The Illinois Soil Experiment Fields

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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.

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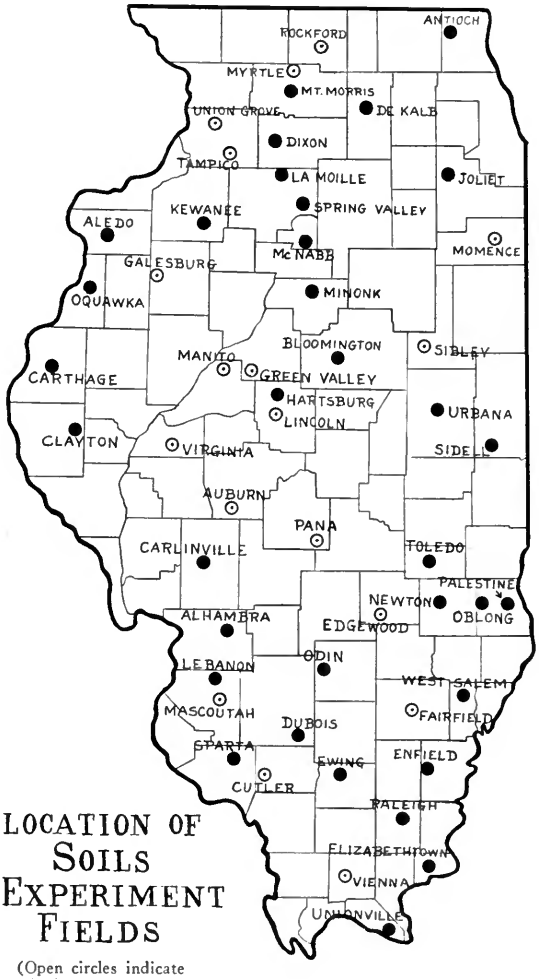

LOCATION OF SOILS EXPERIMENT FIELDS

(Open circles indicate fields discontinued)

THE ILLINOIS SOIL EXPERIMENT FIELDS

By F. C. Bauer, R. S. Smith, and L. H. Smith[1]

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

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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 nitrogeneous 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. ¼ of the S.E. ¼, Sec. 18, Twp. 14 N., R. 3 W. of the 4th P. M.

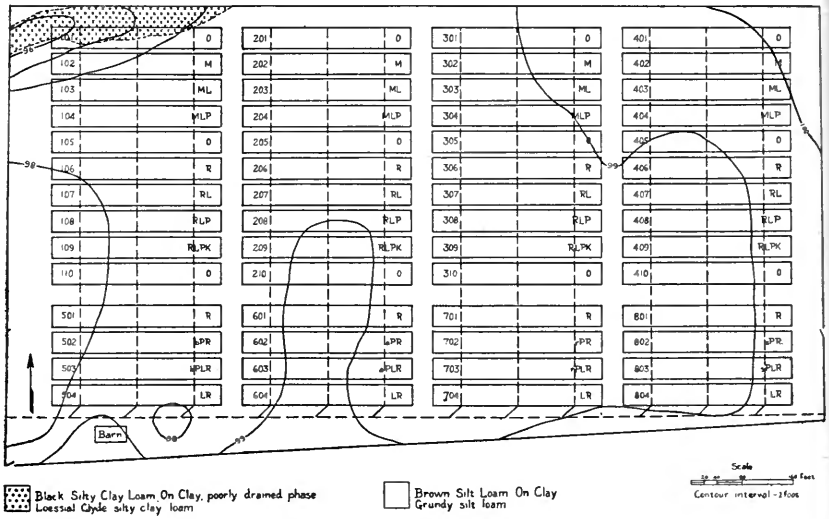
Description.—The field consists of about 20 acres of dark-colored loessial upland soil, which is neutral or slightly acid in reaction. The land is practically uniform both in soil type and in topography. With the exception of a small area on Plot 101, consisting of Black Silty Clay Loam On Clay, poorly drained phase (Loessial Clyde silty clay loam), the field consists entirely of Brown Silt Loam On Clay (Grundy Silt Loam). The land is thoroly tiled 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 cornstalks 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.—ALEDO FIELD: SERIES 100, 200, 300, 400

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1910 Oats[1]	1911 Corn[2]	1912 Oats[4]	1913 Clover[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	1924 Stubble clover[6]
101	0.....	60.2	69.3	49.2	(3.02)	27.0	52.8	51.9	(1.46)	32.6	60.9	67.5	21.3	28.4	47.5	56.9	....
102	M.....	37.5	68.1	38.1	(3.16)	29.2	67.7	62.5	(2.23)	32.2	85.5	73.4	16.2	29.2	75.9	64.7	....
103	ML.....	60.6	67.6	40.8	(3.29)	31.8	67.9	65.8	(2.24)	34.5	75.6	65.8	15.1	32.5	80.5	72.8	(1.65)
104	MLrP.....	60.8	65.1	41.4	(3.55)	34.6	72.2	71.9	(2.38)	39.2	77.1	84.4	13.1	35.1	78.8	74.1	(1.71)
105	0.....	48.1	70.7	40.3	2.33	30.0	56.8	56.2	.50	31.8	62.2	84.2	15.9	25.4	64.9	56.6	....
106	R.....	55.0	64.6	40.6	2.42	30.6	58.3	52.5	.58	35.7	71.7	71.7	15.1	25.0	74.2	59.4	....
107	RL.....	53.4	66.8	45.0	2.67	33.1	61.5	57.8	1.25	38.6	79.4	72.3	17.6	30.7	89.0	74.1	....
108	RLrP.....	46.1	69.2	46.9	1.92	36.1	69.1	60.0	1.75	43.7	78.6	77 7	19.4	34.8	87.8	78.4	....
109	RLrPK....	61.4	65.8	43.1	2.50	32.7	63.1	62.8	1.33	40.7	78.0	79.7	19.8	34.6	88.7	84.1	....
110	0.....	53.1	67.1	45.2	(3.06)	26.8	55.6	58.1	(1.93)	30.3	60.1	63.4	17.5	29.3	58.6	49.7	....

		Soy-beans[1]	Wheat[3]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Corn	Corn
201	0.....	10.7	14 5	69.7	46.4	(1.03)	34.4	40.9	67.3	(3.48)	36.1	64.6	49.8	(2.22)	71.7	49.8
202	M.....	11.0	14.7	78.8	43.4	(1.40)	40.8	50.9	68.3	(3.71)	34.5	73.8	57.0	(2.99)	83.5	57.6
203	ML.....	15.3	12.3	78.2	45.8	(2.54)	49.2	60.0	73.8	(4.36)	26.3	68.3	52.2	(3.21)	89.8	57.2
204	MLrP.....	13.7	9.7	83.1	45.9	(2 59)	50.0	57.9	53.6	(3 87)	27.3	75.4	49.2	(2.94)	97.8	53.8
205	0.....	13.8	13.4	71.6	46.2	1.17	42.5	45.3	72.2	(3.01)	33.1	63.0	53.0	(2.77)	70.9	52.8
206	R.....	14.2	13.7	73.9	40.6	.83	49.6	50.4	83.1	(2.84)	29.1	74.5	55.2	(3.59)	94.5	68.0
207	RL.....	12.8	9.1	78.8	37.8	.83	49.6	52.9	88.3	(2.84)	26.1	80.2	52.5	(3.09)	76.0	66.6
208	RLrP.....	10.8	14.4	84.5	41.7	.83	53.5	53.3	88.1	(3.20)	32.8	81.1	50.5	(3.44)	96.2	72.6
209	RLrPK....	11.3	18.2	88.7	44.5	.17	50.4	52.6	92.3	(3.11)	34.8	79.0	56.4	(3.15)	82.7	77.4
210	0.....	11.7	15.0	80.5	45.5	(1.24)	39.6	48.7	75.5	(4.59)	36.8	64.5	45.9	(2.74)	68.7	47.6

[1]No soil treatment. [2]Residues only. [3]No manure or lime. [4]Residues and lime only. [5]No manure. [6]Clover seeded on all plots, but only on Plots 103 and 104 was there enough to harvest.

TABLE 1.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1910 Oats[1]	1911 Soy-beans[2]	1912 Wheat[3]	1913 Corn	1914 Oats	1915 Soy-beans	1916 Wheat	1917 Corn	1918 Oats	1919 Soy-beans	1920 Wheat	1921 Corn	1922 Oats	1923 Wheat	1924 Corn
301	0	64.1	15.7	11.5	45.8	42.2	(1.38)	10.2	40.5	74.8	(1.29)	34.8	65.3	65.0	19.4	42.8
302	M	58.6	17.1	12.6	44.2	51.6	(1.48)	22.2	55.5	76.9	(1.80)	41.5	71.2	68.3	25.0	66.8
303	ML	64.7	15.9	11.7	51.0	52.3	(1.52)	15.8	64.4	83.3	(1.76)	39.7	77.2	72.2	22.6	70.2
304	MLrP	57.3	13.6	13.8	49.9	53.1	(1.59)	19.2	68.7	73.4	(1.93)	43.2	74.7	70.3	22.6	67.6
305	0	68.8	16.9	18.1	43.3	51.2	19.8	12.0	54.9	72.3	12.6	35.2	64.5	53.8	19.2	42.2
306	R	64 5	15.8	14.4	46.0	51.6	19.8	12.2	53.7	71.4	14.5	29.9	58.6	52.2	19.6	52.0
307	RL	67.2	17.1	10.0	50.1	51.9	22.5	9.2	64.4	78.3	16.2	31.7	74.0	69.8	23.5	71.6
308	RLrP	55.9	13.3	10.8	48.8	55.2	24.0	12 8	68.6	78.1	17.6	38.5	66.0	68.8	22.8	70.4
309	RLrPK	66.7	13.2	13.3	50.5	52.5	24.8	16.2	70.1	72.3	18.1	38.2	67.0	64.8	22.0	76.0
310	0	53.6	15.0	9.0	44.8	45.8	(1.44)	13.7	55.6	66.6	(1.37)	37.8	59.7	53.4	17.0	32.8
		Corn[1]	Oats[2]	Soy-beans[4]	Wheat[3]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Wheat	Corn	Oats	Wheat
401	0	45.9	53.3	15.2	39.6	43.7	71.9	(3.26)	21.4	78.8	53.3	(1.84)	40.9	67.4	58.0	33.2
402	M	74.9	51.7	15.0	37.7	57.6	82.0	(3.63)	23.3	85.8	54.2	(2.46)	48.4	84.3	58.4	41.2
403	ML	81.2	53.4	15.4	38.0	60.0	89.7	(3.90)	18.6	90.3	49.5	(2.48)	50.8	85.5	77.2	45.9
404	MLrP	82.1	51.6	15.8	37.7	62.9	93.4	(3.86)	19.4	89.4	51.9	(2.68)	50.5	82.6	83.8	40.2
												hay seed				
405	0	80.9	39.7	16.4	38.2	38.7	73.4	.25	28.2	81.8	49.7	(1.57) 2.75	41.7	71.7	56.3	32.5
406	R	67.7	60.3	15.2	42.3	47.9	74.5	.33	26.9	85.2	51.4	(1.58) 1.71	43.8	74.7	67.7	34.3
407	RL	67.4	62.8	14.6	38.8	48.3	83.6	.25	28.0	97.1	52.3	(1.51) .96	45.0	77.7	69.4	38.0
408	RLrP	71.7	62.5	16.4	40.0	48.4	81.2	.25	28.2	96.7	50.9	(1.48) 1.50	50.6	79.0	74.1	39.2
409	RLrPK	77.8	55.5	15.8	38.9	52.7	93.8	.18	22.7	98.3	53.0	(1.28) 1.17	42.2	78.5	74.5	41.8
410	0	67.1	52.3	14.5	34.7	40.7	58.3	(2.30)	20.8	72.8	47.3	(1.50)	40.7	62.5	74.1	30.5

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

TABLE 2.—ALEDO FIELD: SERIES 500, 600, 700, 800

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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

[1]No residues.

ALHAMBRA FIELD, MADISON COUNTY

ESTABLISHED 1918

Location.—About one mile south of Alhambra. The E. ½ of the S. ½ of the S.E. ¼, Sec. 14, Twp. 5 N., R. 6 W. of the 3d P. M.

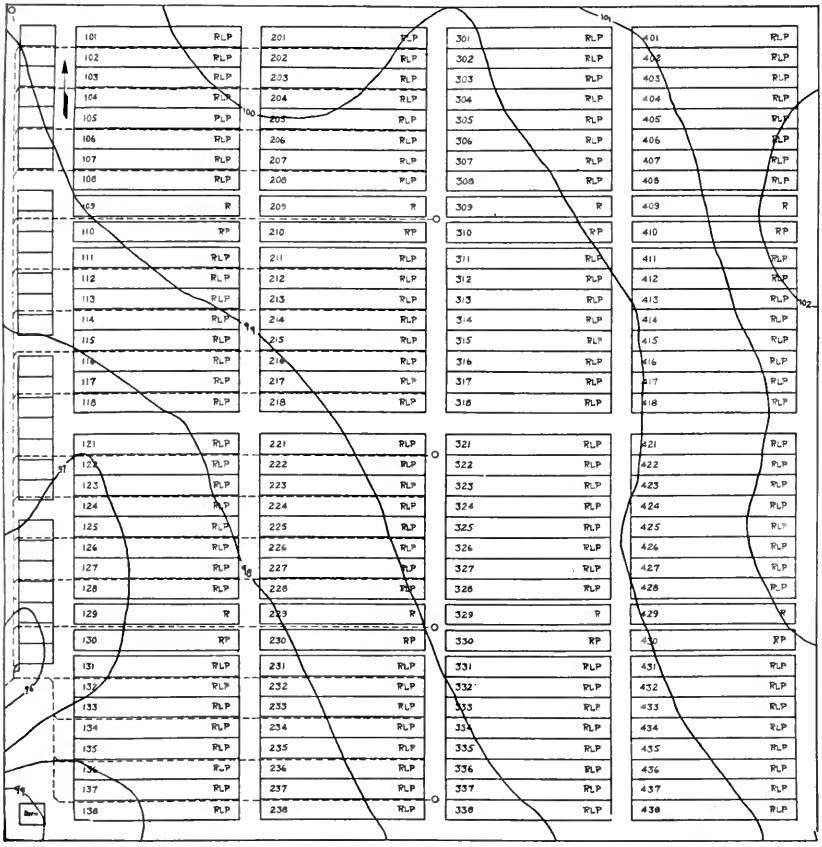
Description.—The field consists of 40 acres of dark-colored loessial soil of medium to strong acidity. Only one soil type has been mapped on the field, namely, Brown-Gray Silt Loam On Tight Clay (Putnam silt loam).

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.



Brown-Gray Silt Loam On Tight Clay
Putnam silt loam

Contour Interval - 1 foot

Scale

SOIL MAP OF ALHAMBRA FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1918 Soybeans[2]	1919 Corn[3,4]	1920 Oats[3]	1921 Clover[3]	1922 Wheat	1923 Corn	1924 Oats
101	RLrP	14.9	....	44.9	1.45	31.7	29.0	37.2
108	RLrP	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	....	32.2	19.2	42.7
111	RLrP	9.7	....	42.6	1.45	30.7	21.0	47.5
118	RLrP	8.6	....	43.0		32.4	27.9	46.5

Plot No.	Soil treatment applied	Soybeans[2]	Oats[3]	Soybeans[3]	Wheat	Corn	Oats	Soybeans
121	RLrP	7.2	31.8	13.2	18.1	44.9	33.6	15.1
128	RLrP	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	RLrP	4.5	26.7	11.9	12.9	26.3	28.6	12.9
138[1]	RLrP	1.1	22.5	9.0	8.1	6.0	16.5	9.0

Plot No.	Soil treatment applied	Soybeans[2]	Soybeans[3]	Wheat	Corn	Oats	Soybeans	Soybeans
201	RLrP	14.4	12.6	25.6	26.1	6.6	27.3	17.7
208	RLrP	12.7	14.0	14.8	28.8	7.1		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	RLrP	14.8	12.5	5.6	32.2	3.7	26.9	18.8
218	RLrP	10.6	12.8	8.8	46.6	6.8		19.5

Plot No.	Soil treatment applied	Soybeans[2]	Wheat	Corn	Oats	Clover	Wheat	Corn
221	RLrP	(.88)	14.3	..[5]	21.3	.47	36 8	43.2
228	RLrP	(1.01)	19.5	17.0	25.2		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	RLrP	(.87)	17.3	20.3	23.7	.53	38.3	48.8
238[1]	RLrP	(.38)	11.6	11.2	10.1		29.6	36.0

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

TABLE 4.—ALHAMBRA FIELD: UNTILED SECTION, SERIES 300, 400

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1918 Soybeans[2]	1919 Corn[2,4]	1920 Oats[2]	1921 Clover[2]	1922 Wheat	1923 Corn	1924 Oats
301	RLrP	8.4	....	43.4	.82	34.4	28.3	52.2
308	RLrP	12.8	....	33.1		31.4	19.6	37.0
309	R	13.0	....	37.0	.98	29.4	18.9	24.8
310	RrP	11.7	....	25.7	.93	28.5	14.7	22.7
311	RLrP	11.0	....	28.5	1.16	29.6	18.3	37.1
318	RLrP	10.9	....	37.8		30.8	26.5	31.8

Plot No.	Soil treatment applied	Soybeans[2]	Oats[2]	Soybeans[2]	Wheat	Corn	Oats	Soybeans
321	RLrP	7.5	29.9	11.4	19.4	39.5	29.1	11.8
328	RLrP	7.0	32.1	12.2	18.8	30.6	32.7	10.4
329	R	8.7	30.7	15.3	16.6	32.0	28.5	10.4
330	RrP	5.1	35.5	12.9	16.1	19.7	22.5	9.2
331	RLrP	5.6	37.8	15.4	17.3	28.1	37.0	9.7
338[1]	RLrP	1.7	21.3	15.1	11.2	15.8	27.4	10.4

Plot No.	Soil treatment applied	Soybeans[2]	Soybeans[2]	Wheat	Corn	Oats	Soybeans	Soybeans
401	RLrP	8.6	12.7	28.7	19.8	5.9	30.5	19.4
408	RLrP	11.6	15.2	11.0	32.9	7.5		20.2
409	R	11.9	16.3	8.7	26.9	6.7	27.4	14.8
410	RrP	9.5	15.7	17.9	35.5	5.5	26.6	14.3
411	RLrP	11.1	16.2	11.5	42.1	7.0	29.9	18.4
418	RLrP	8.0	13.3	19.9	33.6	6.3		17.2

Plot No.	Soil treatment applied	Soybeans[2]	Wheat	Corn	Oats	Clover	Wheat	Corn
421	RLrP	(.67)	14.3	..[5]	25.6	.52	37.8	22.6
428	RLrP	(.63)	19.5	6.6	20.7		36.8	31.2
429	R	(.60)	11.9	10.2	17.0	.72	29.5	13.1
430	RrP	(.60)	17.7	14.3	21.0	.59	32.7	8.1
431	RLrP	(.69)	17.3	21.3	25.2	.73	34.4	19.0
438[1]	RLrP	(.46)	11.6	14.7	14.9		25.3	35.8

[1]Plots 338 and 438 are affected by a hedge fence. [2]No soil treatment in 1918. [3]Residues only. [4]Corn failed in 1919. [5]Corn in 1920 on Plot 421 destroyed by chinch bugs.

ANTIOCH FIELD, LAKE COUNTY

ESTABLISHED 1902

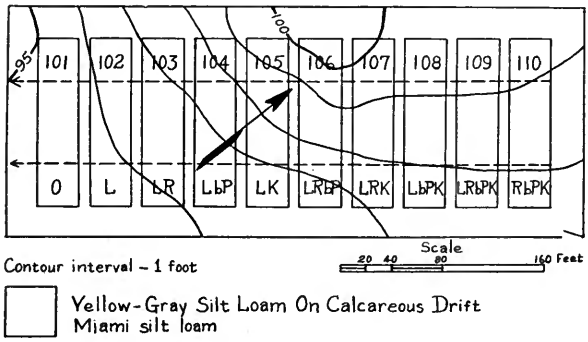
Location.—Three miles southeast of Antioch on the farm of Mr. D. M. White. A part of the N.W. ¼ of the S.W. ¼ of the N.E. ¼, Sec. 22, Twp. 46 N., R. 10 E. of the 3rd P. M. A part of this field which was discontinued in 1911 lay adjacent to the above described land and another portion, also nearby, which was also discontinued in 1911, was a part of the N.E. ¼ of the S.E. ¼ of the N.W. ¼, 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 tiled 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.



SOIL MAP OF ANTIOCH FIELD

(Map of present plots—Series 100)

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied[1]	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	1913 Clover	1914 Wheat	1915 Corn[3]	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

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

TABLE 6.—ANTIOCH FIELD: SERIES 200, 300

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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[3]	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	(.93)	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]

[1]Phosphate only. [2]Phosphate and legume treatment only. [3]No manure. [4]No 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. ¼ of the S.E. ¼, 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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1905 Clover[1, 2]	1906 Cowpeas[1, 3]	1907 Corn[5]	1908 Corn	1909 Oats	1910 Clover	1911 Corn	1912 Corn
101	0	....	....	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	0	....	....	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	0	....	....	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	0	....	....	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	0	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	(.85)
205	0	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	(2.19)	48.5	58.6	59.1	(1.30)
210	0	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	0	38.8	36.6	24.7	(.92)	43.5	39.8	41.1	(1.37)

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

BLOOMINGTON FIELD, McLEAN COUNTY

ESTABLISHED 1902

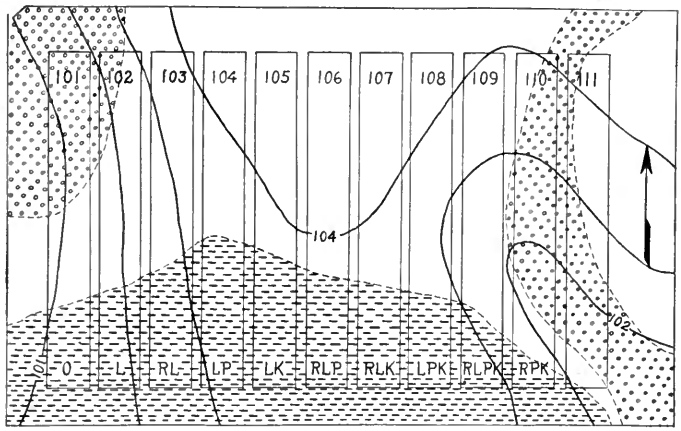
Location.—About 2½ miles northeast of Bloomington on the S. Noble King farm. A part of the N.E. ¼ of the N.W. ¼ of the S.W. ¼, Sec 25, Twp. 24 N., R. 2 E. of the 3d P. M.

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

Brown Silt Loam
Muscatine silt loam

Black Clay Loam, poorly drained phase
Loessial Clyde clay loam

Scale
20 40 80 160 Feet

Contour interval – 1 foot

SOIL MAP OF BLOOMINGTON FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied[1]	1902 Corn	1903 Corn	1904 Oats	1905 Wheat	1906 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	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	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

[1]Commercial nitrogen was used from 1902 to 1905. [2]Clover partly smothered in 1906 by previous wheat crop. [3]Soybeans 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. ½ of the S.E. ¼ of the S.E. ¼, 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.

