | 79.2 | 59.8 | 58.5 | 79.2 |
| | | | | | | | | | | | LNbPK | 41.1 | 73.0 | 54.8 | 85.5 | 57.3 | 54.8 | 85.5 | 57.3 | 54.8 | 85.5 |
| 708 | 77.5 | 76.3 | 68.6 | 62.0 | 57.6 | ..... | ..... | ..... | ..... | ..... | ..... | 35.5 | 70.2 | 53.3 | 78.7 | 56.5 | 53.3 | 78.7 | 56.5 | 53.3 | 78.7 |
| | | | | | | | | | | | LNbPK | 36.8 | 68.2 | 55.8 | 80.0 | 58.5 | 55.8 | 80.0 | 58.5 | 55.8 | 80.0 |
| 709 | 76.2 | 82.7 | 64.7 | 62.7 | 56.3 | ..... | ..... | ..... | ..... | ..... | ..... | 33.9 | 63.0 | 45.8 | 79.2 | 59.0 | 45.8 | 79.2 | 59.0 | 45.8 | 79.2 |
| | | | | | | | | | | | NbPK | 38.4 | 70.4 | 55.5 | 78.0 | 62.3 | 55.5 | 78.0 | 62.3 | 55.5 | 78.0 |
| 710 | 82.4 | 75.5 | 67.5 | 62.6 | 55.1 | ..... | ..... | ..... | ..... | ..... | ..... | 38.6 | 68.0 | 54.5 | 83.2 | 62.3 | 54.5 | 83.2 | 62.3 | 54.5 | 83.2 |
| | | | | | | | | | | | NbPK | 40.3 | 73.0 | 48.0 | 81.0 | 65.0 | 48.0 | 81.0 | 65.0 | 48.0 | 81.0 |

TABLE 103.—URBANA FIELD, DAVENPORT PLOTS: SERIES 700
(1906-1913)

| Plot No. | Soil treatment applied | Bushels per acre | | | | | | | | | | |
|----------|------------------------|------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|--|--|
| | | 1906 Corn | 1907 Corn | 1908 Corn | 1909 Corn | 1910 Corn | 1911 Corn | 1912 Corn | 1913 Corn | | | |
| 701W | LNrP | 72.5 | 60.3 | 50.3 | 54.0 | 51.6 | 38.2 | 77.6 | 32.8 | | | |
| 701E | LNbP | 74.3 | 66.8 | 49.8 | 50.8 | 56.4 | 39.4 | 79.2 | 38.4 | | | |
| 702W | LNrP | 73.5 | 60.8 | 46.3 | 52.0 | 42.4 | 36.0 | 75.2 | 34.8 | | | |
| 702E | LNbP | 74.3 | 67.8 | 57.5 | 53.6 | 59.2 | 33.8 | 73.6 | 33.2 | | | |
| 703W | LNK | 63.3 | 64.3 | 42.5 | 52.4 | 46.0 | 25.8 | 71.6 | 32.0 | | | |
| 703E | LNK | 79.8 | 73.5 | 55.0 | 55.2 | 64.0 | 42.4 | 83.2 | 41.2 | | | |
| 704W | LNK | 65.0 | 61.5 | 45.0 | 51.6 | 40.0 | 29.3 | 73.2 | 27.6 | | | |
| 704E | LNK | 79.5 | 72.3 | 60.8 | 48.0 | 56.8 | 34.0 | 80.0 | 38.4 | | | |
| 705W | LrPK | 52.0 | 34.5 | 30.5 | 28.4 | 49.2 | 29.0 | 64.4 | 35.2 | | | |
| 705E | LbPK | 56.3 | 35.5 | 33.0 | 19.2 | 49.2 | 32.2 | 62.8 | 37.2 | | | |
| 706W | LrPK | 57.5 | 39.8 | 31.0 | 27.6 | 52.8 | 27.9 | 63.2 | 36.4 | | | |
| 706E | LbPK | 60.5 | 44.3 | 35.8 | 28.4 | 54.8 | 32.8 | 65.2 | 39.2 | | | |
| 707W | LNrPK | 75.0 | 59.8 | 58.3 | 58.8 | 50.8 | 39.2 | 84.4 | 41.2 | | | |
| 707E | LNbPK | 81.5 | 70.8 | 50.3 | 47.6 | 59.6 | 40.9 | 86.8 | 48.4 | | | |
| 708W | LNrPK | 75.0 | 58.0 | 50.8 | 50.4 | 48.4 | 31.3 | 82.4 | 34.8 | | | |
| 708E | LNbPK | 79.0 | 67.0 | 43.5 | 45.6 | 55.2 | 30.5 | 83.2 | 39.6 | | | |
| 709W | MNrP | 92.0 | 70.8 | 62.8 | 51.6 | 78.0 | 26.2 | 78.8 | 38.0 | | | |
| 709E | MNbp | 93.8 | 72.8 | 63.0 | 44.8 | 71.2 | 30.4 | 87.2 | 30.8 | | | |
| 710W | MrP | 78.8 | 61.8 | 55.8 | 51.2 | 73.6 | 24.4 | 82.4 | 37.2 | | | |
| 710E | Mbp | 80.8 | 68.3 | 53.8 | 47.6 | 66.0 | 30.8 | 83.6 | 31.2 | | | |

URBANA FIELD, SOUTH FARM: CHAMPAIGN COUNTY

ESTABLISHED 1903

Location.—About a mile south of the University campus.

Description.—The field consists of 80 acres of dark-colored loessial and drift soils of slight to medium acidity. Six soil types have been mapped on the field: (1) Black Clay Loam, poorly drained phase (Loessial Clyde clay loam); (2) Brown Silt Loam On Drift, light phase (Carrington silt loam, light phase); (3) Brown Silt Loam On Drift (Carrington silt loam); (4) Brown Silt Loam (Muscatine silt loam); (5) Brown Silt Loam, light phase (Muscatine silt loam, light phase); and (6) Black Silty Clay Loam On Clay (Grundy silty clay loam). The land is moderately rolling, with a tendency to wash some on the north divisions of Series 100 and 200. It is tile-drained and drains well. The field is divided into eight series of 36 fifth-acre plots each. Each series is further divided into two divisions, the north division of which contains the plots numbered from 41 to 58 and the south division the plots numbered from 61 to 78.

History.—Little is known of the previous history of this field except that it had been used for general farming before the experimental work was established upon it.

Cropping and Soil Treatment.—The Urbana South Farm field is used primarily for the investigation of crop problems. Four definite rotations have, however, been practiced on the different quarters of the field, where certain plots have been maintained with various soil treatments.

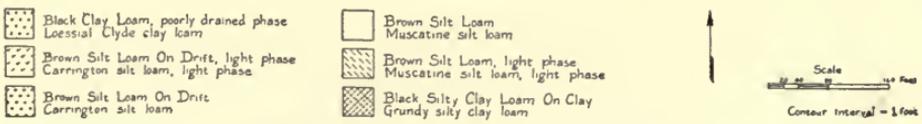
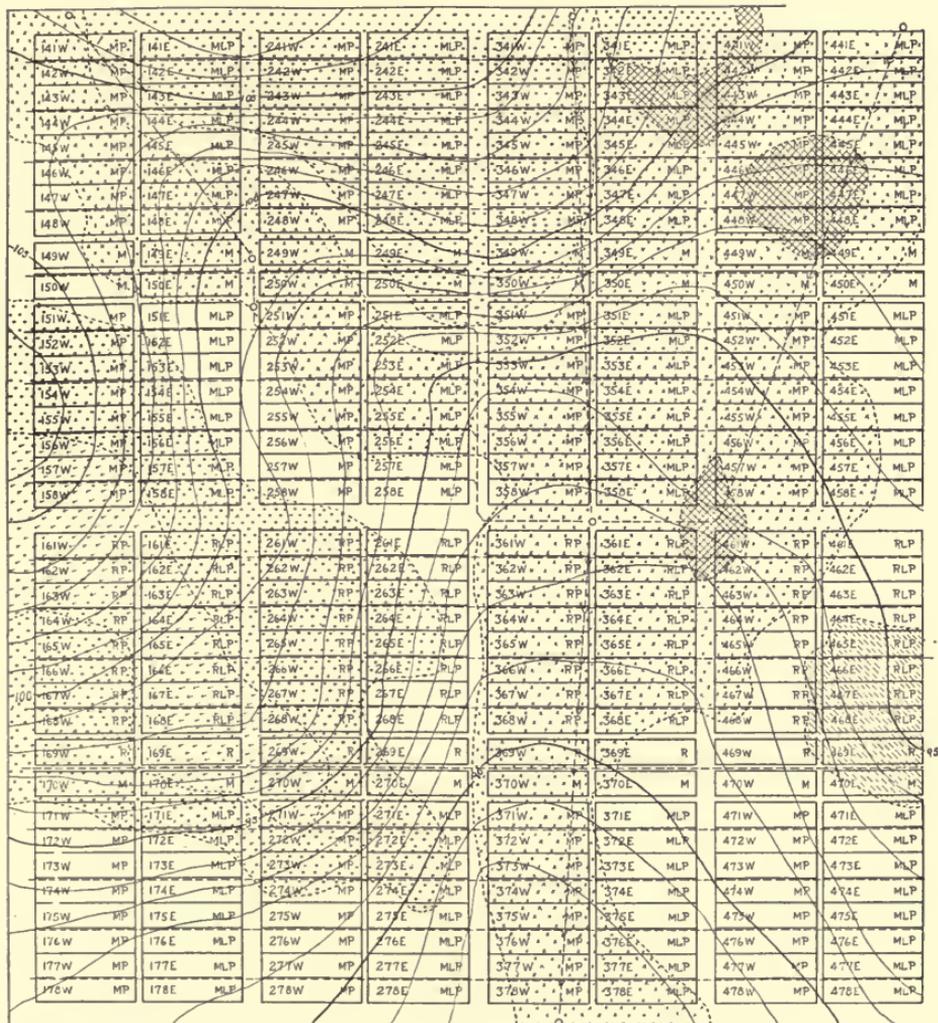
On the north divisions of Series 100, 200, 300, and 400 a rotation of potatoes, corn, soybeans, and alfalfa has been practiced. Alfalfa has remained on one division for seven years, while the other three crops rotate twice, after which the alfalfa is shifted to another division. This rotation is known as the Northwest rotation. All the plots in this rotation are handled as livestock plots. Manure at the annual acre rate of 15 tons is applied to each plot for the potatoes. Rock phosphate at the annual acre rate of 500 pounds is applied to all plots excepting those ending in the numbers 9 and 0. When the land was platted in 1903, a uniform application of limestone at the acre rate of $\frac{1}{2}$ ton was made to all plots excepting those whose numbers ended in 9 and 0. No further limestone was applied until 1911, when it was planned to apply it regularly once a rotation at the annual acre rate of $\frac{1}{2}$ ton to the east halves of all plots excepting those ending in the numbers 9 and 0. All plots ending in the numbers 3, 6, 9, and 0 are known as standard plots. On them, crop varieties or other cropping tests are alike, thus making it possible to study the effects of soil treatment.

On the south divisions of Series 100, 200, 300, and 400 a rotation of corn, oats, clover, and wheat has been practiced. This rotation is

known as the Southwest rotation. In this rotation, plots comprizing the north halves of the divisions represent the grain system of farming and receive crop residues, including red clover seeded in the wheat, while the plots comprizing the south halves of the divisions represent the livestock system of farming and receive farm manure in amounts proportionate to crops produced. In all other respects the soil treatments and the standard plots are similar to those described for the north division of this series.

On the north divisions of Series 500, 600, 700, and 800 a rotation of corn, corn, oats, and clover has been practiced. This is known as the North Central rotation. The soil treatments and standard plots on these divisions are similar to those described for the south divisions of Series 100, 200, 300, and 400 except that no limestone has been used since the small initial application mentioned above.

On the south divisions of Series 500, 600, 700, and 800 a rotation of corn, corn, corn, and soybeans has been practiced; this is designated as the South Central rotation. The soil treatments and standard plots on these divisions are similar to those on the north divisions of the same series.



SOIL MAP OF SOUTH FARM, URBANA, SERIES 100, 200, 300, 400

TABLE 104.—URBANA FIELD, SOUTH FARM: ROTATION, POTATOES, CORN, SOYBEANS, ALFALFA (1903-1913)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|--------------|------------------|------------------|--|
| | | 1903 Alfalfa ² | 1904 Alfalfa | 1905 Alfalfa | 1906 Alfalfa | 1907 Alfalfa | 1908 Alfalfa | 1909 Alfalfa | 1910 Potatoes | 1911 Corn | 1912 Soybeans | 1913 Potatoes | |
| 143W | MrP | .. | (.9) | (4.01) | (6.40) | (2.78) | (2.96) | (3.71) | 103.0 | 60.0 | 18.8 | 57.4 | |
| 146W | MrP | .. | (.9) | (4.01) | (6.70) | (2.43) | (1.86) | (3.55) | 83.2 | 59.3 | 18.1 | 58.5 | |
| 149W | M | .. | (.9) | (3.70) | (6.20) | (2.28) | (1.81) | (3.76) | 60.2 | 65.0 | 19.7 | 59.0 | |
| 150W | M | .. | (.68) | (3.40) | (5.80) | (2.22) | (1.60) | (3.35) | 82.9 | 63.9 | (1.47) | 49.7 | |
| 153W | MrP | .. | (.71) | (3.43) | (6.00) | (2.79) | (1.99) | (4.01) | 113.1 | 55.2 | (1.45) | 59.8 | |
| 156W | MrP | .. | (.62) | (3.43) | (5.40) | (3.19) | (2.24) | (4.00) | 112.2 | 54.3 | (1.42) | 81.9 | |
| 143E | MLrP | .. | .. | .. | .. | .. | .. | .. | .. | .. | 17.1 | 54.9 | |
| 146E | MLrP | .. | .. | .. | .. | .. | .. | .. | .. | .. | 19.2 | 44.4 | |
| 149E | M | .. | .. | .. | .. | .. | .. | .. | .. | .. | 20.1 | 54.1 | |
| 150E | M | .. | .. | .. | .. | .. | .. | .. | .. | .. | (1.47) | 38.0 | |
| 153E | MLrP | .. | .. | .. | .. | .. | .. | .. | .. | .. | (1.30) | 53.6 | |
| 156E | MLrP | .. | .. | .. | .. | .. | .. | .. | .. | .. | (1.42) | 65.1 | |

| (1914-1924) | | | | | | | | | | | | |
|-------------|------------------------|------|---------------|----------|------|---------------|----------|------|---------------|----------|------|---------------|
| Plot No. | Soil treatment applied | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 |
| | | Corn | Soy- beans | Potatoes | Corn | Soy- beans | Potatoes | Corn | Soy- beans | Potatoes | Corn | Soy- beans |
| 143W | MrP | 43.3 | 27.2 | 145.4 | 86.6 | (2.08) | 126.3 | 64.1 | 37.2 | 73.3 | 66.1 | 23.4 |
| 146W | MrP | 43.0 | 26.6 | 155.0 | 83.6 | (2.58) | 128.7 | 63.8 | 36.5 | 82.5 | 65.9 | 23.2 |
| 149W | M | 48.5 | 27.6 | 162.6 | 90.6 | (2.42) | 138.1 | 61.3 | 37.5 | 63.2 | 65.9 | 22.6 |
| 150W | M | 45.9 | (1.85) | 173.1 | 89.0 | (2.34) | 137.5 | 60.1 | 36.8 | 62.4 | 63.3 | 21.1 |
| 153W | MrP | 41.3 | 115.1 | 92.9 | 92.9 | (2.22) | 136.2 | 79.2 | 37.0 | 78.3 | 67.1 | 23.0 |
| 156W | MrP | 39.3 | (1.90) | 99.1 | 85.9 | (2.53) | 129.2 | 67.9 | 38.0 | 86.7 | 67.1 | 24.2 |
| 143E | MLrP | 54.7 | 25.1 | 140.0 | 84.2 | (2.05) | 105.5 | 76.9 | 35.1 | 63.3 | 65.7 | 23.1 |
| 146E | MLrP | 49.9 | 25.2 | 139.7 | 85.2 | (2.24) | 106.3 | 76.3 | 33.4 | 66.7 | 62.2 | 21.7 |
| 149E | M | 43.9 | 27.8 | 165.1 | 88.9 | (2.05) | 131.3 | 65.9 | 36.7 | 67.2 | 62.2 | 23.6 |
| 150E | M | 52.6 | (1.75) | 172.0 | 87.1 | (2.42) | 122.6 | 73.1 | 38.0 | 61.6 | 62.6 | 22.4 |
| 153E | MLrP | 57.4 | (1.67) | 96.6 | 89.3 | (2.19) | 113.4 | 57.5 | 36.7 | 53.3 | 70.0 | 22.9 |
| 156E | MLrP | 55.3 | (1.83) | 82.5 | 93.0 | (2.37) | 115.5 | 66.3 | 36.6 | 70.0 | 70.0 | 22.4 |

¹The plots were not divided into west and east halves until 1912. ²Not harvested.

TABLE 104.—Continued
(1903-1913)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|----------|------------------------|--|--------------------------------------|------------------------------------|--|--------------------------------------|------------------------------------|---|--------------------------------------|--|--|--------------------------------------|
| | | 1903 Sugarbeets (13.4) (11.8) | 1904 Corn 59.6 54.9 49.0 | 1905 Vetch 3.5 3.5 2.7 | 1906 Potatoes 62.1 60.1 71.5 | 1907 Corn 57.6 66.3 61.0 | 1908 Vetch 2.9 4.0 4.2 | 1909 Potatoes 194.6 194.6 172.2 | 1910 Corn 57.2 51.2 56.7 | 1911 Soybeans 26.0 28.8 29.8 | 1912 Potatoes 83.4 63.1 79.9 | 1913 Corn 40.4 42.7 49.3 |
| 243W | MrP | (13.4) | 59.6 | 3.5 | 62.1 | 57.6 | 2.9 | 194.6 | 57.2 | 26.0 | 83.4 | 40.4 |
| 246W | MrP | (11.8) | 54.9 | 3.5 | 60.1 | 66.3 | 4.0 | 194.6 | 51.2 | 28.8 | 63.1 | 42.7 |
| 249W | M | (11.8) | 49.0 | 2.7 | 71.5 | 61.0 | 4.2 | 172.2 | 56.7 | 29.8 | 79.9 | 49.3 |
| 250W | M | (12.7) | 47.9 | (1.55) | 66.0 | 62.4 | (.80) | 168.3 | 55.6 | (2.25) | 78.0 | 49.2 |
| 253W | MrP | (14.3) | 56.6 | (1.76) | 49.3 | 62.0 | (.78) | 170.9 | 55.5 | (2.13) | 77.2 | 49.2 |
| 256W | MrP | (11.3) | 57.0 | (1.76) | 48.0 | 55.6 | (.90) | 156.3 | 51.1 | (2.22) | 85.1 | 43.9 |
| 243E | MLrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 24.9 | 83.3 | 39.5 |
| 246E | MLrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 26.5 | 63.7 | 47.4 |
| 249E | M | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 27.2 | 67.0 | 47.7 |
| 250E | M | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | (1.90) | 71.3 | 41.6 |
| 253E | MLrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | (2.10) | 74.9 | 56.0 |
| 256E | MLrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | (2.57) | 92.6 | 60.0 |

(1914-1924)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|----------|------------------------|--|--|--|--|---|------------------------------|----------------------------------|--|--------------------------------------|--------------------------------------|---|
| | | 1914 Soybeans (2.19) (2.58) (2.88) | 1915 Potatoes 70.4 63.0 68.2 | 1916 Potatoes 38.7 41.1 43.2 | 1917 Soybeans 11.6 12.4 11.9 | 1918 Potatoes 160.6 173.1 159.2 | 1919 Corn 59.8 68.7 | 1920 Soybeans 25.0 25.5 | 1921 Potatoes 116.3 106.3 84.9 | 1922 Corn 50.9 47.4 48.7 | 1923 Soybeans (1.74) (1.91) | 1924 Alfalfa (.4) (4.12) (3.43) |
| 243W | MrP | (2.19) | 70.4 | 38.7 | 11.6 | 160.6 | 59.8 | 25.0 | 116.3 | 50.9 | (1.74) | (.4) |
| 246W | MrP | (2.58) | 63.0 | 41.1 | 12.4 | 173.1 | 68.7 | 25.5 | 106.3 | 47.4 | (1.91) | (4.12) |
| 249W | M | (2.88) | 68.2 | 43.2 | 11.9 | 159.2 | 65.7 | 24.8 | 84.9 | 48.7 | (1.91) | (3.43) |
| 250W | M | (2.09) | 67.6 | 51.4 | (1.16) | 150.6 | 71.2 | 23.4 | 99.8 | 53.3 | (1.79) | (3.94) |
| 253W | MrP | (1.99) | 56.3 | 55.8 | (1.24) | 157.0 | 71.2 | 23.4 | 124.1 | 64.4 | (1.86) | (.4) |
| 256W | MrP | (1.97) | 60.3 | 52.9 | (1.26) | 153.3 | 71.2 | 23.4 | 135.6 | 62.7 | (1.86) | (4.09) |
| 243E | MLrP | 20.1 | 55.7 | 43.3 | 11.6 | 173.0 | 63.7 | 26.0 | 117.5 | 58.2 | (1.83) | (.4) |
| 246E | MLrP | 25.0 | 57.4 | 49.6 | 11.9 | 171.1 | 70.2 | 26.4 | 117.9 | 55.4 | (1.83) | (4.35) |
| 249E | M | 25.2 | 66.8 | 46.3 | 11.0 | 163.3 | 70.2 | 26.4 | 79.4 | 49.8 | (1.76) | (3.89) |
| 250E | M | (1.66) | 75.3 | 42.1 | (1.00) | 179.4 | 66.5 | 26.6 | 101.4 | 50.6 | (1.48) | (3.82) |
| 253E | MLrP | (2.05) | 51.2 | 51.4 | (1.23) | 169.6 | 76.0 | 24.1 | 122.6 | 58.4 | (1.92) | (.4) |
| 256E | MLrP | (2.24) | 49.7 | 55.7 | (1.21) | 130.3 | 76.0 | 24.1 | 54.8 | 60.0 | (1.92) | (3.83) |

¹The plots were not divided into west and east halves until 1911. ²Alfalfa on Plots 243 and 253 cut at a different stage of maturity in 1924.