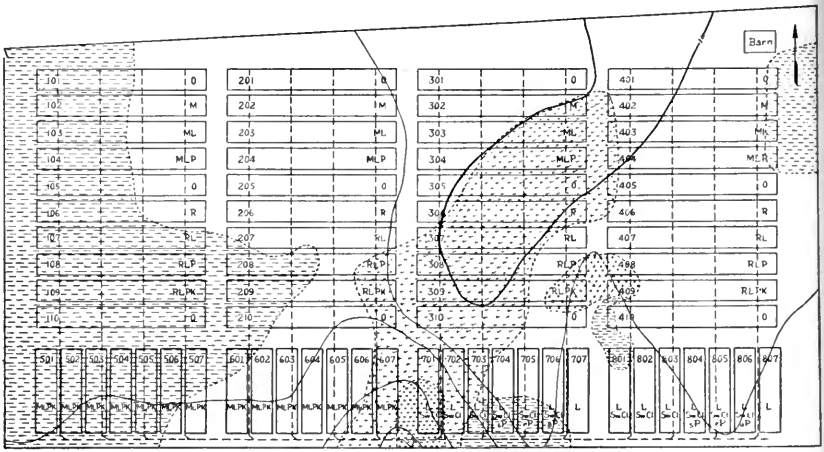
Cropping and Soil Treatment.—In 1910 the somewhat standard rotation and soil treatment described in the introduction were established on Series 100, 200, 300, and 400. Beginning with 1921 the clover on the grain system plots was harvested for hay rather than seed. At that time the return of oat straw 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, 8½ 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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	(.05)	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	(1.76)	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	...[3]	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	...[3]	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	...[3]	43.4	43.3	54.7	30.4	21.5	53.8	51.1
108	RLrP	10.3	49.4	27.5	17.8	17.2	71.8	55.0	...[3]	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	...[3]	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	16.7

		Cow-peas[1]	Wheat[2]	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

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

TABLE 9.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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 Soybeans	1924 Oats[2]
301	0.....	32.5	(.82)	7.3	21.1	1.9	(2.31)	5.0	39.2	44.5	(.25)	15.9	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)	19.5	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	(1.86)	39.4	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)	39.1	59.4	27.8	22.1	63.9
305	0.....	45.6	(1.51)	9.8	23.2	3.4	.50	9.0	60.1	48.8	(.31)	18.4	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)	15.0	53.0	17.7	24.1	65.5
307	RL.....	46.6	.33	12.7	18.7	3.9	.50	11.4	63.7	58.3	(1.85)	34.3	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)	37.8	58.2	23.4	29.8	67.7
309	RLrPK....	40.6	.33	19.0	17.7	4.4	.25	18.2	71.8	48.4	(1.84)	36.7	66.2	24.5	30.3	68.0
310	0.....	38.8	(.97)	18.8	25.0	3.1	(1.95)	9.0	48.6	47.7	(.58)	14.0	55.6	11.4	16.8	55.2

		Corn[1]	Oats[2]	Soybeans[2]	Wheat[2]	Corn	Oats	Clover	Wheat	Corn	Oats	Sweet clover	Wheat	Corn	Oats	Clover
401	0.....	48.7	30.6	(1.11)	10.9	3.3	71.7	(1.17)	13.2	9.4	35.6	(.09) 2.88	19.9	37.7	38.8	(1.94)
402	M.....	49.6	21.1	(1.19)	7.2	6.6	74.7	(1.48)	15.8	18.7	52.2	(.28) 3.16	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	47.0	(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	46.7	(2.39)	26.2	56.9	51.1	(3.73)
405	0.....	49.5	38.4	11.3	7.7	2.5	68.8	2.75	19.8	14.0	29.1	(.28) 5.09	23.3	39.5	42.5	(2.39)
406	R.....	43.7	30.3	12.6	15.3	3.0	71.1	2.75	9.7	28.5	54.1	(.19) 4.62	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	40.3	(1.76)	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	42.7	(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	37.5	(1.83)	29.7	59.3	49 2	(4.06)
410	0	45.6	33.8	11.5	8.7	3.5	69.1	(1.20)	15.6	13.3	35.0	(.19) 3.72	19.2	37.8	43.1	(1.83)

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

TABLE 10.—CARLINVILLE FIELD: PLOTS A AND B

Bushels or (tons) per acre

Crop	Soil treatment applied	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)

[1]Soybeans. [2]Stubble 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)

Bushels or (tons) per acre

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

TABLE 12.—CARLINVILLE FIELD: PLOTS C AND D

Bushels or (tons) per acre

Crop	Soil treatment applied	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
Timothy	None	(1.84)	(1.57)	(.41)	(.63)	(1.67)	(.85)	(.54)	(1.62)	(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)

[1]Soybeans 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)

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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])		Corn[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

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

CARTHAGE FIELD, HANCOCK COUNTY

ESTABLISHED 1911

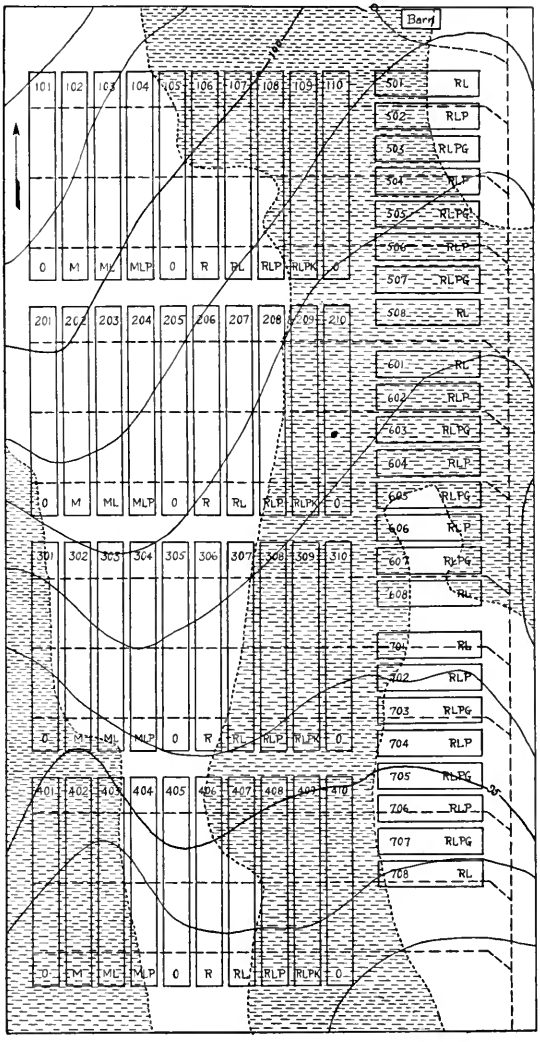
Location.—Five blocks south of the courthouse in Carthage. A part of the E. ½ of the S.W. ¼ of the S.W. ¼, Sec. 19, Twp. 5 N., R. 6 W. of the 4th P. M.

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 plotted 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 40 80 160 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	1911 Corn[1]	1912 Oats[3]	1913 Clover[6]	1914 Wheat[6]	1915 Corn	1916 Oats	1917 Clover	1918 Wheat	1919 Corn	1920 Oats	1921 Clover	1922 Wheat	1923 Corn	1924 Oats
101	0	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	M	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)	26.6	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	0	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	0	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

		Wheat[2]	Corn[4]	Oats	Clover	Wheat	Corn	Oats	Clover	Wheat	Corn	Oats	Soy-beans	Wheat	Corn
201	0	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	0	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	85.6
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	0	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

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

TABLE 14.—*Concluded*

Plot No.	Soil treatment applied	1911 Soybeans[1]	1912 Wheat[2]	1913 Corn	1914 Oats	1915 Soybeans	1916 Wheat	1917 Corn	1918 Oats	1919 Soybeans	1920 Wheat	1921 Corn	1922 Oats	1923 Soybeans	1924 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	(2.99)	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

		Oats[1]	Soybeans[3]	Wheat[4]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Wheat	Corn	Oats	Clover
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) 2.32	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) 1.98	20.3	64.2	38.0	(2.53)
407	RL	13.3	14.6	24.2	47.2	54.7	.08	21.7	33.3	40.0	(1.21) 2.02	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	(1.89) 2.05	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) 1.82	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)

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

TABLE 15.—CARTHAGE FIELD: SERIES 500, 600, 700

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1920 Corn	1921 Oats	1922 Corn	1923 Corn	1924 Oats	1924 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)

Plot No.	Soil treatment applied	Corn	Corn	Oats	Stubble clover	Corn	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)	68.6	71.4	43.4	(.98)	68.8	61.8
608	RL	70.8	64.2	44.1	(.98)	72.6	57.6

Plot No.	Soil treatment applied	Oats	Corn	Corn	Oats	Stubble clover	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	50.2	46.3	(1.27)	71.8
705	RLrP (200) Gypsum (200)	48.1	60.8	54.4	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)	77.0
708	RL	38.8	59.6	60.0	47.5	(1.40)	69.2

CLAYTON FIELD, ADAMS COUNTY

ESTABLISHED 1911

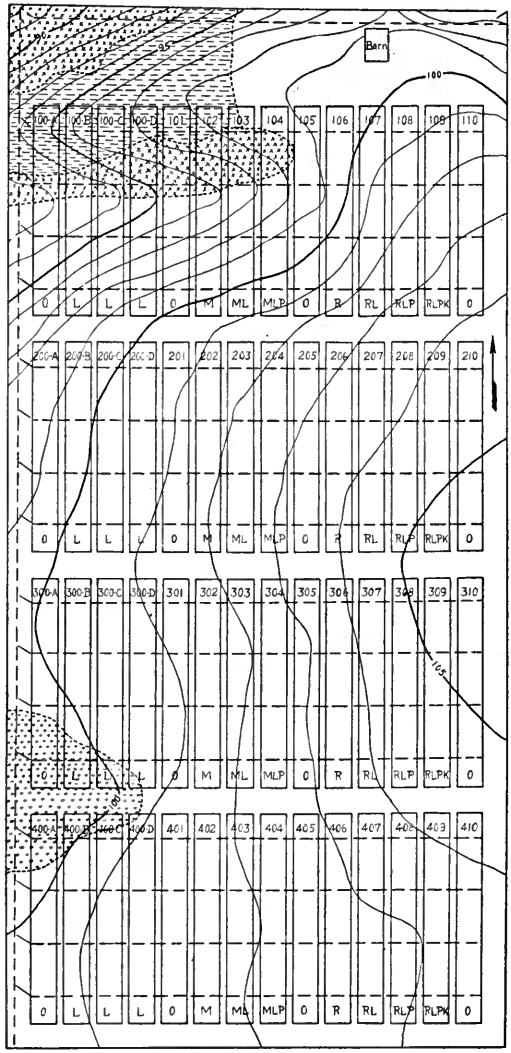
Location.—About one-quarter mile south of Clayton. A part of the W. end of the N. ½ of the S.W. ¼, Sec. 35, Twp. 1 N., R. 5 W. of the 4th P. M.

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 tiled 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 50 100 150 Feet

Contour interval - 1 foot

SOIL MAP OF CLAYTON FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	.....	....	....	....	....	....	....	....	....	....	....	17.3	17.4	61.9	38.8
100B	.....	....	....	....	....	....	....	....	....	....	....	23.0	20.2	47.4	39.4
100C	.....	....	....	....	....	....	....	....	....	....	....	24.2	20.3	55.0	36.9
100D	.....	....	....	....	....	....	....	....	....	....	....	22.9	9.9	62.8	43.4
101	0.....	45.8	43.0	10.3	5.0	23.3	19.2	(2.01)	27.3	37.7	22.3	20.1	15.3	41.7	36.4
102	M.....	50.0	42.3	(1.49)	4.8	27.3	21.6	(2.51)	30 2	50.3	38.1	18.8	15.4	60.5	48.1
103	ML.....	52.4	39.3	(1.58)	5.3	28.6	20.8	(3.26)	42.8	47.9	32.8	28.1	21.4	69.1	64.8
104	MLrP.....	48.7	46.9	(1.50)	5.4	31.5	23.0	(3.55)	47.0	41.6	40.6	21.5	24.7	72.0	65.2
105	0.....	54.6	44.1	12.1	6.2	25.6	20.3	1.92	33.3	30.1	25.9	21.3	14.8	51.2	45.0
106	R.....	56.5	40.0	12.5	8.5	36.0	20.2	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	2.17	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	38.6	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	35.9	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	25.9	(2.94)	31.2	49.3	46.1	17.5	15.3	50.1	39.8

		Oats[1]	Corn[3]	Oats	Soy-beans	Wheat	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Wheat	Corn
200A	.....	....	....	....	....	....	....	....	....	....	....	36.4	(2.45)	27.3	54.9
200B	.....	....	....	....	....	....	....	....	....	....	....	37.5	(2.85)	28.1	56.0
200C	.....	....	....	....	....	....	....	....	....	....	....	39.4	(2.93)	29.1	55.3
200D	.....	....	....	....	....	....	....	....	....	....	....	13.9	(2.49)	27.5	60.1
201	0.....	19.5	35.4	45.5	(1.28)	11.2	17.1	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	21.4	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	21.5	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	21.0	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	15.2	65.9	(2.06) 1.00	20.3	53.2	31.2	(2.40)	22.4	41.1
206	R.....	18.1	52.1	45.9	16.7	16.2	26.7	69.8	(2.18) .83	19.8	59.2	32.0	(2.25)	29.3	48.4
207	RL.....	18.9	50.5	48.3	18.3	16.1	26.8	82.8	(2.18) .58	19.3	65.7	34.2	(3.00)	30.9	66.8
208	RLrP.....	20.9	54.4	52.2	19.6	30.2	26.9	77.5	(2.54) .58	20.0	70.1	39.8	(3.53)	31.8	72.4
209	RLrPK.....	17.5	55.5	47.7	17.1	29.2	24.6	83.6	(2.29) .42	21.2	71.6	41.9	(3.59)	32.8	78.5
210	0.....	25.0	36.2	45.5	14.0	14.8	15.1	65.9	(2.60)	20.3	46.1	30.6	(2.02)	24.0	34.4

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

TABLE 16.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1911 Soybeans[1]	1912 Barley[2]	1913 Corn	1914 Oats	1915 Soybeans	1916 Wheat	1917 Corn	1918 Oats	1919 Soybeans	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	(1.55)	16.4	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	(1.66)	30.8	52.3	26.4	(1.42)	20.7
303	ML.....	13.0	20.2	55.1	13.3	(2.83)	3.9	61.2	50.6	(1.86)	27.5	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	(1.62)	32.8	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	23.1	11.0	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	20.8	11.5	58.4	26.1	(1.33)	16.0
307	RL.....	14.8	22.2	52.2	16.6	19.2	5.6	59.9	57.0	23.5	19.6	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	25.0	21.9	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	27.5	22.7	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	(1.38)	19.2	43.9	21.9	(1.17)	10.5

		Oats[1]	Soybeans[3]	Wheat[4]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Wheat	Corn	Oats	Clover
400A	.....	....	....	....	....	....	....	....	....	....	....	28.4[5]	32.1	32.8	(3.59)
400B	.....	....	....	....	....	....	....	....	....	....	....	32.7[5]	40.0	37.5	(3.80)
400C	.....	....	....	....	....	....	....	....	....	....	....	38.6[5]	40.8	39.1	(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	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	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	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	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) .96	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) .83	24.1	30.4	46.9	(2.40)
407	RL.....	33.3	16.9	33.8	41.6	62.5	1.00	21.5	44.6	43.0	(2.92) .80	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) 1.71	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) .96	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	48.4	(2.95)

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

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. ½ of the S.E. ¼ of the N.W. ¼, 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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	RLaPK....	....	....	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	(.63)	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	(.73)	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	(.69)	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	(.61)	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	(.96)	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	LaPK.....	....	....	24.2	(2.40)	52.7	51.9	18.3	(1.04)	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	(1.11)	49.3	24.4	(.64)	26.2	8.8	34.2	(1.15)	42.1

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

TABLE 18.—CUTLER FIELD: SERIES 200

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	0	(.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	5.8	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	15.9	35.9	11.5	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	....	20.3	30.6	(1.64)	26.5	31.3	4.6	20.2	44.0	11.8	5.7	25.5	....	2.2	43.8	13.4
207	MLbP	(.95)	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	....	26.8	60.0	(1.82)	30.4	57.8	6.8	19.0	69.5	15.0	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)

		Oats[3]	Cow-peas[4]	Wheat	Corn	Cow-peas	Wheat	Corn	Soy-beans[4]	Wheat	Corn	Soy-beans	Wheat	Corn	Soy-beans[4]	Wheat	Corn
211	0	19.6	....	9.0	24.1	(.43)	14.8	27.0	(.43)	7.3	22.9	(1.08)	8.8	3.0	....	.2	29.9
212	R	23 8	....	8.5	52.0	2.6	16.6	26.6	....	11.8	24.6	10.7	5.6	6.4	....	.2	34.2
213	M	26.6	....	18.2	51.1	(.81)	25.2	43.0	(.95)	10.2	31.4	(1.20)	8.3	9.0	....	.2	39.7
214	RL	26.9	....	8.8	57.7	3.2	26.1	37.6	....	21.9	44.0	15.0	21.1	11.5	....	2.2	48.0
215	ML	27.8	....	18.4	69.7	(1.03)	30.7	50.3	(1.35)	15.5	43.8	(1.61)	17.8	14.4	....	1.8	57.5
216	RLbP	28.0	....	14.3	57.3	5.2	32.0	38.6	....	26.7	47.6	14.3	32.2	6.4	....	2.3	48.3
217	MLbP	25.1	....	19.7	69.3	(1.40)	37.2	50.7	(1.25)	18.3	52.0	(1.78)	29.7	3.8	....	2.4	57.8
218	RLbPK	31.1	....	16.4	71.3	9.8	36.7	53.9	....	27.6	54.5	17.9	31.7	1.0	....	1.3	59.0
219	MLbPK	28.8	....	19.7	64.7	(1.97)	36.3	54.8	(1.33)	17.3	50.4	(1.90)	29.6	.1	....	1.6	59.5
220	LbPK	26.7	....	15.0	37.5	(1.73)	29.5	50.9	(1.56)	14.2	37.7	(1.79)	23.3	1.0	....	1.5	50.1

		Wheat[3]	Corn[5]	Cow-peas[4,5]	Wheat	Corn	Cow-peas	Wheat	Corn	Soy-beans	Wheat	Corn	Soy-beans	Wheat	Corn	Soy-beans	Wheat
221	0	12.8	4.0	....	8.7	28.6	(.58)	6.4	17.5	(1.45)	5.6	22.2	(.14)	7.2	.1	(.46)	9.5
222	R	12.3	3.7	....	12.8	30.9	(.68)	5.5	22.6	13.1	5.0	26.4	.8	8.8	.1	3.4	7.4
223	M	12.4	3.5	....	14.9	33 2	(.73)	7.0	25.9	(1.73)	5.8	43.5	(.18)	10.2	.3	(.63)	13.2
224	RL	13.2	3.7	....	13.8	28.1	(.90)	10.6	35.8	17.5	9.0	38.4	1.5	20.9	4.8	7.8	20.0
225	ML	12.9	3.6	....	20.1	35.1	(1.05)	13.8	36.6	(2.16)	10.4	53.9	(.39)	22.4	6.1	(1.74)	27.9
226	RLbP	16.9	2.4	....	18.2	29.1	(1.11)	16.4	33.8	17.6	12.6	42.3	1.1	21.9	3.5	7.1	19.6
227	MLbP	16.1	2.1	....	20.1	32.8	(.93)	15.6	31.6	(2.30)	14.8	52.4	(.41)	19.8	4.2	(1.62)	26.3
228	RLbPK	20.8	3.7	....	23.5	48.4	(1.96)	21.4	41.8	22.5	18.3	59.9	1.4	23.4	1.0	12.9	14.6
229	MLbPK	19.4	6.1	....	23.0	35.3	(2.27)	20.7	34.2	(2.59)	18.7	47.8	(.59)	20.4	3.3	(1.92)	32.1
230	LbPK	20.8	9.2	....	21.5	37.2	(2.19)	17.7	32.6	(2.67)	18.7	46.9	(.54)	22.7	3.2	(1.58)	26.6

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

DEKALB FIELD, DEKALB COUNTY

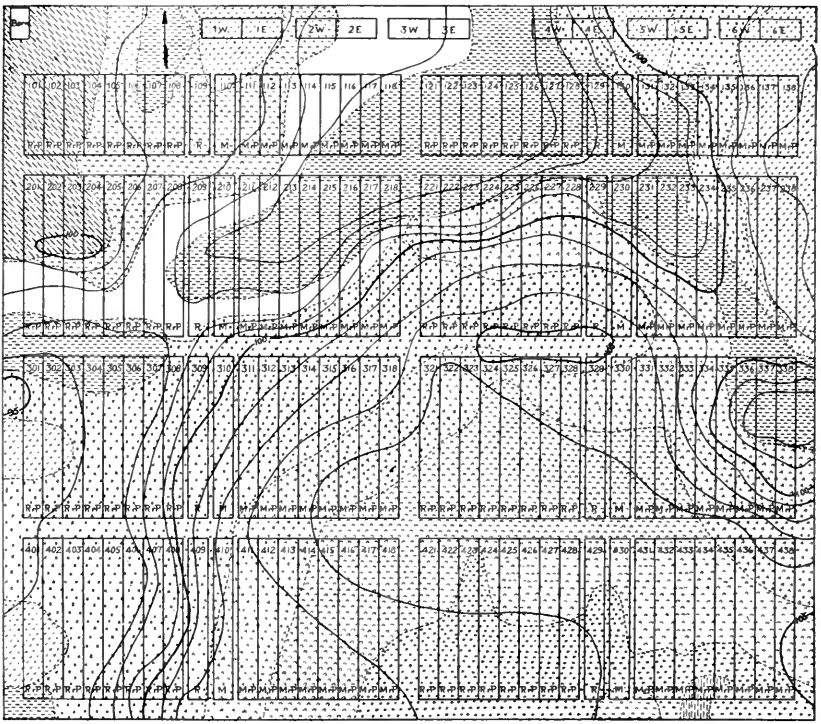
ESTABLISHED 1906

Location.—About one mile south of DeKalb on land owned by the Fairview Park Cemetery Association. A part of the S.E. ¼ of the S.E. ¼, 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.



SOIL MAP OF DE KALB FIELD

TABLE 19.—DE KALB FIELD: ROTATION, CORN, CORN, OATS, CLOVER

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1906 Corn	1907 Corn	1908 Oats	1909 Clover	1910 Corn	1911 Corn	1912 Oats	1913 Clover	1914 Corn	1915 Corn	1916 Oats	1917 Clover	1918 Corn	1919 Corn	1920 Oats	1921 Soybeans	1922 Corn	1923 Corn	1924 Oats
103	RrP	74.8	33.0	44.1	0.00	58.9	62.4	76.6	0.00	69.6	37.8	68.4	0.00	51.7	56.2	49.5	19.9	63.7	56.0	83.9
106	RrP	76.2	37.8	40.9	0.00	62.4	64.1	76.1	0.00	78.3	39.7	63.9	0.00	57.9	64.1	49.5	21 6	71.1	61.7	89.5
109	R	73.0	35.3	44.1	0.00	55.7	54.5	63.1	0.00	68.4	33.3	62.1	0.00	47.1	56.1	50.2	19.5	69.8	42.0	61.8
110	M	72.8	35.5	40.6	(1.80)	54.2	56.0	66.2	(1.26)	78.7	30.4	69.1	(.79)	55.0	52.8	63.8	(1.54)	72.6	56.0	67.1
113	MrP	66.0	30.4	45.6	(2.40)	58.6	59.3	74.1	(1.74)	76.9	39.6	66.6	(.59)	53.2	64.1	66.1	(1.39)	67.4	43.9	78.8
116[1]	MrP	51.6	0.0	28.1	(2.00)	45.2	0.0	60.5	(1.74)	79.7	33.3	54.4	(.52)	62.9	64.6	66.1	(1.38)	73.2	40.1	67.9

Plot No.	Soil treatment applied	Corn	Oats	Clover	Corn	Corn	Oats	Soybeans	Corn	Corn	Oats	Clover	Corn	Corn	Oats	Clover	Corn	Corn	Oats	Clover
203	RrP	64.6	28.1	(2.45)	56.8	48.4	38.6	(.45)	58.3	50.4	68.5	0.00	17.2	51.3	62.1	2.90	59.6	62.3	83.1	1.48
206	RrP	66.6	28.7	(2.87)	47.1	45.2	39.2	(.90)	61.2	58.0	69.2	0.00	16.0	48.5	53.3	3.70	55.1	62.9	82.2	1.23
209	R	76.4	30.3	(2.40)	59.2	53.9	37.8	(1.20)	68.4	64.9	61.4	0.00	16.9	46.3	60.1	2.80	64.5	56.8	77.7	1.61
210	M	72.4	29.0	(2.60)	68.5	56.8	37.8	(1.10)	63.0	65.6	57.5	(1.84)	21.3	48.6	57.1	(1.94)	58.7	63.0	75.5	(2.26)
213	MrP	45.4	28.1	(2.25)	66.5	52.7	26.9	.. [3]	64.1	62.8	54.0	(1.82)	19.4	46.0	52.7	(1.84)	64.1	56.2	73.2	(2.53)
216	MrP	76.0	28.9	(2.32)	63.0	46.4	27.0	.. [3]	58.8	62.5	64.6	(1.82)	22.2	43.5	49.9	(1.67)	64.7	52.5	76.5	(2.36)

Plot No.	Soil treatment applied	Oats	Clover	Corn	Corn	Oats	Clover	Corn	Corn	Oats	Clover	Corn	Corn	Oats	Soybeans	Corn	Corn	Oats	Soybeans	Corn
303	RrP	23.6	(1.38)	66.1	55.1	68.3	0.00	63.7	54.4	53.2	2.00	46.1	11.3	83.5	15.9	49.1	54.5	30.3	12.3	30.9
306	RrP	21.9	(1.38)	67.8	58.2	84.5	0.00	68.0	60.1	49.1	2.00	44.6	13.9	70.9	17.2	52.7		30.5	12.7	31.5
309	R	25.3	(1.25)	66.0	58.2	76.1	0.00	57.6	59.1	47.7	3.70	43.4	9.0	79.7	16.9	46.0	50.8	31.0	7.7	22.9
310	M	24.9	(1.45)	73.3	55.4	71.9	(1.30)	63.7	60.0	42.5	(1.59)	51.6	7.3	77.7	(1.26)	58.6	54.7	30.8	(2.35)	22.9
313	MrP	24.6	(1.69)	69.2	52.8	80.9	(1.50)	83.1	53.4	43.2	(1.88)	53.0	11.2	74.9	(1.28)	88.6	55.3	31.0	(2.00)	24.5
316	MrP	23.7	(1.69)	70.8	54.5	82.7	(1.50)	78.2	55.3	43.4	(1.88)	47.0	8.8	73.0	(1.54)	60.8		31.5	(2.25)	23.1

Plot No.	Soil treatment applied	Cowpeas[2]	Corn	Corn	Oats	Clover	Corn	Corn	Oats	Clover	Corn	Corn	Oats	Clover	Corn	Corn	Oats	Clover	Corn	Corn
403	RrP	....	53.0	43.9	37.5	0.00	78.6	52.4	43.2	3.12	40.5	40.3	67.5	1.49	56.6	44.9	29.2	1.38	58.3	20.8
406	RrP	....	54.9	46.5	43.8	0.00	75.8	60.2	43.6	3.12	44.0	45.7	78.6	1.42	55.4	50.1	28.4	1.45	56.0	21.4
409	R	....	47.7	30.9	50.8	0.00	49.7	39.5	33.6	1.29	26.5	37.9	67.6	.61	48.7	42.6	26.1	1.41	46.4	9.6
410	M	....	65.8	50.9	60.1	(2.44)	63.1	56.7	39.7	(2.54)	35.9	42.2	85.3	(1.51)	62.3	52.7	27.4	(2.29)	58.0	13.5
413	MrP	....	73.5	55.1	69.0	(3.41)	73.7	67.7	51.1	(3.32)	37.5	47.8	94.2	(1.96)	53.8	62.9	29.4	(2.52)	59.7	10.4
416	MrP	....	74.3	54.3	67.3	(3.41)	72.3	62.4	54.7	(3.32)	44.4	45.4	93.1	(1.83)	53.6	59.9	30.5	(2.59)	61.8	23.0

[1]Plot 116 is on an alkali spot. [2]Yields not taken. [3]Growth practically all weeds.

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1906 Corn	1907 Oats	1908 Wheat	1909 Clover	1910 Corn	1911 Oats	1912 Oats	1913 Clover	1914 Corn	1915 Oats	1916 Wheat	1917 Clover	1918 Corn	1919 Oats	1920 Wheat	1921 Soy-beans	1922 Corn	1923 Oats	1924 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	35.6	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

Plot No.	Soil treatment applied	Oats	Wheat	Clover	Corn	Oats	Wheat	Soy-beans	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	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		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)		33.0	39.9	(1.18)

Plot No.	Soil treatment applied	Oats	Clover	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	Clover	Corn
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	25.4	0.00	38.5	80.7	21.1	2.50	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

Plot No.	Soil treatment applied	Soy-beans[1]	Corn	Oats	Oats	Clover	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	Clover	Corn	Oats
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	4.50	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

[1]Yields not taken.

DIXON FIELD, LEE COUNTY

ESTABLISHED 1910

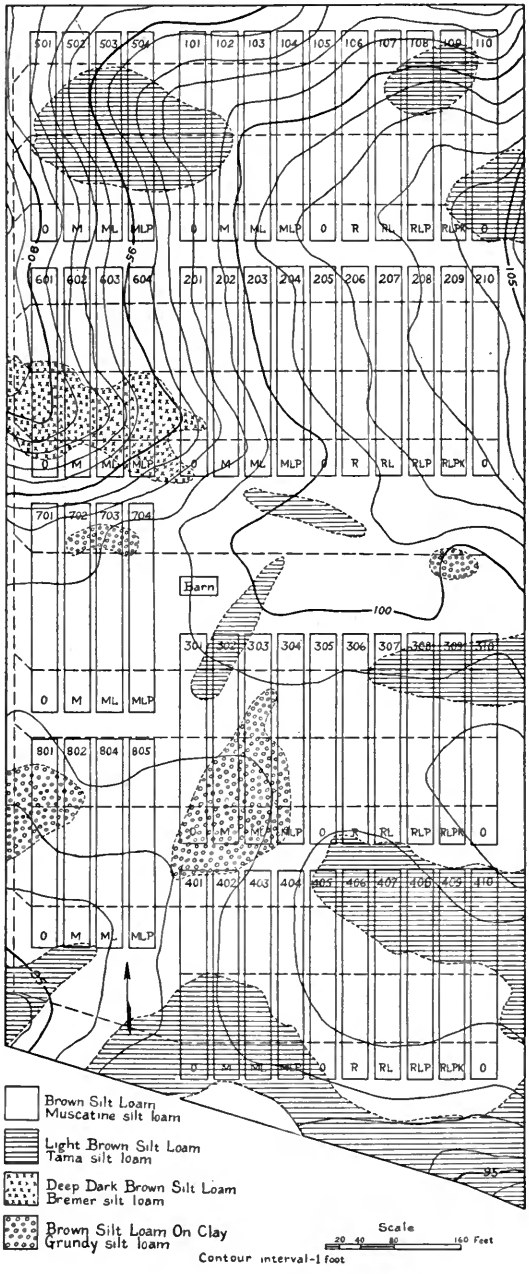
Location.—About two miles west of Dixon on the Lincoln highway. A part of the E. ½ of the S.E. ¼, Sec. 26, Twp. 22 N., R. 8 E. of the 4th P. M.

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1910 Barley[1]	1911 Corn[2]	1912 Oats[3]	1913 Clover[3]	1914 Wheat[7]	1915 Corn	1916 Oats	1917 Soy-beans	1918 Barley[8]	1919 Corn	1920 Oats	1921 Clover	1922 Wheat	1923 Corn	1924 Oats
101	0	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	M	20.8	62.8	39.8	(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	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	81.6	(2.40)	58.3	70.6	86.6	(1.89)	38.2	62.0	71.6
105	0	26.8	64.3	47.8	1.00	32.8	18.5	76.6	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	60.3
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	0	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

		Clover[1]	Wheat[4]	Corn	Oats	Clover	Wheat	Corn	Oats	Soy-beans	Wheat	Corn	Oats	Clover	Wheat	Corn
201	0	(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	M	(1.56)	31.0	12.9[6]	55.6	(2.13)	28.2	44.5	82.3	(1.80)	26.3	42.9	41.9	(2.98)	19.9	57.6
203	ML	(1.54)	33.8	11.4[6]	52.7	(2.54)	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	0	(1.87)	30.5	21.1	58.9	(1.83)	28.0	43.4	76.1	14.6	27.8	44.2	31.4	(2.59)	10.3	45.0
206	R	...[2]	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	...[2]	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	...[2]	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	...[2]	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	0	(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

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

TABLE 21.—*Concluded*

Plot No.	Soil treatment applied	1910 Oats[1]	1911 Soy-beans[2]	1912 Barley[3,4]	1913 Corn	1914 Oats	1915 Clover	1916 Wheat	1917 Corn	1918 Oats	1919 Soy-beans	1920 Wheat	1921 Corn	1922 Oats	1923 Clover	1924 Wheat
301	0	50.0	14.5	17.2	35.5	54.7	(1.35)	7.2	24.9	76.6	(1.25)	19.1	47.9	49.4	(.73)	20.0
302	M	56.9	12.8	30.6	56.6	60.6	(3.38)	9.2	55.3	91.4	(1.90)	30.8	71.3	79.7	(1.97)	33.0
303	ML	57.3	16.7	27.0	60.4	61.1	(3.41)	11.6	57.2	89.1	(1.90)	33.2	78.8	86.1	(2.32)	41.2
304	MLrP	54.5	16.0	32.5	55.3	60.6	(3.57)	18.2	60.7	91.2	(1.78)	36.9	77.0	88.8	(2.27)	38.2
305	0	56.1	17.9	27.6	42.5	60.0	.42	12.2	26.6	82.5	9.4	18.3	54.6	62.5	(1.17)	26.2
306	R	56.7	15.3	37.7	47.5	59.8	.58	16.2	40.6	85.9	13.8	18.7	60.7	69.5	(1.46)	27.3
307	RL	48.9	18.1	31.2	48.3	56.2	.58	14.9	38.7	85.8	13.4	20.7	70.8	81.3	(1.83)	35.5
308	RLrP	49.5	17.9	37.5	49.2	54.2	.50	21.1	45.5	78.1	13.6	26.4	70.8	80.2	(1.63)	41.3
309	RLrPK	51.6	19.1	40.6	53.4	58.0	.42	22.1	46.4	76.6	14.2	27.9	75.1	87.5	(2.04)	37.7
310	0	48.1	15.4	27.8	44.4	58.8	(2.50)	10.6	29.4	81.4	(1.30)	13.2	49.3	57.7	(.79)	20.0

		Corn[1]	Oats[2]	Soy-beans[5]	Wheat[4]	Corn	Oats	Clover	Wheat	Corn	Oats	Soy-beans	Wheat	Corn	Oats	Clover
401	0	35.8	47.8	(1.60)	16.2	43.9	65.5	(2.69)	25.5	40.7	41.1	(1.18)	21.7	56.3	25.3	(2.73)
402	M	40.3	48.3	(1.73)	18.2	66.8	70.5	(2.97)	26.2	69.6	45.6	(1.59)	26.6	74.0	42.5	(2.80)
403	ML	41.3	53.8	(1.74)	17.6	68.8	58.6	(3.06)	27.5	69.7	43.8	(1.69)	31.0	77.8	52.0	(3.36)
404	MLrP	41.3	48.4	(1.63)	23.7	66.1	54.2	(3.03)	27.8	70.1	43.9	(1.74)	33.6	79.8	53.1	(3.92)
405	0	42.2	48.4	12.3	18.8	49.1	73.9	.05	24.8	48.5	37.8	12.2	18.4	54.8	26.9	(2.66)
406	R	39.2	49.7	12.4	21.0	58.8	68.6	.03	26.8	60.7	38.8	14.1	22.5	72.9	35.6	(2.97)
407	RL	40.0	42.3	15.0	20.7	61.3	58.6	.04	30.7	65.1	44.1	13.7	28.2	80.2	49.4	(3.98)
408	RLrP	39.0	47.0	14.0	23.8	55.4	58.9	.06	31.8	64.4	38.3	15.4	31.4	80.0	53.4	(4.09)
409	RLrPK	35.2	47.8	13.8	23.0	59.1	52.5	.05	35.8	71.9	43.0	16.4	31.8	86.8	44.8	(4.21)
410	0	43.0	48.0	(1.50)	15.0	49.0	72.7	(2.85)	25.7	45.6	30.5	(1.28)	20.5	58.3	33.0	(2.59)

[1]No soil treatment. [2]Residues only. [3]Wheat winterkilled; barley grown as a substitute crop. [4]No manure. [5]Residues and lime only.

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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]	1921 Corn	1922 Oats	1923 Corn	1924 Corn
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	0				(2.61)	(1.45)	(1.50)	(.95)	(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)	(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)	(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)	(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)	95.5	20.8	....	(2.74)	(4.08)	....	68.0	85.6	54.1	39.2
601S	0	.....		110.3	24.2	....	(1.73)	(3.80)	....	65.2	75.4	67.5	38.6
602N	MK	.....	(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)	....	75.0	88.4	66.9	54.2
603N	MLK	.....	(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)	....	73.4	85.6	70.9	57.2
604N	MLrPK	.....	(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)	....	76.8	79.8	68.8	59.6

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

TABLE 22.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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
		Alfalfa[1,2]	Alfalfa[1]	Alfalfa[1]	Alfalfa[1]	Alfalfa[1,3]	Alfalfa[1]	Potatoes	Potatoes	Oats	Alfalfa	Alfalfa	Alfalfa
801N	K	.....	(5.39)	(4.64)	(4.49)	....	(3.90)	38.3	46.0	48.4	(4.23)	(4.12)	(2.69)
801S	0	.....		(4.52)	(4.26)	....	(4.22)	36.3	36.2	40.9	(4.11)	(4.36)	(3.17)
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)

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

DUBOIS FIELD, WASHINGTON COUNTY

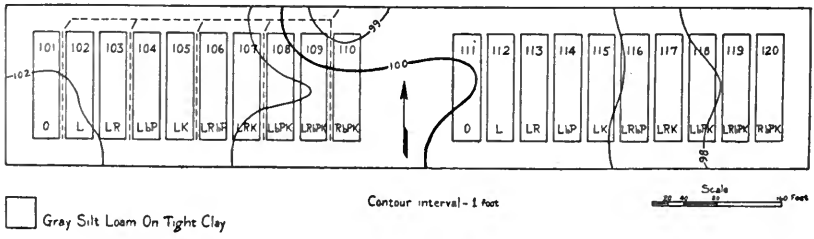
ESTABLISHED 1902

Location.—About one mile northwest of DuBois on the farm of Mr. A. A. Hinkley. A part of the S. ½ of the S.E. ¼ of the N.E. ¼ 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 untiled 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.



SOIL MAP OF DUBOIS FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied[1]	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	RbPK	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)	48.3	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	RbP	4.8	33.1	28.2	(2.79)	50.7	35.3	12.0	6.7	65.4	28.1	1.83	24.0

[1]Commercial nitrogen used in place of residues until 1906.

TABLE 23.—*Concluded*
(1914-1923)

Plot No.	Soil treatment applied	1914 Corn	1915 Oats	1916 Clover	1917 Wheat	1918 Corn	1919 Oats	1920 Clover	1921 Wheat	1922 Corn	1923 Wheat
		Bushels or (tons) per acre									
	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. ½ of the S.E. ¼ of the S.E. ¼, 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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1902 Corn[1]	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	11.3	12.5	60.4	30.3	(.62)	54.0	10.0	(.34)	(1.80)	70.6	(0.00)
102	M	8.1	10.9	52.0	20.3	(.41)	50.8	12.2	(.26)	(.70)	51.8	(0.00)
103	0	9.3	12.2	29.0	13.4	(.08)	36.8	9.4	(.04)	(.29)	26.0	(0.00)
104	LeL	11.3	21.2	40.9	18.4	(.44)	46.3	19.1	(.06)	.....	34.6	(.14)
105	LeLbP	14.9	31.6	43.0	19.4	(.44)	52.8	22.8	(.12)	.....	39.0	(.31)
106	LeLbPK	17.1	24.4	52.5	17.8	(1.06)	62.5	13.8	(.27)	.....	64.0	(.34)
107	LbPK	21.5	20.6	52.6	22.2	(1.33)	58.9	10.9	(.40)	(1.07)	66.0	(.35)
				Land Tile-drained								
201	MbP	14.1	6.6	59.6	24.7	(.39)	58.3	16.9	(.10)	(.71)	63.0	(.27)
202	M	16.7	9.4	58.0	29.4	(.33)	51.4	11.6	(.04)	(.38)	44.8	(0.00)
203	0	15.1	7.2	27.8	22.8	(.16)	30.0	9.1	(.03)	(.21)	18.0	(0.00)
204	LeL	24.9	16.2	44.4	43.7	(.66)	48.6	20.0	(.09)	(0.00)	27.2	(.21)
205	LeLbP	33.7	35.3	59.2	41.2	(.98)	55.5	14.7	(.45)	(0.00)	38.8	(.22)
206	LeLbPK	32.1	37.5	62.1	38.8	(1.64)	69.5	15.9	(.99)	(0.00)	75.6	(.16)
207	LbPK	33.2	35.0	61.3	26.9	(1.59)	69.5	17.5	(1.00)	(1.27)	68.6	(.27)

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1902 Corn[1]	1903 Oats	1904 Clover	1905 Corn	1906 Oats	1907 Clover	1908 Corn	1909 Oats	1910 Clover	1911 Corn
301	0	42.6	33.9	(1.74)	75.5	53.9	(1.84)	27.1	43.0	(1.67) .92	33.2
302	L	41.3	40.6	(1.95)	81.7	70.8	(1.98)	22.4	43.9	(2.44) 1.17	28.8
303	LN	22.0	39.1	(1.85)	81.5	71.2	(1.87)	24.4	41.9	1.42	33.5
304	LbP	24.3	42.8	(1.97)	77.4	69.7	(1.88)	28.0	48.6	(2.53) 1.50	28.5
305	LK	27.3	38.3	(1.79)	85.8	69.1	(2.04)	37.8	48.9	(2.60) 1.83	40.2
306	LNbP	23.4	41.1	(2.64)	80.5	70.9	(1.80)	31.0	48.3	1.50	29.4
307	LNK	15.7	37.2	(2.39)	85.8	71.1	(1.97)	42.2	52.8	1.83	36.6
308	LbPK	24.0	48.1	(2.61)	83.6	73.1	(2.03)	41.9	48.0	(2.94) 1.58	35.5
309	LNbPK	22.3	46.7	(2.71)	88.9	74.4	(1.90)	41.6	46.4	1.92	34.5
310	NbPK	21.9	49.1	(2.14)	82.7	55.8	(1.80)	39.4	51.6	1.25	38.5

[1]No lime.

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

Bushels or (tons) per acre

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

2000 lb. air-slaked lime

4000 lb. air-slaked lime

[1]No legume treatment. [2]Harvested across all series. [3]Series 500 harvested as a unit; yield 2.17 tons per acre. [4]The 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. [5]Clover crop failed on Series 500 in 1908 and 1911.

TABLE 26.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1903 Corn[1]	1904 Oats[2]	1905 Clover	1906 Corn	1907 Oats[3]	1908 Clover	1909 Corn	1910 Oats[3]	1911 Clover
801	8000 lb. air-slaked lime Le	34.8	21.7	(1.88)	31.4	15.7	(1.22)	38.4	24.9	(.24)
802	LebP(20)	30.1	26.2	(2.10)	24.9	16.0	(1.23)	31.4	41.4	(.23)
803	LerP(100)	28.3	26.4	(1.92)	19.0	15.1	(1.15)	23.4	34.2	(.23)
804	LebP(50)	30.8	23.6	(1.80)	22.0	17.2	(1.18)	30.6	33.0	(.25)
805	LerP(250)	30.5	23.4	(2.02)	27.1	17.5	(1.39)	37.6	36.8	(.25)
806	LebP(100)	37.8	28.5	(2.19)	28.9	15.1	(1.22)	32.4	43.9	(.34)
807	LerP(500)	38.3	27.5	(2.50)	35.1	16.1	(1.37)	31.8	45.8	(.25)
808	LebP(200)	40.9	33.4	(2.56)	32.3	15.2	(1.31)	37.8	48.3	(.21)
809	LerP(1000)	41.7	28.7	(3.12)	35.9	18.1	(1.40)	44.6	41.5	(.31)
810	Le	41.4	27.0	(2.13)	38.9	16.2	(1.48)	39.0	22.9	(.33)
901	Le	39.0	21.7	(.98)	26.9	....	(.19)	39.4	28.4	(.00)
902	LebP(20)	34.1	26.2	(1.05)	27.1	....	(.14)	20.2	20.3	(.00)
903	LerP(100)	34.4	26.4	(1.12)	22.9	....	(.26)	20.8	28.4	(.00)
904	LebP(50)	40.6	23.6	(1.35)	26.5	....	(.37)	21.0	19.4	(.04)
905	LerP(250)	39.6	23.4	(1.68)	32.1	....	(.41)	20.2	24.1	(.17)
906	LebP(100)	50.5	28.5	(1.81)	37.6	....	(.29)	7.8	32.5	(.32)
907	LerP(500)	47.0	27.5	(1.80)	43.4	....	(.14)	6.6	32.5	(.40)
908	LebP(200)	53.4	33.4	(1.85)	36.6	....	(.47)	16.0	35.3	(.35)
909	LerP(1000)	51.6	28.7	(2.15)	40.0	....	(.69)	17.0	40.0	(.23)
910	Le	46.8	27.0	(1.37)	40.9	....	(.24)	18.0	31.3	(.09)

[1]No legume treatment. [2]Harvested across all series. [3]The 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. ½ of the S.E. ¼, 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.

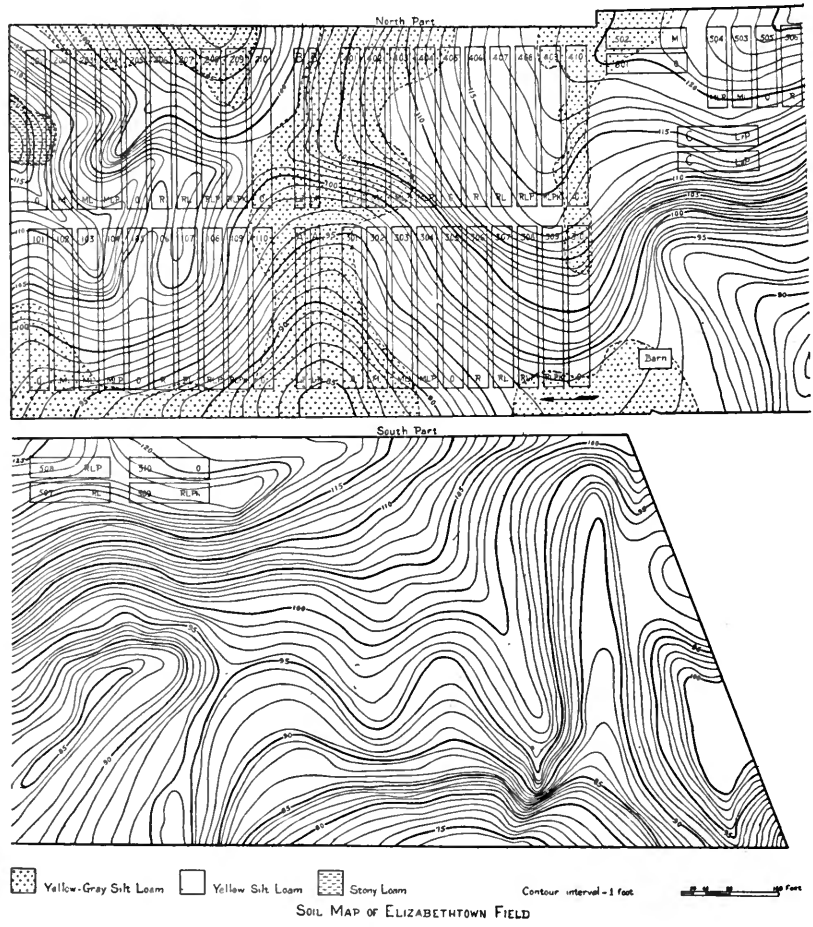
History.—The Elizabethtown experiment field was a direct gift by deed from Mr. R. A. Ledbetter to the University for experimental purposes. In 1915 the land occupied by Series 100, 200, 300, and 400 was in corn. The next year the stalks were disked down and clover seeded. In 1917 when the plots were 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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	45.5
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

		Soybeans[1]	Wheat[3]	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)	.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

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

TABLE 27.—*Concluded*

Plot No.	Soil treatment applied	1918 Corn[1]	1919 Soybeans[2]	1920 Oats[2]	1921 Sweet clover	1922 Corn	1923 Wheat	1924 Timothy mixture
301	0	5.2	(.58)	26.7	0.00	26.0	5.3	(0.00)
302	M	5.3	(.44)	17.2	0.00	13.9	3.5	(0.00)
303	ML	9.1	(.78)	28.0	4.58	44.3	10.8	(1.37)
304	MLrP	11.3	(.51)	26.2	4.17	49.6	8.3	(2.03)
305	0	2.0	1.2	16.2	0.00	4.5	1.1	(0.00)
306	R	1.8	1.7	21.2	0.00	4.0	1.0	(0.00)
307	RL	5.3	1.7	23.1	2.83	27.5	3.3	(0.95)
308	RLrP	6.8	2.2	24.7	2.58	34.1	3.9	(1.73)
309	RLrPK	8.5	2.7	20.6	2.08	33.5	4.8	(2.05)
310	0	2.5	(.50)	19.4	0.00	10.0	3.4	(0.00)

		Soybeans[1]	Corn	Soybeans	Wheat	Stubble clover	Sweet clover	Corn	Wheat
401	0	(.53)	30.8	(.40)	17.3	(0.00)	0.00	25.8	4.6
402	M	(.59)	32.2	(.50)	16.7	(0.00)	0.00	30.4	5.3
403	ML	(.43)	42.0	(.41)	19.0	(.10)	.50	45.2	9.6
404	MLrP	(.40)	26.1	(.51)	19.0	(.13)	.54	45.1	9.6
405	0	2.2	22.5	3.2	14.8	(0.00)	0.00	23.2	3.7
406	R	2.9	27.5	3.2	10.4	(0.00)	0.00	31.7	4.7
407	RL	2.8	29.1	4.1	15.5	(.11)	1.04	34.0	6.5
408	RLrP	2.1	30.7	5.1	14.3	(.19)	.71	41.2	6.4
409	RLrPK	2.5	26.0	4.9	17.1	(.22)	.67	42.5	5.0
410	0	(.48)	18.8	(.45)	8.9	(0.00)	0.00	23.2	5.3

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	....	....