TABLE 104.—Continued
(1903-1913)

| Plot ¹ No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|--------------------------|------------------------|----------------------------|---------------|------------------|--------------|------------------|------------------|--------------|------------------|------------------|--------------|------------------|
| | | 1903 Corn | 1904 Vetch | 1905 Potatoes | 1906 Corn | 1907 Soybeans | 1908 Potatoes | 1909 Corn | 1910 Soybeans | 1911 Potatoes | 1912 Corn | 1913 Soybeans |
| 343W | MrP | 43.4 | (.16) | 53.3 | 93.3 | (2.50) | 72.5 | 59.6 | 19.3 | 41.1 | 85.0 | 13.7 |
| 346W | MrP | 44.9 | (.15) | 29.0 | 82.4 | (2.50) | 59.2 | 61.5 | 22.3 | 45.3 | 77.3 | 16.3 |
| 349W | M | 41.1 | (.2) | 26.7 | 95.2 | (2.11) | 54.6 | 60.9 | 22.3 | 37.6 | 81.2 | 12.0 |
| 350W | M | 40.3 | (.37) | 34.6 | 74.6 | (2.01) | 53.3 | 62.7 | (2.29) | 41.6 | 74.2 | (.94) |
| 353W | MrP | 34.8 | (.75) | 49.0 | 88.0 | (2.37) | 64.6 | 63.6 | (2.39) | 36.0 | 86.0 | (1.34) |
| 356W | MrP | 35.4 | (.82) | 58.5 | 120.7 | (2.37) | 52.9 | 66.2 | (2.51) | 51.5 | 90.9 | (1.29) |
| 343E | MLrP | ..... | ..... | ..... | ..... | ..... | ..... | 69.1 | 22.3 | 45.0 | 85.2 | 16.6 |
| 346E | MLrP | ..... | ..... | ..... | ..... | ..... | ..... | 64.3 | 24.8 | 43.5 | 94.6 | 14.8 |
| 349E | M | ..... | ..... | ..... | ..... | ..... | ..... | 60.9 | 28.3 | 40.9 | 84.9 | 14.4 |
| 350E | M | ..... | ..... | ..... | ..... | ..... | ..... | 62.7 | (2.30) | 40.3 | 86.5 | (.84) |
| 353E | MLrP | ..... | ..... | ..... | ..... | ..... | ..... | 70.8 | (2.44) | 41.8 | 80.3 | (1.19) |
| 356E | MLrP | ..... | ..... | ..... | ..... | ..... | ..... | 63.4 | (2.40) | 44.4 | 83.7 | (1.72) |

(1914-1924)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|-------------|------------------------|----------------------------|--------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| | | 1914 Potatoes | 1915 Corn | 1916 Clover | 1917 Alfalfa | 1918 Alfalfa | 1919 Alfalfa | 1920 Alfalfa | 1921 Alfalfa | 1922 Alfalfa | 1923 Alfalfa | 1924 Potatoes |
| 343W | MrP | 18.5 | 60.2 | (2.91) | (1.07) | (5.87) | (3.97) | (4.81) | (3.60) | (4.71) | (4.23) | 278.7 |
| 346W | MrP | 6.0 | 51.8 | (2.89) | (.94) | (3.16) | (3.58) | (4.28) | (3.60) | (3.17) | (3.95) | 258.0 |
| 349W | M | 11.1 | 58.7 | (3.07) | (.71) | (5.67) | (4.39) | (4.91) | (4.13) | (3.71) | (4.09) | 236.7 |
| 350W | M | 8.6 | 63.1 | (2.93) | (.84) | (5.41) | (5.12) | (4.93) | (4.27) | (4.55) | (4.41) | 235.7 |
| 353W | MrP | 23.7 | 58.9 | (3.01) | (1.15) | (5.55) | (4.22) | (4.53) | (4.13) | (4.20) | (4.53) | 245.7 |
| 356W | MrP | 31.8 | 61.6 | (3.63) | (1.24) | (5.86) | (3.64) | (3.62) | (4.61) | (3.47) | (4.13) | 145.8 |
| 343E | MLrP | 23.9 | 58.5 | (3.20) | (1.07) | (5.49) | (3.26) | (4.71) | (4.39) | (4.59) | (3.91) | 284.3 |
| 346E | MLrP | 14.5 | 58.0 | (3.15) | (1.11) | (5.40) | (3.34) | (5.74) | (3.42) | (3.17) | (3.48) | 250.5 |
| 349E | M | 16.6 | 57.6 | (3.40) | (1.16) | (5.71) | (4.44) | (4.41) | (3.60) | (2.96) | (3.85) | 205.7 |
| 350E | M | 17.6 | 63.9 | (3.03) | (1.17) | (5.52) | (5.08) | (4.62) | (3.86) | (3.62) | (4.08) | 233.3 |
| 353E | MLrP | 25.4 | 63.6 | (3.12) | (1.23) | (5.13) | (3.75) | (3.75) | (3.13) | (3.00) | (3.51) | 251.7 |
| 356E | MLrP | 30.0 | 67.8 | (3.40) | (.97) | (5.02) | (2.88) | (3.13) | (2.89) | (3.01) | (3.76) | 168.8 |

¹The plots were not divided into west and east halves until 1909. ²Vetch not seeded on this plot.

TABLE 104.—*Concluded*
(1903-1913)

Bushels or (tons) per acre

| Plot ¹ No. | Soil treatment applied | 1903 Vetch ² | 1904 Potatoes | 1905 Corn | 1906 Cowpeas | 1907 Potatoes | 1908 Corn | 1909 Vetch ² | 1910 Alfalfa | 1911 Alfalfa | 1912 Alfalfa ³ | 1913 Alfalfa |
|--------------------------|------------------------|----------------------------|------------------|--------------|-----------------|------------------|--------------|----------------------------|-----------------|-----------------|------------------------------|-----------------|
| 443W | MLP | .... | 43.9 | 69.0 | (1.03) | 50.7 | 72.0 | .... | (2.97) | (3.34) | .... | (3.89) |
| 446W | MLP | .... | 49.2 | 62.4 | (1.04) | 45.9 | 76.0 | .... | (2.90) | (2.98) | .... | (2.94) |
| 449W | M | .... | 56.5 | 60.2 | (.86) | 61.6 | 67.9 | .... | (2.34) | (2.56) | .... | (2.59) |
| 450W | M | .... | 62.6 | 60.4 | (.83) | 64.5 | 63.7 | .... | (2.54) | (2.68) | .... | (3.17) |
| 453W | MLP | .... | 60.6 | 67.1 | (.81) | 70.8 | 73.4 | .... | (3.90) | (3.51) | .... | (3.29) |
| 456W | MLP | .... | 56.7 | 68.8 | (.86) | 67.0 | 68.9 | .... | (3.15) | (3.64) | .... | (3.47) |
| 443E | MLrP | .... | .... | .... | .... | .... | .... | .... | (3.74) | (3.46) | .... | (4.52) |
| 446E | MLrP | .... | .... | .... | .... | .... | .... | .... | (3.75) | (3.56) | .... | (3.97) |
| 449E | M | .... | .... | .... | .... | .... | .... | .... | (2.93) | (2.94) | .... | (2.92) |
| 450E | M | .... | .... | .... | .... | .... | .... | .... | (2.94) | (2.96) | .... | (3.32) |
| 453E | MLrP | .... | .... | .... | .... | .... | .... | .... | (4.01) | (4.01) | .... | (3.59) |
| 456E | MLrP | .... | .... | .... | .... | .... | .... | .... | (3.67) | (3.71) | .... | (4.09) |

(1914-1924)

| Plot No. | Soil treatment applied | 1914 Alfalfa | 1915 Alfalfa | 1916 Alfalfa | 1917 Potatoes | 1918 Corn | 1918 Soybeans | 1919 Potatoes | 1920 Potatoes | 1921 Corn | 1922 Soybeans | 1923 Potatoes | 1924 Corn ⁴ |
|-------------|------------------------|-----------------|-----------------|-----------------|------------------|--------------|------------------|------------------|------------------|--------------|------------------|------------------|---------------------------|
| 443W | MLP | (4.28) | (4.00) | (2.02) | 91.2 | 78.2 | (2.27) | 61.6 | 61.6 | 81.4 | 28.3 | 145.0 | .... |
| 446W | MLP | (3.88) | (4.40) | (2.12) | 74.1 | 86.6 | (2.43) | 60.8 | 60.8 | 81.8 | 20.3 | 137.4 | .... |
| 449W | M | (3.57) | (3.88) | (2.17) | 105.0 | 83.5 | (2.20) | 63.1 | 63.1 | 88.3 | 20.7 | 149.5 | .... |
| 450W | M | (3.40) | (4.03) | (2.12) | 108.2 | 81.8 | (2.38) | 72.7 | 72.7 | 85.6 | 22.5 | 164.9 | .... |
| 453W | MLP | (4.23) | (4.56) | (2.58) | 110.3 | 78.2 | (2.43) | 71.7 | 71.7 | 87.1 | 27.6 | 175.4 | .... |
| 456W | MLP | (3.52) | (4.50) | (2.75) | 97.9 | 91.5 | (2.77) | 68.2 | 68.2 | 85.7 | 26.4 | 161.6 | .... |
| 443E | MLrP | (4.41) | (4.09) | (2.34) | 96.1 | 86.5 | (2.50) | 64.7 | 64.7 | 99.2 | 31.3 | 150.2 | .... |
| 446E | MLrP | (4.36) | (4.36) | (2.22) | 84.9 | 96.8 | (2.61) | 62.2 | 62.2 | 89.0 | 29.0 | 144.4 | .... |
| 449E | M | (3.90) | (4.24) | (2.30) | 100.6 | 88.7 | (2.41) | 71.7 | 71.7 | 86.8 | 26.8 | 155.7 | .... |
| 450E | M | (3.82) | (3.93) | (2.17) | 109.4 | 67.7 | (2.31) | 72.8 | 72.8 | 86.6 | 26.4 | 162.9 | .... |
| 453E | MLrP | (3.13) | (4.38) | (2.97) | 108.3 | 88.4 | (2.24) | 64.2 | 64.2 | 91.2 | 19.2 | 146.4 | .... |
| 456E | MLrP | (2.80) | (4.43) | (3.19) | 91.3 | 88.5 | (2.32) | 60.1 | 60.1 | 89.9 | 26.4 | 161.2 | .... |

¹The plots were not divided into west and east halves until 1910. ²Clipped to kill weeds; no crops removed. ³Clipped to kill weeds; no crops removed. ⁴Error in harvesting.

TABLE 105.—URBANA FIELD, SOUTH FARM: ROTATION, CORN, OATS, CLOVER, WHEAT
(1903-1913)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------|--------------|---------------|----------------|--------------|--------------|----------------|---------------|--------------|--------------|--|
| | | 1903 Corn | 1904 Corn | 1905 Oats | 1906 Wheat | 1907 Clover | 1908 Corn | 1909 Oats | 1910 Clover | 1911 Wheat | 1912 Corn | 1913 Oats | |
| 163W | RrP | 45.1 | 54.1 | 57.5 | 39.8 | .83 | 72.0 | 45.4 | .60 | 46.9 | 74.9 | 26.8 | |
| 166W | RrP | 43.8 | 49.3 | 60.9 | 36.5 | 1.00 | 74.9 | 40.8 | 1.30 | 53.4 | 79.5 | 24.6 | |
| 169W | R | 42.7 | 39.5 | 49.3 | 28.4 | .90 | 65.0 | 39.9 | 1.70 | 36.7 | 67.9 | 19.1 | |
| 170W | M | 41.8 | 38.7 | 52.2 | 26.2 | (2.56) | 69.6 | 40.1 | (2.87) | 35.9 | 76.7 | 22.5 | |
| 173W | MrP | 35.4 | 53.3 | 54.6 | 32.8 | (3.65) | 78.4 | 39.8 | (4.23) | 52.7 | 83.7 | 29.6 | |
| 176W | MrP | 39.3 | 58.1 | 61.9 | 38.8 | (3.74) | 79.5 | 40.0 | (4.23) | 51.0 | 85.6 | 32.1 | |
| 163E | RLrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 49.9 | 87.0 | 28.2 | |
| 166E | RLrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 53.6 | 81.4 | 26.8 | |
| 169E | R | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 33.8 | 62.7 | 17.0 | |
| 170E | M | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 32.4 | 74.4 | 22.0 | |
| 173E | MLrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 51.3 | 85.7 | 28.0 | |
| 176E | MLrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 51.0 | 85.6 | 30.9 | |

| (1914-1924) | | | | | | | | | | | | |
|-------------|------------------------|----------|-------|------|------|----------|-------|------|------|--------|-------|------|
| Plot No. | Soil treatment applied | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 |
| | | Soybeans | Wheat | Corn | Oats | Soybeans | Wheat | Corn | Oats | Clover | Wheat | Corn |
| 163W | RrP | 16.6 | 46.9 | 37.6 | 78.8 | (2.00) | 37.2 | 63.5 | 37.6 | 1.08 | 37.0 | 57.2 |
| 166W | RrP | 17.5 | 44.4 | 41.6 | 74.1 | (1.65) | 37.1 | 63.1 | 39.0 | 1.32 | 37.3 | 65.4 |
| 169W | R | 15.3 | 26.6 | 29.2 | 59.9 | (1.30) | 23.9 | 46.1 | 30.5 | 1.03 | 35.5 | 51.2 |
| 170W | M | (1.09) | 31.8 | 37.2 | 67.4 | (1.33) | 26.4 | 57.7 | 36.6 | (2.43) | 36.5 | 62.6 |
| 173W | MrP | (1.45) | 50.5 | 41.9 | 78.4 | (1.79) | 36.1 | 70.7 | 46.4 | (2.26) | 38.3 | 59.8 |
| 176W | MrP | (1.52) | 48.9 | 41.5 | 75.1 | (2.19) | 35.4 | 79.8 | 45.3 | (2.26) | 37.9 | 59.3 |
| 163E | RLrP | 18.1 | 50.9 | 47.2 | 57.3 | (1.93) | 31.0 | 75.6 | 38.4 | .87 | 35.1 | 68.5 |
| 166E | RLrP | 18.0 | 49.6 | 45.7 | 66.6 | (1.65) | 34.5 | 78.6 | 39.8 | 1.06 | 33.3 | 56.4 |
| 169E | R | 15.2 | 25.9 | 33.6 | 61.4 | (1.40) | 20.6 | 55.0 | 30.6 | 1.10 | 38.3 | 56.0 |
| 170E | M | (1.09) | 31.2 | 34.5 | 63.1 | (1.27) | 23.3 | 58.0 | 37.2 | (2.23) | 30.6 | 63.3 |
| 173E | MLrP | (1.37) | 52.4 | 46.6 | 63.6 | (1.78) | 31.9 | 77.1 | 46.1 | (2.53) | 36.2 | 48.2 |
| 176E | MLrP | (1.47) | 53.0 | 44.3 | 66.1 | (2.24) | 34.7 | 86.8 | 44.0 | (2.53) | 30.5 | 52.3 |

¹The plots were not divided into west and east halves until 1911.

TABLE 105.—Continued
(1903-1913)

| Plot ¹ No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|--------------------------|------------------------|----------------------------|--------------|---------------|----------------|--------------|--------------|---------------|---------------|--------------|--------------|------------------|--|
| | | 1903 Oats | 1904 Oats | 1905 Wheat | 1906 Clover | 1907 Corn | 1908 Oats | 1909 Wheat | 1910 Wheat | 1911 Corn | 1912 Oats | 1913 Soybeans | |
| 263W | RrP | 24.7 | 25.7 | 32.1 | (.82) | 65.3 | 31.3 | 42.5 | 43.7 | 52.3 | 72.9 | 13.7 | |
| 266W | RrP | 23.1 | 24.5 | 29.3 | (.80) | 59.7 | 26.7 | 40.7 | 32.3 | 50.2 | 75.7 | 12.3 | |
| 269W | R | 26.8 | 22.5 | 26.8 | (.86) | 57.9 | 31.5 | 39.4 | 23.3 | 35.5 | 61.9 | 10.7 | |
| 270W | M | 22.0 | 21.5 | 24.0 | (.82) | 55.3 | 30.0 | 37.1 | 28.7 | 43.1 | 67.8 | (.84) | |
| 273W | MrP | 23.9 | 25.0 | 27.8 | (.77) | 62.5 | 29.5 | 43.4 | 43.7 | 38.6 | 69.4 | (1.17) | |
| 276W | MrP | 16.1 | 25.3 | 30.7 | (.68) | 58.0 | 27.9 | 44.1 | 33.2 | 48.0 | 68.6 | (1.34) | |
| 263E | RrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 49.0 | 50.3 | 78.9 | 13.2 | |
| 266E | RrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 45.2 | 47.1 | 78.7 | 10.3 | |
| 269E | R | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 35.3 | 45.3 | 68.4 | 10.5 | |
| 270E | M | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 33.3 | 45.2 | 73.2 | (1.13) | |
| 273E | MLrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 46.2 | 53.7 | 69.0 | (1.27) | |
| 279E | MLrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 39.5 | 50.6 | 69.5 | (1.24) | |

(1914-1924)

| Plot No. | Soil treatment applied | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 |
|-------------|------------------------|-------|------|------|----------|-------|------|------|--------|-------|------|------|
| | | Wheat | Corn | Oats | Soybeans | Wheat | Corn | Oats | Clover | Wheat | Corn | Oats |
| 263W | RrP | 30.6 | 57.9 | 57.0 | (1.93) | 36.7 | 68.2 | 44.8 | (.94) | 40.6 | 49.6 | 67.4 |
| 266W | RrP | ..... | 56.4 | 58.5 | (1.90) | 40.0 | 69.8 | 42.7 | (1.13) | 37.7 | 57.6 | 57.3 |
| 269W | R | ..... | 45.9 | 51.6 | (1.68) | 17.0 | 60.8 | 31.1 | (.82) | 27.5 | 40.0 | 60.8 |
| 270W | M | ..... | 57.0 | 58.9 | (1.73) | 18.6 | 64.1 | 37.0 | (1.56) | 29.5 | 47.7 | 59.9 |
| 273W | MrP | ..... | 61.5 | 76.9 | (1.74) | 38.8 | 70.0 | 44.8 | (3.29) | 38.0 | 58.7 | 67.8 |
| 276W | MrP | ..... | 57.0 | 74.8 | (1.85) | 38.8 | 68.9 | 47.3 | (3.29) | 38.0 | 69.4 | 72.4 |
| 263E | RrP | ..... | 50.0 | 65.5 | (2.01) | 28.5 | 75.7 | 42.8 | (1.08) | 37.9 | 74.9 | 71.1 |
| 266E | RrP | ..... | 55.8 | 64.0 | (2.08) | 34.6 | 79.3 | 38.4 | (1.32) | 34.9 | 74.4 | 70.9 |
| 269E | R | ..... | 53.3 | 60.0 | (2.28) | 23.5 | 64.6 | 36.0 | (1.05) | 29.0 | 57.9 | 65.2 |
| 270E | M | ..... | 55.5 | 66.8 | (1.81) | 26.8 | 64.8 | 42.3 | (2.00) | 29.2 | 53.4 | 65.2 |
| 273E | MLrP | ..... | 49.6 | 78.4 | (1.90) | 37.7 | 72.0 | 44.0 | (3.28) | 37.5 | 69.2 | 63.2 |
| 276E | MLrP | ..... | 53.5 | 75.9 | (1.96) | 40.0 | 72.4 | 42.0 | (3.28) | 36.4 | 74.5 | 68.5 |

¹The plots were not divided into west and east halves until 1910.