[1]No residues.

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1918 Corn[2]	1919 Corn[3]	1920 Soybeans[3]	1921 Wheat[6]	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
			Wheat[4]	Corn[4]	Corn	Cowpeas	Wheat	Corn
B[1] North	RaP	....	24.3	47.3	28.8	12.5	18.6	54.6
B[1] South	RrP	....			28.6	11.7	14.3	59.2
			Soybeans[5]	Oats[5]	Cowpeas	Wheat	Corn	Cowpeas
C West	RaP	....	.4	17.3	9.2	3.2	32.2	(.78)
C East	RrP	....			7.8	9.8	46.8	(.80)

[1]2000 pounds of rock phosphate per acre was applied to the entire plot in the fall of 1918. [2]No treatment. [3]Residues only. [4]Lime and rock phosphate only. [5]Lime only. [6]No lime.

ENFIELD FIELD, WHITE COUNTY

ESTABLISHED 1912

Location.—About one mile east of Enfield. A part of the E. ½ of the S.E. ¼, 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.

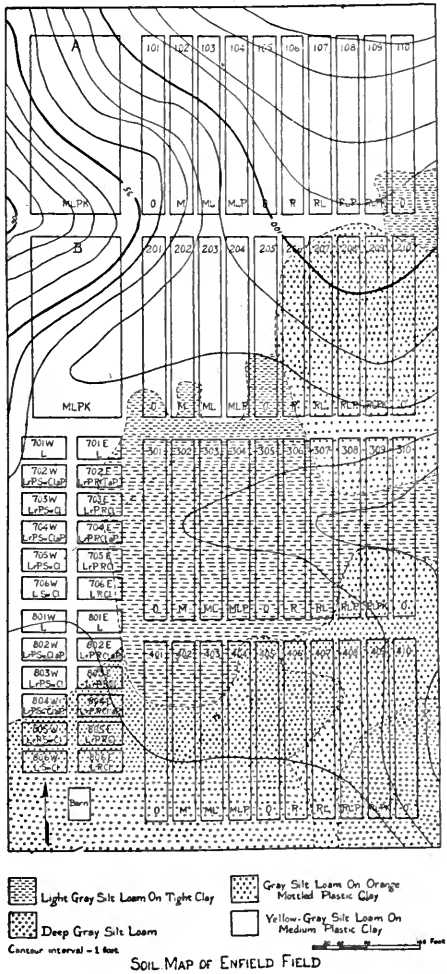
History.—The Enfield field was purchased by about six hundred citizens of White county and donated to the University for experimental purposes. In 1912 wheat was grown on approximately the north two-thirds of the field, while the remainder of the field was in redtop meadow. No further information in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



SOIL MAP OF ENFIELD FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	56.6
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	...[3]	8.0	32.8	8.3	5.0	9.6	2.9	10.0	0.00	4.3	32.2	11.3
107	RL	...[3]	11.4	45.2	14.1	13.5	19.2	13.6	21.9	.50	17.8	39.9	39.8
108	RLrP	...[3]	16.2	48.4	14.4	15.6	22.9	18.0	26.7	.58	20.5	42.9	47.5
109	RLrPK	...[3]	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[2]	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

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

TABLE 30.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	...[3]	1.8	20.3	22.5	3.8	11.2	13.7	3.3	0.00	1.8
306	R	23.7	1.3	...[3]	2.0	26.3	30.6	3.0	9.5	16.4	3.0	0.00	3.9
307	RL	29.3	1.6	...[3]	5.7	69.8	51.1	14.1	27.2	43.5	6.1	1.40	21.8
308	RLrP	26.2	1.1	...[3]	15.8	69.6	60.8	13.5	31.5	34.2	6.7	.49	25.3
309	RLrPK	21.8	1.3	...[3]	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

		Wheat[2]	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	28.5	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	2.33
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

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

TABLE 31.—ENFIELD FIELD: PLOTS A and B

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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[3]
A	MLrPK	(.57)	(.93)	(2.53)		(1.45)	(1.83)	(1.43)	16.2	(3.06)	24.8	(1.29)	3.3	....
	MrPK	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	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	MLrPK	8.5	5.4	20.3	(1.12)[1]	(1.48)	24.1	(1.11)	(0.00)	(1.06)	(1.12)	(1.89)	(1.86)	(1.50)
	MrPK			13.8	(.48)[1]	(0.00)	5.7	(.57)[2]	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(1.42)

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

TABLE 32.—ENFIELD FIELD: PLOTS C and D

Bushels or (tons) per acre

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

[1]Growth 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

[1]No soil treatment. [2]No legume catch crop.

EWING FIELD, FRANKLIN COUNTY

ESTABLISHED 1910

Location.—About one mile northeast of Ewing. A part of the E. ½ of the S.E. ¼ of the S.W. ¼, Sec. 11, Twp. 5 S., R. 3 E. of the 3d P. M.

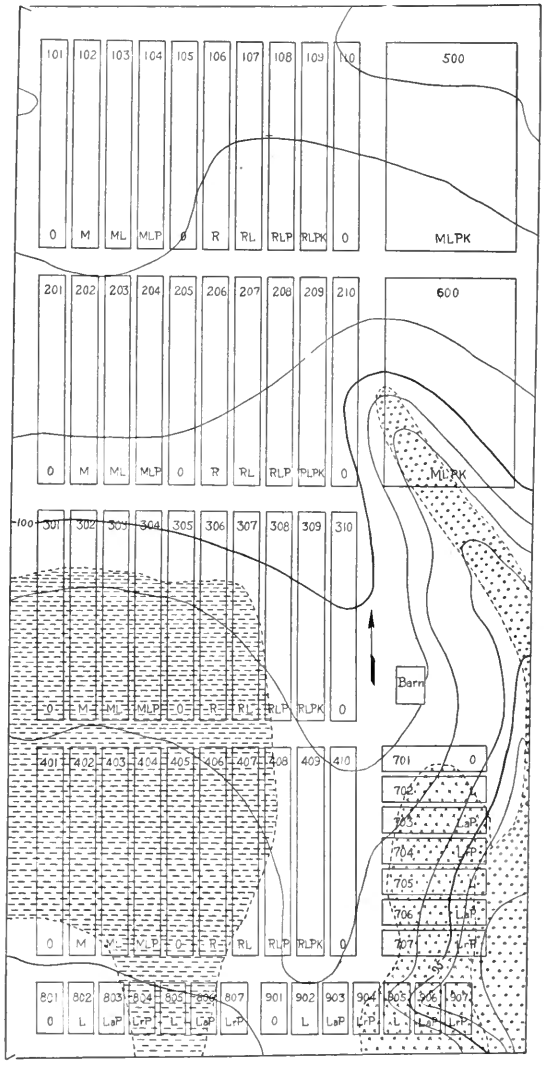
Description.—This field consists of 20 acres of light-colored, loessial upland soil of strong acidity. Four soil types have been mapped on this field: (1) Gray Silt Loam On Tight Clay; (2) Gray Silt Loam On Orange Mottled Tight Clay; (3) Deep Gray Silt Loam; (4) Yellow-Gray Silt Loam. The field is quite 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.



SOIL MAP OF EWING FIELD

TABLE 34.—EWING FIELD: SERIES 100, 200, 300, 400

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1910 Wheat[1]	1911 Corn	1912 Oats	1913 Clover	1914 Wheat	1915 Corn	1916 Oats	1917 Soy-beans	1918 Wheat	1919 Corn	1920 Oats	1921 Sweet clover	1922 Wheat	1923 Corn	1924 Oats
101	0	10.4	16.2	12.0	(.20)	1.7	24.1	5.0	(.51)	3.0	10.4	7.2	0.00	.4	15.9	8.6
102	M	14.2	26.8	19.1	(.24)	3.4	38.1	9.4	(.61)	5.4	22.0	15.5	0.00	1.3	40.3	18.1
103	ML	9.9	27.5	28.3	(.40)	16.2	60.7	19.7	(1.00)	16.5	34.8	25.3	2.75	6.2	54.8	46.9
104	MLrP	8.0	30.2	34.4	(.81)	22.5	57.4	21.9	(1.26)	21.1	37.0	23.9	3.08	14.3	51.1	51.6
105	0	6.8	12.7	14.4	0.00	.9	17.7	3.8	2.0	2.0	9.0	5.8	0.00	.3	15.5	12.3
106	R	8.6	13.2	16.4	0.00	.8	15.0	4.8	1.8	1.5	7.7	6.7	0.00	.3	15.0	9.4
107	RL	8.5	23.0	30.8	.50	12.8	46.7	11.2	9.6	12.9	28.2	18.4	2.83	20.4	13.3	39.8
108	RLrP	10.7	20.8	33.4	1.08	17.6	42.5	14.2	10.7	18.5	26.8	26.2	2.50	21.8	11.5	49.2
109	RLrPK	17.9	26.0	37.2	.75	25.8	56.4	22.5	12.6	21.4	37.4	30.9	2.67	25.8	45.3	55.5
110	0	9.7	15.8	11.4	(.31)	1.2	23.4	4.7	(.66)	4.2	15.0	12.0	0.00	.3	19.3	15.6
		Cow-peas[1]	Wheat[2]	Corn	Oats	Soy-beans	Wheat	Corn	Oats	Soy-beans	Wheat	Corn	Oats	Sweet clover	Wheat	Corn
201	0	(.89)	10.7	24.7	1.7	(.27)	5.3	21.4	18 3	(.29)	2.4	6.9	10.2	0.00	.5	2.7
202	M	(.97)	12.8	39.8	3.9	(.23)	8.2	40.1	25.2	(.43)	5.4	25.5	11.4	0.00	.8	12.4
203	ML	(1.05)	17.3	52.1	7.3	(.47)	18.1	57.0	37.0	(1.20)	20.4	38.2	17.7	1.71	11.3	57.5
204	MLrP	(1.19)	23.8	50.7	6.9	(.53)	23.6	58.6	40.9	(1.26)	21.7	50.7	14.8	1.42	16.9	56.5
205	0	(1.02)	11.9	30.7	.6	(.32)	4.9	24.3	17.5	1.3	3.9	6.8	7.2	0.00	.9	2.8
206	R	.. [3]	9.9	33.1	2.5	2.3	4.9	19.6	18.8	1.3	2.1	12.7	7.5	0.00	.8	5.4
207	RL	.. [3]	20.5	48.3	8.4	4.0	19.1	51.5	34.7	4.6	21.2	24.3	25.2	2.08	9.0	30.3
208	RLrP	.. [3]	23.7	45.0	9.2	4.0	17.7	51.6	36.6	6.8	24.7	21.1	13.8	1.63	13.8	34.6
209	RLrPK	.. [3]	28.1	51.6	12.5	4.2	27.8	64.0	47.0	8.7	30.0	47.2	20.6	1.50	25.6	50.3
210	0	(.87)	12.0	31.7	3.3	2.0	4.2	31.1	18.1	(.28)	8.0	10.9	7.5	0.00	1.7	13.7

[1]No manure or residues. [2]No manure. [3]Growth plowed down.

TABLE 34.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	(.52)	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)	5.9	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)	18.6	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)	19.4	23.3	14.1	.29	29.6
305	0	32.8	1.6	.8	5.6	1.4	1.7	.2	12.6	31.6	3.8	6.1	3.2	8.0	0.00	0.0
306	R	37.8	1.2	.8	6.2	3.3	2.5	.2	17.1	31.2	3.8	3.6	5.9	7.8	0.00	1.3
307	RL	39.2	2.4	4.3	22.5	5.9	7.5	7.4	35.7	57.0	14.2	5.1	20.2	16.1	.37	17.3
308	RLrP	35.6	3.2	3.2	21.8	5.3	6.4	4.8	45.9	61.9	13.2	8.6	23.2	18.0	.29	20.5
309	RLrPK	36.7	4.0	4.3	26.8	6.6	8.2	6.9	63.8	61.1	11.1	12.2	32.6	21.9	.40	30.4
310	0	44.2	1.3	2.8	6.1	1.4	3.8	.5	13.1	35.6	(.56)	8.4	7.0	11.1	0.00	0.0

		Corn[1]	Oats[2]	Cow-peas[2]	Wheat[2]	Corn	Oats	Clover	Oats[4]	Corn	Oats	Clover	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	(0.00)	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	(0.00)	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	(1.08)	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	(.91)	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	(0.00)	3.2	9.8	14.4	....
406	R	38.4	21.8	..[3]	1.1	2.7	13.8	0.00	27.3	13.6	8.8	(0.00)	4.0	12.2	17.7	....
407	RL	51.7	42.7	..[3]	16.0	3.1	43.9	1.25	58.1	21.8	23.1	(.88)	20.2	25.4	33.9	....
408	RLrP	50.7	36.7	..[3]	14.9	3.6	44.5	1.58	62.8	22.2	16.7	(.56)	23.1	29.2	33.8	....
409	RLrPK	47.6	42.8	..[3]	27.2	6.4	45.3	1.58	65.5	17.7	25.3	(1.16)	23.3	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	(0.00)	8.0	11.2	16.6	....

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

TABLE 35.—EWING FIELD: PLOTS A AND B

Plot No.	Soil treatment applied	1911 Alfalfa	1912 Alfalfa	1913 Alfalfa	1914 Alfalfa	1915 Alfalfa	1916 Soy-beans	1917 Wheat	1918 Clover	1919 Wheat	1920 Soy-beans	1921 Wheat	1922 Clover	1923 Wheat	1924 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)
		Wheat[1]	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

[1]No manure.

TABLE 36.—EWING FIELD: PLOTS C AND D

Plot No.	Soil treatment applied	1911 Timothy	1912 Timothy	1913 Timothy	1914 Wheat	1915 Timothy	1916 Timothy	1917 Wheat	1918 Clover	1919 Wheat	1920 Cowpeas	1921 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]	Wheat
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	Corn
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

[1]Phosphorus only. [2]No 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. ½ of the W. ½ of the N.W. ¼ and the W. ½ of the W. ½ of the N.E. ¼, 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 tiled and untiled 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)

Bushels or (tons) per acre

Plot No.	Soil treatment applied[1]	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	RLrP	26.5	1.0	15.1	(1.02)	31.2	20.1	13.2	.35	2.9	12.4
106	RLrP	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)	5.0	(1.21)
		Land Not Tile-drained									
123	RLrP	26.6	.8	13.1	(.90)	37.9	20.8	11.1	.39	3.3	13.8
126	RLrP	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)

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

TABLE 38.—*Continued*
(1915-1923)

Bushels or (tons) per acre

Plot No.	Soil treatment applied[1]	1915 Wheat	1916 Soybeans[2]	1917 Corn	1918 Soybeans	1919 Wheat	1920 Sweet clover	1921 Corn	1922 Soybeans	1923 Wheat
					Land Tile-drained					
103	RLrP	7.9	19.2	43.6	15.1	22.6	2.20	43.7	10.1	13.3
106	RLrP	7.2	19.5	51.1	14.6	24.2	1.30	38.3		
109	R	0.0	13.7	65.3	12.5	8.7	0.00	30.8	8.4	2.8
110	M	0.0	(0.00)	41.8	(.97)	10.5	(.84)	33.6	..[3]	3.9
113	MLrP	5.4	(1.60)	55.0	(1.56)	27.5	(1.57)	46.2	..[3]	21.6
116	MLrP	4.7	(1.60)	62.9	(1.69)	24.4	(1.69)	49.4	..[3]	
					Land Not Tile-drained		Soybeans			
123	RLrP	2.7	15.6	44.5	14.0	20.6	13.9	22.3	8.3	10.5
126	RLrP	.6	13.6	24.7	12.1	19.6	12.3	19.2		
129	R	0.0	2.3	7.5	6.0	0.0	5.4	15.2	5.0	.1
130	M	0.0	(0.00)	13.0	(.79)	0.0	(.53)	25.3	..[3]	.3
133	MLrP	2.7	(1.33)	35.9	(1.39)	25.8	(1.26)	40.7	..[3]	20.0
136	MLrP	.6	(1.33)	51.6	(1.31)	28.8	(1.17)	46.1	..[3]	

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

TABLE 38.—*Continued*
(1905-1914)

Plot No.	Soil treatment applied[1]	1905 Soybeans	1906 Wheat	1907 Clover[2]	1908 Corn	1909 Cowpeas	1910 Wheat	1911 Clover	1912 Corn	1913 Soybeans	1914 Wheat
		Bushels or (tons) per acre									
		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)	28.5	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

[1]Potassium sulfate and kainit applied to different parts of each plot, as explained on page 117. [2]Growth in 1907 mostly redtop. [3]Grass 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 Soybeans	1922 Wheat	1923 Sweet clover
	Land Tile-drained									
203	RLrP	17.2	11.3	12.6	23.0	..[2]	29.5	13.0	16.2	..[2]
206	RLrP	16.9	10.7	12.9	25.5	..[2]	25.7		22.4	..[2]
209	R	11.8	20.7	11.6	25.1	..[2]	33.3	12.9	11.3	..[2]
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	..[2]	14.1	9.7	20.4	..[2]
226	RLrP	13.5	12.1	9.1	18.2	..[2]	13.2		19.6	..[2]
229	R	5.9	14.0	8.8	11.1	..[2]	18.7	7.8	1.2	..[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	

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

TABLE 38.—*Continued*
(1905-1914)

Plot No.	Soil treatment applied[1]	1905	1906 Clover	1907 Corn	1908 Cowpeas	1909 Oats	1910 Clover	1911 Corn	1912 Soybeans	1913 Wheat	1914 Soybeans
		Bushels or (tons) per acre									
		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)	.6	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)	36.6	(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)

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

TABLE 38.—*Continued*
(1915-1923)

Bushels or (tons) per acre

Plot No.	Soil treatment applied[1]	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	..[2]	13.4[3]
306	RLrP	41.3	7.3	20.3	2.26	37.1	14.5	26.0	..[2]	29.5
309	R	24.9	6.3	5.5	0.00	19.1	7.9	4.5	..[2]	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	..[2]	7.5[3]
326	RLrP	51.0	8.4	36.1	1.36	33.1	13.6	30.6	..[2]	18.1
329	R	30.1	7.4	13.0	0 00	11.5	10.5	6.5	..[2]	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

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

TABLE 38.—*Continued*
(1905-1914)

Bushels or (tons) per acre

Plot No.	Soil treatment applied[1]	1905	1906 Corn	1907 Cowpeas	1908 Wheat	1909 Cowpeas	1910 Corn	1911 Soybeans	1912 Wheat	1913 Soybeans	1914 Corn[2]
		Land Tile-drained									
403	RLrP	....	34.8	3.5	16.0	5.0	55.1	10.6	12.5	9.9	....
406	RLrP	....	38.2	3.1	14.0	7.2	60.9	12.3	13.2	10.5	....
409	R	....	32.6	3.2	5.3	7.2	44.4	11.5	1.7	9.9	....
410	M	....	41.0	3.4	10.6	6.9	43.8	10.2	2.1	(.65)	....
413	MLrP	....	50.8	8.2	21.8	6.7	66.9	14.7	13.3	(.91)	....
416	MLrP	....	49.2	7.7	21.3	6.5	64.9	15.2	13.1	(.86)	....
		Land Not Tile-drained									
423	RLrP	....	47.2	8.0	14.9	5.8	60.9	11.7	14.0	13.4	....
426	RLrP	....	38.6	2.4	10.0	4.8	57.7	13.4	9.3	11.0	....
429	R	....	33.0	1.8	2.8	6.5	37.6	9.1	1.0	7.5	....
430	M	....	40.3	2.2	1.4	5.4	47.5	8.8	1.1	(.55)	....
433	MLrP	....	48.8	6.6	15.1	4.7	63.6	10.6	13.6	(.82)	....
436	MLrP	....	53.0	4.3	16.3	6.0	65.1	15.5	10.4	(.90)	....

[1]Potassium sulfate and kainit applied to different parts of each plot, as explained on page 117. [2]Crop failure.

TABLE 38.—*Concluded*
(1915-1923)

Bushels or (tons) per acre

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

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

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

Bushels or (tons) per acre

Soil treatment applied	1907 Corn	1908 Corn	1909 Corn	1910 Clover	1910 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	....	24.1	9.8	19.2
R, Potassium sulfate	31.4	30.4	50.2	....	48.8	....	23.9	....	21.0	14.8	26.4
R, Kainit	35.4	26.8	50.1	....	50.2	....	24.9	....	21.8	9.8	29.2
M	27.1	38.6	35.5	....	34.4	....	31.2	....	25.7	5.9	22.7
M, Potassium sulfate	29.6	38.6	47.7	....	50.4	....	31.1	....	20.0	8.1	25.0
M, Kainit	34.9	36.6	42.9	....	46.6	....	29.2	....	21.0	7.4	32.2
RLrP	37.0	20.8	27.3	2.00	55.1	....	35.0	.27	38.6	1.6	39.5
RLrP, Potassium sulfate	38.7	19.5	36.0	2.29	59.2	....	35.4	.41	33.5	2.0	47.1
RLrP, Kainit	45.6	26.4	34.0	2.54	59.8	....	33.6	.45	46.1	3.1	45.5
MLrP	48.0	38.5	41.3	(3.62)	64.6	(.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	(2.55)	52.8	5.4	46.3
MLrP, Kainit	52.4	35.5	40.6	(4.59)	68.2	(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	....	3.9	.7	22.0
R, Potassium sulfate	38.8	11.6	18.8	....	42.8	....	24.6	....	.6	2.1	34.8
R, Kainit	37.2	16.6	19.2	....	36.9	....	21.7	....	.4	2.5	33.6
M	40.4	30.8	19.4	....	52.6	....	36.6	....	6.7	3.7	35.3
M, Potassium sulfate	42.8	30.4	19.6	....	65.2	....	35.7	....	3.2	3.4	34.3
M, Kainit	44.9	29.6	17.1	....	66.2	....	37.5	....	2.3	3.9	39.9
RLrP	40.9	20.6	23.1	.89	46.0	....	33.7	.37	25.7	2.1	39.2
RLrP, Potassium sulfate	49.9	26.1	37.6	1.98	48.3	....	31.7	.39	21.9	2.5	55.2
RLrP, Kainit	53.9	31.4	34.1	2.03	48.4	....	30.1	.43	27.8	2.4	52.8
MLrP	49.8	39.7	32.2	(3.50)	62.9	(.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	(1.90)	18.0	2.3	46.6
MLrP, Kainit	54.7	38.9	34.3	(3.93)	65.0	(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. ¼ of the S.W. ¼, 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

Bushels or (tons)per acre

Plot No.	Soil treatment applied	1904 Corn[1]	1905 Corn[2]	1906 Oats[2]	1907 Wheat[2]	1908 Clover[2]	1909 Timothy[2]	1910 Corn	1911 Corn	1912 Oats	1913 Clover	1914 Wheat	1915 Soybeans	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	..[3]	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	55.0	41.3	.67	(4.92)	78.0	83.8	65.2	..[3]	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	..[3]	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	..[3]	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	69.9	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	..[3]	28.8	15.4	34.7	43.2	69.5
117	RrP	79.4	64.2	60.0	36.2	1.25	(5.50)	75.0	77.5	66.1	..[3]	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	..[3]	53.3	17.3	58.7	54.0	70.3
119	RLNrPK	87.1	76.3	66.2	46.0	1.08	(5.00)	74.8	79.3	67.3	..[3]	49.6	17.9	66.7	72.5	75.9
120	0	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

[1]No manure, cover crop, or residues. [2]No manure. [3]No seed harvested in 1913.