TABLE 105.—Continued
(1903-1913)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|------------|-------------|-----------|-----------|------------|-------------|-----------|-----------|---------------|------------|--|
| | | 1903 Oats | 1904 Wheat | 1905 Clover | 1906 Corn | 1907 Oats | 1908 Wheat | 1909 Clover | 1910 Corn | 1911 Oats | 1912 Soybeans | 1913 Wheat | |
| 363W | RrP | 28.5 | 16.6 | (1.52) | 79.7 | 35.4 | 39.4 | .49 | 74.4 | 64.9 | 17.1 | 38.1 | |
| 366W | RrP | 28.4 | 21.5 | (1.52) | 82.0 | 35.0 | 45.7 | .60 | 78.7 | 76.4 | 16.9 | 45.8 | |
| 369W | R | 28.4 | 13.5 | (1.25) | 85.0 | 33.1 | 39.2 | .71 | 68.3 | 61.9 | 15.0 | 39.8 | |
| 370W | M | 29.0 | 15.3 | (1.43) | 92.4 | 32.8 | 29.2 | (2.51) | 70.5 | 64.8 | (1.03) | 41.8 | |
| 373W | MrP | 29.5 | 15.0 | (1.94) | 76.5 | 34.7 | 44.5 | (2.53) | 73.3 | 68.9 | (1.00) | 44.7 | |
| 376W | MrP | 30.7 | 16.3 | (1.94) | 64.4 | 33.4 | 45.7 | (2.67) | 74.7 | 64.9 | (1.05) | 46.7 | |
| 363E | RLrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 34.0 | |
| 366E | RLrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 39.6 | |
| 369E | R | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 27.9 | |
| 370E | M | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 31.2 | |
| 373E | MrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 40.2 | |
| 376E | MrP | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 36.7 | |

(1914-1924)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|-----------|-------------|------------|-----------|-----------|---------------|------------|-----------|-----------|-------------|--|
| | | 1914 Corn | 1915 Oats | 1916 Clover | 1917 Wheat | 1918 Corn | 1919 Oats | 1920 Soybeans | 1921 Wheat | 1922 Corn | 1923 Oats | 1924 Clover | |
| 363W | RrP | 70.5 | 80.9 | .93 | 46.2 | 72.6 | 40.3 | 18.5 | 31.8 | 75.8 | 67.8 | (3.53) | |
| 366W | RrP | 66.8 | 82.3 | 1.07 | 48.1 | 74.5 | 37.8 | 18.5 | 32.8 | 77.3 | 66.3 | (3.02) | |
| 369W | R | 69.0 | 79.8 | .78 | 43.3 | 74.5 | 41.4 | 14.5 | 33.5 | 71.9 | 60.6 | (3.28) | |
| 370W | M | 67.4 | 84.0 | (2.90) | 36.6 | 71.0 | 42.0 | (1.15) | 33.8 | 63.4 | 64.5 | (3.43) | |
| 373W | MrP | 57.1 | 87.2 | (2.90) | 35.9 | 71.2 | 41.9 | (1.42) | 30.1 | 60.7 | 67.6 | (3.47) | |
| 376W | MrP | 46.5 | 90.1 | (2.86) | 31.3 | 64.1 | 39.0 | (1.22) | 29.3 | 54.2 | 68.9 | (3.81) | |
| 363E | RLrP | 70.1 | 81.5 | 1.17 | 43.1 | 72.9 | 38.4 | 14.0 | 34.3 | 81.3 | 58.6 | (3.19) | |
| 366E | RLrP | 73.7 | 80.8 | 1.37 | 44.0 | 73.5 | 36.0 | 14.0 | 34.6 | 83.7 | 58.8 | (3.02) | |
| 369E | R | 62.5 | 73.0 | .63 | 38.5 | 66.4 | 40.9 | 12.8 | 30.2 | 58.0 | 59.1 | (2.75) | |
| 370E | M | 62.1 | 81.2 | (2.73) | 25.1 | 61.8 | 42.4 | (1.03) | 29.4 | 59.0 | 63.9 | (2.98) | |
| 373E | MrP | 57.3 | 85.5 | (2.04) | 31.9 | 70.3 | 42.7 | (1.14) | 33.4 | 62.1 | 63.2 | (3.43) | |
| 376E | MrP | 50.7 | 80.7 | (2.89) | 26.0 | 68.0 | 38.7 | (.95) | 33.4 | 59.4 | 61.3 | (3.26) | |

The plots were not divided into west and east halves until 1913.

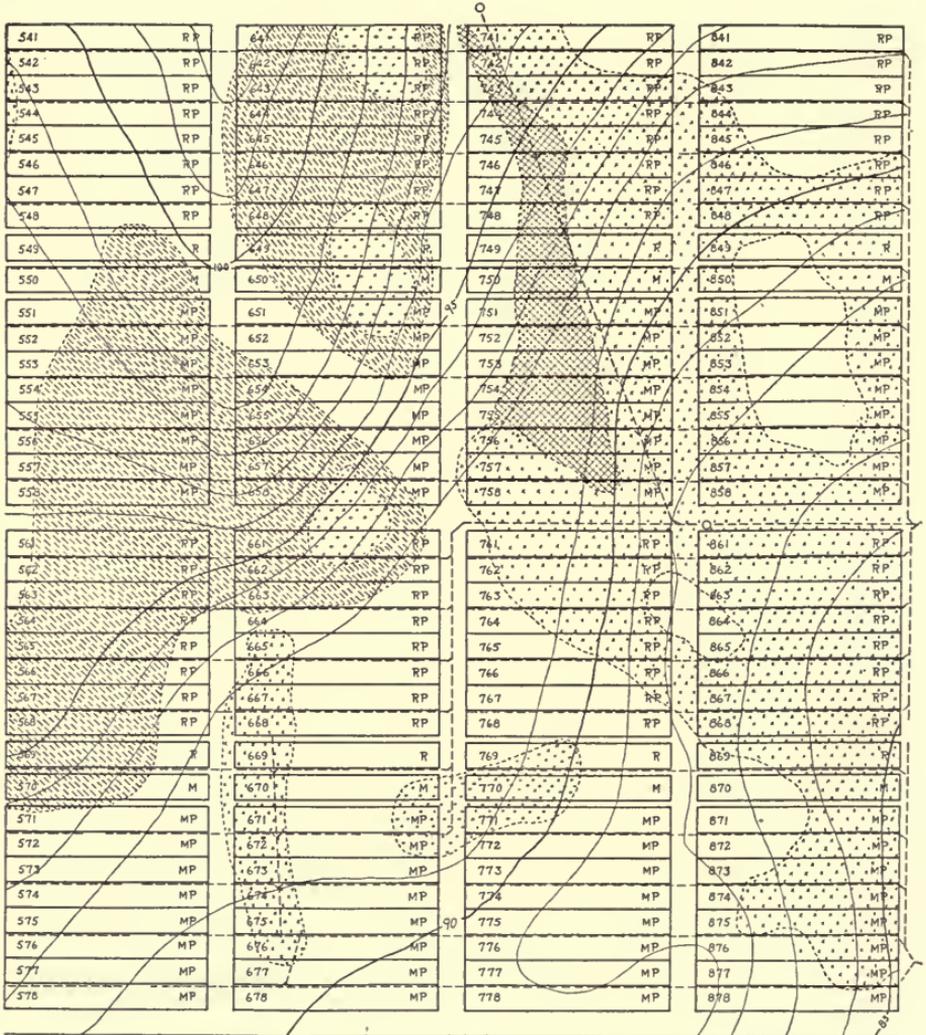
TABLE 105.—Concluded
(1903-1913)

| Plot ¹ No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|--------------------------|------------------------|-----------------------------|-----------------------------|--------------|--------------|---------------|----------------|--------------|--------------|------------------|------------------|--------------|
| | | 1903 Clover ² | 1904 Clover ² | 1905 Corn | 1906 Oats | 1907 Wheat | 1908 Clover | 1909 Corn | 1910 Oats | 1911 Soybeans | 1912 Soybeans | 1913 Corn |
| 463W | RrP | .... | .... | 64.8 | 60.0 | 43.3 | 1.34 | 74.4 | 56.6 | 12.2 | 19.6 | 45.9 |
| 466W | RrP | .... | .... | 64.3 | 57.0 | 42.4 | 1.66 | 75.9 | 56.1 | 13.9 | 18.6 | 46.7 |
| 469W | R | .... | .... | 65.0 | 54.3 | 40.2 | 1.48 | 66.3 | 51.3 | 12.6 | 16.1 | 33.0 |
| 470W | M | .... | .... | 67.1 | 53.9 | 40.2 | (2.37) | 64.0 | 48.1 | (1.20) | (.97) | 51.0 |
| 473W | MrP | .... | .... | 72.2 | 59.5 | 42.6 | (2.93) | 73.1 | 54.1 | (1.24) | (.87) | 49.1 |
| 476W | MrP | .... | .... | 72.1 | 60.5 | 43.0 | (2.56) | 69.9 | 58.2 | (1.18) | (1.10) | 48.8 |
| 463E | RrP | .... | .... | .... | .... | .... | .... | .... | .... | .... | 14.1 | 44.0 |
| 466E | RrP | .... | .... | .... | .... | .... | .... | .... | .... | .... | 19.1 | 43.0 |
| 469E | R | .... | .... | .... | .... | .... | .... | .... | .... | .... | 15.1 | 31.5 |
| 470E | M | .... | .... | .... | .... | .... | .... | .... | .... | .... | (.83) | 38.3 |
| 473E | MrP | .... | .... | .... | .... | .... | .... | .... | .... | .... | (1.15) | 57.8 |
| 476E | MrP | .... | .... | .... | .... | .... | .... | .... | .... | .... | (1.07) | 52.5 |

(1914-1924)

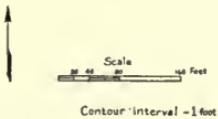
| Plot No. | Soil treatment applied | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 |
|-------------|------------------------|------|----------|-------|------|------|--------|-------|------|------|--------|----------|
| | | Oats | Soybeans | Wheat | Corn | Oats | Clover | Wheat | Corn | Oats | Oats | Soybeans | Wheat |
| 463W | RrP | 43.5 | 23.2 | 45.6 | 69.8 | 56.0 | .78 | 43.1 | 89.4 | 44.4 | } 23.3 | 40.5 |
| 466W | RrP | 46.0 | 23.1 | 45.1 | 73.0 | 60.4 | .60 | 44.5 | 86.5 | 47.3 | | 40.6 |
| 469W | R | 42.0 | 22.8 | 30.4 | 64.2 | 57.7 | .97 | 42.1 | 79.0 | 44.7 | 24.4 | 24.7 |
| 470W | M | 50.2 | (1.41) | 37.0 | 74.7 | 63.3 | (2.76) | 40.7 | 85.0 | 49.1 | (2.75) | 28.8 |
| 473W | MrP | 52.5 | (2.00) | 45.8 | 82.1 | 66.5 | (2.41) | 44.2 | 77.0 | 53.0 | (2.94) | 41.4 |
| 476W | MrP | 53.9 | (1.92) | 43.3 | 78.7 | 67.2 | (2.71) | 43.2 | 82.4 | 49.4 | | |
| 463E | RrP | 49.5 | 23.3 | 40.2 | 66.8 | 62.6 | .68 | 45.1 | 80.2 | 48.8 | } 24.5 | 39.9 |
| 466E | RrP | 52.5 | 24.1 | 41.2 | 73.5 | 61.0 | .60 | 43.0 | 82.2 | 49.8 | | 37.5 |
| 469E | R | 41.2 | 23.4 | 19.1 | 56.7 | 51.6 | .83 | 35.7 | 68.9 | 41.5 | 21.4 | 18.9 |
| 470E | M | 49.7 | (1.85) | 27.5 | 75.8 | 58.8 | (2.31) | 36.6 | 85.4 | 48.0 | (2.40) | 23.3 |
| 473E | MrP | 55.4 | (2.01) | 41.1 | 88.1 | 63.0 | (2.91) | 47.1 | 89.4 | 54.5 | (2.90) | 41.7 |
| 476E | MrP | 54.4 | (2.02) | 42.0 | 85.6 | 70.5 | (2.73) | 46.0 | 92.5 | 53.1 | | 40.1 |

¹The plots were not divided into west and east halves until 1912. ²Not harvested. ³Not harvested by plots.



-  Black Clay Loam, poorly drained phase
Lecessial Clyde clay loam
-  Brown Silt Loam On Drift, light phase
Carrington silt loam, light phase
-  Brown Silt Loam On Drift
Carrington silt loam

-  Brown Silt Loam
Muscatine silt loam
-  Brown Silt Loam, light phase
Muscatine silt loam, light phase
-  Black Silty Clay Loam On Clay
Grundy silty clay loam



SOIL MAP OF SOUTH FARM, URBANA, SERIES 500, 600, 700, 800

TABLE 106.—URBANA FIELD, SOUTH FARM: ROTATION, CORN, CORN, OATS, CLOVER (1903-1913)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------|------------------|--------------|----------------|--------------|--------------|--------------|------------------|--------------|--------------|--|
| | | 1903 Corn | 1904 Corn | 1905 Soybeans | 1906 Oats | 1907 Clover | 1908 Corn | 1909 Corn | 1910 Oats | 1911 Soybeans | 1912 Corn | 1913 Corn | |
| 543 | RrP..... | 38.6 | 58.8 | 8.3 | 70.0 | (2.36) | 67.0 | 66.1 | 53.4 | 8.6 | 71.3 | 38.5 | |
| 546 | RrP..... | 35.9 | 59.0 | 12.1 | 71.4 | (2.34) | 70.3 | 58.4 | 61.8 | 8.8 | 72.9 | 39.9 | |
| 549 | R..... | 42.6 | 50.5 | 7.6 | 66.2 | (2.23) | 61.7 | 62.2 | 54.6 | 8.1 | 65.6 | 29.1 | |
| 550 | M..... | 39.7 | 52.1 | (1.27) | 65.7 | (1.93) | 60.3 | 61.7 | 56.0 | (.97) | 66.3 | 36.1 | |
| 553 | MrP..... | 45.0 | 62.1 | (1.30) | 64.0 | (2.41) | 67.1 | 67.4 | 48.6 | (1.14) | 70.8 | 35.7 | |
| 556 | MrP..... | 41.4 | 55.7 | (.49) | 59.8 | (2.40) | 59.9 | ..(1) | 52.3 | (1.11) | 63.2 | 47.9 | |
| | | Corn | | Corn Soybeans | | Corn | | Oats | | Corn | | Oats | |
| 643 | RrP..... | 41.9 | 51.0 | 44.3 | (.88) | 67.0 | 33.7 | 49.8 | 0.00 | 44.6 | 73.1 | 19.5 | |
| 646 | RrP..... | 37.5 | 45.8 | 46.8 | (.98) | 62.8 | 29.0 | 49.7 | 0.00 | 46.7 | 71.2 | 19.6 | |
| 649 | R..... | 27.6 | 39.1 | 37.5 | (1.05) | 62.8 | 30.9 | 47.8 | 0.00 | 32.1 | 57.5 | 13.2 | |
| 650 | M..... | 28.3 | 40.9 | 42.6 | (.98) | 57.9 | 26.3 | 53.0 | (2.30) | 36.9 | 57.5 | 14.6 | |
| 653 | MrP..... | 38.9 | 48.4 | 48.6 | (1.37) | 64.5 | 38.8 | 51.1 | (3.68) | 47.0 | 76.1 | 19.5 | |
| 656 | MrP..... | 39.0 | 43.9 | 48.5 | (1.47) | 60.4 | 34.3 | 49.8 | (3.68) | 43.8 | 80.2 | 20.0 | |

(1914-1924)

| Plot No. | Soil treatment applied | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 |
|----------|------------------------|----------|----------|------|-------|--------|--------|------|------|--------|--------|--------|
| | | Oats | Soybeans | Corn | Corn | Oats | Clover | Corn | Corn | Corn | Oats | Clover | Corn |
| 543 | RrP..... | 45.1 | 22.2 | 41.1 | 69.7 | 54.1 | .57 | 74.1 | 60.2 | 49.1 | 0.00 | 56.5 |
| 546 | RrP..... | 49.5 | 20.7 | 43.9 | 68.3 | 53.2 | .48 | 74.1 | 60.2 | 49.7 | 0.00 | 46.3 |
| 549 | R..... | 38.6 | 20.4 | 37.0 | 59.1 | 52.3 | .57 | 63.3 | 60.3 | 40.4 | 0.00 | 51.3 |
| 550 | M..... | 36.9 | (1.45) | 46.7 | 68.7 | 52.2 | (2.31) | 71.2 | 69.8 | 41.7 | (1.01) | 56.5 |
| 553 | MrP..... | 45.7 | (1.57) | 45.1 | 71.7 | 50.7 | (2.72) | 69.8 | 66.5 | 48.4 | (1.57) | 56.6 |
| 556 | MrP..... | 44.4 | (1.72) | 47.5 | 70.6 | 52.5 | (2.53) | 69.8 | 66.5 | 47.6 | (1.57) | 50.2 |
| | | Soybeans | | Corn | | Clover | | Oats | | Corn | | Corn |
| 643 | RrP..... | 19.3 | 54.2 | 37.5 | 94.5 | .59 | 48.8 | 66.1 | 60.1 | 1.62 | 65.2 | 55.4 |
| 646 | RrP..... | 19.9 | 54.6 | 36.9 | 100.0 | .36 | 43.2 | 66.1 | 58.6 | .31 | 67.7 | 37.2 |
| 649 | R..... | 16.9 | 46.2 | 31.6 | 78.3 | .40 | 47.0 | 50.7 | 45.6 | .70 | 56.0 | 22.2 |
| 650 | M..... | (1.45) | 51.6 | 33.4 | 76.3 | (1.11) | 52.8 | 61.9 | 50.9 | (.90) | 69.7 | 28.4 |
| 653 | MrP..... | (1.70) | 54.1 | 38.5 | 101.9 | (1.35) | 51.6 | 71.5 | 59.6 | (1.20) | 71.1 | 57.7 |
| 656 | MrP..... | (1.82) | 53.7 | 39.4 | 100.5 | (1.34) | 49.2 | 71.5 | 61.0 | (1.20) | 72.9 | 55.0 |

¹Error in harvesting in 1909.

TABLE 107.—URBANA FIELD, SOUTH FARM: ROTATION, CORN, CORN, CORN, SOYBEANS
(1903-1913)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------|-----------------|--------------|------------------|--------------|--------------|--------------|------------------|--------------|--------------|--|
| | | 1903 Corn | 1904 Corn | 1905 Cowpeas | 1906 Corn | 1907 Soybeans | 1908 Corn | 1909 Corn | 1910 Corn | 1911 Soybeans | 1912 Corn | 1913 Corn | |
| 563 | RrP..... | 40.2 | 53.7 | 17.8 | 77.2 | 15.0 | 56.3 | 33.7 | 59.3 | 23.1 | 62.1 | 36.8 | |
| 566 | RrP..... | 41.6 | 56.8 | 20.1 | 75.6 | 13.3 | 57.1 | 30.0 | 59.3 | 23.8 | 62.8 | 32.9 | |
| 569 | R..... | 44.2 | 49.9 | 13.8 | 68.1 | 13.4 | 55.1 | 39.0 | 54.0 | 21.7 | 57.6 | 32.3 | |
| 570 | M..... | 35.8 | 51.0 | (1.19) | 73.8 | (.78) | 54.4 | 42.4 | 53.0 | (1.45) | 65.5 | 35.4 | |
| 573 | MrP..... | 42.8 | 49.3 | (1.39) | 72.4 | (.57) | 59.9 | 40.6 | 60.3 | (1.51) | 58.8 | 40.0 | |
| 576 | MrP..... | 43.4 | 49.4 | (1.33) | 71.4 | (.55) | 62.1 | 36.7 | 56.0 | (1.56) | 62.9 | 38.5 | |
| 663 | RrP..... | 34.2 | 41.4 | 49.5 | 3.1 | 66.6 | 34.3 | 16.9 | 23.6 | 33.2 | 60.8 | 32.9 | |
| 666 | RrP..... | 28.1 | 36.2 | 51.4 | 2.1 | 70.0 | 35.7 | 18.9 | 25.6 | 29.9 | 59.2 | 30.9 | |
| 669 | R..... | 28.6 | 37.3 | 54.0 | 2.5 | 66.6 | 37.2 | 18.3 | 24.6 | 21.7 | 48.5 | 24.2 | |
| 670 | M..... | 30.6 | 39.1 | 54.8 | (1.35) | 67.6 | 33.7 | 19.5 | (1.93) | 30.3 | 59.0 | 22.5 | |
| 673 | MrP..... | 34.4 | 40.5 | 54.7 | (1.45) | 68.3 | 43.5 | 22.0 | (2.07) | 35.2 | 65.9 | 33.1 | |
| 676 | MrP..... | 24.6 | 32.4 | 59.1 | (1.20) | 68.1 | 41.5 | 20.6 | (1.87) | 40.1 | 67.9 | 32.7 | |

| Plot No. | Soil treatment applied | (1914-1924) | | | | | | | | | | | |
|----------|------------------------|--------------|------------------|--------------|--------------|--------------|------------------|--------------|--------------|--------------|------------------|--------------|--|
| | | 1914 Corn | 1915 Soybeans | 1916 Corn | 1917 Corn | 1918 Corn | 1919 Soybeans | 1920 Corn | 1921 Corn | 1922 Corn | 1923 Soybeans | 1924 Corn | |
| 563 | RrP..... | 38.7 | 20.3 | 31.5 | 66.9 | 40.4 | 20.0 | 56.7 | 46.1 | 33.3 | 14.0 | 37.6 | |
| 566 | RrP..... | 38.6 | 20.0 | 30.0 | 67.9 | 33.6 | 20.1 | 51.9 | 46.1 | 33.3 | 12.7 | 46.5 | |
| 569 | R..... | 38.4 | 18.8 | 27.4 | 59.1 | 40.1 | 16.8 | 43.4 | 44.7 | 28.2 | 14.6 | 39.7 | |
| 570 | M..... | 35.7 | (1.90) | 32.0 | 64.5 | 31.6 | (1.78) | 56.6 | 49.1 | 35.0 | (2.20) | 37.2 | |
| 573 | MrP..... | 35.3 | (1.65) | 31.3 | 67.5 | 39.3 | (1.47) | 53.2 | (2.07) | 39.9 | (2.01) | 36.1 | |
| 576 | MrP..... | 37.8 | (1.58) | 30.4 | 66.8 | 35.2 | (1.79) | 55.5 | 51.7 | 39.9 | (2.10) | 36.1 | |
| 663 | RrP..... | 19.5 | 58.2 | 31.6 | 58.5 | 15.7 | 58.9 | 28.0 | 40.3 | 18.8 | 45.4 | 42.5 | |
| 666 | RrP..... | 19.1 | 62.0 | 30.3 | 59.8 | 16.5 | 55.0 | 34.7 | 39.1 | 19.8 | 45.7 | 39.8 | |
| 669 | R..... | 19.3 | 52.4 | 27.5 | 44.6 | 16.5 | 49.4 | 28.4 | 44.1 | 19.2 | 47.5 | 43.2 | |
| 670 | M..... | (1.58) | 61.6 | 35.7 | 52.1 | (1.73) | 58.1 | 43.0 | 44.6 | (2.12) | 63.3 | 53.2 | |
| 673 | MrP..... | (1.64) | 59.9 | 37.3 | 60.6 | (1.84) | 59.0 | 41.2 | 44.4 | (2.06) | 61.2 | 49.2 | |
| 676 | MrP..... | (1.63) | 63.6 | 33.6 | 58.6 | (1.98) | 59.9 | 43.8 | 47.4 | (2.18) | 57.5 | 51.7 | |

TABLE 107.—*Concluded*
(1903-1913)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|---|--------------|--------------|--------------------------|--------------|--------------|--------------------------|--------------------------|--------------|--------------|--------------------------|--|
| | | 1903 Corn | 1904 Corn | 1905 Corn | 1906 Corn | 1907 Corn | 1908 Corn | 1909 Soybeans Corn | 1910 Corn | 1911 Corn | 1912 Corn | 1913 Soybeans Corn | |
| 763 | RrP..... | 25.7 | 42.5 | 48.2 | 65.4 | 53.3 | 39.3 | 23.8 | 65.1 | 43.1 | 47.6 | 13.9 | |
| 766 | RrP..... | 27.2 | 51.3 | 63.5 | 60.0 | 60.0 | 42.5 | 23.1 | 66.4 | 32.3 | 52.1 | 16.5 | |
| 769 | R..... | 28.3 | 34.0 | 39.0 | 56.3 | 57.0 | 33.9 | 22.4 | 56.2 | 19.9 | 32.7 | 14.5 | |
| 770 | M..... | 34.2 | 35.6 | 44.3 | 53.2 | 52.1 | 25.4 | (1.37) | 55.6 | 18.7 | 34.0 | (.95) | |
| 773 | MrP..... | 24.1 | 38.3 | 45.2 | 63.4 | 60.3 | 44.7 | (1.70) | 70.7 | 27.0 | 50.7 | (1.27) | |
| 776 | MrP..... | 22.9 | 38.4 | 42.4 | 64.3 | 62.0 | 43.4 | (1.67) | 70.4 | 25.0 | 46.5 | (.85) | |
| | | Cowpeas ¹ Cowpeas Corn Soybeans Corn Soybeans Corn | | | | | | | | | | | |
| 863 | RrP..... | .... | 1.2 | 61.6 | 66.6 | 55.8 | 14.8 | 45.0 | 57.0 | 20.7 | 17.9 | 54.3 | |
| 866 | RrP..... | .... | .8 | 64.2 | 62.8 | 51.4 | 13.6 | 49.0 | 63.3 | 17.7 | 17.8 | 45.4 | |
| 869 | R..... | .... | 1.3 | 61.2 | 62.2 | 49.6 | 14.2 | 47.3 | 64.7 | 17.2 | 14.6 | 45.3 | |
| 870 | M..... | .... | (1.00) | 62.5 | 61.0 | 47.3 | (1.07) | 49.2 | 61.9 | 14.7 | (.73) | 41.1 | |
| 873 | MrP..... | .... | (1.60) | 67.2 | 66.8 | 54.5 | (1.13) | 47.9 | 67.0 | 26.0 | (.80) | 45.4 | |
| 876 | MrP..... | .... | (1.20) | 65.5 | 66.4 | 48.1 | (1.22) | 49.3 | 63.7 | 24.1 | (.80) | 44.7 | |
| | | (1914-1924) | | | | | | | | | | | |
| Plot No. | Soil treatment applied | 1914 Corn | 1915 Corn | 1916 Corn | 1917 Soybeans Corn | 1918 Corn | 1919 Corn | 1920 Corn | 1921 Soybeans Corn | 1922 Corn | 1923 Corn | 1924 Corn | |
| 763 | RrP..... | 41.3 | 47.6 | 35.5 | 18.2 | 59.3 | 55.7 | 33.8 | 32.9 | 49.0 | 49.7 | 35.5 | |
| 766 | RrP..... | 40.3 | 44.4 | 37.9 | 17.1 | 65.0 | 48.3 | 30.5 | 31.3 | 49.0 | 37.8 | 37.8 | |
| 769 | R..... | 39.2 | 39.3 | 30.3 | 17.9 | 50.2 | 55.9 | 26.5 | 28.9 | 37.5 | 34.0 | 35.9 | |
| 770 | M..... | 42.1 | 41.6 | 27.7 | (1.93) | 51.1 | 48.3 | 25.9 | (2.27) | 38.3 | 44.9 | 46.7 | |
| 773 | MrP..... | 47.7 | 47.9 | 42.1 | (1.80) | 60.8 | 56.1 | 37.3 | (2.80) | 54.6 | 61.8 | 48.4 | |
| 776 | MrP..... | 48.0 | 52.1 | 36.5 | (2.02) | 60.7 | 52.8 | 40.7 | (2.60) | 56.0 | 48.4 | 49.5 | |
| | | Corn Soybeans Corn Soybeans Corn Soybeans Corn Soybeans Corn Soybeans Corn Soybeans | | | | | | | | | | | |
| 863 | RrP..... | 49.3 | 49.9 | 11.3 | 74.7 | 42.3 | 52.0 | 18.8 | 59.4 | 46.8 | 56.3 | 17.5 | |
| 866 | RrP..... | 46.0 | 48.2 | 10.2 | 69.8 | 46.2 | 58.2 | 19.3 | 66.1 | 49.0 | 57.7 | 15.7 | |
| 869 | R..... | 49.8 | 43.1 | 9.8 | 62.9 | 51.9 | 49.5 | 16.9 | 58.7 | 31.9 | 57.4 | 14.0 | |
| 870 | M..... | 47.7 | 40.9 | (1.70) | 64.5 | 57.1 | 46.5 | (1.52) | 66.4 | 36.1 | 59.7 | (2.28) | |
| 873 | MrP..... | 49.2 | 46.2 | (1.71) | 71.3 | 48.9 | 46.3 | (1.64) | 61.8 | 47.2 | 57.3 | (2.07) | |
| 876 | MrP..... | 48.2 | 48.7 | (1.47) | 69.4 | 51.7 | 45.9 | (1.49) | 59.8 | 51.1 | 47.7 | (2.40) | |

¹No yields taken in 1903.

OLD VIENNA FIELD, JOHNSON COUNTY

ESTABLISHED 1902—DISCONTINUED 1911

Location.—About two miles southeast of Vienna on the farm of Mr. J. M. Price. A part of the N.E. $\frac{1}{4}$ of the N.E. $\frac{1}{4}$, Sec. 9 and a part of the S.E. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 4, Twp. 13 S., R. 3 E. of the 3d P. M.

Description.—The field consisted of 5.6 acres of soil described at the time the field was established as “red clay, a soil typical of the unglaciated hill sections of the state.” The land was more or less rolling with a tendency to wash. It was not tilled. A part of the field was low and wet. The field was divided into three series each of which contained 5 fifth-acre plots.

History.—The old Vienna field was leased from Mr. J. M. Price. Previous to 1902 the land had been cultivated for about fifty years.

Cropping and Soil Treatment.—The original rotation was wheat, corn, and cowpeas. In 1905 this was changed to corn, wheat, and legumes. Cowpeas were seeded in the corn at the last cultivation on all plots except Plot 1 for use as residues. Phosphorus was applied yearly in 200 pounds of steam bone meal an acre, and potassium in 100 pounds of potassium sulfate. Slaked lime was applied at the acre rate of 1,800 pounds in 1902, and in 1903 eight tons of limestone an acre was also applied. No more lime was applied.

TABLE 108.—OLD VIENNA FIELD: SERIES 100, 200, 300

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | | | | | | | | | | |
|----------|------------------------|----------------------------|-----------------------|-------|-----------------------|-----------------------|-------|-------|-----------------------|-------|-------|-----------------------|-------|-------|-----------------------|-------|-------|-----------------------|-------|-------|-----------------------|-------|
| | | 1902 | | 1903 | | 1904 | | 1905 | | 1906 | | 1907 | | 1908 | | 1909 | | 1910 | | 1911 | | |
| | | Corn ¹ | Cow-peas ² | Corn | Cow-peas ² | Cow-peas ² | Wheat | Corn | Cow-peas ² | |
| 101 | 0..... | 15.5 | ..... | 9.3 | ..... | 1.3 | ..... | 16.7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 102 | Le..... | 13.3 | ..... | 5.0 | ..... | 10.8 | ..... | 17.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 103 | LeL..... | 14.9 | ..... | 8.3 | ..... | 18.2 | ..... | 30.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 104 | LeLbP..... | 12.5 | ..... | 7.4 | ..... | 25.6 | ..... | 37.1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 105 | LeLbPK..... | 19.9 | ..... | 11.6 | ..... | 30.0 | ..... | 38.1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | | Oats ¹ | Cow-peas ² | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat |
| 201 | 0..... | 19.1 | ..... | 6.7 | ..... | 37.5 | ..... | 3.8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 202 | Le..... | 18.8 | ..... | 7.1 | ..... | 42.9 | ..... | 5.4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 203 | LeL..... | 19.8 | ..... | 10.0 | ..... | 61.9 | ..... | 17.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 204 | LeLbP..... | 20.0 | ..... | 14.8 | ..... | 57.2 | ..... | 11.3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 205 | LeLbPK..... | 31.7 | ..... | 17.5 | ..... | 56.5 | ..... | 15.0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | | Cow-peas ² | Wheat | Corn | Cow-peas ² | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat | Corn | Wheat |
| 301 | 0..... | ..... | ..... | .4 | ..... | 30.5 | ..... | 41.2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 302 | Le..... | ..... | ..... | .6 | ..... | 35.5 | ..... | 40.6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 303 | LeL..... | ..... | ..... | .7 | ..... | 49.1 | ..... | 48.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 304 | LeLbP..... | ..... | ..... | 8.0 | ..... | 49.4 | ..... | 40.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 305 | LeLbPK..... | ..... | ..... | 11.0 | ..... | 44.7 | ..... | 40.9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

¹No legume treatment. ²Growth removed from Plot 1 and plowed down on the other plots. ³Thru error the growth was removed from the plots without being weighed. ⁴Hay very weedy in 1907 and 1911. ⁵The pods were harvested but not weighed by plots. ⁶Very poor stand, due to moles.

NEW VIENNA FIELD, JOHNSON COUNTY

ESTABLISHED 1916—DISCONTINUED 1924

Location.—About one mile southeast of Vienna. A part of the N.W. $\frac{1}{4}$ of the N.E. $\frac{1}{4}$, Sec. 9, and a part of the S.W. $\frac{1}{4}$ of the S.E. $\frac{1}{4}$, Sec. 4, Twp. 13 S., R. 3 E. of the 3d P. M.

Description.—The field consisted of 16 acres of light-colored loessial upland soil of strong acidity. Three soil types have been mapped on the field: (1) Deep Gray Silt Loam; (2) Yellow Silt Loam; (3) Yellow-Gray Silt Loam. The land is more or less hilly and rough and was drained by surface drainage. The field was divided into five series containing 7 tenth-acre plots each. The series were arranged on the field in such a manner as to prevent, so far as possible, washing from one plot to another.

History.—The Vienna field was purchased by the University for the purpose of studying methods of reclaiming eroded land, of preventing washing so far as possible on a practical basis, and to compare the merits of rock phosphate and acid phosphate on such soils.

Cropping and Soil Treatment.—The rotation established on this field was corn, cowpeas, wheat (seeded to timothy in the fall and early the following spring), clover (with timothy), and timothy.

About 4 tons of limestone an acre were applied to all plots in the fall of 1915. Two tons an acre were applied each rotation thereafter. The rock phosphate was applied at the rotation rate of 1 ton an acre in three equal applications for the corn, cowpeas, and wheat. The acid phosphate was applied in the same manner except that only half a ton was used in each rotation. The residues plowed under were for the most part cornstalks. They were rolled down in the fall at right angles to the slope of the ground. The manure was applied in amounts equal to the total weight of all the produce (excepting the corn stalks) grown on the respective plots.

TABLE 109.—NEW VIENNA FIELD: SERIES 100-500

| | | Bushels or (tons) per acre | | | | | | | | |
|----------|------------------------|----------------------------|------------------------|----------------------|----------------|--------------------|---------------------|------------------|------------------------|----------------|
| Plot No. | Soil treatment applied | 1916 Corn | 1917 Cow-peas | 1918 Wheat | 1919 Clover | 1920 Timothy | 1921 Corn | 1922 Cow-peas | 1923 Wheat | 1924 Clover |
| 101 | LRM..... | 10.0 | 6.2 | 17.3 | (3.46) | (1.30) | 24.8 | 8.8 | 22.2 | (2.52) |
| 102 | LRMrP..... | 5.0 | 6.3 | 22.0 | (2.85) | (1.25) | 27.4 | 9.1 | 23.2 | (2.64) |
| 103 | LRMaP..... | 10.9 | 4.9 | 25.5 | (3.03) | (1.55) | 23.5 | 5.7 | 27.2 | (2.96) |
| 104 | LRM..... | 12.1 | 4.0 | 22.5 | (2.84) | (1.35) | 25.5 | 7.2 | 25.3 | (2.51) |
| 105 | LRMrP..... | 10.3 | 4.0 | 16.5 | (2.65) | (1.00) | 24.6 | 6.0 | 21.6 | (2.54) |
| 106 | LRMaP..... | 11.9 | 4.0 | 22.5 | (2.27) | (1.50) | 27.8 | 3.6 | 24.0 | (2.76) |
| 107 | L..... | 11.6 | 7.8 | 14.2 | (1.87) | (1.00) | 22.8 | 8.8 | 12.3 | (1.29) |
| | | Cow-peas | Wheat | Clover | Timothy | Corn | Cow-peas | Wheat | Clover | Timothy |
| 201 | LRM..... | 7.8 | 15.3 | (2.10) | (2.93) | 50.0 | 32.0 | 27.9 | (1.89) | (1.60) |
| 202 | LRMrP..... | 9.9 | 17.8 | (2.40) | (3.20) | 54.5 | 33.1 | 30.1 | (2.57) | (1.83) |
| 203 | LRMaP..... | 8.8 | 19.5 | (1.97) | (3.53) | 52.8 | 30.0 | 31.1 | (2.51) | (1.71) |
| 204 | LRM..... | 9.8 | 18.3 | (2.00) | (3.30) | 57.1 | 29.8 | 30.3 | (1.88) | (1.66) |
| 205 | LRMrP..... | 9.6 | 17.3 | (2.30) | (3.01) | 54.0 | 28.5 | 29.8 | (2.59) | (1.73) |
| 206 | LRMaP..... | 9.2 | 12.8 | (2.40) | (3.45) | 48.9 | 26.3 | 26.9 | (2.15) | (1.51) |
| 207 | L..... | 8.9 | 6.5 | (1.43) | (2.65) | 44.2 | 18.0 | 14.9 | (1.43) | (.87) |
| | | Wheat | Clover | Timothy ² | Corn | Cow-peas | Wheat | Clover | Timothy | Corn |
| 301 | LRM..... | 3.5 | (3.28) | .... | 3.3 | 10.3 | 11.5 | (2.65) | (1.37) | 31.4 |
| 302 | LRMrP..... | 3.9 | (4.07) | .... | 13.1 | 13.3 | 14.5 | (2.50) | (1.27) | 37.0 |
| 303 | LRMaP..... | 3.5 | (4.14) | .... | 13.1 | 11.8 | 14.8 | (2.38) | (1.16) | 43.8 |
| 304 | LRM..... | 10.0 | (2.51) | .... | 8.7 | 10.8 | 12.2 | (2.07) | (1.03) | 33.1 |
| 305 | LRMrP..... | 14.3 | (2.82) | .... | 8.0 | 11.5 | 11.8 | (2.33) | (1.39) | 35.3 |
| 306 | LRMaP..... | 13.8 | (3.46) | .... | 7.1 | 10.7 | 11.5 | (2.32) | (1.24) | 28.9 |
| 307 | L..... | 10.7 | (3.58) | .... | 6.6 | 14.7 | 9.1 | (2.09) | (1.04) | 26.1 |
| | | Clover ^{1,2} | Timothy ^{2,3} | Corn | Cow-peas | Wheat ⁴ | Clover ² | Timothy | Corn | Cow-peas |
| 401 | LRM..... | .... | .... | 11.1 | 8.8 | .... | .... | (1.65) | 42.9 | (1.15) |
| 402 | LRMrP..... | .... | .... | 7.3 | 7.5 | .... | .... | (2.30) | 35.6 | (1.55) |
| 403 | LRMaP..... | .... | .... | 7.1 | 8.0 | .... | .... | (2.51) | 31.5 | (1.67) |
| 404 | LRM..... | .... | .... | 10.7 | 8.8 | .... | .... | (2.25) | 42.0 | (1.70) |
| 405 | LRMrP..... | .... | .... | 15.4 | 10.0 | .... | .... | (2.46) | 42.6 | (1.87) |
| 406 | LRMaP..... | .... | .... | 12.0 | 7.7 | .... | .... | (2.42) | 35.6 | (2.00) |
| 407 | L..... | .... | .... | 10.0 | 9.2 | .... | .... | (2.27) | 25.1 | (1.27) |
| | | Timothy ^{1,2} | Corn | Cow-peas | Wheat | Clover | Timothy | Corn | Soy-beans ² | Wheat |
| 501 | LRM..... | .... | 23.2 | 3.4 | 12.5 | (1.84) | (1.29) | 28.7 | .... | 7.5 |
| 502 | LRMrP..... | .... | 30.0 | 4.2 | 14.2 | (2.31) | (1.15) | 31.7 | .... | 9.0 |
| 503 | LRMaP..... | .... | 48.4 | 3.3 | 19.3 | (3.00) | (1.65) | 48.2 | .... | 15.2 |
| 504 | LRM..... | .... | 43.2 | 4.4 | 17.0 | (2.15) | (1.66) | 42.1 | .... | 15.2 |
| 505 | LRMrP..... | .... | 39.6 | 4.2 | 17.5 | (2.30) | (.88) | 43.7 | .... | 16.5 |
| 506 | LRMaP..... | .... | 46.6 | 4.8 | 18.5 | (2.75) | (1.29) | 48.0 | .... | 15.0 |
| 507 | L..... | .... | 38.4 | 5.6 | 11.7 | (2.25) | (1.31) | 56.9 | .... | 7.7 |

¹No soil treatment. ²No yields taken. ³No manure. ⁴Wheat winterkilled.

VIRGINIA FIELD, CASS COUNTY

ESTABLISHED 1902—DISCONTINUED 1923

Location.—About three miles southeast of Virginia on the farm of Mr. George Conover. A part of the North side of the N.W. $\frac{1}{4}$ of the S.W. $\frac{1}{4}$, Sec. 14, Twp. 17 N., R. 10 W. of the 3d P. M.

Description.—The field consisted of 11.1 acres of dark-colored loessial upland soil described at the time the field was established as a black prairie loam rather clayey in nature. The soil was probably not very sour. The land was fairly level. It was not tile-drained and in some seasons the drainage was not very good. The field was divided into eight series, four of which contained 10 tenth-acre plots and 4 which contained 4 tenth-acre plots each.

History.—The Virginia field was leased from Mr. George Conover, and after his death from the Conover estate. Prior to 1901 the field was in grass for three or four years and pastured some. The north side of the field had some manure applied to it in the fall of 1900. It was in corn in 1901.