TABLE 40.—*Continued*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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 Soybeans	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	RL	55.0	40.0	(.63)	(1.31)	78.8	51.9	43.3	..[2]	21.1	..[2]	37.6	49.2	42.2	17.0	32.6
203	ML	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	RLrP	57.5	42.2	(.90)	(1.79)	105.6	49.4	48.6	..[2]	27.3	..[2]	43.1	56.7	42.2	18.0	49.5
208	MLrP	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	..[2]	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	RLrPK	65.0	39.3	(1.40)	(2.15)	103.3	57.5	53.8	..[2]	28.3	..[2]	41.1	62.4	44.2	16.4	45.8
213	MLrPK	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	..[2]	11.8	..[2]	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	..[2]	22.1	..[2]	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	..[2]	28.3	..[2]	36.4	64.0	45.2	14.8	46.2
219	RLNrPK	57.5	37.7	(1.21)	(1.98)	109.6	47.2	57.2	..[2]	27.3	..[2]	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

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

TABLE 40.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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 Soybeans	1916 Barley[4]	1917 Soybeans	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	..[3]	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]	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	..[3]	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	..[3]	82.1	35.0	37.2	17.8	33.3	8.6	73.3
317	RrP	(1.95)	(2.00)	59.1	83.3	31.1	44.9	27.0	..[3]	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	..[3]	113.2	42.8	55.5	20.2	32.6	4.9	60.4
319	RLNrPK	(4.15)	(2.37)	71.2	84.7	32.7	43.8	24.9	..[3]	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

[1]No manure, cover crop, or residues. [2]No manure. [3]No seed harvested in 1911. [4]Barley 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. ¼ of the N.W. ¼ of the N.W. ¼, 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 Corn[1]	1903 Oats[1]	1904 Cow-peas[1]	1905 Corn	1906 Oats	1907 Cow-peas
101	0	38.3	21.0	(1.33)	30.9	11.3	(1.55)
102	Le	33.1	26.9	..[2]	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	..[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	..[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	..[2]	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[1]	Corn	Oats	Cow-peas	Corn
201	0	41.6	(1.00)	52.2	24.1	(1.50)	48.8
202	Le	39.4	..[2]	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	..[2]	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	..[2]	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	..[2]	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

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1902 Corn	1903 Corn	1904 Oats	1905 Wheat	1906 Corn	1907 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

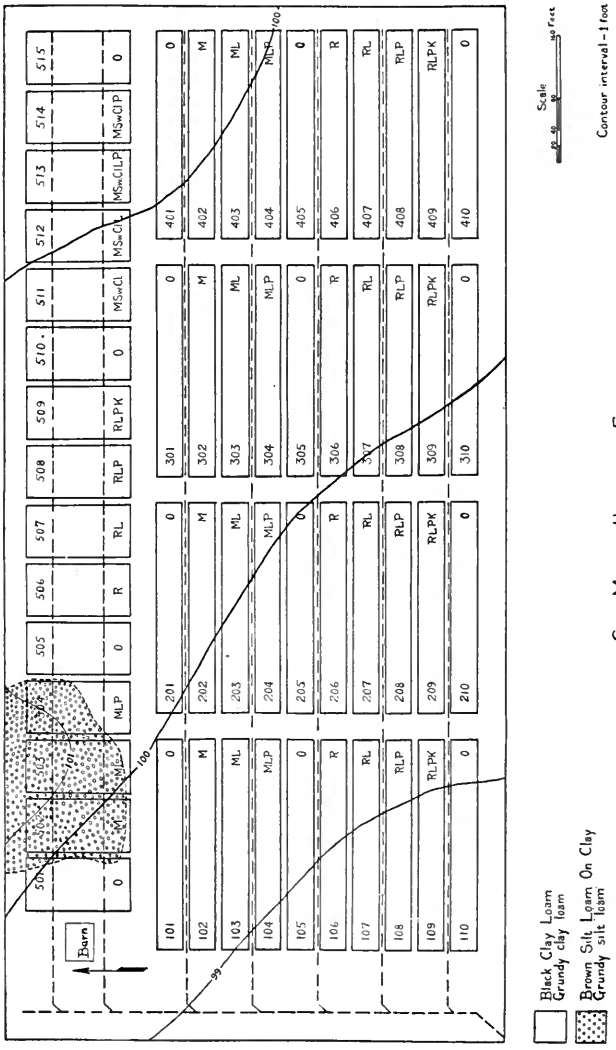
ESTABLISHED 1911

Location.—About one-half mile east of Hartsburg. A part of the S. ½ of the S.W. ¼ of the S.W. ¼, 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.



SOIL MAP OF HARTSBURG FIELD

TABLE 43.—HARTSBURG FIELD: SERIES 100-500

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1912 Oats[1]	1913 Clover[2]	1914 Wheat[2]	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)	(4.77)	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)	(4.56)	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)	(5.08)	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)	(5.37)	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)	(4.63)	72.6	71.3	(.71)
106	R.....	33.0	2.33	30.8	52.1	54.8	2.25	37.3	(2.09)	(3.02)	(3.89)	(5.13)	70.2	71.9	(.75)
107	RL.....	35.3	2.67	32.1	60.5	58.3	2.00	34.1	(1.98)	(3.09)	(3.18)	(5.09)	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)	(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)	(5.12)	69.8	78.8	(.80)
110	0.....	31.2	(1 95)	33.7	49.3	56.2	(1.86)	31.4	(1.44)	(2.71)	(3.11)	(4.70)	68.9	78.4	(.75)

Plot No.	Soil treatment applied	Corn[1]	Oats[3]	Soy-beans[3]	Wheat[2]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Corn	Corn
201	0.....	32.1	25.5	(1.51)	39.9	32.2	45.6	(3.92)	25.9	48.1	34.8	(2.26)	60.6	53.8
202	M.....	33.4	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.....	45.3	25.6	(1.88)	42.8	45.1	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	41.9	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	30.7	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	86.9	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	24.2	67.9	34.2	(1.63)	73.5	60.6
208	RLrP.....	40.5	22.3	21.2	39.7	45.2	89.4	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	23.8	59.0	39.4	(1.60)	72.1	68.0
210	0.....	39.2	22.3	(1.40)	37.8	31 6	43.1	(3.80)	27.2	47.9	31.6	(2.55)	60 6	55.0

Plot No.	Soil treatment applied	Wheat[2]	Corn	Oats	Soy-beans	Wheat	Corn	Oats	Clover	Wheat	Stubble clover	Corn	Oats	Wheat	Corn
301	0.....	....	21.1	25.8	(1.43)	14.4	38.2	33.1	(.69)	19.8	....	48.2	37.0	24.8	40.0
302	M.....	....	21.3	30.9	(1.84)	21.8	48.7	39.8	(.96)	22.0	....	68.0	47.7	39.3	60.0
303	ML.....	....	33.1	36.9	(1.96)	29.0	60.7	53.3	(1.13)	43.1	....	67.3	52.5	42.7	64.0
304	MLrP.....	....	30.0	36.9	(2.23)	34.6	63.7	54.1	(1.16)	44.7	....	69.0	52.3	42.5	57.4
305	0.....	....	27.1	33.1	30.8	28.7	43.9	36.6	(.56) .45	36.5	....	50.1	39.4	32.9	49.0
306	R.....	....	34.2	31.2	28.4	31.5	79.1	63.1	(.59) .48	37.8	(.42)	60.8	45.8	35.0	68.8
307	RL.....	....	49.5	32.5	30.1	32.7	84.8	58.6	(.43) .37	34.4	(.68)	63.3	45.9	32.3	73.6
308	RLrP.....	....	41.7	36.4	28.2	34.9	85.7	65.3	(.45) .38	38.2	(.75)	63.1	41.4	34.0	68.0
309	RLrPK....	....	39.5	35.5	28.9	34.5	84.1	59.4	(.38) .28	37.7	(.65)	63.1	44.7	34.0	76.2
310	0.....	....	26.7	34.5	(2.00)	26.8	49.1	41.9	(.72)	32.2	....	58.3	39.7	30.5	48.8

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

TABLE 43.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1912 Soybeans[1]	1913 Wheat[2]	1914 Corn	1915 Oats	1916 Clover	1917 Wheat	1918 Corn	1919 Oats	1920 Soybeans	1921 Wheat	1922 Corn	1923 Oats	1924 Wheat
401	0.....	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	0.....	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	0.....	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]	Corn[3]	Oats	Clover	Wheat	Corn	Oats
501	0.....	....	(2.36)	(4.11)	(4.67)	(3.17)	(3.20)	(4.22)	69.9	68.4	(2.12)	40.0	58.0	69.1
502	M.....	....	(2.89)	(4.23)	(5.20)	(3.66)	(3.84)	(4.76)	72.1	70.0	(2.25)	38.5	66.3	75.8
503	ML.....	....	(3.20)	(4.51)	(5.35)	(3.85)	(3.65)	(5.11)	74.5	70.8	(2.45)	39.5	68.5	83.4
504	MLrP.....	....	(3.31)	(4.66)	(5.58)	(3.94)	(4.05)	(5.05)	75.8	73.3	(2.39)	41.3	70.1	82.5
505	0.....	....	(1.80)	(3.53)	(4.53)	(3.38)	(3.42)	(4.57)	76.5	57.2	(2.12)	40.7	64.5	65.9
506	R.....	....	(2.79)	(4.24)	(5.17)	(3.67)	(3.38)	(4.41)	75.6	58.6	(2.84)	40.9	74.3	69.4
507	RL.....	....	(2.12)	(3.56)	(4.72)	(3.25)	(3.24)	(4.24)	82.4	62.8	(2.18)	35.2	71.3	70.9
508	RLrP.....	....	(2.28)	(4.04)	(5.33)	(3.15)	(3.98)	(4.76)	75.5	68.0	(2.37)	39.6	74.6	79.4
509	RLrPK....	....	(2.72)	(4.49)	(5.52)	(3.49)	(4.00)	(4.98)	78.8	63.0	(2.18)	40.5	74.3	77.2
510	0.....	....	(1.87)	(3.71)	(4.46)	(2.60)	(3.14)	(4.24)	65.1	62.2	(2.27)	37.3	63.8	60.9
511	RM.....	....	(2.45)	(3.61)	(4.52)	(2.79)	(2.83)	(4.05)	74.2	72.0	(2.22)	37.8	72.4	70.8
512	RML.....	....	(2.79)	(3.76)	(4.61)	(2.94)	(2.92)	(4.14)	74.3	73.8	(2.15)	36.8	74.7	78.8
513	RMLrP...	....	(3.71)	(4.63)	(5.03)	(3.36)	(3.45)	(4.57)	68.7	76.7	(2.38)	40.8	66.3	83.9
514	RMrP.....	....	(3.30)	(4.73)	(5.09)	(3.96)	(3.87)	(4.70)	68.0	70.6	(2.67)	41.4	68.2	76.4
515	0.....	....	(1.79)	(3.92)	(4.19)	(2.81)	(2.39)	(3.20)	59.3	52.2	(1.84)	35.3	51.7	60.2

[1]Lime only. [2]No manure. [3]No residues.

JOLIET FIELD, WILL COUNTY

ESTABLISHED 1914

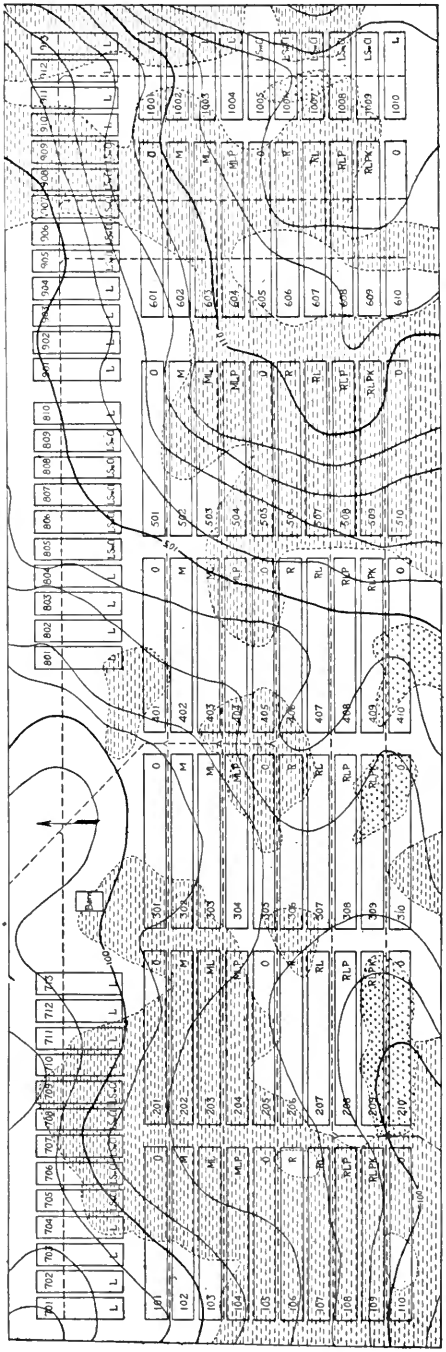
Location.—About three miles northwest of Joliet on the Lincoln highway. A part of the S. ½ of the N.W. ¼ and the S.W. ¼ of the N.E. ¼, Sec. 31, Twp. 36 N., R. 10 E. of the 3d P. M.

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 2½ 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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1914 Wheat[1]	1915 Soybeans[2]	1916 Corn	1917 Oats	1918 Soybeans	1919 Wheat	1920 Alfalfa seeding	1921 Oats[3]	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	(1.81)	(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	(1.26)	(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[2]	Soybeans[2]	Corn	Oats	Clover	Wheat	Corn	Corn	Oats	Clover
201	0	(2.00)	9.8	(.55)	7.3	75.2	(1.59)	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]	Soybeans[2]	Wheat[2]	Soybeans[2]	Corn	Oats	Soybeans	Wheat	Corn	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

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

TABLE 44.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1914 Corn[1]	1915 Oats[2]	1916 Clover[2]	1917 Wheat[2]	1918 Soybeans[2]	1919 Corn	1920 Oats	1921 Clover	1922 Wheat	1923 Corn	1924 Corn
401	0	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	69.5	(.75)	32.7	57.9	45.2
404	MLrP	50.2	75.0	(1.64)	19.6	(1.53)	44.3	93.1	(1.13)	38.8	66.1	52.4
405	0	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	0	45.1	63.1	(1.15)	0.0	(1.63)	29.2	58.6	(.75)	27.3	36.7	38.2

Plot No.	Soil treatment applied	Soybeans[1]	Corn	Oats	Soybeans	Wheat	Soybeans	Corn	Oats	Clover	Wheat	Corn
501	0	(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	0	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	0	(1.12)	27.1	74.1	(1.50)	20.8	(.67)	34.5	60.8	(1.30)	11.4	31.2

Plot No.	Soil treatment applied	Alfalfa seeding[1]	Alfalfa[3]	Alfalfa[3]	Alfalfa[3]	Alfalfa[3]	Soybeans[3]	Soybeans[3]	Corn	Oats	Clover	Wheat
601	0	....	(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	0	....	(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	0	....	(1.90)	(1.72)	(.41)	(1.30)	(.86)	(1.68)	51.5	55.5	(.30)	17.9

[1]Lime only. [2]No manure. [3]No 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]	Soy-beans[1]	Wheat[3]	Soy-beans
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

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

FOR PLOT 6 IN EACH SERIES ABOVE, READ LeL.

KEWANEE FIELD, HENRY COUNTY

ESTABLISHED 1915

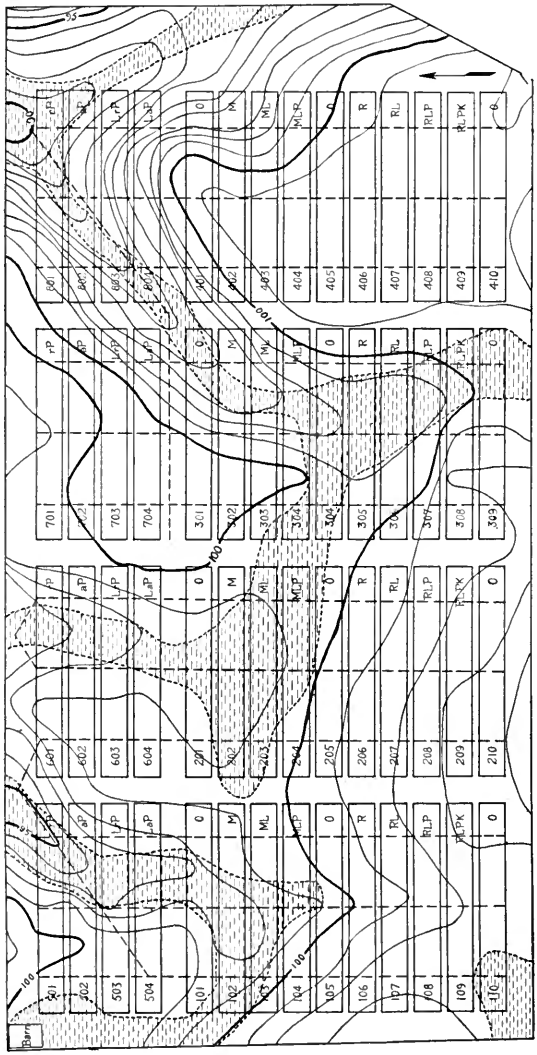
Location.—About midway between Kewanee and Galva. The N. 20 acres of the W. ½ of the N.W. ¼, Sec. 18, Twp. 14 N., R. 5 E. of the 4th P. M.

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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)	35.3	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	69.6	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) .42	35.1	60.8	47.3	(2.49)	30.3	50.0
206	R	41.2	47.9	70.5	(1.22) .38	31.8	51.9	44.5	(2.81)	31.2	53.0
207	RL	27.2	52.5	68.6	(1.60) .25	25.4	61.4	45.0	(2.82)	30.8	56.0
208	RLrP	29.7	49.2	71.2	(1.67) .12	26.8	64.7	47.5	(2.94)	38.4	62.4
209	RLrPK	28.8	54.2	77 3	(1.82) 17	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

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

TABLE 46.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1915 Soy-beans[1]	1916 Wheat[2]	1917 Corn	1918 Oats	1919 Clover	1920 Wheat	1921 Corn	1922 Oats	1923 Clover	1924 Wheat
301	0	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	0	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)	43.6
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	0	19.7	14.8	44.0	62.5	(1.85)	31.1	69.9	50.6	(0.00)	31.0

Plot No.	Soil treatment applied	Oats[1]	Clover[3]	Wheat[5]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover
401	0	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	43.6	(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	0	84.8	..[4]	30.2	58.0	43.3	(.80) .29	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	(3.31)
407	RL	88.1	..[4]	32.0	76.8	44.1	(1.00) .40	33.8	81.3	63.9	(4.04)
408	RLrP	87.8	..[4]	33.2	69.4	45.3	(.89) .35	36.7	89.0	69.4	(3.91)
409	RLrPK	95.6	..[4]	38.7	75.7	46.4	.81) .19	32.6	86.6	64.4	(3.90)
410	0	72.2	(1.95)	19.7	53.2	35.2	(1.03)	24.7	54.9	49.1	(2.96)

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1915 Barley	1916 Alfalfa seeding	1917 Alfalfa seeding	1918 Alfalfa seeding	1919 Alfalfa	1920 Alfalfa	1921 Corn	Soil treatment applied	1922 Wheat	1923 Corn	1924 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	LeLrP	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	Wheat	Corn
601	0	25.7	....	....	....	(2.48)	(2.47)	(4.57)	LerP	(4.94)	36.4[1]	67.6
602	0	25.6	....	....	....	(2.47)	(2.60)	(4.32)	LeaP	(5.05)	41.4	70.2
603	L	22.7	....	....	....	(3.05)	(2.78)	(4.18)	LeLrP	(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		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)	(4.36)	LeLrP	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		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)	LeLrP	77.7	67.5	(3.51)
804	L	21.8	....	....	....	(2.47)	(2.31)	(3.79)	LeLaP	80.4	68.6	(3.92)

[1]Wheat damaged by standing water in 1923.

LAMOILLE FIELD, BUREAU COUNTY

ESTABLISHED 1910

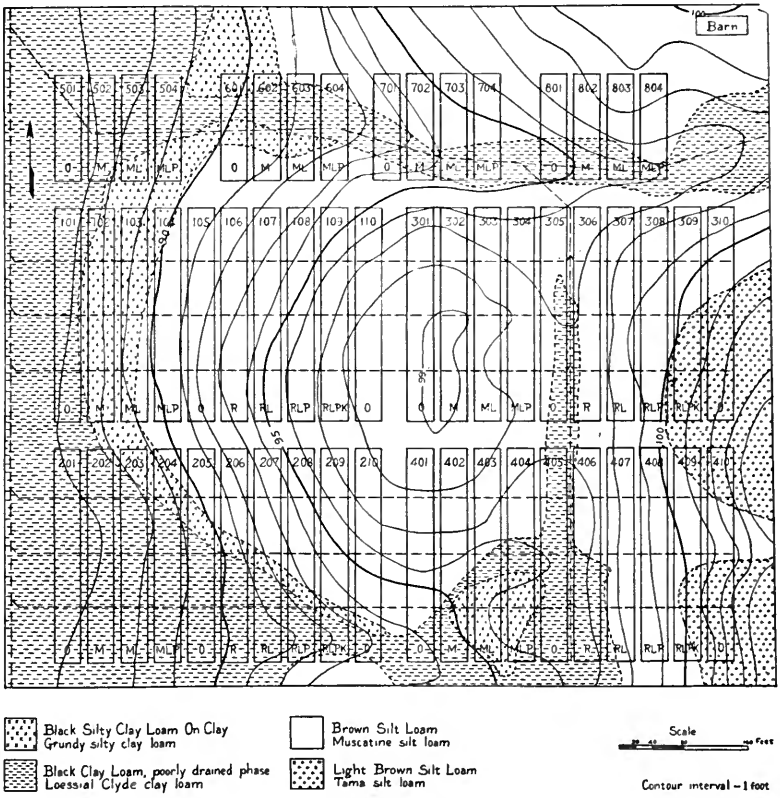
Location.—About one mile south of LaMoille. A part of the N.E. ¼ of the N.W. ¼, Sec. 36, Twp. 18 N., R. 10 E. of the 4th P. M.

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 tiled 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 ½ 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 3½ 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.