Cropping and Soil Treatment.—A rotation of corn, oats, and legumes was practiced on Series 100, 200, and 300. Cowpeas were seeded in the corn at the last cultivation on the residue plots. This practice, however, was discontinued in 1912. Phosphorus was applied at the annual acre rate of 200 pounds of steamed bone meal and potassium in 100 pounds of potassium sulfate. Slaked lime at the acre rate of 285 pounds was applied in 1902. No further applications were made until 1915, when limestone was applied at the acre rate of 4 tons. Thereafter, limestone was applied once during the rotation at the acre rate of 1,000 pounds a year. Manure was first applied at the acre rate of 6 tons once during the rotation. After 1908 manure was applied in proportion to the amount of produce grown.

Series 400 was cropped with a rotation of corn, corn, oats, and wheat in what was called a complete fertility test. Nitrogen was applied in 800 pounds of dried blood an acre a year applied twice in the rotation, half ahead of each corn crop; phosphorus was applied in 200 pounds of steamed bone meal and potassium in 100 pounds of potassium sulfate per acre per year for the corn crop. The lime applications have been similar to those on the first three series.

Series 500, 600, 700, and 800 were unplotted until 1919. Prior to that time alfalfa was grown on the land. At that time a rotation similar to that on Series 100, 200, and 300 was established on Series 500, 600, and 700, and a rotation similar to that practiced on Series 400 was established on Series 800. Crop residues were returned to all plots of all four series. Limestone was applied at the annual acre rate of 1,000 pounds. Plot 1 received steamed bone meal at the annual acre rate of 200 pounds; Plot 3, acid phosphate at the rate of 333 pounds; and Plot 4, rock phosphate at the rate of 667 pounds.

TABLE 110.—VIRGINIA FIELD: SERIES 100, 200, 300
(1902-1912)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|----------|------------------------|----------------------------|---------------------------|------------------------------|--------------|--------------|-----------------|--------------|--------------|----------------|--------------|--------------|
| | | 1902 Corn ¹ | 1903 Oats ² | 1904 Cowpeas ² | 1905 Corn | 1906 Oats | 1907 Cowpeas | 1908 Corn | 1909 Oats | 1910 Clover | 1911 Corn | 1912 Oats |
| 101 | 0..... | 55.3 | 46.9 | (1.90) | 78.4 | 52.5 | (3.10) | 66.8 | 39.7 | (1.04) | 53.6 | 46.3 |
| 102 | R..... | 54.8 | 42.8 | (2.35) | 78.9 | 66.6 | (3.15) | 75.4 | 53.1 | (.9) | 62.1 | 71.9 |
| 103 | M..... | 51.4 | 44.4 | (2.50) | 82.1 | 56.3 | (2.80) | 85.0 | 51.9 | (.97) | 62.9 | 50.0 |
| 104 | RL..... | 49.9 | 42.2 | (2.35) | 71.9 | 60.9 | (3.00) | 68.2 | 40.0 | (.9) | 63.3 | 64.7 |
| 105 | ML..... | 51.5 | 41.9 | (2.10) | 76.1 | 51.9 | (2.75) | 79.2 | 43.4 | (1.26) | 69.1 | 53.4 |
| 106 | RLbP..... | 50.5 | 46.9 | (2.45) | 79.9 | 66.6 | (2.70) | 85.4 | 52.5 | (.9) | 68.8 | 67.8 |
| 107 | MLbP..... | 56.0 | 42.8 | (2.00) | 79.5 | 55.9 | (2.65) | 86.6 | 58.7 | (1.24) | 73.4 | 56.6 |
| 108 | RLbPK..... | 55.8 | 41.3 | (2.10) | 82.8 | 61.9 | (2.80) | 83.8 | 45.3 | (.9) | 72.2 | 65.6 |
| 109 | MLbPK..... | 55.7 | 46.9 | (2.20) | 84.9 | 61.6 | (2.85) | 85.0 | 64.9 | (1.73) | 70.1 | 63.4 |
| 110 | LbPK..... | 57.0 | 41.3 | (1.55) | 78.6 | 52.8 | (3.10) | 80.0 | 51.9 | (1.73) | 68.0 | 72.8 |

(1913-1923)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------|--------------|------------------|--------------|--------------|----------------|--------------|--------------|----------------|--------------|
| | | 1913 Clover | 1914 Corn | 1915 Oats | 1916 Soybeans | 1917 Corn | 1918 Oats | 1919 Clover | 1920 Corn | 1921 Oats | 1922 Clover | 1923 Corn |
| 101 | 0..... | (2.41) | 54.8 | 62.5 | (2.20) | 67.8 | 48.1 | (1.10) | 30.8 | 51.2 | (1.42) | 50.4 |
| 102 | R..... | .83 | 52.6 | 68.4 | 17.3 | 80.6 | 51.2 | (.9) | 43.6 | 49.7 | (1.72) | 59.2 |
| 103 | M..... | (2.91) | 60.2 | 58.4 | (2.63) | 85.2 | 60.6 | (1.19) | 49.8 | 52.8 | (2.11) | 68.8 |
| 104 | RL..... | 1.50 | 51.6 | 67.8 | 16.8 | 75.2 | 50.0 | (.9) | 43.8 | 44.7 | (1.70) | 67.8 |
| 105 | ML..... | (2.73) | 57.4 | 72.5 | (2.55) | 83.0 | 60.3 | (2.34) | 57.6 | 54.1 | (1.94) | 69.6 |
| 106 | RLbP..... | 1.83 | 55.0 | 67.5 | 24.3 | 85.0 | 60.0 | (.9) | 59.4 | 50.0 | (2.24) | 68.6 |
| 107 | MLbP..... | (3.58) | 61.8 | 59.1 | (2.76) | 80.4 | 61.2 | (1.70) | 56.6 | 60.6 | (2.18) | 72.6 |
| 108 | RLbPK..... | 1.17 | 51.6 | 70.0 | 22.0 | 83.0 | 57.2 | (.9) | 62.6 | 58.4 | (2.49) | 67.4 |
| 109 | MLbPK..... | (3.60) | 52.4 | 60.3 | (2.58) | 85.8 | 65.0 | (1.79) | 53.2 | 61.6 | (2.20) | 67.0 |
| 110 | LbPK..... | (3.77) | 53.2 | 67.8 | (2.62) | 74.4 | 53.8 | (1.89) | 64.4 | 56.2 | (2.34) | 74.2 |

¹No manure or residues. ²No manure. ³No seed harvested in 1910 and 1919.

TABLE 110.—Continued
(1902-1912)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|----------|------------------------|----------------------------|----------------------------|------------------------|------------------------|----------------------------|-----------|-----------|-------------|-----------|-----------|-------------|
| | | 1902 Oats ¹ | 1903 Cow-peas ² | 1904 Corn ³ | 1905 Oats ⁴ | 1906 Cow-peas ⁵ | 1907 Corn | 1908 Oats | 1909 Clover | 1910 Corn | 1911 Oats | 1912 Clover |
| 201 | 0..... | 71.9 | (1.07) | 72.7 | 55.9 | (3.09) | 79.1 | 15.6 | (1.99) | 83.8 | 48.8 | (2.69) |
| 202 | R..... | 71.9 | (1.32) | 76.5 | 52.5 | (2.97) | 73.1 | 17.8 | (.9) | 83.0 | 48.1 | (.9) |
| 203 | M..... | 79.7 | (1.20) | 68.5 | 50.9 | (3.12) | 75.1 | 15.6 | (2.39) | 74.6 | 50.0 | (3.34) |
| 204 | RL..... | 71.9 | (1.17) | 65.8 | 47.8 | (2.71) | 61.5 | 13.8 | (.9) | 75.0 | 35.9 | (.9) |
| 205 | ML..... | 71.9 | (1.12) | 61.1 | 44.1 | (2.72) | 71.1 | 13.8 | (1.83) | 86.6 | 39.1 | (2.88) |
| 206 | RIbP..... | 56.3 | (1.10) | 73.5 | 50.3 | (2.72) | 73.1 | 15.0 | (.9) | 100.6 | 58.4 | (.9) |
| 207 | MIbP..... | 56.3 | (1.00) | 67.5 | 49.1 | (2.78) | 72.6 | 12.5 | (2.89) | 101.2 | 53.8 | (3.90) |
| 208 | RIbPK..... | 56.3 | (1.22) | 75.6 | 49.7 | (2.63) | 69.4 | 14.1 | (.9) | 100.8 | 54.7 | (.9) |
| 209 | MIbPK..... | 66.3 | (1.17) | 74.0 | 47.2 | (2.89) | 78.9 | 12.2 | (2.80) | 101.6 | 56.6 | (3.90) |
| 210 | LbPK..... | 73.4 | (1.15) | 66.8 | 50.0 | (2.63) | 71.6 | 9.4 | (2.20) | 94.2 | 46.9 | (4.12) |

| (1913-1923) | | | | | | | | | | | | |
|-------------|------------------------|------|------|--------|------|------|--------|------|------|----------|------|------|
| Plot No. | Soil treatment applied | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 |
| | | Corn | Oats | Clover | Corn | Oats | Clover | Corn | Oats | Soybeans | Corn | Oats |
| 201 | 0..... | 32.4 | 34.7 | (3.37) | 49.6 | 80.6 | (2.06) | 49.4 | 53.4 | 5.3 | 31.2 | 43.8 |
| 202 | R..... | 41.8 | 30.3 | .67 | 51.4 | 85.9 | 1.50 | 57.4 | 45.6 | 7.0 | 52.6 | 60.3 |
| 203 | M..... | 46.8 | 35.3 | (4.08) | 56.4 | 90.9 | (2.41) | 60.2 | 58.1 | 7.0 | 55.2 | 51.6 |
| 204 | RL..... | 32.4 | 26.6 | .83 | 51.8 | 75.9 | 1.33 | 52.0 | 38.4 | 6.0 | 50.0 | 53.1 |
| 205 | ML..... | 43.6 | 29.1 | (4.25) | 55.0 | 80.9 | (2.28) | 59.0 | 57.5 | 7.7 | 56.0 | 47.2 |
| 206 | RIbP..... | 50.4 | 26.2 | .50 | 59.0 | 90.6 | 1.00 | 64.6 | 51.9 | 5.8 | 56.4 | 61.6 |
| 207 | MIbP..... | 51.4 | 29.7 | (3.89) | 49.6 | 87.2 | (2.38) | 70.4 | 48.4 | 10.2 | 65.0 | 45.3 |
| 208 | RIbPK..... | 50.6 | 29.7 | .33 | 46.4 | 86.2 | .33 | 70.2 | 35.3 | 9.0 | 57.8 | 68.8 |
| 209 | MIbPK..... | 48.8 | 30.0 | (5.23) | 47.2 | 93.1 | (2.48) | 66.4 | 59.7 | 4.0 | 56.0 | 54.7 |
| 210 | LbPK..... | 53.4 | 29.7 | (5.45) | 52.6 | 91.6 | (2.63) | 65.2 | 52.5 | 6.0 | 56.2 | 64.1 |

¹No manure or residues. ²No manure. ³No seed harvested in 1909 and 1912.

TABLE 110.—*Concluded*
(1902-1912)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | |
|----------|------------------------|-----------------------------------|---------------------------|---------------------------|-----------------------------------|--------------|--------------|-----------------------------|--------------|--------------|----------------|--------------|
| | | 1902 Cow- peas ¹ | 1903 Corn ¹ | 1904 Oats ³ | 1905 Cow- peas ³ | 1906 Corn | 1907 Oats | 1908 Clover ⁴ | 1909 Corn | 1910 Oats | 1911 Clover | 1912 Corn |
| 301 | O..... | ..... | 68.0 | 41.9 | (2.32) | 84.6 | 47.2 | (3.50) | 73.2 | 59.4 | (1.84) | 73.6 |
| 302 | R..... | ..... | 65.5 | 46.6 | (2.33) | 82.8 | 41.3 | (.6) | 70.2 | 55.3 | (.6) | 65.6 |
| 303 | M..... | ..... | 67.0 | 41.9 | (2.17) | 86.3 | 42.5 | (4.23) | 74.2 | 53.1 | (1.75) | 73.0 |
| 304 | RL..... | ..... | 63.5 | 42.3 | (2.16) | 73.0 | 37.2 | (.6) | 63.0 | 46.9 | (.6) | 55.6 |
| 305 | ML..... | ..... | 67.0 | 36.3 | (1.63) | 82.0 | 37.5 | (3.36) | 64.4 | 54.7 | (1.14) | 55.8 |
| 306 | RLbP..... | ..... | 68.8 | 40.0 | (2.01) | 85.9 | 44.1 | (.6) | 64.0 | 61.3 | (.6) | 84.0 |
| 307 | MLbP..... | ..... | 68.3 | 44.4 | (1.82) | 89.5 | 39.1 | (4.17) | 75.4 | 53.8 | (2.19) | 85.8 |
| 308 | RLbPK..... | ..... | 67.3 | 43.5 | (2.19) | 84.4 | 47.5 | (.6) | 61.8 | 45.0 | (.6) | 87.8 |
| 309 | MLbPK..... | ..... | 75.0 | 37.8 | (2.05) | 88.0 | 41.6 | (4.36) | 76.6 | 62.5 | (2.63) | 88.0 |
| 310 | LbPK..... | ..... | 66.5 | 36.3 | (2.11) | 84.5 | 36.6 | (2.49) | 61.8 | 51.6 | (2.30) | 86.8 |

| (1913-1923) | | | | | | | | | | | | |
|-------------|------------------------|------|----------|------|------|--------|------|------|--------|------|------|----------------------------------|
| Plot No. | Soil treatment applied | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 |
| | | Oats | Soybeans | Corn | Oats | Clover | Corn | Oats | Clover | Corn | Oats | Annual Sweet clover ² |
| 301 | O..... | 30.9 | 10.8 | 66.2 | 58.1 | (2.00) | 57.0 | 30.0 | (2.57) | 61.8 | 35.3 | ..... |
| 302 | R..... | 31.9 | 19.8 | 66.8 | 45.0 | 1.33 | 62.4 | 41.9 | 3.00 | 54.4 | 35.9 | ..... |
| 303 | M..... | 32.5 | (2.20) | 77.6 | 59.4 | (1.42) | 62.2 | 42.5 | (2.18) | 69.4 | 47.2 | ..... |
| 304 | RL..... | 45.6 | 17.7 | 70.8 | 47.5 | 1.67 | 57.4 | 38.1 | 3.00 | 60.4 | 34.6 | ..... |
| 305 | ML..... | 10.9 | (2.40) | 76.2 | 51.9 | (1.23) | 64.8 | 42.8 | (2.94) | 74.2 | 42.2 | ..... |
| 306 | RLbP..... | 49.4 | 21.0 | 75.8 | 64.1 | 2.33 | 64.6 | 43.8 | 3.50 | 63.4 | 43.8 | ..... |
| 307 | MLbP..... | 40.9 | (2.30) | 73.2 | 60.0 | (2.48) | 68.6 | 40.3 | (2.71) | 72.4 | 45.0 | ..... |
| 308 | RLbPK..... | 47.2 | 20.5 | 73.2 | 53.1 | 2.33 | 73.2 | 44.4 | 3.33 | 72.0 | 43.8 | ..... |
| 309 | MLbPK..... | 51.6 | (2.50) | 80.8 | 63.8 | (3.13) | 65.4 | 46.6 | (3.01) | 73.6 | 49.0 | ..... |
| 310 | LbPK..... | 48.8 | 14.3 | 73.2 | 61.9 | (2.86) | 64.0 | 41.2 | (3.09) | 76.6 | 48.4 | ..... |

¹No residues or manure. ²Crop failure. ³Yields of clover in 1908 include stubble clover in 1907. ⁴No seed harvested in 1908 and 1911.

TABLE 111.—VIRGINIA FIELD: SPECIAL FERTILITY TEST, SERIES 400
(1902-1912)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------|--------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--|
| | | 1902 Corn | 1903 Corn | 1904 Oats | 1905 Wheat | 1906 Corn | 1907 Corn | 1908 Oats | 1909 Wheat | 1910 Corn | 1911 Corn | 1912 Oats | |
| 401 | 0 | 57.5 | 67.8 | 53.1 | 29.8 | 62.3 | 67.5 | 16.3 | 25.5 | 49.4 | 50.1 | 72.2 | |
| 402 | L | 55.4 | 66.5 | 41.0 | 29.5 | 55.6 | 59.5 | 16.3 | 16.0 | 36.0 | 40.0 | 62.5 | |
| 403 | LN | 52.9 | 64.3 | 47.8 | 32.2 | 69.9 | 74.8 | 15.0 | 24.3 | 89.6 | 55.6 | 85.3 | |
| 404 | LbP | 57.3 | 67.0 | 48.1 | 29.8 | 52.6 | 59.4 | 12.8 | 31.3 | 28.0 | 38.3 | 46.9 | |
| 405 | LK | 59.0 | 63.8 | 36.6 | 22.8 | 45.8 | 50.4 | 13.1 | 19.7 | 22.2 | 30.7 | 46.6 | |
| 406 | LNbP | 56.1 | 72.5 | 46.0 | 36.0 | 72.0 | 72.0 | 12.5 | 40.0 | 86.0 | 60.8 | 67.2 | |
| 407 | LNK | 54.0 | 74.5 | 54.4 | 30.2 | 71.3 | 79.3 | 15.9 | 24.7 | 88.8 | 61.0 | 83.8 | |
| 408 | LbPK | 55.6 | 65.3 | 26.9 | 23.8 | 38.3 | 45.6 | 11.6 | 22.3 | 22.2 | 28.0 | 18.4 | |
| 409 | LNbPK | 60.2 | 75.8 | 53.3 | 32.7 | 77.4 | 84.0 | 15.9 | 29.3 | 84.0 | 61.7 | 61.9 | |
| 410 | NbPK | 57.5 | 77.5 | 60.0 | 30.7 | 77.9 | 81.5 | 12.8 | 31.7 | 93.0 | 62.8 | 58.8 | |

(1913-1923)

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--|
| | | 1913 Wheat | 1914 Corn | 1915 Corn | 1916 Oats | 1917 Wheat | 1918 Corn | 1919 Corn | 1920 Oats | 1921 Wheat | 1922 Corn | 1923 Corn | |
| 401 | 0 | 18.0 | 53.8 | 56.4 | 36.2 | 28.7 | 33.6 | 40.4 | 41.6 | 22.8 | 22.2 | 52.0 | |
| 402 | L | 17.8 | 51.0 | 52.8 | 37.5 | 24.8 | 31.6 | 38.4 | 35.9 | 20.3 | 22.6 | 55.6 | |
| 403 | LN | 29.2 | 50.2 | 63.4 | 42.2 | 24.5 | 54.4 | 38.0 | 42.5 | 20.0 | 40.2 | 60.0 | |
| 404 | LbP | 23.3 | 51.6 | 56.6 | 43.8 | 33.3 | 30.6 | 32.8 | 36.9 | 22.8 | 27.0 | 58.0 | |
| 405 | LK | 17.7 | 52.6 | 50.0 | 27.5 | 21.2 | 29.8 | 39.0 | 30.0 | 17.2 | 28.2 | 60.6 | |
| 406 | LNbP | 27.7 | 58.0 | 73.6 | 61.9 | 39.2 | 59.2 | 47.8 | 41.6 | 25.0 | 53.0 | 62.0 | |
| 407 | LNK | 24.7 | 57.0 | 69.0 | 54.1 | 23.0 | 63.4 | 41.6 | 31.9 | 17.5 | 46.8 | 76.2 | |
| 408 | LbPK | 14.2 | 51.2 | 32.0 | 39.7 | 21.8 | 35.6 | 36.6 | 11.9 | 18.2 | 28.0 | 45.6 | |
| 409 | LNbPK | 21.3 | 52.4 | 70.4 | 55.3 | 32.7 | 58.4 | 58.6 | 17.8 | 26.2 | 48.6 | 74.4 | |
| 410 | NbPK | 22.5 | 52.0 | 67.0 | 63.1 | 32.7 | 57.4 | 50.6 | 26.6 | 23.0 | 47.2 | 62.4 | |

TABLE 112.—VIRGINIA FIELD: COMPARATIVE PHOSPHATE TEST,
SERIES 500, 600, 700, 800

Bushels or (tons) per acre

| Plot No. | Soil treatment applied | 1919 Alfalfa ¹ | 1920 Corn ¹ | 1921 Oats | 1922 Clover | 1923 Corn |
|----------|------------------------|------------------------------|---------------------------|--------------|----------------|--|
| 501 | RLbP..... | (2.53) | 46.4 | 50.3 | (2.22) | 54.0 |
| 502 | RL..... | (2.38) | 45.4 | 55.3 | (2.13) | 65.6 |
| 503 | RLaP..... | (2.84) | 52.0 | 59.4 | (2.16) | 49.8 |
| 504 | RLrP..... | (2.63) | 49.8 | 63.4 | (2.18) | 58.6 |
| | | Corn ¹ | Oats | Soybeans | Corn | Oats |
| 601 | RLbP..... | 64.0 | 48.8 | 6.8 | 56.2 | 47.2 |
| 602 | RL..... | 66.0 | 40.0 | 8.0 | 58.4 | 64.1 |
| 603 | RLaP..... | 66.2 | 57.2 | 6.0 | 56.4 | 49.7 |
| 604 | RLrP..... | 66.6 | 49.7 | 6.2 | 61.2 | 61.9 |
| | | Oats ¹ | Soy-beans ² | Corn | Oats | Annual sweet clover ³ |
| 701 | RLbP..... | 41.6 | .... | 71.2 | 47.5 | .... |
| 702 | RL..... | 37.5 | .... | 66.8 | 45.9 | .... |
| 703 | RLaP..... | 39.4 | .... | 61.4 | 42.8 | .... |
| 704 | RLrP..... | 38.8 | .... | 66.2 | 48.4 | .... |
| | | Corn ¹ | Oats | Wheat | Corn | Corn |
| 801 | RLbP..... | 60.8 | 40.6 | 28.5 | 57.4 | 68.4 |
| 802 | RL..... | 57.6 | 36.2 | 25.8 | 49.8 | 66.2 |
| 803 | RLaP..... | 55.6 | 36.6 | 24.8 | 54.6 | 56.4 |
| 804 | RLrP..... | 55.4 | 41.9 | 27.8 | 58.2 | 60.8 |

¹No residues. ²Crop destroyed by early freeze. ³Crop failure.

WEST SALEM FIELD, EDWARDS COUNTY

ESTABLISHED 1912

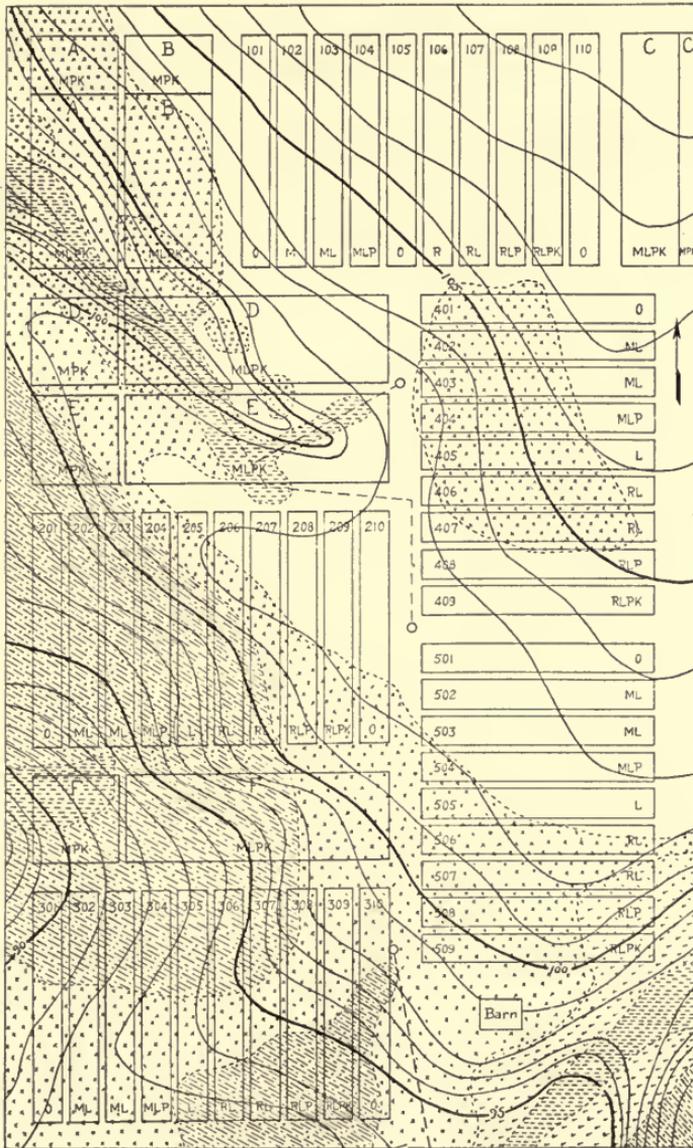
Location.—About a mile west of West Salem. A part of the west side of the S.W. $\frac{1}{4}$ of the N.W. $\frac{1}{4}$, Sec. 18, Twp. 1 N., R. 11 E. of the 3d P. M.

Description.—The field consists of 24 acres of light-colored loessial upland and drift soils of strong acidity. Six soil types have been mapped on the field: (1) Yellow-Gray Silt Loam On Compact Medium Plastic Clay; (2) Yellow-Gray Silt Loam On Tight Clay; (3) Gray Silt Loam On Tight Clay; (4) Yellow Sandy or Gravelly Silt Loam On Drift; (5) Deep Gray Silt Loam; and (6) Yellow Silt Loam. The land is comparatively level in some parts of the field, while in other parts it is rather rolling, tending to wash in places. It is not systematically tile-drained, tho some tile and catch basins have been used on the field. The field is divided into three series of 10 fifth-acre plots each, two series of 9 fifth-acre plots, and six large plots known as Plots A, B, C, D, E, and F.

History.—The West Salem field was purchased by the citizens of West Salem and vicinity and donated to the University for experimental purposes. Little is known of the previous history of the field except that it was not very productive and was for the most part in redtop meadow previous to 1912.

Cropping and Soil Treatment.—A rotation of corn, soybeans, oats, clover, and wheat was established on Series 100, 200, 300, 400, and 500. Sweet clover was seeded in the wheat on the residue plots, and cowpeas in the corn on the same plots for use as green manure and residues. The soil treatments applied were similar to those described in the introduction. In 1918 the legume seeding in the corn was discontinued. In 1920 sweet clover was substituted for the regular clover crop in the rotation. In 1923 the return of the wheat straw was discontinued as was also the application of limestone until further need for it should appear. By mistake the initial application of limestone was given to Plots 2, 5, and 6 of all series. No additional limestone has been given these plots.

Originally Plots A, B, C, D, E, and F were used for a five-year rotation of potatoes, corn, soybeans, wheat, and sweet clover, with alfalfa on the sixth plot for a period of six years, when it was to be shifted. The soil treatments given these plots were somewhat similar to those on the first six series. In 1921 the rotation was changed into two three-year rotations. On Plots A, B, and C a rotation of wheat and sweet clover on two plots with a timothy, alsike, red clover mixture on the third plot for a period of three years. On Plots D, E, and F a rotation was planned consisting of corn, wheat (with sweet clover) on two plots, while the hay mixture mentioned above was grown on the third plot for three years.



- | | | | |
|--|---|--|---|
| | Yellow-Gray Silt Loam On Compact Medium Plastic Clay. | | Yellow Sandy or Gravelly Silt Loam On Drift |
| | Yellow-Gray Silt Loam On Tight Clay | | Deep Gray Silt Loam |
| | Gray Silt Loam On Tight Clay | | Yellow Silt Loam |
- Scale
00 40 80 160 Feet
Contour interval - 1 foot

SOIL MAP OF WEST SALEM FIELD

TABLE 113.—WEST SALEM FIELD: SERIES 100-500

| Plot No. | Soil treatment applied ¹ | Bushels or (tons) per acre | | | | | | | | | | | | |
|----------|-------------------------------------|----------------------------|-----------------------------|-------------------------|-------------|----------------|-------------|-------------|------------|-----------|----------------|-----------|-------------------|------------|
| | | 1912 Oats ² | 1913 Soy-beans ⁴ | 1914 Wheat ⁴ | 1915 Corn | 1916 Soy-beans | 1917 Oats | 1918 Clover | 1919 Wheat | 1920 Corn | 1921 Soy-beans | 1922 Oats | 1923 Sweet clover | 1924 Wheat |
| 101 | 0..... | 14.4 (.32) | 2.8 | 1 | 15.6 | (1.21) | 5.8 | (0.00) | 1.7 | 4.7 | 6.0 | 4.7 | 0.00 | 2.6 |
| 102 | ML..... | 14.4 (.39) | 3.3 | 2.5 | 39.3 (1.86) | 32.8 | 32.8 (1.86) | (.71) | 10.8 | 22.1 | 8.2 | 13.0 | .81 | 5.9 |
| 103 | ML..... | 11.7 (.36) | 3.3 | 2.7 | 36.6 (1.57) | 35.8 | 35.8 (1.57) | (.65) | 11.8 | 33.9 | 8.8 | 16.9 | 1.14 | 9.7 |
| 104 | MLrP..... | 12.0 (.39) | 3.7 | 7.4 | 38.9 (1.68) | 41.4 | 41.4 (1.68) | (.72) | 19.3 | 35.7 | 9.8 | 18.0 | .37 | 18.8 |
| 105 | L..... | 11.7 | 2.8 | 2.8 | 22.4 | 8.6 | 32.7 | .75 | 7.6 | 8.4 | 7.7 | 9.7 | .66 | 2.9 |
| 106 | RL..... | 10.2 | 3.3 | 2.3 | 31.5 | 11.8 | 35.2 | 1.00 | 9.7 | 14.1 | 9.2 | 12.8 | .92 | 5.8 |
| 107 | RL..... | 10.9 | 3.4 | 3.3 | 35.8 | 13.8 | 35.2 | 1.00 | 14.7 | 11.2 | 9.7 | 14.7 | .81 | 14.4 |
| 108 | RLrP..... | 11.1 | 3.7 | 7.9 | 43.7 | 16.9 | 40.6 | 1.25 | 21.8 | 25.3 | 10.6 | 16.3 | .26 | 27.2 |
| 109 | RLrPK..... | 11.3 | 4.8 | 8.8 | 49.3 | 18.9 | 49.2 | 1.25 (0.00) | 25.4 | 44.9 | 13.7 | 17.0 | .55 | 30.2 |
| 110 | 0..... | 10.8 | 3.7 | .2 | 16.8 (.97) | 17.2 | 17.2 | | 3.6 | 11.5 | 6.3 | 6.3 | 0.00 | 1.4 |
| 201 | 0..... | (1.05) | 7.3 | (.18) | 3.5 | 25.4 (1.06) | 5.7 | 25.0 (.82) | | 2.2 | 25.5 | 10.0 | 16.7 | 0.00 |
| 202 | ML..... | (1.05) | 7.3 | (.20) | 6.6 | 40.8 (1.23) | 7.5 | 38.8 (1.08) | | 3.5 | 41.1 | 10.7 | 26.9 | 1.18 |
| 203 | ML..... | (.85) | 6.4 | (.19) | 6.2 | 38.1 (1.03) | 8.0 | 35.9 (1.08) | | 3.8 | 42.0 | 10.8 | 28.3 | 4.83 |
| 204 | MLrP..... | (.88) | 7.0 | (.23) | 12.6 | 41.5 (1.21) | 10.7 | 42.7 (1.20) | | 4.8 | 43.8 | 12.7 | 33.9 | 5.58 |
| 205 | L..... | (.82) | 5.6 | .9 | 5.2 | 26.3 | 5.7 | 35.0 (.76) | | 1.0 | 22.1 | 7.7 | 14.1 | 0.00 |
| 206 | RL..... | (.82) | 6.1 | .8 | 6.8 | 33.4 | 7.5 | 33.1 (.76) | | .9 | 28.9 | 8.7 | 20.8 | 0.00 |
| 207 | RL..... | (.82) | 5.2 | .9 | 8.2 | 34.7 | 8.0 | 40.2 (1.08) | | 2.7 | 33.8 | 11.6 | 29.2 | 3.92 |
| 208 | RLrP..... | (.82) | 7.3 | 1.6 | 15.7 | 49.6 (1.21) | 10.7 | 46.1 (1.20) | | 3.5 | 39.8 | 15.3 | 29.7 | 5.08 |
| 209 | RLrPK..... | (.82) | 8.6 | 1.2 | 22.7 | 48.0 (1.21) | 10.6 | 49.5 (1.20) | | 7.8 | 39.9 | 15.8 | 33.0 | 5.67 |
| 210 | 0..... | (.94) | 6.1 | (.09) | 1.7 | 15.3 (.46) | 15.3 | 23.0 (1.20) | | 0.0 | 19.3 | 6.8 | 12.7 | 0.00 |
| 301 | 0..... | 14.8 (.67) | 4.2 | 1.1 | (1.40) | 0.0 | 17.8 (.95) | | 6.6 | (.13) | 5.0 | 24.8 | 6.4 | 22.0 |
| 302 | ML..... | 20.2 (.59) | 4.7 | 1.2 | (.90) | .1 | 29.4 (1.19) | | 13.0 | (.36) | 8.5 | 34.2 | 8.2 | 31.6 |
| 303 | ML..... | 17.3 (.67) | 5.8 | 1.9 | (.90) | .1 | 34.2 (1.29) | | 15.6 | (.73) | 11.7 | 41.6 | 11.0 | 41.1 |
| 304 | MLrP..... | 12.2 (.64) | 5.2 | 1.1 | (.98) | .3 | 34.1 (1.41) | | 17.7 | (.56) | 14.5 | 45.0 | 11.2 | 42.7 |
| 305 | L..... | 9.9 | 4.2 | .5 | (.21) | .1 | 16.7 (.62) | | 10.6 | 3.2 | 7.7 | 15.6 | 5.3 | 12.8 |
| 306 | RL..... | 12.8 | 4.7 | .3 | 8.2 | .1 | 25.0 | 6.6 | 15.5 | 3.2 | 9.6 | 22.2 | 7.6 | 21.4 |
| 307 | RL..... | 12.5 | 5.8 | 1.1 | 8.2 | .1 | 29.5 | 7.1 | 15.8 | 6.6 | 11.0 | 27.2 | 8.8 | 34.8 |
| 308 | RLrP..... | 8.7 | 5.2 | 1.7 | 9.8 | .1 | 29.7 | 8.8 | 18.0 | 6.5 | 14.8 | 29.8 | 10.9 | 45.3 |
| 309 | RLrPK..... | 14.7 | 4.9 | 1.9 | 13.6 | 1.2 | 47.4 | 11.8 | 21.4 | 10.4 | 18.8 | 48.6 | 12.4 | 45.3 |
| 310 | 0..... | 12.9 | 3.9 | .5 | (.99) | 0.0 | 10.3 | 3.4 | 5.6 | (.23) | 1.6 | 12.9 | 4.1 | 5.6 |

¹On Plots 2, 5, and 6 lime has been applied only once—as an initial application in 1912. ²No treatment. ³Growth plowed down. ⁴No manure.

TABLE 113.—*Concluded*

| Plot No. | Soil treatment applied ¹ | Bushels or (tons) per acre | | | | | | | | | | | | | |
|----------|-------------------------------------|----------------------------|--------------------|----------------|-----------|-------------|------------|-----------|----------------|-----------|---------------------|-------------------|------------|-----------|----------------|
| | | 1912 Oats ² | 1913 Corn | 1914 Soy-beans | 1915 Oats | 1916 Clover | 1917 Wheat | 1918 Corn | 1919 Soy-beans | 1920 Oats | 1920 Stubble clover | 1921 Sweet clover | 1922 Wheat | 1923 Corn | 1924 Soy-beans |
| 401 | 0..... | 16.4 | 5.0 | (.40) | 13.6 | (0.00) | 2.2 | 9.6 | (.80) | 1.4 | (0.00) | 0.00 | 2.8 | 19.5 | 3.5 |
| 402 | ML..... | 16.6 | 6.4 | (.50) | 19.1 | (0.00) | 6.8 | 15.9 | (1.30) | 15.0 | (.20) | 1.08 | 11.0 | 52.0 | 8.9 |
| 403 | ML..... | 19.5 | 10.8 | (.58) | 10.5 | (0.00) | 10.1 | 17.2 | (1.25) | 16.2 | (.25) | 1.25 | 15.8 | 59.7 | 11.3 |
| 404 | MLrP..... | 17.0 | 9.4 | (.81) | 24.2 | (.76) | 16.8 | 18.0 | (1.24) | 23.1 | (.32) | .92 | 19.3 | 57.9 | 11.8 |
| 405 | L..... | 15.2 | 5.4 | 4.5 | 28.3 | .42 | 11.2 | 11.4 | 3.8 | 6.4 | (.16) | .75 | 9.1 | 31.2 | 6.1 |
| 406 | RL..... | 17.7 | 10.6 | 6.7 | 21.7 | .92 | 12.5 | 17.8 | 5.0 | 13.3 | (.36) | .75 | 12.7 | 38.3 | 7.5 |
| 407 | RL..... | 18.0 | 9.3 | 7.4 | 23.0 | .83 | 13.0 | 21.7 | 6.4 | 16.6 | (.44) | 1.25 | 13.6 | 38.7 | 10.5 |
| 408 | RLrP..... | 7.0 | 20.5 | 10.2 | 22.3 | 1.17 | 21.6 | 27.4 | 7.8 | 19.4 | (.61) | 1.25 | 21.7 | 50.2 | 12.7 |
| 409 | RLrPK..... | 12.2 | 14.2 | 9.6 | 30.9 | 2.17 | 23.3 | 28.2 | 5.6 | 15.6 | (.71) | 1.42 | 20.3 | 57.9 | 12.9 |
| | | Cow-peas ³ | Wheat ⁴ | Corn | Soy-beans | Oats | Soy-beans | Wheat | Corn | Soy-beans | Oats | Sweet clover | Wheat | Corn | |
| 501 | 0..... | (.44) | 9 | 7.7 | (.98) | 2.5 | (.33) | 0.0 | 5.0 | (.30) | | 19.5 | 0.00 | 1.9 | 6.5 |
| 502 | ML..... | (.41) | 3.8 | 12.6 | (1.70) | 19.4 | (.77) | 4.5 | 28.0 | (.68) | | 49.2 | 2.08 | 12.2 | 31.2 |
| 503 | ML..... | (.46) | 5.1 | 8.6 | (1.71) | 18.6 | (.71) | 8.1 | 32.1 | (.42) | | 52.5 | 3.25 | 14.4 | 35.8 |
| 504 | MLrP..... | (.68) | 3.8 | 8.6 | (1.53) | 20.6 | (.86) | 11.0 | 36.5 | (.73) | | 56.9 | 2.33 | 17.9 | 40.5 |
| 505 | L..... | (.66) | 3.8 | 8.4 | 10.9 | 15.8 | 8.1 | 7.6 | 23.1 | 5.3 | | 36.7 | 1.58 | 8.2 | 19.6 |
| 506 | RL..... | (.9) | 5.7 | 12.4 | 13.2 | 18.6 | 7.4 | 7.3 | 24.8 | 7.2 | | 37.8 | 2.00 | 6.9 | 27.8 |
| 507 | RL..... | (.6) | 4.4 | 11.2 | 12.0 | 18.4 | 6.6 | 7.2 | 26.2 | 8.5 | | 41.7 | 2.92 | 7.1 | 31.9 |
| 508 | RLrP..... | (.6) | 7.8 | 13.5 | 12.6 | 23.4 | 8.5 | 12.5 | 32.1 | 8.6 | | 54.1 | 3.08 | 11.7 | 42.7 |
| 509 | RLrPK..... | (.6) | 11.1 | 17.2 | 13.2 | 27.0 | 8.8 | 18.2 | 36.6 | 11.6 | | 54.1 | 3.33 | 19.3 | 51.1 |

¹On Plots 2, 5, and 6 lime has been applied only once—as an initial application in 1912. ²No treatment. ³Growth plowed down in 1912. ⁴No manure.

TABLE 114.—WEST SALEM FIELD: PLOTS A, B, C, D, E, F

| Plot No. | Soil treatment applied | Bushels or (tons) per acre | | | | | | | | | | | |
|----------|------------------------|----------------------------|-----------|---------------------|------------|--------------------|--------------------------------|-----------------|----------------|-----------------|-------------------|--------------|-------------------|
| | | 1913 Potatoes | 1914 Corn | 1915 Soybeans | 1916 Wheat | 1917 Sweet clover | 1918 Potatoes | 1919 Kafir corn | 1920 Soy-beans | 1921 Wheat | 1922 Sweet clover | 1923 Wheat | 1924 Sweet clover |
| A | MLrPK | 6.7 | 18.2 | 5.9 | 1.0 | (1.25) | 28.1 | (3.00) | 5.2 | 10.6 | 1.70 | 11.4 | 3.70 |
| | MrPK | 4.3 | 5.1 | 1.9 | 0.0 | (0.00) | 34.4 | (1.71) | 1.4 | 7.8 | 0.00 | 5.0 | 0.00 |
| B | MLrPK | 10.8 | 1.3 | 4.3 | .85 | ..... | Varieties sorghum ² | Stubble clover | Sweet clover | Wheat | Wheat | Sweet clover | Timothy |
| | MrPK | 10.5 | .8 | 5.9 | .11 | ..... | Potatoes | Wheat | Wheat | Wheat | Wheat | Sweet clover | Timothy |
| C | MLrPK | 3.2 | 9.5 | (2.35) | 42.7 | 34.5 | (1.03) | 22.3 | (1.19) | .78 | 24.3 | .35 | (2.57) |
| | MrPK | 2.3 | 1.0 | (1.43) ² | 9.2 | 11.6 | (.38) | 7.3 | (0.00) | 0.00 | 8.9 | .30 | (.91) |
| D | MLrPK | 7.8 | ..... | 123.4 | 42.8 | 8.5 | 10.9 | (3.66) | 15.2 | Wheat | Corn | Wheat | Corn |
| | MrPK | ..... | ..... | 45.1 | 22.8 | 3.4 | 7.6 | (.29) | 14.7 | Timothy mixture | Timothy | Timothy | Soy-beans |
| E | MLrPK | 6.6 | 2.8 | 63.9 | 12.9 | 25.6 | (1.20) | (1.01) | ..... | Wheat | Wheat | Corn | Soy-beans |
| | MrPK | 0.0 | .6 | 38.6 | 2.1 | 8.5 | (0.00) | (0.00) | ..... | Corn | Wheat | Corn | Soy-beans |
| F | MLrPK | (1.10) | ..... | (4.33) | ..... | (1.69) | (1.70) | 1.9 | 10.4 | Timothy mixture | Timothy | Timothy | Sweet clover |
| | MrPK | (.24) ² | ..... | (.55) ² | ..... | (.36) ² | (0.00) | 0.0 | 7.1 | (1.44) | (2.47) | (2.51) | (1.47) |

¹No manure. ²Growth mostly weeds. ³No yields taken.