SOIL MAP OF LA MOILLE FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1910 Barley[1]	1911 Corn[2]	1912 Oats[2]	1913 Soy-beans[5]	1914 Wheat[6]	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[1]	Wheat[3]	Corn[4]	Oats	Clover	Wheat	Corn	Oats	Clover	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

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

TABLE 48.—*Concluded*

Bushels or (tons)per acre

Plot No.	Soil treatment applied	1910 Oats[1]	1911 Soy-beans[2]	1912 Barley[3, 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	0.....	61.3	18.0	44.7	35.6	51.6	(2.20)	21.5	22.8	58.4	(2.45)		36.7	49.7	54.5	20.2	33.9
302	M.....	74.1	21.2	46.3	51.2	58.9	(2.20)	29.8	40.3	78.4	(2.76)		43.3	63.1	74.2	30.2	50.0
303	ML.....	65.9	22.1	47.2	46.6	60.5	(2.18)	30.7	36.1	65.5	(2.84)		41.2	61.7	75.2	32.9	53.7
304	MLrP.....	59.4	21.2	43.0	47.9	56.2	(2.20)	28.6	42.5	68.8	(2.77)		40.8	68.7	71.7	33.5	57.8
305	0.....	44.7	21.8	44.8	40.2	50.0	16.2	10.9	24.6	42.8	(1.80)	1.79	36.2	57.8	59.2	25.6	42.1
306	R.....	52.8	20.4	45.2	58.9	57.5	16.8	25.9	31.2	75.9	(1.80)	.75	33.7	63.9	66.3	33.0	46.7
307	RL.....	70.5	21.9	52.2	58.8	60.5	16.6	36.2	38.9	80.0	(1.88)	1.00	36.9	68.7	68.6	37.2	48.9
308	RLrP.....	61.6	21.0	47.5	58.8	60.2	14.4	34.2	35.8	84.5	(1.93)	1.21	40.6	68.2	68.6	40.4	54.8
309	RLrPK....	53.4	19.7	47.1	51.0	57.8	14.7	32.7	34.1	76.1	(1.79)	1.17	37.7	65.6	74.1	34.6	48.1
310	0.....	58.6	20.0	44.5	36.1	46.1	(1.96)	25.3	20.1	46.6	(2.43)		23.3	49.9	43.3	22.6	34.9

Plot No.	Soil treatment applied	Corn[1]	Oats[2]	Soy-beans[2]	Wheat[5]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Wheat	Corn	Oats	Wheat
401	0.....	34.6	57.5	(2.11)	42.7	44.3	75.8	(2.90)	40.1	52.6	51.4	(1.70)	39.5	60.2	65.3	43.7
402	M.....	35.4	55.6	(2.17)	45.8	57.3	80.8	(2.77)	45.2	59.5	52.3	(2.11)	42.3	69.2	67.0	48.8
403	ML.....	37.2	58.1	(2.14)	44.6	55.7	90.8	(2.54)	46.8	64.0	57.0	(2.07)	43.7	75.9	72.0	47.3
404	MLrP.....	36.2	61.9	(2.20)	45.8	61.2	83.4	(2.51)	45.3	65.1	53.9	(1.94)	40.8	78.3	68.6	48.6
405	0.....	37.4	68.1	30.6	48.8	49.9	54.7	.25	42.8	58.3	51.4	(.82)	38.3	64.9	64.5	43.7
406	R.....	40.5	66.6	28.8	54.4	58.5	85.8	.25	44.4	59.7	39.7	(1.18)	40.1	66.4	59.8	45.9
407	RL.....	39.8	66.3	27.1	55.9	52.9	68.8	.08	48.2	57.3	42.3	(1.55)	43.0	72.5	55.0	39.2
408	RLrP.....	38.9	63.0	25.8	53.8	56.2	76.6	.17	48.8	59.7	47.3	(1.60)	39.6	70.0	54.5	41.8
409	RLrPK....	39.4	58.9	25.8	49.8	59.1	85.9	.33	49.1	61.8	53.1	(1.70)	39.3	75.5	60.8	43.5
410	0.....	36.9	50.8	26.0	44.4	40.7	64.1	(2.64)	39.8	55.4	42.0	(1.81)	36.3	56.2	66.3	36.1

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

TABLE 49.—LAMOILLE FIELD: SERIES 500, 600, 700, 800

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
501	0	153.2	140.3	....	(3.39)	....	(4.18)	(5.20)	(2.49)	31.3	90.2	72.8	40.0
502	M	156.8	108.2	....	(4.58)	....	(4.36)	(5.11)	(2.48)	33.3	81.0	61.4	40.8
503	ML	163.5	111.7	....	(4.77)	....	(4.58)	(5.30)	(2.60)	34.7	77.4	64.8	32.7
504	MLrP	161.8	124.3	....	(4.08)	....	(4.00)	(4.68)	(2.70)	39.7	74.2	59.6	31.8
		Potatoes	Alfalfa[1,2]	Alfalfa[2]	Potatoes	Potatoes	Alfalfa[2]	Alfalfa	Alfalfa	Alfalfa[3]	Oats	Soybeans	Corn	Corn
601	0	....	(6.64)	203.0	99.2	....	(4.42)	(4.08)	....	54.1	27.5	66.6	43.6
602	M	....	(6.68)	222.8	216.3	....	(5.54)	(5.12)	....	49.1	27.8	69.0	44.2
603	ML	....	(6.82)	228.5	196.7	....	(4.94)	(4.80)	....	53.8	28.5	67.4	45.6
604	MLrP	....	(6.58)	182.0	160.2	....	(4.79)	(5.08)	....	52.8	30.0	67.4	49.0
		Potatoes	Alfalfa[1,2]	Alfalfa[2]	Alfalfa[2]	Alfalfa[2]	Potatoes	Potatoes	Alfalfa	Alfalfa[3]	Corn	Wheat	Clover	Corn
701	0	64.0	....	(5.39)	(4.20)	(4.64)	73.3	(2.09)	....	50.4	33.3	(1.63)	37.2
702	M	98.0	....	(5.20)	(4.73)	(4.77)	143.2	(3.30)	....	63.4	39.2	(1.96)	46.0
703	ML	91.8	....	(5.28)	(4.83)	(5.27)	120.7	(3.87)	....	66.0	39.2	(1.94)	43.8
704	MLrP	96.8	....	(5.32)	(4.70)	(4.72)	108.5	(4.22)	....	64.6	35.0	(2.10)	42.6
		Potatoes	Potatoes	Alfalfa[1,2]	Alfalfa[2]	Alfalfa[2]	Alfalfa[2]	Alfalfa[2,3]	Alfalfa[2]	Corn	Corn	Wheat	Clover
801	0	50.7	41.8	....	(5.24)	(4.29)	(4.48)	....	(4.02)	60.8	64.6	21.5	(1.42)
802	M	70.0	70.8	....	(5.01)	(4.46)	(4.61)	....	(3.87)	68.0	84.2	36.8	(2.30)
803	ML	67.8	59.2	....	(5.79)	(4.60)	(4.45)	....	(4.10)	70.6	78.6	44.0	(2.45)
804	MLrP	68.7	71.8	....	(6.24)	(6.01)	(4.64)	....	(3.71)	72.4	79.4	39.2	(2.75)

[1]Series 600, 700, 800 harvested as a unit. [2]No manure. [3]Alfalfa winterkilled in 1915, 1917, and 1920.

LEBANON FIELD, ST. CLAIR COUNTY

ESTABLISHED 1910

Location.—Immediately south of Lebanon. Parts of lots 43 and 44 in the S.W. ¼, Sec. 19, Twp. 2 N., R. 6 W. of the 3d P. M.

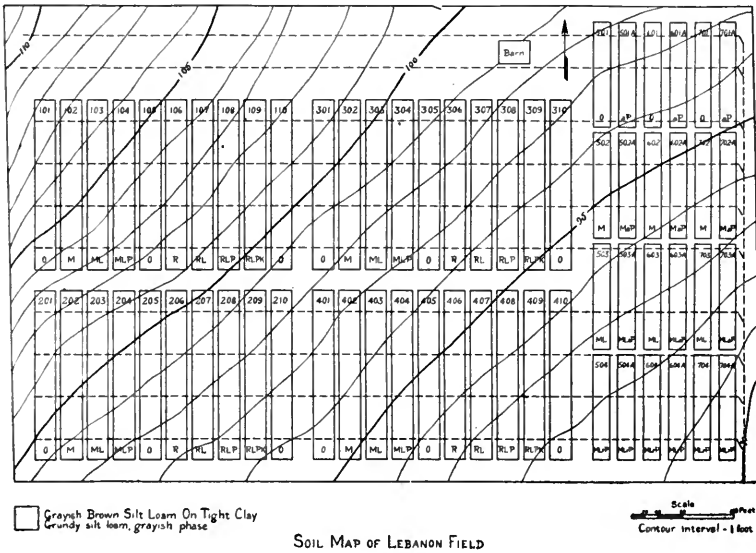
Description.—The field consists of 20 acres of dark-colored loessial upland soil of medium acidity. It appears to be fairly uniform both as to soil and topography. Only one soil type was found on this field, namely, Grayish Brown Silt Loam On Tight Clay (Grundy silt loam, grayish phase). Altho there 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 tiled 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

to the west halves, but acid phosphate has been applied to the east half of Plots 1, 2, and 3 of each series at the annual rate of 200 pounds an acre, 400 pounds preceding the potato crop and 200 pounds ahead of the wheat. Rock phosphate will be applied to the east half of Plot 4 on each series at the annual rate of 500 pounds an acre, all to the potato crop.



SOIL MAP OF LEBANON FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1910 Wheat[1]	1911 Corn[2]	1912 Oats[2]	1912 Stubble clover	1913 Clover[2]	1914 Wheat	1915 Corn	1916 Oats	1917 Clover	1918 Wheat	1919 Corn	1920 Oats	1921 Clover	1922 Wheat	1923 Corn	1924 Soybeans
101	0	....	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	0	....	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	....	..[4]	25.6	39.3	33.1	.83	33.2	36.5	43.1	(1.00)	30.0	36.6	(1.71)
107	RL	....	44.7	42.8	....	..[4]	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	....	..[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	....	..[4]	26.2	50.0	46.9	.58	42.2	57.7	58.0	(2.17)	27.3	62.8	(1.64)
110	0	....	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)

		Cowpeas[1]	Wheat[3]	Corn	Oats	Soybeans	Wheat	Stubble clover	Corn	Oats	Clover	Wheat	Corn[5]	Oats	Clover	Wheat[6]	Corn
201	0	....	27.3	34.0	3.1	(.46)	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	7.3	(.37)	30.8	(1.80)	27.6	48.9	(2.16)	29.2	8.4	46.1	(1.47)	34.7	26.2
203	ML	....	30.0	48.7	5.8	(.41)	33.0	(1.78)	29.5	71.1	(3.11)	30.8	10.8	48.8	(2.55)	32.5	43.2
204	MLrP	....	29.6	46.2	6.1	(.41)	32.4	(1.80)	28.1	66.2	(3.09)	31.7	13.8	49.2	(2.86)	29.3	42.4
205	0	....	23.9	27.6	5.2	2.8	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	3.2	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	3.8	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	0	....	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

[1]No soil treatment: no yields taken. [2]No phosphorus or potassium. [3]No manure. [4]No seed harvested in 1913. [5]Chinch bugs damaged the corn in 1920. [6]In 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)

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1910 Wheat[1]	1911 Clover[2]	1912 Wheat[4]	1912 Stubble clover	1913 Corn	1914 Oats	1915 Clover	1916 Wheat	1917 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

Plot No.	Soil treatment applied	Corn[1]	Oats[3]	Soybeans[3]	Wheat[4]	Corn[5]	Oats	Stubble clover	Clover	Wheat
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

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

TABLE 50.—*Concluded* (1918-1924)

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1918 Oats	1919 Soybeans	1920 Wheat	1920 Stubble clover	1921 Corn	1922 Oats	1923 Wheat	1923 Stubble clover	1924 Wheat	1924 Stubble clover
301	0	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	0	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	0	36.1	(2.17)	25.9	....	59.2	32.0	22.5	(0.00)	21.3	....

Plot No.	Soil treatment applied	Corn	Oats	Clover		Wheat	Corn	Soybeans	Wheat	Stubble clover
401	0	13.3	32.5	(1.90)		36.0	45.7	15.3	4.3	(.17)
402	M	24.4	43.4	(1 98)		36.3	62.4	24.3	7.5	(.24)
403	ML	32.2	46.7	(2.11)		36.9	61.2	25.4	20.0	(.71)
404	MLrP	31.6	48.1	(2.06)		35.3	61.1	25.8	24.0	(.54)
405	0	20.4	36.2	(1.68)	.18	35.6	40.6	27.7	8.5	(.23)
406	R	21.7	44.4	(1.84)	.04	32.8	59.8	25.8	8.8	(.46)
407	RL	36.9	57.5	(1.46)	.03	30.5	57.5	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	0	17.9	35.5	(1.93)		35.3	52.8	24.2	10.2	(.27)

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1911 Potatoes	1912 Corn	1913 Soybeans	1914 Potatoes	1915 Corn	1916 Soybeans	1917 Potatoes	1918 Corn	1919 Soybeans	1920 Potatoes
501	0	30.1	55.9	24.0	13.3	45.0	22.8	22.0	42.4	(2.96)	17.1
502	M	32.0	65.9	24.1	17.6	65.4	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	55.3	(2.90)	37.7
504	MLrP	17.5	57.5	24.4	8.5	61.6	19.8	33.6	49.7	(3.04)	32.3

Plot No.	Soil treatment applied	Soybeans[1]	Potatoes	Corn	Soybeans	Potatoes	Corn	Soybeans	Potatoes	Corn	Oats	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)

Plot No.	Soil treatment applied	Corn[1]	Soybeans[1]	Potatoes	Corn	Soybeans	Potatoes	Corn	Soybeans	Potatoes	Corn
701	0	48.2	(2.93)	35.3	13.0	11.8	63.3	59.6	(3.10)	37.3	23.0
702	M	46.4	(2.53)	40.5	16.7	10.3	83.7	59.0	(3.18)	45.1	29.8
703	ML	38.1	(2.08)	31.9	19.3	13.7	68.9	58.1	(3.22)	76.5	39.0
704	MLrP	43.2	(2.22)	29.8	19.2	12.5	73.9	64 4	(3.58)	74.9	24.5

[1]Lime only.

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

Plot No.	Soil treatment applied	1921 Oats	1922 Sweet clover	1923 Potatoes	1924 Wheat	1924 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	Clover
601W	0	22.2	20.8	30.0	(1.03)	(2.99)
601E	aP	27.2	22.7	25.0	(1.10)	(2.71)
602W	M	21.2	30.5	29.0	(1.27)	(2.61)
602E	MaP	24.5	34.3	23.5	(.82)	(3.14)
603W	ML	25.3	37.3	28.5	(1.12)	(2.51)
603E	MLaP	26.0	35.0	25.0	(1.01)	(3.08)
604W	MLrP[1]	21.8	23.7	32.7	(1.34)	(3.27)
604E	MLrP	23.5	27.7	25.0	(1.03)	(2.70)

		Potatoes	Wheat	Sweet clover	Potatoes
701W	0	47.0	32.5	.50	50.8
701E	aP	65.0	26.5	.83	39.7
702W	M	42.0	28.7	.33	47.2
702E	MaP	66.2	26.8	.83	52.0
703W	ML	44.7	29.2	.33	59.2
703E	MLaP	53.7	25.7	.67	76.8
704W	MLrP[1]	52.0	36.2	.33	58.0
704E	MLrP	52.0	27.5	.83	89.7

[1]Residual phosphate on plots 504W, 604W, and 704W. [2]No 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. ¼ of the S.E. ¼ of the S.E. ¼, 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	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]

[1]Growth 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. ¼ of the N.W. ¼, 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

Bushels or (tons) per acre

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

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

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

Bushels per acre

Plot No.	Soil treatment applied	1907 Oats[1]	1908 Wheat	1909 Corn	1910 Oats	1911 Wheat	1912 Corn	1913 Oats
101	None	39.1	24.5	8.6	57.5	11.3	12.7	14.8
102W	Manure (6 tons)	28.1	27.6	35.7	59.6	14.7	40.0	10.6
102E	Manure (12 tons)			44.5			53.6	
103	Potassium sulfate	41.9	27.8	31.6	68.8	16.0	43.9	11.5
104	Gypsum	25.4	20.1	2.1	39.8	5.7	4.6	5.2
105	None	19.3	21.5	4.6	37.5	6.0	8.6	1.9
		Corn	Oats	Wheat	Corn	Oats	Oats[3]	Corn
201	None	8.8	19.9	13.5	8.0	5.6	35.1	2.0
202W	Manure (6 tons)	43.5	24.0	22.7	67.5	14.4	53.4	9.7
202E	Manure (12 tons)	64.9	23.8	24.1	75.5			
203	Potassium sulfate	73.1	20.3	18.3	51.8	15.6	57.3	11.6
204	Gypsum	5.0	17.5	14.7	4.8	5.3	44.3	3.0
205	None	5.4	18.1	2.0	14.6	10.6	43.9	4.9
		Cowpeas[1, 2]	Corn	Oats	Wheat	Corn	Oats	Wheat
301	None	....	34.9	63.0	7.7	20.6	56.5	17.7
302W	Manure (6 tons)	....	29.1	62.5	13.0	35.2	55.6	24.5
302E	Manure (12 tons)	....	23.2	67.5				
303	Potassium sulfate	....	38.7	62.6	22.0	35.2	59.4	25.5
304	Gypsum	....	13.4	63.8	7.0	15.7	48.5	16.5
305	None	....	10.3	65.3	7.7	18.8	48.3	19.3

[1]No manure. [2]Growth plowed down. [3]Wheat 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. ½ of the S.W. ¼ of the S.E. ¼, 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 1½ 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.—MASCOUTAH FIELD: SERIES 100, 200, 300, 400

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1902 Cow-peas[2,3]	1903 Corn	1904 Oats	1905 Wheat	1906 Clover	1907 Corn	1908 Oats	1909 Wheat	1910 Cow-peas	1911 Corn	1912 Soy-beans	1913 Wheat
101	0	....	46.4	29.7	14.8	(.23)	63.3	6.6	19.8	(1.15)	35.2	(1.06)	21.0
102	Le[1]	....	60.3	39.4	22.0	(.79)	67.9	7.8	24.0	..[5]	56.6	..[5]	24.7
103	M	....	53.9	34.4	22.2	(.63)	76.3	6.3	25.8	(1.44)	40.6	(1.50)	19.5
104	LeL	....	53.3	36.9	18.3	(1.09)	72.0	8.4	26.5	..[5]	54.4	..[5]	17.3
105	ML	....	56.5	41.9	21.3	(1.23)	79.0	9.4	26.8	(1.23)	43.6	(1.53)	30.7
106	LeLbP	....	50.8	36.9	25.9	(1.30)	70.0	9.7	32.0	..[5]	38.2	..[5]	33.5
107	MLbP	....	43.1	32.8	26.3	(1.24)	73.0	10.6	32.7	(1.23)	29.6	(1.67)	32.3
108	LeLbPK	....	56.8	33.4	28.2	(1.69)	84.3	11.3	32.7	..[5]	29.4	..[5]	34.7
109	MLbPK	....	58.9	39.4	31.2	(1.57)	93.0	13.1	33.2	(1.52)	32.8	(2.38)	30.2
110	LbPK	....	63.6	49.4	34.7	(1.24)	85.6	15.9	32.3	(2.10)	44.0	(2.62)	26.5

		Wheat[2]	Cow-peas[4,5]	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	Cow-peas	Corn	Oats
201	0	19.7	....	34.7	22.2	17.8	(.44)	44.4	34.1	11.2	(.49)	42.4	.6
202	Le	15.2	....	47.5	34.1	17.8	(.15)	35.6	27.2	11.3	..[5]	50.4	2.5
203	M	15.3	....	34.7	27.8	22.7	(.42)	45.2	32.5	14.5	(.63)	60.4	1.6
204	LeL	17.7	....	64.9	39.7	22.5	(1.22)	54.6	27.2	15.2	..[5]	76.8	8.1
205	ML	16.5	....	49.6	27.2	20.3	(1.46)	53.4	30.6	17.8	(.72)	59.4	10.0
206	LeLbP	24.7	....	66.4	49.4	25.0	(1.62)	60.8	38.4	18.3	..[5]	63.2	13.8
207	MLbP	28.0	....	38.7	35.9	23.8	(1.61)	55.4	38.4	22.5	(.76)	58.6	9.4
208	LeLbPK	29.8	....	58.1	52.5	31.3	(1.64)	62.6	35.9	17.2	..[5]	68.0	6.6
209	MLbPK	31.7	....	40.4	40.9	23.7	(1.47)	63.8	48.4	24.3	(.94)	71.4	12.2
210	LbPK	39.8	....	53.7	40.6	23.3	(1.26)	66.2	43.4	25.0	(.74)	64.8	14.7

[1]Eight tons of manure applied to plot 102 ahead of the 1903 crop. [2]No manure or legumes. [3]Crop removed but not weighed by plots. [4]No manure. [5]Growth plowed under.

TABLE 56.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1902 Oats[1]	1903 Wheat[2]	1904 Cow-peas[2]	1905 Corn	1906 Oats	1907 Wheat	1908 Clover	1909 Corn	1910 Oats	1911 Wheat	1912 Clover	1912 Soy-beans[5]	1913 Corn
301	0	31.6	4.7	....	41.7	20.9	18.3	(.50)	20.4	25.6	13.8	(.43)	(.50)	6.8
302	Le	37.2	5.0	..[3]	56.8	32.2	24.5	(.65)	27.4	29.4	15.7	..[3]		13.2
303	M	41.6	4.8	....	67.2	30.6	32.0	(.22)	42.0	38.1	18.8	(.71)	(.74)	17.4
304	LeL	43.8	7.5	..[3]	60.0	36.2	20.2	(1.39)	42.0	35.9	17.0	..[3]		19.0
305	ML	45.0	4.3	....	64.3	30.3	23.0	(1.49)	46.4	28.1	13.7	(.91)	(1.09)	20.6
306	LeLbP	46.9	10.5	..[3]	60.3	38.1	26.8	(1.31)	44.8	29.4	23.8	..[3]		19.2
307	MLbP	46.3	4.7	....	65.3	29.7	23.2	(1.39)	41.8	25.3	21.3	(1.57)	(1.18)	13.8
308	LeLbPK	50.6	8.0	..[3]	70.7	33.1	23.2	(1.63)	45.6	50.0	19.8	..[3]		20.4
309	MLbPK	54.1	6.5	....	67.2	26.6	24.0	(1.63)	44.6	54.4	22.7	(2.02)	(1.57)	22.8
310	LbPK	57.8	7.4	....	63.5	28.4	25.8	(1.41)	44.0	56.3	22.2	(2.05)	(1.86)	17.0

		Corn[1]	Oats[1]	Wheat[2]	Cow-peas[2]	Corn	Oats[4]	Wheat	Clover	Corn	Oats	Wheat	Stubble clover	Clover
401	0	32.3	34.4	17.7	....	49.6	....	5.3	(0.00)	18.0	10.9	11.5	(.46)	(.85)
402	Le	28.9	27.5	17.0	..[3]	50.4	....	6.2	..[3]	22.2	8.1	10.3		
403	M	30.4	33.8	20.7	....	54.0	....	10.2	(.50)	34.0	16.3	14.5	(.58)	(1.26)
404	LeL	26.5	37.2	19.8	..[3]	54.3	....	14.2	..[3]	28.6	26.9	14.0		
405	ML	30.5	33.8	16.8	....	52.8	....	15.2	(1.05)	29.4	31.9	18.5	(.84)	(1.27)
406	LeLbP	39.6	39.7	25.5	..[3]	57.1	....	21.7	..[3]	28.6	33.8	34.2		
407	MLbP	42.7	34.7	21.3	....	54.1	....	19.7	(1.25)	27.2	34.4	37.5	(.71)	(1.57)
408	LeLbPK	45.3	37.2	19.8	..[3]	57.3	....	18.2	..[3]	36.0	25.0	40.5		
409	MLbPK	47.1	37.2	19.8	....	49.1	....	16.7	(1.40)	35.2	25.0	36 0	(.74)	(2.50)
410	LbPK	48.1	40.9	22.8	....	51.5	....	18.5	(0.00)	33.8	21.6	29.0	(.61)	(2.80)

[1]No manure or legumes. [2]No manure. [3]Growth plowed down. [4]All plots harvested together. [5]Soybeans seeded after one crop of clover had been removed.