DESCRIPTION OF SOILS

The following outline shows all the soil types mapped on the experiment fields together with the field or fields upon which each occurs. The types are designated by the Illinois type name and also by the type name of the Bureau of Soils, U. S. Department of Agriculture, in all cases where the correlation has been made. The correlation is considered tentative in some instances and in one or two cases changes are considered certain. No Bureau of Soils name was available at the time this bulletin went to press for the loessial equivalent of Clyde. This series has been called "Loessial Clyde" thruout this bulletin.

Dark-colored upland soils developed on loess

- Light Brown Silt Loam (*Tama silt loam*)
Dixon, LaMoille, Mt. Morris fields
- Light Brown Silt Loam, shallow phase (*Tama silt loam, shallow phase*)
Mt. Morris field
- Light Brown Silt Loam, deep phase (*Tama silt loam, deep phase*)
Mt. Morris field
- Brown Silt Loam (*Muscatine silt loam*)
Bloomington, DeKalb, Dixon, Kewanee, LaMoille, McNabb, Minonk, Mt. Morris, Sidell, Spring Valley fields, Urbana Davenport plots, Urbana South Farm
- Brown Silt Loam, light phase (*Muscatine silt loam, light phase*)
Urbana South Farm
- Brown Silt Loam, deep phase (*Muscatine silt loam, deep phase*)
Mt. Morris field
- Brown Silt Loam On Clay (*Grundy silt loam*)
Aledo, Bloomington, Clayton, DeKalb, Dixon, Hartsburg fields
- Light Brown Silt Loam On Clay (*Grundy silt loam, light phase*)
Clayton field
- Grayish Brown Silt Loam On Tight Clay (*Grundy silt loam, grayish phase*)
Carlinville, Carthage, Lebanon, Pana fields
- Brown Silt Loam On Tight Clay (*Grundy silt loam, tight phase*)
Carlinville, Pana fields
- Brown Silt Loam On Calcareous Clay (*Grundy silt loam, calcareous phase*)
Minonk field
- Black Silty Clay Loam On Clay (*Grundy silty clay loam*)
Carthage, DeKalb, LaMoille, Sidell fields, Urbana South Farm
- Black Clay Loam (*Grundy clay loam*)
Carlinville, Hartsburg fields
- Grayish Brown Clay Loam On Tight Clay (*Grundy clay loam, grayish phase*)
Carlinville field
- Deep Dark Brown Silt Loam (*Bremer silt loam*)
Dixon, Spring Valley fields

Black Clay Loam, poorly drained phase (*Loessial Clyde clay loam*)

Bloomington, DeKalb, Joliet, Kewanee, LaMoille, Minonk, Sidell,
Spring Valley fields, Urbana Davenport plots, Urbana South Farm

Black Silty Clay Loam On Clay, poorly drained phase (*Loessial Clyde silty clay loam*)

Aledo field

Light Brown Silt Loam On Clay, poorly drained phase (*Loessial Clyde silt loam*)

Clayton field

Brown-Gray Silt Loam On Tight Clay (*Putnam silt loam*)

Alhambra, Carlinville, Clayton, Pana fields

Dark-colored upland soils developed on drift

Brown Silt Loam On Drift (*Carrington silt loam*)

Urbana Davenport plots, Urbana South Farm

Brown Silt Loam On Drift, light phase (*Carrington silt loam, light phase*)

Sidell field, Urbana South Farm

Brown Silt Loam On Red Calcareous Drift (*Bellefontaine silt loam*)

DeKalb field

Brown Silt Loam On Calcareous Drift (*Clarion silt loam*)

DeKalb, Joliet, Minonk fields

Brown Silt Loam On Plastic Calcareous Drift (*Webster silt loam*)

DeKalb, Joliet fields

Black Silty Clay Loam On Drift (*Clyde silty clay loam*)

DeKalb field

Black Clay Loam On Drift (*Clyde clay loam*)

DeKalb field

Light-colored upland soils developed on loess

Brownish Yellow-Gray Silt Loam (*Clinton silt loam*)

Spring Valley field

Yellow-Gray Silt Loam

Elizabethtown, Ewing, Odin, Sparta, Unionville, Vienna fields

Yellow-Gray Silt Loam, deep phase

Unionville field

Deep Gray Silt Loam

Enfield, Ewing, Raleigh, Sparta, West Salem, Vienna fields

Yellow-Gray Silt Loam On Compact Medium-Plastic Clay

Enfield, West Salem fields

Yellow-Gray Silt Loam On Tight Clay

Raleigh, Sparta, West Salem fields

Yellow Silt Loam

Elizabethtown, Unionville, West Salem, Vienna fields

Stony Loam

Elizabethtown field

Light Gray Silt Loam On Tight Clay

Enfield, Sparta fields

Gray Silt Loam On Plastic Reddish Brown Clay
Odin field

Gray Silt Loam On Orange-Mottled Tight Clay
Ewing field

Gray Silt Loam On Orange-Mottled Plastic Clay
Enfield, Raleigh fields

Gray Silt Loam On Tight Clay
DuBois, Ewing, Oblong, Odin, Newton, Raleigh, Toledo, West Salem
fields

Light-colored upland soils developed on drift

Yellow-Gray Silt Loam On Calcareous Drift (*Miami silt loam*)
Antioch field

Yellow Sandy or Gravelly Silt Loam On Drift
West Salem field

Terrace Soils

Brown Sandy Loam, Terrace (*Plainfield sandy loam*)
Oquawka, Palestine fields

Dune Sand, Terrace (*Plainfield sand*)
Oquawka field

In the following profile descriptions of the above types, their occurrence in the state is briefly discussed and an attempt is made to point out any variations which were found in the various types as mapped on the experiment fields. That is to say, two fields may be classified as of the same type, on one of which the type is typically developed while on the other its development is not typical with respect to certain characters. Differences of variations of this sort are described because it is believed that they may have an important bearing on the interpretation of the experimental data furnished by the fields.

In the descriptions the various strata or horizons composing the soil profile are designated by the letters A, B, and C. According to this method of designation, A₁ corresponds to the surface soil, A₂ to the subsurface, B₁ to the upper subsoil, and C₁ to the lower subsoil. In the type descriptions definite depths are usually assigned to the various horizons. It should be understood, however, that small variations in these depths occur. In certain cases where the variations are relatively large, attention is called to them.

LIGHT BROWN SILT LOAM (*Tama silt loam*)

A₁—0 to 8 inches, light or yellowish brown silt loam

A₂—8 to about 20 inches, distinctly yellowish brown, friable silt loam

B₁—20 to about 28 inches, brownish yellow, friable, non-mottled, non-compact silt loam

C₁—28 inches to the depth sampled (40 inches), very friable, slightly mottled, bright yellowish brown silt loam

This type is non-calcareous,¹ is easily pervious to roots, air, and water, is well and uniformly oxidized. The topography of the type is usually undulating to rolling. It occurs extensively in the northwestern part of the state.

Two phases of this type were mapped because of variations in depth:

| Shallow Phase | Deep Phase |
|---------------------------------|---------------------------------|
| A ₁ —0 to 4 inches | A ₁ —0 to 13 inches |
| A ₂ —5 to 10 inches | A ₂ —14 to 22 inches |
| B ₁ —11 to 19 inches | B ₁ —23 to 28 inches |
| C ₁ —20+ inches | C ₂ —29+ inches |

BROWN SILT LOAM (*Muscatine silt loam*)

A₁—0 to 8 inches, brown silt loam

A₂—8 to 18 inches, light brown or yellowish brown silt loam

B₁—19 to 30 inches, mottled,² pale yellow, medium-compact clay loam or silty clay loam

C₁—30 inches to the depth sampled (40 inches), strongly mottled, yellow or pale yellow, friable silty clay loam

The areas of Muscatine silt loam as mapped on the various fields are thought to be typical except in the case of the McNabb and Spring Valley fields. In the case of the former field the A₂ horizon extends to a depth of 26 to 28 inches over much of the area. The Spring Valley field presents an unusual condition in that it is located on an area where both forest and prairie vegetation have had an influence on the character of the soil. The A₁ horizon is too light colored to be typical of Muscatine and the B₁ horizon is too compact and strongly mottled. The type behavior of Muscatine silt loam should probably not be judged by the behavior of the area on this field which is classified as Muscatine. This type occurs extensively thruout the central and north-central parts of the state.

Two phases of Muscatine silt loam were mapped, as follows:

1. Muscatine silt loam, light phase, in which the A₁ horizon is light brown in color and the A₂ and B₁ horizons are yellow. The degrees of mottling, of compaction, and of plaeticity do not differ from those which characterize Muscatine silt loam.

2. Muscatine silt loam, deep phase. which corresponds to Muscatine silt loam except that the A₁ horizon is about 14 inches in thickness, and B₁ is 3 or 4 inches deeper but usually no thicker.

¹*Non-calcareous*, as the term is used in this bulletin, means that the soil does not effervesce with hydrochloric (muriatic) acid.

²The term *mottled*, as used in this bulletin, means, unless otherwise stated, the presence of gray splotches, streaks, or surfaces thruout a soil mass of some color other than gray.

BROWN SILT LOAM ON CLAY (*Grundy silt loam*)

A₁—0 to 8 or 9 inches, dark brown silt loam

A₂—9 to 19 inches, brown silt loam with gray cast

B₁—20 to 30 inches, strongly mottled, pale yellow, heavy, compact clay loam

C₁—30 inches to depth sampled (40 inches), very strongly mottled, drab or pale yellow, friable silty clay loam

This type as mapped is thought to be typical on the Bloomington, DeKalb, and Dixon fields. On the Aledo field the B₁ horizon is grayer than is usual for the type, and on the Clayton field the B₁ horizon is a strongly mottled, reddish brown instead of the usual yellowish gray or yellowish brown. The variations which are mapped as phases of the type are described below. The Grundy series occurs extensively in the south-central part of the state.

Four phases of Grundy silt loam were mapped, as follows:

1. Light phase, in which A₁ is 7 to 8 inches in depth and light brown in color.

2. Grayish phase, in which A₁ may or may not have a grayish cast, but in which A₂ is drabish or grayish brown and B₁ is plastic, with a marked tendency to be impervious. This soil, in the course of its development, has apparently reached a stage intermediate between Grundy and Putnam, which is described later.

3. Tight phase, in which the gray cast does not appear, excepting slightly in A₂ in some areas, but in which B₁ is very plastic, compact, and impervious.

4. Calcareous phase, in which drift probably occurs at 34 to 40 inches and which is usually strongly calcareous at 32 inches. This soil perhaps should be correlated with Webster instead of Grundy.

BLACK SILTY CLAY LOAM ON CLAY (*Grundy silty clay loam*)

A₁—0 to 9 or 10 inches, black silty clay loam

A₂—10 to 19 inches, drabish brown silty clay loam frequently splotted with reddish brown or yellow spots

B₁—20 to 30 or 35 inches, strongly mottled, yellowish gray or drab clay, compact, and medium plastic

C₁—Below B₁ to depth sampled (40 inches) strongly mottled, bright yellow or reddish brown, medium-friable silty clay loam

This type is uniform on the Carthage, LaMoille, and Urbana South Farm fields. On the DeKalb and Sidell fields the A₁ horizon is unusually shallow (6 to 7 inches), and on the DeKalb field the B₁ horizon occurs at a depth of only about 10 or 11 inches, thus reducing the A₂ horizon to a very thin stratum (3 or 4 inches). It occurs only on relatively flat areas and is associated with Grundy clay loam.

BLACK CLAY LOAM (*Grundy clay loam*)

A₁—0 to 8 inches, black clay loam

A₂—9 to 19 inches, grayish or drabish brown clay loam

B₁—20 to 35 inches, gray clay loam splotted with black iron concretions and yellow mottling, not very compact or plastic

C₁—35 inches to depth sampled (40 inches), strongly mottled, reddish brown, friable silty clay loam. Carbonates occur at about 45 inches.

This type is found only on flat areas which were originally rather poorly drained, tho its natural drainage is better than that of the loessial correlative of Clyde.

GRAYISH BROWN CLAY LOAM ON TIGHT CLAY (*Grundy clay loam, grayish phase*)

This type occupies a small low-lying area in association with Grayish Brown Silt Loam On Tight Clay. Its profile differs from that of the preceding type in its finer texture and slightly grayer color.

DEEP BROWN SILT LOAM (*Bremer silt loam*)

This type, as it occurs on the Dixon and Spring Valley fields, occupies areas which have received much wash. The Dixon area occupies a small draw in which much alluvial material has been deposited and the Spring Valley areas are small outwash plains. The following description applies to the Dixon area and to the area which occurs on Plots 102 to 110 and Plots 501 to 504 on the Spring Valley field.

A₁—0 to about 14 inches, dark brown silt loam

A₂—14 to about 24 inches, yellowish brown to drabish black silty clay loam

A₃—24 inches to depth sampled (40 inches), strongly mottled, yellowish gray or drabish black clay loam, friable, and not compact

The area of this type which occurs on Plots 801 to 804 of the Spring Valley field is lighter in color in all horizons than is usual for this type, and has a distinctly compact subsoil. Bremer silt loam probably does not occur extensively in the state.

BLACK CLAY LOAM, POORLY DRAINED PHASE (*Loessial Clyde clay loam*)

This type occurs on low-lying flat areas in the central part of the state and is developed under poor drainage conditions. The descriptive name Black Clay Loam, poorly drained phase, was adopted to distinguish this type from Black Clay Loam (*Grundy clay loam*) and should not be taken to mean that the type is now poorly drained, which may not be the case because of the extensive installation of tile-drainage systems in these flat areas. A profile description follows:

A₁—0 to 9 inches, black clay loam

A₂—10 to 22 inches, drabish black clay or clay loam

B₁—23 to 30 or 40 inches or more, drab or strongly mottled pale yellow, plastic, compact clay

C₁—When this horizon occurs within the 40-inch section, it is usually either a strongly mottled yellow, medium-friable clay loam containing black iron concretions, or a drab clay loam splotted with yellow and containing black iron concretions.

This type, as mapped on the Bloomington, Kewanee, and Urbana Davenport fields, has an unusually deep A_1 horizon. In the case of the Bloomington and Davenport fields this horizon extends to a depth of about 15 inches, while in the case of the Kewanee field it is 12 inches deep with a slightly drabish black clay loam A_2 to 21 inches in depth.

BLACK SILTY CLAY LOAM ON CLAY, POORLY DRAINED PHASE
(*Loessial Clyde silty clay loam*)

This type occurs on the Aledo field and interferes with the uniformity of this field only to the extent that it eliminates Plot 101 from any comparisons with the other plots.

The profile of this type is the same as for that of the preceding type (Black Clay Loam, poorly drained phase) except that its texture is coarser in all horizons resulting in less plasticity. This type is usually associated with Black Clay Loam, poorly drained phase.

LIGHT BROWN SILT LOAM ON CLAY, POORLY DRAINED PHASE
(*Loessial Clyde silt loam, light phase*)

This type occurs on the Clayton field on a low area in association with Grundy silt loam. Its profile is typical for the type with the exception that the surface is brown or slightly drabish brown instead of dark brown or black.

BROWN-GRAY SILT LOAM ON TIGHT CLAY (*Putnam silt loam*)

This type occurs in a belt extending from the Shelbyville moraine thru Shelby, Christian, Montgomery, Macoupin, and Madison counties. It is well developed on the Alhambra and Pana fields and occurs less typically developed on the Carlinville and Clayton fields. The type is characterized by an ashy gray subsurface and a very plastic and compact subsoil. "Scald spots" occur at frequent intervals and are caused by the nearness to the surface of the plastic subsoil or "tight clay."

It is not infrequently the case that lime concretions occur in the compact, or B_1 horizon. This feature needs further study to determine its significance. A profile description of the type follows:

A_1 —0 to 8 inches, brown or grayish brown silt loam

A_2 —9 to about 18 inches, ashy gray silt loam

B_1 —about 19 to about 32 inches, gray or drab, highly plastic clay, with some yellow spots and frequently black iron concretions

C_1 —This horizon sometimes does not occur in the 40-inch section because of the depth to which B_1 extends. When present it is a fairly friable, mottled yellow clay loam or silty clay loam

On the Carlinville field some of the area mapped as Putnam silt loam is not typical of the type in that the gray layer is either entirely absent or imperfectly developed and the compact, or B_1 , horizon is deeper than is ordinarily the case. On the Clayton field the gray layer

is not ashy gray but is brownish gray. The compact, or B₁, horizon of this type on the Clayton field is strongly developed and is thicker than is usually found; it frequently is so thick that no C₁ horizon occurs in the 40-inch section.

BROWN SILT LOAM ON DRIFT (*Carrington silt loam*)

This type is found in considerable area in the east-central part of the state. It was mapped on the Urbana Davenport plots and Urbana South Farm. A profile description of the type follows:

A₁—0 to about 8 inches, brown silt loam

A₂—8 to about 18 inches, yellowish brown silt loam

B₁—18 to about 30 inches, mottled yellow, medium-compact, sandy or gravelly clay

C₁—30 inches to depth sampled (40 inches), strongly mottled yellow, medium-friable, sandy or gravelly silty clay loam

A light-colored phase of Carrington silt loam was mapped on the Sidell and Urbana South Farm fields. It differs from Carrington silt loam in that the surface, or A₁ horizon, is light brown or yellowish brown in color.

BROWN SILT LOAM ON RED CALCAREOUS DRIFT (*Bellefontaine silt loam*)

This type probably occurs only in the northern part of the state and is found in regions of undulating to rolling topography. The DeKalb field is the only field on which the type was mapped and the following profile description was taken from that area:

A₁—0 to 7 inches, light, slightly reddish brown silt loam

A₂—8 to 15 inches, yellowish brown silt loam with reddish cast

B₁—16 to 25 inches, dark reddish brown, sandy, gravelly clay loam, medium compact

C₁—26 inches to depth sampled (40 inches), dark reddish, gravelly drift, strongly calcareous

BROWN SILT LOAM ON CALCAREOUS DRIFT (*Clarion silt loam*)

This type occurs in the north-central part of the state in areas of undulating to rolling topography. The areas of the type which are found on the DeKalb and Minonk fields are typical, while in the case of the area on the Joliet field the surface soil is lighter colored than is usual for the type. The profile description of the type follows:

A₁—0 to 8 inches, brown silt loam

A₂—9 to about 18 inches, light brown or yellowish brown silt loam

B₁—19 to about 28 inches, yellowish brown, medium-compact clay, or sandy and gravelly clay

C₁—29 inches to depth sampled (40 inches), yellow, highly calcareous, sandy and gravelly drift

BROWN SILT LOAM ON PLASTIC CALCAREOUS DRIFT
(*Webster silt loam*)

Webster silt loam occurs in the northern part of the state, north of McLean county and east of Stark county. It occupies low-lying flat areas. The profile description of the type follows:

A₁—0 to 9 inches, dark brown silt loam

A₂—10 to 18 inches, grayish brown silt loam

B₁—19 to 29 inches, grayish drab or strongly mottled yellow clay, heavy and compact

C₁—30 inches to depth sampled, strongly mottled, calcareous, sandy or gravelly clay

BLACK SILTY CLAY LOAM ON DRIFT (*Clyde silty clay loam*)

This type, a profile description of which follows, probably occurs only in the portion of the state which is included in the early Wisconsin glaciation.

A₁—0 to 8 inches, black silty clay loam

A₂—9 to 13 inches, brownish black silty clay loam

A₃—14 to 18 inches, drabish black silty clay loam

B₁—19 inches to depth sampled (40 inches), drab clay containing yellow splotches which increase in number and size below 30 inches

BLACK CLAY LOAM ON DRIFT (*Clyde clay loam*)

This type occurs in the same region as Clyde silty clay loam and is very similar to it. It is heavier in texture in all horizons, and the color of the B₁ horizon is gray rather than drab. This horizon contains dark reddish brown splotches rather than yellow splotches.

BROWNISH YELLOW-GRAY SILT LOAM (*Clinton silt loam*)

This type, which is called Brownish Yellow-Gray Silt Loam to distinguish it from Yellow-Gray Silt Loam, is a light-colored upland soil and occurs thruout the central part of the state adjacent to the eroded land bordering streams. A profile description follows:

A₁—0 to 8 inches, yellowish gray silt loam, frequently with a brownish cast

A₂—9 to 18 inches, mottled, yellowish brown silt loam

B₁—19 to 35 inches, compact, mottled, yellowish brown silty clay loam

C₁—36 inches to depth sampled (40 inches), friable, strongly mottled, yellow silt loam

This type occurs on a portion of the Spring Valley field, but there is a portion of the field in which the soils are too dark colored in both the A₁ and A₂ horizons to be considered typical.

YELLOW-GRAY SILT LOAM

This type occurs extensively on the rolling uplands in the southern part of the state. The following description applies to the cultivated areas and not to the type in the virgin condition.

A₁—0 to 7 inches, grayish yellow silt loam

A₂—8 to 15 inches, yellowish gray silt loam

B₁—16 to 31 inches, compact, mottled, bright yellow silty clay loam

C₁—32 inches to depth sampled (40 inches), friable, mottled, yellow silt loam

YELLOW-GRAY SILT LOAM, DEEP PHASE

This type occupies a small area on the Unionville field and is of small importance because of its limited area in the state. It is similar to Deep Gray Silt Loam, Bottom, both in formation and in character. The surface, or A₁, horizon is not observably different from the surface horizon of the preceding type, Yellow-Gray Silt Loam, except that it is 9 inches deep instead of 7. No horizon development has taken place below the surface, the material to the depth sampled (40 inches) being a gray silt loam heavily splotched with dark reddish brown spots. Ordinarily no compact, or B₁, horizon occurs in the 40-inch section, tho in places it appears to be forming.

DEEP GRAY SILT LOAM

This type is similar to Yellow-Gray Silt Loam, deep phase, in manner of formation, but differs from it in the grayer color of the surface, or A₁, horizon and the heavy mottling below a depth of about 13 inches. There is an incipient compact, or B₁, horizon between 19 and 30 inches. This type is not extensively developed in the state and occurs only where the topography is such that a deep silty deposit has been formed.

YELLOW-GRAY SILT LOAM ON COMPACT MEDIUM-PLASTIC CLAY

This type is well developed on the Enfield and West Salem fields and probably occurs extensively in the southern part of the state. Portions of the type, such as the area on the Enfield field, appear to have been developed under poorer drainage conditions than other portions, such as the area on the West Salem field. This is indicated by a well-developed gray color thruout the soil section and an abundance of dark red splotches below about 17 inches. Further study may show that this type should be separated into two types. The following profile description applies to the type as mapped and includes the variations noted above.

A₁—0 to 7 inches, yellowish brown to yellowish gray silt loam

A₂—8 to about 12 inches, grayish yellow silt loam

A₃—13 to about 21 inches, gray silt loam splotched with yellow (the amount of yellow splotching varying according to the drainage conditions)

B₁—22 to about 34 inches, mottled yellowish brown to gray splotched with yellowish red, compact, medium-plastic clay loam

C₁—35 inches to depth sampled (40 inches), strongly mottled yellowish brown to gray splotched with yellowish red, friable silt loam

YELLOW-GRAY SILT LOAM ON TIGHT CLAY

This type is similar to the preceding type, Yellow-Gray Silt Loam On Medium-Plastic Clay, but differs from it in having a more plastic

subsoil, and usually a stronger development of the gray color thruout the soil section. If further study shows that the degree of plasticity is the only distinguishing character, these two types cannot be successfully separated because the apparent plasticity of the subsoil varies greatly with variations in moisture content. This type is similar to Yellow-Gray Silt Loam On Medium-Plastic Clay not only in character but also in occurrence. A profile description of it follows:

- A₁—0 to 6 inches, slightly brownish gray silt loam
- A₂—7 to 13 inches, mottled, pale yellow silt loam
- A₃—14 to 20 inches, gray silt loam
- B₁—21 to 34 inches, strongly mottled, plastic, reddish yellow clay
- C₁—35 inches to depth sampled (40 inches), friable, strongly mottled, reddish yellow silt loam

YELLOW SILT LOAM

Yellow Silt Loam occurs extensively in the hilly region of southern Illinois. It is typically developed on the Elizabethtown and Vienna fields and comprizes the major portion of the area of these two fields. It is distinguished from Yellow-Gray Silt Loam by the absence of an A₂ horizon. Its topography is usually so steep as to subject it to serious erosion. A profile description of the type follows:

- A₁—0 to 7 inches, grayish yellow silt loam
- B—8 to 25 inches, bright yellow to slightly reddish yellow, compact silty clay loam, usually with little or no mottling
- C—26 inches to depth sampled (40 inches), mottled, yellow, friable silt loam containing some black iron concretions

The above depths are subject to considerable variation because of the variation in amount of soil removed from different areas by erosion.

STONY LOAM

This type is unimportant because of its small area and its low agricultural value. A small area of it occurs on the Elizabethtown field where the loessial covering has been removed by erosion, exposing the underlying, partially weathered sandstone and shale.

LIGHT GRAY SILT LOAM ON TIGHT CLAY

This type is found in the southern part of the state on flat areas. It is locally known as post-oak or water-oak flats. It occurs on the Enfield and Sparta fields and is typically developed in both cases; however, on the Sparta field its topography is undulating, thus giving good surface drainage, which is an unusual condition for the type. Dark reddish brown iron concretions occur thruout the soil section and are conspicuous on the surface of the ground after a rain.

- A₁—0 to 7 inches, light gray silt loam
- A₂—8 to 16 inches, light gray to white silt loam with a slightly yellowish cast when moist
- B₁—17 to 35 inches, compact, highly plastic, gray or drabbish gray clay

C₁—36 inches to depth sampled (40 inches), fairly friable, gray silty clay loam abundantly supplied with reddish brown iron concretions
Frequently no C₁ horizon is found in the 40-inch section.

GRAY SILT LOAM ON PLASTIC REDDISH BROWN CLAY

This type is found on the low glacial and preglacial hills in the southern part of the state. A profile description of the type follows:

A₁—0 to 6 inches, gray silt loam

B₁—7 to 22 inches, reddish brown, plastic clay

C₁—23 inches to depth sampled (40 inches), friable, strongly mottled, yellowish brown silt loam

GRAY SILT LOAM ON ORANGE-MOTTLED TIGHT CLAY

This type is found in the southern part of the state and usually occurs on gentle slopes. It is associated with Gray Silt Loam On Tight Clay, but appears to have developed under better drainage conditions than the latter type and is superior to it in productivity. A profile description of the type follows:

A₁—0 to 8 inches, brownish gray silt loam

A₂—9 to 12 inches, slightly mottled, brownish gray silt loam containing some yellow spots

A₃—13 to 16 inches, gray silt loam heavily spotted with orange red

B₁—17 to 21 inches, highly plastic, gray clay heavily spotted with orange red

C₁—21 inches to depth sampled (40 inches), friable, gray silty clay loam heavily spotted with yellowish brown

GRAY SILT LOAM ON ORANGE-MOTTLED PLASTIC CLAY

This type, upon further study, may be correlated with Gray Silt Loam On Orange-Mottled Tight Clay. It appears, however, to be less impervious in the subsoil horizon and to have developed under better drainage conditions. It occurs on gentle slopes in the southern part of the state. A profile description of the type follows:

A₁—0 to 7 inches, yellowish gray to yellowish brown silt loam

A₂—8 to 14 inches, grayish yellow silt loam becoming somewhat compact and mottled with orange red at about 11 inches

B₁—15 to 24 inches, compact, medium-plastic, orange-mottled silty clay loam with the mottling disappearing at about 20 inches

C₁—24 inches to depth sampled (40 inches), friable, mottled, reddish brown silt loam becoming gray at about 35 inches.

GRAY SILT LOAM ON TIGHT CLAY

This type is extensively developed in the region of Jefferson, Marion, Clay, and Effingham counties. It is typically developed on the DuBois, Ewing, Oblong, Odin, Newton, Raleigh, Toledo, and West Salem fields. A profile description of the type follows:

A₁—0 to 8 inches, brownish gray silt loam

A₂—9 to 18 inches, gray silt loam

B₁—19 to 32 inches, strongly mottled, yellowish brown, highly plastic clay

C₁—32 inches to depth sampled (40 inches), gray or drabbish gray, friable silty clay loam containing many yellowish brown and black iron blotches

This type is characterized by a great variation in the depth of the B, or compact, horizon.

YELLOW-GRAY SILT LOAM ON CALCAREOUS DRIFT (*Miami silt loam*)

This type is rather extensively developed in the northwestern part of the state.

A₁—0 to 7 inches, yellowish brown silt loam

A₂—8 to about 14 inches, mottled, yellowish brown silt loam

B₁—14 to about 28 inches, dark reddish brown, compact clay loam containing gravel

C—29 inches to depth sampled (40 inches), highly calcareous, reddish yellow, friable, sandy and gravelly clay. This material has a strongly mottled appearance, which is probably due to its high native carbonate content rather than to mottling produced by weathering.

YELLOW SANDY OR GRAVELLY SILT LOAM ON DRIFT

This type occurs in large areas in five sections of the state, as follows: Henderson county region, Whiteside county region, Mason county region, Kankakee county region, and less extensively along the Wabash river. The area of this type in Crawford county upon which the Palestine field is located is probably too productive a soil to be correlated with Plainfield, and further study may lead to a change in the correlation. A profile description of the type follows:

A₁—0 to 7 inches, light brown sandy loam

A₂—8 inches to depth sampled (40 inches), brownish yellow sandy loam becoming more yellowish below about 24 inches

DUNE SAND, TERRACE (*Plainfield sand*)

The occurrence of this type is similar to that of Plainfield sandy loam. It is typically developed on the Oquawka field. The surface is light brown in color between dunes, and yellowish brown on the tops of the dunes. The depth of the surface varies; it frequently is 15 inches deep between the dunes and may be entirely absent on top of the dunes. There is no horizon development below the surface, or A₁, horizon, the material consisting of incoherent yellow sand.

INDEX

CROPS GROWN

| | |
|--|--|
| Alfalfa..... | Tables 10, 22, 28, 31, 35, 43, 44, 47, 49, 64, 70, 75, 77, 82, 84, 85, 87, 92, 94, 95, 99, 104, 112, 114 |
| Barley..... | Tables 16, 21, 40, 45, 48, 60, 63, 64, 91 |
| Barley hay..... | Tables 22, 64 |
| Barley, winter..... | Table 85 |
| Beets, sugar..... | Tables 53, 104 |
| Clover, medium red, mammoth, alsike..... | Standard on most fields |
| Clover, stubble..... | Tables 1, 15, 27, 43, 50, 51, 52, 56, 60, 69, 70, 71, 84, 85, 99, 113, 114 |
| Clover, sweet, as green manure crop | Standard on most fields |
| Clover, sweet, as regular crop..... | Tables 5, 9, 27, 30, 34, 38, 52, 64, 68, 69, 70, 71, 74, 75, 76, 83, 84, 85, 89, 90, 113, 114 |
| Corn..... | Standard on most fields |
| Cotton..... | Table 93 |
| Cowpeas..... | Tables 18, 29, 38, 41, 71, 84, 93, 108, 109, 110 |
| Cowpeas (or soybeans)..... | Substitute legumes on all fields |
| Kafir corn..... | Table 114 |
| Oats..... | Standard on most fields |
| Oat hay..... | Tables 77, 113 |
| Oats, winter..... | Tables 85, 94, 95 |
| Potatoes..... | Tables 22, 49, 51, 52, 64, 70, 84, 92, 94, 95, 104, 114 |
| Rye..... | Tables 75, 76, 93 |
| Soybeans..... | Tables 18, 27, 38, 44, 50, 51, 66, 67, 68, 70, 71, 74, 75, 76, 83, 90, 94, 95, 107, 113, 114 |
| Soybeans (or cowpeas)..... | Substitute legumes on all fields |
| Timothy or timothy-clover mixture. | Tables 12, 27, 32, 36, 40, 65, 69, 72, 79, 95, 109, 114 |
| Vetch..... | Table 104 |
| Wheat..... | Standard on most fields |

CROPPING SYSTEMS FOLLOWED

SINGLE-CROP SYSTEMS

| | |
|--------------|---|
| Alfalfa..... | Tables 28, 47 |
| Corn..... | Tables 54, 61, 88, 96, 97, 98, 100, 101, 102, 103 |

TWO-CROP SYSTEMS

| | |
|--------------------------|---------------------------|
| Corn, oats..... | Tables 96, 98 |
| Corn, wheat..... | Tables 13, 23, 33, 73, 77 |
| Potatoes, alfalfa..... | Tables 22, 49, 64, 92 |
| Wheat, sweet clover..... | Table 85 |

CROPPING SYSTEMS FOLLOWED (Cont'd)

THREE-CROP SYSTEMS

| | |
|---|---|
| Corn, corn, oats..... | Table 15 |
| Corn, legumes, wheat..... | Tables 18, 29, 66, 67, 68, 74, 108 |
| Corn, oats, clover..... | Tables 24, 25, 26, 81, 96, 97, 110, 112 |
| Corn, oats, legumes..... | Table 41 |
| Corn, oats, timothy mixture... | Table 72 |
| Corn, oats, wheat..... | Tables 37, 55, 77 |
| Corn, soybeans, potatoes..... | Table 51 |
| Corn, wheat, legumes..... | Table 108 |
| Corn, wheat, sweet clover..... | Table 68 |
| Corn, wheat, timothy mixture. | Table 114 |
| Wheat, clover, alfalfa..... | Tables 10, 31, 35 |
| Wheat, legumes, timothy..... | Tables 12, 32, 36 |
| Wheat, sweet clover, potatoes.. | Table 52 |
| Wheat, sweet clover, timothy mixture..... | Table 114 |

FOUR-CROP SYSTEMS

| | |
|--|--|
| Corn, barley, soybeans, wheat. | Table 45 |
| Corn, barley, sweet clover, alfalfa..... | Table 64 |
| Corn, corn, barley, clover..... | Table 91 |
| Corn, corn, corn, soybeans.... | Table 107 |
| Corn, corn, oats, alfalfa..... | Tables 22, 87 |
| Corn, corn, oats, clover..... | Tables 6, 7, 19, 62, 65, 79, 91, 106 |
| Corn, corn, oats, wheat..... | Tables 1, 2, 5, 42, 43, 48, 57, 58, 60, 80, 111, 112 |
| Corn, corn, wheat, clover..... | Table 49 |
| Corn, cotton, cowpeas, wheat.. | Table 93 |
| Corn, cowpeas, wheat, clover.. | Table 38 |
| Corn, cowpeas, wheat, cotton.. | Table 93 |
| Corn, cowpeas, timothy mixture, wheat..... | Table 84 |
| Corn, oats, clover, wheat..... | Tables 1, 2, 3, 4, 5, 9, 14, 16, 17, 21, 23, 30, 34, 46, 47, 48, 50, 58, 60, 63, 69, 70, 78, 86, 89, 105 |
| Corn, oats, sweet clover, wheat. | Tables 9, 30, 34, 69, 89 |
| Corn, oats, wheat, clover..... | Tables 17, 20, 23, 56, 59, 105 |
| Corn, rye, cowpeas, wheat..... | Table 93 |
| Corn, soybeans, timothy mixture, wheat..... | Table 95 |
| Corn, soybeans, wheat, clover.. | Tables 38, 71, 83 |
| Corn, soybeans, wheat, sweet clover..... | Tables 27, 38, 71, 74, 83, 90 |
| Corn, soybeans, wheat, wheat.. | Table 50 |
| Corn, wheat, timothy mixture, wheat..... | Table 27 |
| Potatoes, corn, soybeans, alfalfa | Tables 70, 104 |
| Potatoes, winter oats, clover, alfalfa..... | Table 94 |
| Potatoes, wheat, clover, alfalfa | Tables 84, 94 |
| Wheat, oats, sweet clover, alfalfa..... | Table 85 |
| Wheat, winter oats, sweet clover, alfalfa..... | Table 85 |

CROPPING SYSTEMS FOLLOWED (Cont'd)

FIVE-CROP SYSTEMS

| | |
|--|-----------------------|
| Corn, corn, oats, clover, wheat. | Table 8 |
| Corn, corn, oats, wheat, clover. | Table 8 |
| Corn, cowpeas, wheat, clover, timothy..... | Table 109 |
| Corn, oats, clover, wheat, alfalfa..... | Tables 43, 77, 82, 99 |
| Corn, soybeans, rye, sweet clover, wheat..... | Table 76 |
| Corn, soybeans, oats, clover, wheat..... | Table 113 |

SIX-CROP SYSTEMS

| | |
|--|-----------|
| Corn, corn, oats, clover, wheat, alfalfa..... | Table 44 |
| Corn, corn, oats, clover, wheat, clover..... | Table 40 |
| Corn, corn, oats, wheat, clover, timothy..... | Table 40 |
| Corn, oats, clover, wheat, soy- beans, alfalfa..... | Table 44 |
| Corn, soybeans, wheat, sweet clover, potatoes, alfalfa..... | Table 114 |
| Corn, soybeans, wheat, sweet clover, rye, alfalfa..... | Table 75 |

FERTILIZING MATERIALS USED

| | |
|--|--|
| Gypsum..... | Tables 15, 55 |
| Lime, comparative tests..... | Tables 26, 68 |
| Limestone..... | Standard on most fields |
| Nitrogen fertilizers | |
| Dried blood..... | Tables 5, 8, 17, 23, 25, 40, 42, 53, 57, 61, 65, 79, 80, 88, 91, 100, 101, 102, 103, 111 |
| Organic manures | |
| Crop residues, including green manures..... | Standard on most fields |
| Farm manures..... | Standard on most fields |
| Phosphorous fertilizers | |
| Bone meal..... | Tables 5, 8, 17, 18, 23, 24, 25, 41, 42, 53, 56, 57, 61, 62, 71, 74, 80, 81, 88, 97, 98, 100, 102, 108, 110, 111 |
| Rock phosphate..... | Standard on most fields |
| Comparisons of different carriers | |
| Acid phosphate..... | Tables 2, 13, 17, 29, 33, 37, 47, 52, 58, 72, 73, 86, 109, 112 |
| Bone meal..... | Tables 2, 17, 26, 58, 72, 73, 96, 99, 101, 103, 112 |
| Rock phosphate..... | Tables 2, 13, 17, 26, 29, 33, 37, 47, 52, 58, 72, 73, 86, 96, 99, 101, 103, 109, 112 |
| Slag phosphate..... | Tables 2, 58, 72, 73 |
| Superphosphate..... | Table 13 |

| | |
|--|---|
| Potassium fertilizers | |
| Kainit..... | Standard on most fields |
| Nebraska salts..... | Used on all fields during World War as a substitute for kainit and potassium sulfate |
| Potassium sulfate or potassium chlorid..... | Tables 5, 7, 8, 17, 18, 22, 23, 24, 25, 40, 41, 42, 53, 54, 55, 56, 57, 58, 61, 62, 65, 71, 72, 73, 79, 80, 81, 88, 91, 97, 98, 99, 100, 101, 102, 103, 108, 110, 111 |
| Comparison of different carriers | |
| Kainit..... | Tables 39, 54, 95 |
| Nebraska salts..... | Table 95 |
| Potassium bearing shale..... | Table 95 |
| Potassium chlorid..... | Table 54 |
| Potassium sulfate..... | Tables 39, 55 |
| Sodium chlorid (common salt), compared with potassium salts..... | Tables 54, 95 |

SOIL EXPERIMENT FIELDS

| | PAGE | | PAGE |
|--------------------|------|------------------------------|------|
| Aledo..... | 47 | McNabb..... | 168 |
| Alhambra..... | 52 | Minonk..... | 170 |
| Antioch..... | 56 | Momence..... | 173 |
| Auburn..... | 60 | Mt. Morris..... | 176 |
| Bloomington..... | 62 | Myrtle..... | 181 |
| Carlinville..... | 65 | Newton..... | 184 |
| Carthage..... | 71 | Oblong..... | 195 |
| Clayton..... | 76 | Odin..... | 200 |
| Cutler..... | 80 | Oquawka..... | 209 |
| DeKalb..... | 83 | Palestine..... | 213 |
| Dixon..... | 87 | Pana..... | 215 |
| DuBois..... | 93 | Raleigh..... | 220 |
| Edgewood..... | 96 | Rockford..... | 223 |
| Elizabethtown..... | 100 | Sibley..... | 228 |
| Enfield..... | 105 | Sidell..... | 231 |
| Ewing..... | 111 | Sparta..... | 235 |
| Fairfield..... | 117 | Spring Valley..... | 241 |
| Galesburg..... | 127 | Tampico..... | 246 |
| Green Valley..... | 131 | Toledo..... | 247 |
| Hartsburg..... | 133 | Union Grove..... | 252 |
| Joliet..... | 137 | Unionville..... | 256 |
| Kewanee..... | 142 | Urbana, Morrow Plots..... | 262 |
| LaMoille..... | 147 | Urbana, Davenport Plots..... | 266 |
| Lebanon..... | 152 | Urbana, South Farm..... | 279 |
| Lincoln..... | 159 | Vienna (old)..... | 295 |
| Manito (old)..... | 161 | Vienna (new)..... | 297 |
| Manito (new)..... | 161 | Virginia..... | 300 |
| Mascoutah..... | 164 | West Salem..... | 306 |

SOIL TYPES

| | | | |
|-------------------------|-----|--------------------------------|-----|
| List of soil types..... | 311 | Description of soil types..... | 313 |
|-------------------------|-----|--------------------------------|-----|



UNIVERSITY OF ILLINOIS-URBANA

Q. 630.71L68
BULLETIN. URBANA
272-275 1926

C002



3 0112 019529137