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

Bushels per acre

Plot No.	Soil treatment applied	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

[1]Crop failure.

TABLE 58.—MASCOUTAH FIELD: COMPARATIVE PHOSPHATE TEST

Bushels per acre

Plot No.	Soil treatment applied	1904 Corn[1]	1905 Corn	1906 Oats	1907 Wheat	1908 Cow-peas[2]	1909 Corn	1910 Oats	1911 Clover[2]	1912 Wheat	1913 Corn
95N	LebPK	69.7	37.2	20.8	20.3	....	50.5	64.4	....	31.6	37.1
95S	LeLbPK	63.3	26.7			....	51.8	56.3	....	32.3	39.7
96N	LeK	48.9	32.3	17.9	19.0	....	48.5	36.6	....	26.2	29.0
96S	LeLK	50.9	28.4			....	49.9	56.4	....	28.1	26.2
97N	LeaPK	50.8	28.7	17.9	20.4	....	47.3	66.5	....	31.0	33.9
97S	LeLaPK	53.9	29.6			....	53.2	56.1	....	30.4	39.4
98N	LerPK	50.7	31.2	18.3	20.2	....	55.5	56.4	....	32.1	45.0
98S	LeLrPK	54.1	35.9			....	54.0	59.4	....	33.1	44.6
99N	LeK	36.9	30.8	17.0	20.1	....	50.2	44.9	....	21.3	36.5
99S	LeLK	46.1	34.0			....	49.2	64.0	....	30.1	24.3
100N	LesPK	42.4	30.4	19.6	17.5	....	59.0	48.0	....	34.0	59.5
100S	LeLsPK	53.4	34.3			....	52.4	66.4	....	35.5	42.4

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

McNABB FIELD, PUTNAM COUNTY

ESTABLISHED 1907

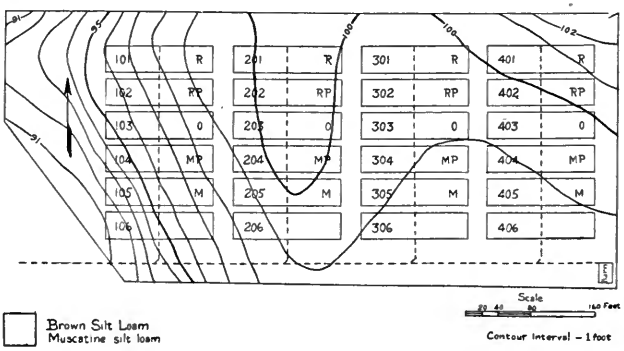
Location.—About 1½ miles south of McNabb on land belonging to the estate of Mr. John P. Swaney. A part of the N.E. ¼ of the S.W. ¼, Sec. 15, Twp. 31 N., R. 1 W. of the 3d P. M.

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 MC NABB FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1907 Cow-peas[1,2]	1908 Corn[1]	1909 Oats[3]	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	35.0	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	0	....	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

		Oats[1]	Clover[1]	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	Soy-beans	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	Clover
201	R	19.1	1.94	84.0	61.9	49.3	..(4)	52.2	62.2	39.3	..(4)	61.0	66.2	32.5	(1.40)	75.6	71.9	29.2	(4.38)
202	RrP	20.0	2.17	93.2	60.9	48.1	..(4)	59.4	58.8	42.2	..(4)	67.8	66.9	30.3	(1.40)	81.0	75.0	32.2	(4.00)
203	0	19.7	(2.02)	92.6	57.8	45.8	(3.41)	61.0	58.1	40.3	(2.07)	64.6	62.8	32.0	(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	32.0	(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	30.8	(2.45)	73.4	69.4	28.5	(3.15)

		Oats[1]	Wheat[1]	Clover[1]	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	Soy-beans	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat
301	R	20.9	41.0	..(4)	111.4	63.1	9.7	..(4)	63.8	33.8	35.0	16.7	68.0	46.2	13.8	(1.06)	78.4	59.7	32.7
302	RrP	22.2	42.5	..(4)	111.2	61.6	11.8	..(4)	61.2	42.2	36.7	20.0	73.2	49.7	14.2	(1.20)	77.6	65.6	38.8
303	0	22.5	39.8	(2.85)	112.2	57.5	10.0	(4.25)	59.2	42.2	38.3	(1.44)	69.0	46.9	17.8	(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	41.9	15.5	(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	40.3	15.8	(2.94)	79.6	61.6	41.0

		Corn[1]	Oats[3]	Wheat[3]	Clover[3]	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	Clover	Corn	Oats	Wheat	Clover	Corn	Oats
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	74.2	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	75.4	69.3	29.0	(2.72)	35.4	87.8
403	0	72.0	26.6	28.2	(2.43)	109.8	90.3	41.0	(1.70)	60.8	40.9	34.7	(3.30)	71.0	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)	74.2	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)	67.0	66.6	35.8	(2.37)	35.0	75.0

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

MINONK FIELD, WOODFORD COUNTY

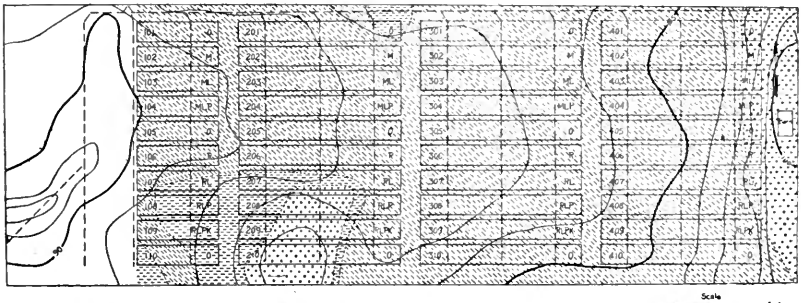
ESTABLISHED 1910

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.



SOIL MAP OF MINONK FIELD

TABLE 60.—MINONK FIELD: SERIES 100, 200, 300, 400

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1910 Barley[1]	1911 Corn[2]	1912 Oats[4]	1913 Clover[4]	1914 Wheat[5]	1915 Corn	1916 Oats	1917 Soy-beans	1918 Wheat	1919 Corn	1920 Oats	1921 Soy-beans	1922 Wheat	1923 Corn	1924 Oats	1924 Stubble clover
101	0	38.1	72.8	42.8	(3.94)	53.2	51.8	63.1	(1.43)	40.1	55.8	71.2	34.8	34.3	38.4	58.8	(.92)
102	M	29.4	66.8	43.4	(4.04)	51.3	56.4	55.3	(1.70)	45.0	65.6	73.4	35.8	35.8	49.8	65.3	(1.21)
103	ML	29.5	63.1	39.7	(3.86)	55.8	61.4	55.6	(1.94)	38.7	67.2	67.5	37.2	31.8	50.2	61.6	(.85)
104	MLrP	33.7	61.0	39.1	(3.61)	49.0	57.0	50.9	(2.06)	34.2	66.8	63.4	36.5	30.2	47.6	54.1	(.89)
105	0	33.0	58.6	41.3	.67	53.0	50.0	52.2	20.0	38.3	58.6	65.0	34.5	30.0	37.4	48.1	(.95)
106	R	36.9	72.3	51.3	.83	47.0	52.2	55.9	19.2	34.8	54.2	96.6	33.8	32.5	55.2	85.9	(.80)
107	RL	39.9	71.2	42.5	.67	35.2	43.8	58.1	18.0	28.2	60.2	92.5	32.3	31.0	52.0	85.3	(.83)
108	RLrP	44.0	72.4	37.5	.67	33.8	40.2	60.6	17.8	32.0	59.2	94.4	31.5	33.3	51.4	84.7	(1.06)
109	RLrP	39.5	73.8	31.9	.50	29.8	43.8	60.6	16.0	31.0	55.6	89.4	25.8	30.3	51.8	83.8	(1.17)
110	0	42.4	68.8	34.4	(1.63)	27.3	43.6	56.9	(1.23)	22.7	51.4	71.2	25.5	21.2	30.2	54.1	(.57)

Plot No.	Soil treatment applied	Soy-beans[1]	Wheat[3]	Corn	Oats	Soy-beans	Wheat	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Corn	Corn
201	0	13.3	25.9	65.4	39.7	(1.10)	52.2	37.5	76.1	(4.35)	33.3	56.4	31.6	(3.36)	48.9	49.3
202	M	14.7	25.7	70.6	38.0	(1.22)	52.6	35.7	67.0	(4.30)	33.7	67.0	33.3	(4.03)	56.5	46.9
203	ML	15.0	28.5	69.4	41.6	(1.23)	53.6	35.1	73.8	(4.57)	32.8	68.1	32.3	(3.59)	59.2	46.6
204	MLrP	14.7	25.8	74.3	41.6	(.98)	61.1	31.6	65.8	(4.59)	32.4	61.7	32.3	(3.42)	54.9	46.0
205	0	13.3	26.0	63.9	39.1	8.7	51.0	26.4	63.6	.75	31.2	54.8	31.7	(2.94)	46.5	47.8
206	R	12.5	26.8	65.0	35.0	10.8	51.2	37.1	78.9	1.08	32.7	62.0	30.6	(3.16)	54.2	56.1
207	RL	13.5	22.7	69.7	36.2	8.5	49.9	34.9	75.0	.92	33.0	61.6	26.4	(2.75)	48.3	54.9
208	RLrP	11.2	22.2	68.4	40.2	8.8	47.6	35.6	79.7	.42	36.2	65.8	29.4	(3.18)	49.1	56.4
209	RLrPK	11.8	23.8	69.8	44.4	7.7	48.1	34.6	78.9	.67	34.2	64.2	30.3	(3.38)	49.2	58.1
210	0	12.7	20.0	66.3	44.1	8.5	44.5	22.8	63.8	(3.75)	32.4	44.7	33.9	(2.35)	35.0	41.1

[1]No treatment. [2]Residues only. [3]No manure or limestone. [4]Residues and limestone only. [5]No manure.

TABLE 60.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	0	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	M	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	0	58.3	(2.82)	15.3	57.9	45.0	19.7	34.5	46.4	58.6	(1.75) .59	42.8	70.4	66.1	30.8	40.6
306	R	58.3	..[3]	17.8	64.0	44.5	18.6	38.3	60.6	60.9	(1.54) .54	40.2	77.6	69.7	36.8	53.3
307	RL	56.7	..[3]	15.8	62.0	45.8	18.3	35.5	70.0	60.9	(1.38) .56	35.8	81.7	67.0	30.4	60.5
308	RLrP	56.9	. [3]	18.0	58.7	42.5	20.7	34.4	68.7	63.1	(1.21) .39	39.0	77.5	70.5	29.9	67.2
309	RLrPK	61.9	..[3]	13.3	59.2	38.8	19.2	31.8	69.9	64.5	(1.13) .30	35.6	80.3	69.2	30.9	56.2
310	0	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

		Corn[1]	Oats[3]	Soy-beans[5]	Wheat[4]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Wheat	Corn	Oats	Wheat
401	0	52.0	52.5	(1.27)	33.8	19.9	89.4	(2.07)	9.9	60.9	52.0	(.70)	29.2	52.0	49.7	26.8
402	M	48.9	52.5	(1.54)	31.8	22.6	93.0	(2.06)	14.0	70.5	49.2	(.92)	28.5	70.3	57.7	33.9
403	ML	50.9	55.3	(1.10)	27.9	18.7	93.4	(1.82)	11.2	75.6	49.5	(1.24)	29.3	71.3	57.2	39.6
404	MLrP	51.8	49.4	(1.24)	33.5	24.7	103.1	(2.32)	17.1	78.5	49.5	(1.66)	30.1	73.0	64.2	39.9
405	0	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	0	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

[1]No treatment. [2]Residues only. [3]Growth plowed down. [4]No manure. [5]Residues 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. ¼ of the N.W. ¼ of the S.E. ¼, Sec. 6, Twp. 30 N., R. 11 W. of the 2d P. M. and a part of the S.W. ¼ of the S.W. ¼ of the N.E. ¼, Sec. 6, Twp. 30 N., R. 11 W. of the 2d P. M.

Description.—The field consisted of two areas, one containing 2¼ acres and one 3½ 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

Bushels per acre

Plot No.	Soil treatment applied	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[1]	33.9[1]	52.6[1]	14.9[1]	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	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[2]	24.8[2]	51.3	23.4	26.6	61.2	29.0	65.2	59.6	50.6	22.8	34.2

[1]Potassium sulfate was applied to Plot 102 in 1904, 1905, 1906, and 1907. [2]No potassium was applied to Plot 110 in 1904 and 1905.

TABLE 62.—MOMENCE FIELD: SERIES 200, 300

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	..[3]	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	24.6	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	..[3]	27.4	18.0	30.3	12.3
208	MbP	1.5	8.9	30.9	....	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	34.9	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	..[3]	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	(.98)	52.0	42.2	30.0	12.3
307	KbPR	44.4	50.5	45.3	(.40)	15.8	53.6	40.0	..[3]	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

[1]No organic manure. [2]Clover 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. [3]Plowed down.

MT. MORRIS FIELD, OGLE COUNTY

ESTABLISHED 1910

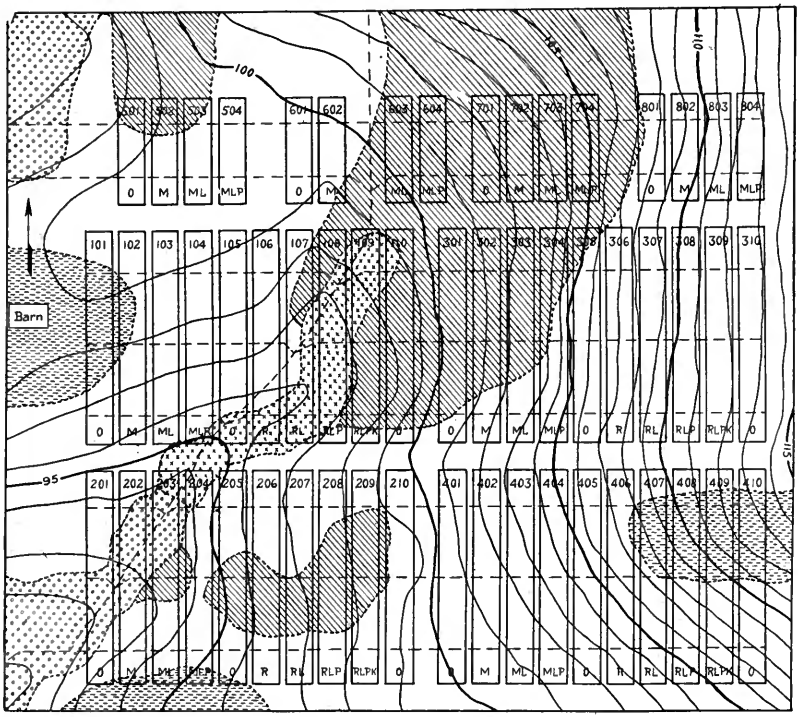
Location.—Just outside the residence district southeast of Mt. Morris. A part of the N. ½ of the N.W. ¼, Sec. 35, Twp. 24 N., R. 9 E. of the 4th P. M.

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 ½ 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 3½ tons, and for the present no more of these materials will be applied.



SOIL MAP OF MT. MORRIS FIELD

TABLE 63.—MT. MORRIS FIELD: SERIES 100, 200, 300, 400

Bushels or (tons)per acre

Plot No.	Soil treatment applied	1910 Barley[1]	1911 Corn[2]	1912 Oats[3]	1913 Clover[5]	1914 Wheat[6]	1915 Corn	1916 Oats	1917 Clover	1918 Wheat	1919 Corn	1920 Oats	1921 Clover	1922 Wheat	1923 Corn	1924 Oats
101	0.....	44.6	53.8	49.1	(3.17)	40.5	17.9	67.0	(1.23)	16.6	47.1	57.2	(1.53)	28.5	38.4	66.9
102	M.....	42.9	54.1	50.0	(3.70)	42.8	36.7	71.6	(1.72)	22.5	58.8	85.2	(1.91)	34.8	61.8	81.7
103	ML.....	30.2	46.7	27.0	(2.37)	36.2	41.0	63.0	(2.41)	25.6	61.7	85.0	(1.89)	42.3	77.1	90.9
104	MLrP.....	26.4	46.5	40.3	(2.18)	36.8	39.5	63.8	(2.52)	28.4	60.4	88.4	(1.90)	41.7	69.3	92.8
105	0.....	27.3	51.5	43.1	(2.59)	37.3	16.0	59.5	.50	20.0	47.6	67.0	(2.00)	36.3	37.6	67.7
106	R.....	23.1	52.1	39.4	.58	38.4	20.9	60.0	1.10	20.9	61.2	66.6	(2.11)	34.9	46.8	70.0
107	RL.....	32.8	53.5	41.9	1.00	42.8	35.2	61.9	1.33	24.0	64.9	93.8	(2.45)	39.3	64.1	67.5
108	RLrP.....	30.7	57.9	47.5	.83	43.4	38.0	54.7	1.17	25.8	81.0	93.4	(2.17)	40.7	66.1	72.3
109	RLrPK....	34.7	52.9	48.4	.92	47.4	40.5	62.8	.83	26.6	68.1	77.0	(2.20)	41.5	75.9	73.0
110	0.....	30.7	55.7	41.6	(3.66)	44.6	19.7	30.3	(1.25)	12.6	35.5	68.3	(1.45)	31.8	43.3	66.6

		Soy-beans[1]	Wheat[3]	Corn[4]	Oats	Clover	Wheat	Corn	Oats	Soy-beans	Wheat	Corn	Oats	Clover	Wheat	Corn
201	0.....	17.8	20.8	48.6	52.8	(1.85)	31.7	29.5	76.2	(1.76)	27.5	36.1	35.5	(2.12)	8.5	31.4
202	M.....	15.8	16.2	56.8	63.0	(2.74)	35.9	43.8	85.2	(1.89)	24.2	42.2	43.9	(3.28)	24.8	46.6
203	ML.....	15.2	15.4	57.4	50.3	(3.44)	40.1	50.7	97.3	(1.71)	29.2	54.9	48.3	(3.30)	36.6	50.2
204	MLrP.....	12.3	16.5	58.7	61.7	(3.52)	44.0	51.0	95.5	(2.20)	30.5	51.6	48.3	(3.08)	38.3	55.4
205	0.....	16.1	17.0	49.6	48.8	(1.74)	30.8	33.3	78.4	14.0	20.0	34.6	30.3	(1.93)	16.8	32.2
206	R.....	16.1	16.3	45.8	62.5	1.00	37.7	42.9	81.1	16.7	23.3	42.1	31.7	(2.87)	17.9	38.4
207	RL.....	16.3	18.2	48.8	63.3	1.25	42.1	55.5	95.8	17.7	32.5	63.2	48.6	(3.57)	30.0	43.8
208	RLrP.....	14.5	21.3	53.0	69.2	1.00	47.1	57.2	99.4	21.3	33.3	61.9	43.9	(3.83)	35.3	45.0
209	RLrPK....	11.8	23.5	62.1	63.1	1.67	48.2	56.5	101.4	20.3	31.7	64.6	52.5	(3.99)	38.0	48.0
210	0.....	12.2	22.0	51.1	48.0	1.50	42.9	42.4	74.5	(1.91)	29.2	42.3	28.9	(2.47)	15.7	37.2

[1]No treatment. [2]Residues only. [3]No manure or lime. [4]No lime. [5]Residues and lime only. [6]No manure.

TABLE 63.—*Concluded*

Bushels or (tons) per acre

Plo No.	Soil treatment applied	1910 Oats[1]	1911 Soy-beans[2]	1912 Barley[3]	1913 Corn	1914 Oats	1915 Clover	1916 Wheat	1917 Corn	1918 Oats	1919 Soy-beans	1920 Wheat	1921 Corn	1922 Oats	1923 Clover	1924 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	M.....	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[2]	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	46.9	(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) 3.96	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) 4.36	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) 4.36	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) 3.72	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) 3.65	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)

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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
		Alfalfa[1, 2]	Alfalfa[1]	Potatoes	Potatoes	Alfalfa[3]	Alfalfa	Alfalfa	Alfalfa	Corn	Barley	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
		Alfalfa[1, 2]	Alfalfa[1]	Alfalfa[1]	Alfalfa[1]	Potatoes	Potatoes	Alfalfa	Alfalfa	Alfalfa	Corn	Barley	Sweet clover seed
701	0	....	(5.78)	(5.01)	(4.98)	94.8	101.0	(3.03)	(2.48)	(3.61)	86.0	37.5	1.67
702	M	....	(5.95)	(5.16)	(5.77)	130.3	154.2	(3.74)	(3.79)	(3.78)	88.8	52.3	1.83
703	ML	....	(6.68)	(5.57)	(5.66)	126.5	158.7	(3.91)	(4.94)	(4.62)	87.8	58.3	.50
704	MLrP	....	(6.67)	(5.61)	(5.57)	119.8	150.2	(4.06)	(4.93)	(4.54)	88.2	59.2	.50
		Alfalfa[1, 2]	Alfalfa[1]	Alfalfa[1]	Alfalfa[1]	Alfalfa[1, 2]	Alfalfa[1]	Potatoes	Potatoes	Alfalfa seeding	Alfalfa	Alfalfa	Alfalfa
801	0	....	(5.56)	(4.98)	(5.27)	....	(3.50)	46.7	15.7	....	(4.26)	(3.50)	(3.09)
802	M	....	(5.51)	(4.80)	(5.34)	....	(3.73)	61.7	31.3	....	(4.90)	(4.40)	(3.33)
803	ML	....	(5.42)	(4.55)	(5.40)	....	(3.09)	71.7	35.5	....	(5.39)	(5.05)	(4.19)
804	MLrP	....	(5.77)	(4.90)	(5.17)	....	(3.26)	62.7	33.3	....	(5.58)	(5.59)	(4.44)

[1]No manure. [2]Series 600, 700, 800 harvested as a unit. [3]Alfalfa 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. ¼ of the N.E. ¼ of the S.E. ¼, 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 cowpeas on Series 200 and 400 for use as residues.

TABLE 65.—MYRTLE FIELD: SERIES 100, 200, 300, 400

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1904 Corn[1]	1905 Corn[2]	1906 Oats[3]	1907 Clover[3]	1908 Corn	1909 Corn
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	LeLNrPK	56.2	72.5	85.0	(2.51)	54.6	46.8
120	0	60.2	53.1	56.6	(1.54)	45.0	28.8

[1]No lime, legumes, or manure. [2]No lime or manure. [3]No 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	LeLNrPK	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

Plot No.	Soil treatment applied	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	LeLNrPK	55.6	17.5	71.8	53.8	40.0	..[6]
320	0	54.4	12.3	60.0	36.0	35.0	(.62)

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

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

NEWTON FIELD, JASPER COUNTY

ESTABLISHED 1912

Location.—About 1½ miles west of Newton. A part of the E. ½ of the N.W. ¼ of the N.E. ¼, 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.

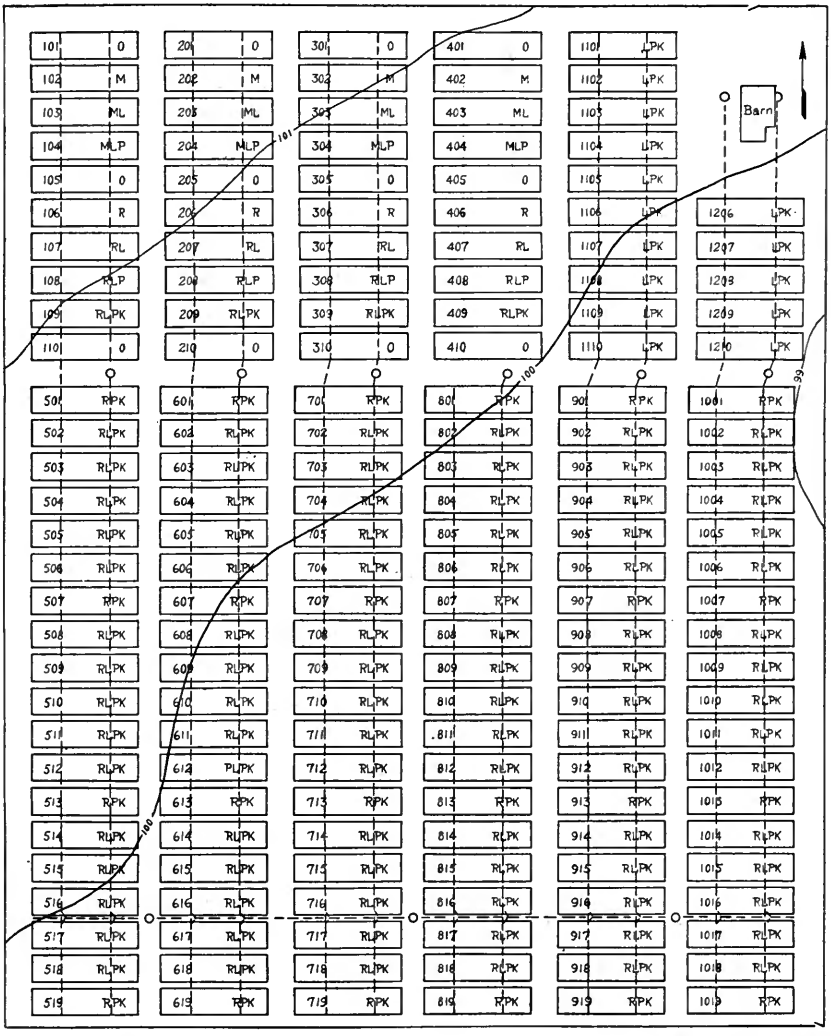
History.—The Newton field was purchased by Jasper county and the citizens of Newton and vicinity and donated to the University for experimental purposes. Little is known of the previous history of the field except that it had been in timothy meadow in 1911.

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.



SOIL MAP OF NEWTON FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1912 Corn[1]	1913 Soy-beans[3]	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)	.3	4.6	(.78)	.3	23.2	(.80)	.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	..[5]	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	..[5]	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	..[5]	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	..[5]	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]	Corn	Soy-beans	Wheat	Corn	Soy-beans	Wheat	Corn	Soy-beans	Wheat	Corn	Soy-beans	Wheat
201	0	....	1.0	2.5	.3	7.8	(0.0)	0.0	.6	(.60)	2.2	19.0	7.7	0.0
202	M	....	3.4	(.57)	.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	5.2	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

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

TABLE 66.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1912 Cowpeas[1,2]	1913 Wheat[3]	1914 Corn	1915 Soybeans	1916 Oats	1917 Corn	1918 Soybeans	1919 Wheat	1920 Corn	1921 Soybeans	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)

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1912 Cowpeas[1]	1913 Corn	1914 Soybeans	1915 Wheat	1916 Corn	1917 Soybeans	1918 Wheat	1919 Corn	1920 Soybeans	1921 Wheat	1922 Corn	1923 Soybeans	1924 Wheat
401	0	....	2.0	8.3	1.2	8.6	(0.00)	0.0	2.2	(.85)	4.0	20.2	13.5	0.0
402	M	....	3.8	(.74)	2.3	9.6	(.26)	1.0	3.0	(.99)	9.5	27.8	18.2	0.0
403	ML	....	1.6	(.77)	2.8	5.2	(.22)	4.8	7.8	(1.12)	17.5	37.2	25.2	5.7
404	MLrP	....	1.0	(.74)	9.2	2.6	(.14)	5.2	5.6	(1.20)	21.5	29.0	27.5	5.0
405	0	....	1.4	7.0	.7	2.6	(.07)	.2	1.2	8.3	4.0	18.6	13.0	0.0
406	R	....	.6	7.8	.5	2.4	..[2]	.3	.4	8.3	3.0	15.4	15.0	0.0
407	RL	....	.2	8.2	1.5	1.2	..[2]	2.8	3.2	10.8	10.2	15.6	28.3	5.3
408	RLrP	....	0.0	8.2	7.3	.4	..[2]	5.0	2.2	11.3	22.7	10.8	29.2	9.7
409	RLrPK	....	.2	8.5	13.2	.8	..[2]	4.3	4.6	14.2	28.0	13.8	33.2	19.0
410	0	....	0.0	5.8	.3	.6	(.02)	0.0	.6	(.60)	5.7	9.4	12.2	0.0

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	High-calcium limestone (meshes per inch)	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	.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

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

TABLE 68.—*Continued*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	Dolomitic limestone (meshes per inch)	1912 Corn[1]	1913 Soybeans[2]	1914 Wheat	1915 Corn	1916 Soybeans	1917 Wheat	1918 Corn	1919 Soybeans[3]	1920 Wheat	1921 Sweet clover	1922 Corn	1923 Wheat	1924 Sweet clover
601	RrPK.....	.....	22.0	3.0	2.5	4.0	4.7	3.2	20.0	....	.5	0.00	24.4	7.3	0.00
602	RrPKL.....	4 down	25.6	2.0	5.0	13.4	8.0	22.8	26.0	....	6.3	1.50	48.2	12.0	3.00
603	RrPKL.....	4 to 10	25.6	3.2	16.8	17.6	9.5	26.5	35.2	....	9.3	2.33	65.2	14.5	3.33
604	RrPKL.....	10 down	22.0	2.5	9.2	17.0	5.8	24.5	7.2	....	9.0	1.67	28.0	13.5	3.50
605	RrPKL.....	50 down	18.8	3.7	4.8	12.8	3.5	18.5	3.0	....	5.0	1.50	12.8	13.8	3.50
606	RrPKL.....	Burnt	13.8	1.7	2.3	7.6	3.3	17.2	4.8	....	6.2	1.67	14.0	13.2	3.17
607	RrPK.....	.....	16.2	1.8	2.3	1.4	2.0	11.3	16.8	....	1.8	.50	16.8	9.0	.07
608	RrPKL.....	4 down	13.4	1.2	1.5	5.0	3.7	15.3	6.0	....	3.7	1.83	16.0	12.7	2.50
609	RrPKL.....	4 to 10	13.8	1.2	1.5	5.2	3.2	11.8	7.4	....	2.7	2.00	15.4	10.9	2.50
610	RrPKL.....	10 down	15.8	1.2	1.7	6.0	3.7	16.8	4.6	....	5.3	1.67	14.6	12.3	2.67
611	RrPKL.....	50 down	12.0	1.7	1.5	5.6	3.2	13.3	8.2	....	5.2	1.83	16.2	17.0	2.50
612	RrPKL.....	Burnt	10.6	2.5	1.8	3.8	3.0	12.7	10.8	....	8.3	1.83	18.4	21.2	2.83
613	RrPK.....	.....	12.6	1.5	1.3	1.0	2.2	7.2	17.2	....	.3	0.00	18.8	8.0	.33
614	RrPKL.....	4 down	12.0	2.2	2.2	7.4	5.8	20.0	19.0	....	6.5	1.50	30.8	20.5	3.00
615	RrPKL.....	4 to 10	11.0	1.3	2.3	8.8	6.5	16.5	23.2	....	4.8	1.17	34.6	23.5	3.00
616	RrPKL.....	10 down	8.2	2.0	4.2	16.4	5.8	20.3	22.6	....	8.5	1.33	33.0	17.7	2.50
617	RrPKL.....	50 down	8.4	2.2	5.7	17.8	6.8	22.2	22.2	....	12.7	1.17	32.2	25.7	2.83
618	RrPKL.....	Burnt	7.0	4.2	8.5	12.8	7.3	16.7	25.0	....	10.5	1.00	38.4	25.2	3.33
619	RrPK.....	.....	7.0	3.3	6.3	3.6	4.2	5.2	16.8	....	.5	0.00	17.0	9.2	0.00

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

TABLE 68.—*Continued*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	High-calcium limestone (meshes per inch)	1912 Cowpeas[1]	1913 Corn[2]	1914 Soybeans	1915 Wheat	1916 Corn	1917 Soybeans[3]	1918 Wheat	1919 Corn	1920 Corn[2]	1921 Wheat	1922 Sweet clover	1923[4] Corn	1923[4] Soybeans	1924 Wheat
701	RrPK.....	.....	....	2.0	9.8	7.0	9.8	....	10.8	13.6	....	12.3	0.00	14.4	(.60)	7.5
702	RrPKL.....	4 down	....	1.6	11.0	17.3	12.6	....	20.3	20.8	....	24.2	4.70	32.8	(1.30)	19.5
703	RrPKL.....	4 to 10	....	1.6	10.7	14.7	11.4	....	20.2	24.8	....	25.3	6.60	32.8	(1.30)	16.0
704	RrPKL.....	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	RrPKL.....	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	RrPKL.....	Burnt	....	.2	10.2	18.7	6.8	....	18.2	12.8	....	25.0	5.82	28.8	(1.43)	19.7
707	RrPK.....	.....	....	.2	9.5	10.3	4.8	....	12.0	9.4	....	26.0	0.00	14.4	(.90)	8.8
708	RrPKL.....	4 down	....	.2	11.5	16.0	5.4	....	16.3	13.2	....	25.5	4.87	19.2	(1.65)	17.7
709	RrPKL.....	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	RrPKL.....	10 down	....	.2	13.2	16.5	3.8	....	12.8	9.8	....	27.3	3.33	19.2	(1.53)	19.0
711	RrPKL.....	50 down	....	.4	11.2	17.0	3.2	....	15.2	9.2	....	26.8	3.57	20.8	(1.33)	20.3
712	RrPKL.....	Burnt	....	.2	12.0	18.8	3.4	....	14.5	11.0	....	26.3	4.52	23.2	(1.28)	19.2
713	RrPK.....	.....	....	.4	10.5	4.0	3.2	....	9.0	7.4	....	27.3	1.07	17.6	(1.00)	6.3
714	RrPKL.....	4 down	....	.2	12.5	16.7	1.8	....	14.8	7.8	....	26.5	4.98	24.8	(1.55)	17.3
715	RrPKL.....	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	RrPKL.....	10 down	....	.2	11.7	17.5	3.0	....	17.7	9.0	....	26.8	5.23	28.0	(1.33)	16.3
717	RrPKL.....	50 down	....	.4	14.7	23.8	4.8	....	22.2	11.0	....	24.7	4.52	33.6	(1.18)	19.0
718	RrPKL.....	Burnt	....	.8	12.3	23.3	6.4	....	23.3	13.8	....	27.5	6.00	30.4	(1.38)	18.8
719	RrPK.....	.....	....	.4	7.7	5.7	6.0	....	12.5	6.4	....	27.8	.83	24.0	(.95)	7.5

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

TABLE 68.—*Continued*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	Dolomitic limestone (meshes per inch)	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	1923[4] Soy-beans	1924 Wheat
801	RrPK.....	.....	....	.2	9.8	11.2	3.4	....	10.5	8.6	....	32.0	0.00	24.6	(.23)	6.7
802	RrPKL.....	4 down	....	.2	10.2	14.0	3.2	....	10.8	11.8	....	24.5	3.08	43.2	(.65)	14.5
803	RrPKL.....	4 to 10	....	.2	8.3	11.8	4.2	....	14.8	11.6	....	25.0	3.68	40.6	(.65)	7.7
804	RrPKL.....	10 down	....	0.0	10.2	13.7	3.4	....	12.7	10.2	....	22.3	4.10	39.4	(.83)	13.0
805	RrPKL.....	50 down	....	.4	9.0	12.8	5.4	....	15.7	13.8	....	25.3	3.08	41.2	(.73)	10.7
806	RrPKL.....	Burnt	....	.4	10.0	17.5	8.4	....	12.2	17.2	....	27.0	4.10	40.6	(.95)	11.7
807	RrPK.....	.....	....	.4	8.8	6.0	6.0	....	6.8	8.2	....	25.0	0.00	24.6	(.38)	2.3
808	RrPKL.....	4 down	....	.2	10.3	16.3	8.8	....	11.7	17.2	....	26.0	3.92	38.6	(1.00)	11.2
809	RrPKL.....	4 to 10	....	.4	11.2	12.2	8.8	....	10.7	18.0	....	26.0	3.08	40.8	(.95)	9.5
810	RrPKL.....	10 down	....	.4	11.2	17.0	8.4	....	11.8	15.6	....	25.8	2.02	37.0	(.78)	12.8
811	RrPKL.....	50 down	....	.2	11.2	19.5	7.0	....	13.7	15.4	....	24.2	3.57	37.0	(.80)	14.2
812	RrPKL.....	Burnt	....	.2	10.7	23.7	8.4	....	12.7	12.8	....	25.8	4.10	37.6	(.88)	17.3
813	RrPK.....	.....	....	.4	9.5	5.0	5.4	....	7.0	8.6	....	23.7	0.00	34.2	(.38)	2.7
814	RrPKL.....	4 down	....	.2	11.3	19.0	4.8	....	15.5	15.2	....	23.5	3.33	37.2	(.98)	17.7
815	RrPKL.....	4 to 10	....	.4	11.0	12.8	6.6	....	16.8	15.2	....	21.0	2.50	40.0	(.88)	17.3
816	RrPKL.....	10 down	....	.4	12.2	18.3	6.2	....	20.2	13.2	....	21.5	3.08	29.6	(1.00)	18.5
817	RrPKL.....	50 down	....	.4	14.0	26.0	7.4	....	22.3	14.8	....	22.3	3.33	33.0	(.80)	21.0
818	RrPKL.....	Burnt	....	1.8	15.0	30.2	10.2	....	29.2	17.4	....	19.5	5.35	36.4	(.93)	24.2
819	RrPK.....	.....	....	3.0	7.7	7.2	9.6	....	10.0	8.6	....	22.8	0.00	26.2	(.40)	7.2

[1]Phosphorus and potassium only; entire crop plowed down. [2]Chinch bugs destroyed the crop. [3]Heavy rains ruined the crop; no yields taken. [4]Soybeans 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]	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
				Bushels or (tons) per acre											
901	RrPK.....	.....	....	4.5	6.4	....	....	4.2	4.2	19.8	0.00	6.8	8.7	0.00	11.0
902	RrPKL.....	4 down	....	6.3	13.4	....	....	4.4	8.7	28.0	3.52	6.8	11.5	.11	28.2
903	RrPKL.....	4 to 10	....	7.5	17.6	....	....	2.8	9.2	21.5	1.70	7.6	9.2	.05	30.6
904	RrPKL.....	10 down	....	7.0	18.8	....	....	2.6	9.7	20.2	2.05	8.8	10.2	.05	36.8
905	RrPKL.....	50 down	....	8.0	21.6	....	....	4.0	8.3	18.5	2.05	13.6	8.8	.05	41.4
906	RrPKL.....	Burnt	....	9.3	19.6	....	....	4.6	11.5	24.8	2.78	4.4	10.0	.13	43.4
907	RrPK.....	.....	....	8.0	17.2	....	....	2.2	5.3	12.6	0.00	11.6	4.2	0.00	15.6
908	RrPKL.....	4 down	....	9.0	20.0	....	....	4.8	10.2	20.8	3.15	11.8	9.2	.13	45.4
909	RrPKL.....	4 to 10	....	9.0	19.4	....	....	1.6	9.2	20.3	4.23	12.2	9.2	.11	41.6
910	RrPKL.....	10 down	....	9.2	15.2	....	....	3.4	6.5	21.7	3.63	6.8	9.0	.16	37.6
911	RrPKL.....	50 down	....	12.2	11.4	....	....	4.4	7.0	23.7	5.08	5.2	9.7	.11	38.4
912	RrPKL.....	Burnt	....	11.3	10.2	....	....	6.6	8.3	23.0	5.57	4.2	11.0	.21	34.4
913	RrPK.....	.....	....	8.5	12.8	....	....	3.2	4.7	19.2	0.97	17.0	8.7	.19	14.4
914	RrPKL.....	4 down	....	10.0	14.2	....	....	7.8	8.8	23.3	7.38	3.4	16.5	.26	39.8
915	RrPKL.....	4 to 10	....	8.2	15.0	....	....	6.6	7.3	21.2	7.87	2.6	15.7	.37	37.6
916	RrPKL.....	10 down	....	12.8	16.8	....	....	9.0	7.2	25.7	6.90	4.0	20.8	.48	39.6
917	RrPKL.....	50 down	....	13.5	9.6	....	....	10.8	10.2	27.0	6.90	4.8	18.7	.29	39.8
918	RrPKL.....	Burnt	....	14.2	17.2	....	....	12.0	11.5	24.8	5.82	10.6	16.0	.11	57.6
919	RrPK.....	.....	....	8.5	29.8	....	....	4.8	6.0	16.5	.37	23.6	7.2	0.00	24.2

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

TABLE 68.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	Dolomitic limestone (meshes per inch)	1912 Cow-peas[1]	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	3.52	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

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

OBLONG FIELD, CRAWFORD COUNTY

ESTABLISHED 1912

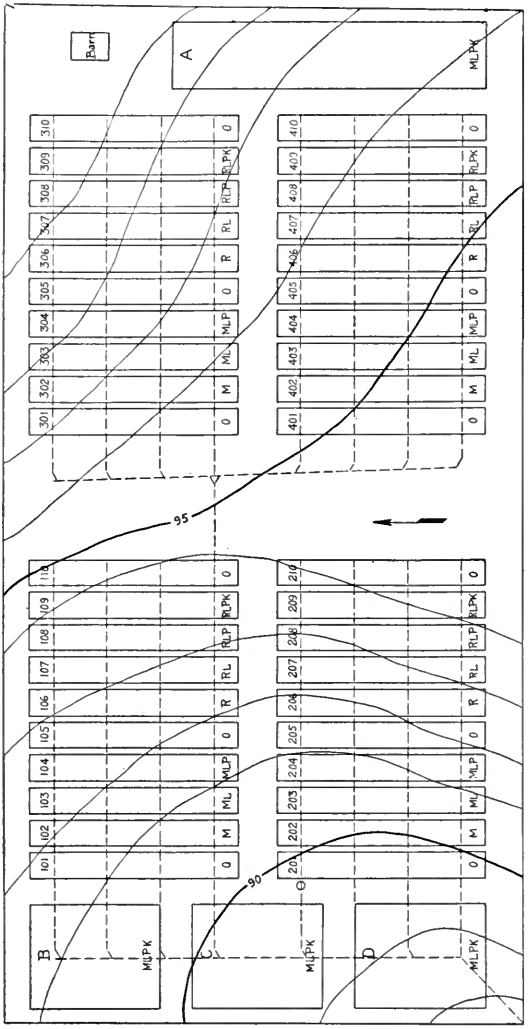
Location.—About five blocks south of the railroad station in Oblong. A part of the S. ½ of the N.E. ¼ of the N.E. ¼, Sec. 1, Twp. 6 N., R. 14 W. of the 2d P. M.

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 kainit 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.



SOIL MAP OF OBLONG FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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 Soybeans
101	0	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	0	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	0	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

		Corn[1]	Oats[2]	Soybeans[2]	Wheat[3]	Corn	Oats	Clover	Wheat	Corn	Oats	Stubble clover	Sweet clover	Wheat	Corn
201	0	14.2	1.2	4.6	9.2	9.4	36.6	(.64)	15.6	13.7	8.6	(0.00)	.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)	.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)	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)	.83	23.5	60.7
205	0	45.3	5.5	7.4	5.7	22.0	49.2	1.00	19.3	15.4	13.4	(0.00)	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)	.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)	.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)	.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)	.79	22.8	52.4
210	0	43.7	1.9	6.9	3.1	10.0	36.1	(.42)	13.5	6.5	8.4	(0.00)	0.00	6.9	19.5

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

TABLE 69.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	1924 Wheat
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]	Wheat[3]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Wheat	Corn	Oats	Clover-timothy hay
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	(1.09)
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)

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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
B	MLrPK	Corn[2] 30.4	Soy-beans[2] 6.0	Potatoes 80.3	Corn 74.0	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
C	MLrPK	Potatoes 18.4	Corn 1.0	Soy-beans 14.0	Potatoes 112.9	Corn 21.1	Soy-beans (2.19)	Potatoes 13.0	Corn 27.5	Alfalfa (1.32)	Corn 49.5	Wheat 18.3	Corn 49.5	Soy-beans 12.8
D	MLrPK	Soy-beans[2] 9.4	Potatoes 46.5	Corn 23.1	Soy-beans 26.2	Potatoes 44.2	Corn 54.4	Soy-beans (1.22)	Potatoes 40.6	Corn 35.3	Oats 30.7	Stubble clover (1.70)	Sweet clover .55	Wheat 29.5	Corn 54.3

[1]Winterkilled. [2]No 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. ¼ of the S.W. ¼, 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.

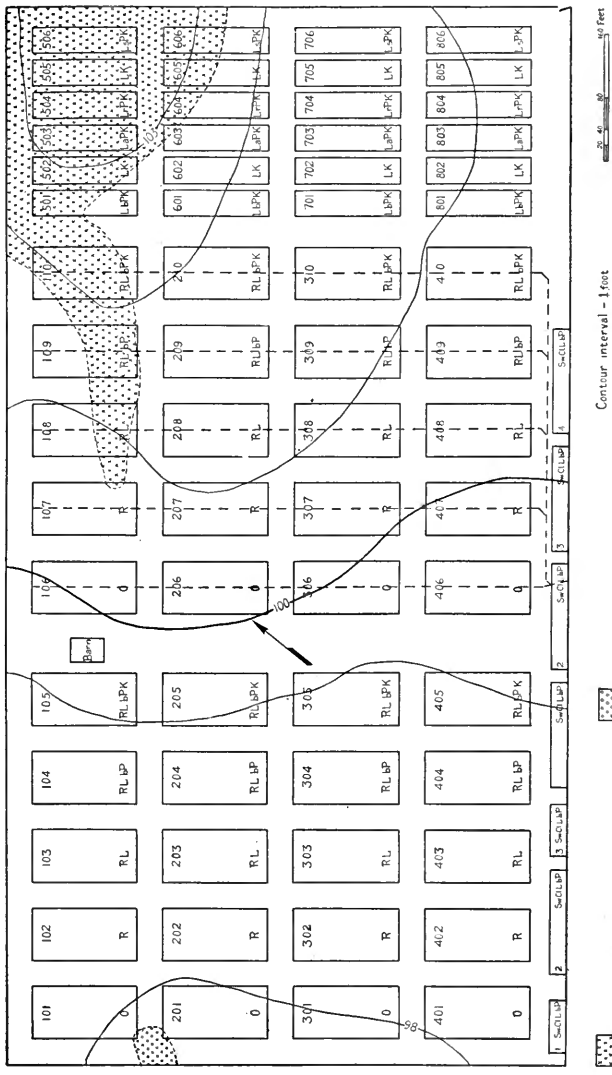
Cropping and Soil Treatment.—The rotation chiefly practiced on Series 100, 200, 300, and 400 has been corn, legumes (cowpeas, or soybeans), wheat, and clover. Until 1922 the clover was alsike, soybeans being substituted if the clover failed. Since that time sweet clover has been used instead of alsike. 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 southeast 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 1½ 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.



SOIL MAP OF ODIN FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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[2]
				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	1920 Stubble clover	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	1.3
102	R	2.9	4.7	3.7	....	6.2	....	8.8	(0.00)	.17	21.2	18.4	1.5
103	RL	1.8	15.7	9.8	....	9.0	....	21.4	(0.90)	2.00	27.5	20.7	6.8
104	RLbP	2.3	16.7	15.8	....	10.0	....	26.2	(0.86)	1.83	27.8	18.8	12.5
105	RLbPK	3.9	16.6	24.0	....	17.7	....	22.5	(1.79)	2.67	35.2	23.8	20.4
					Land Tile-drained								
106	0	4.3	10.2	.2	....	5.8	....	2.3	(0.00)	0.00	18.8	15.4	.7
107	R	4.8	8.2	5.4	....	7.5	....	10.4	(0.00)	.58	24.3	18.9	1.8
108	RL	2.8	24.4	9.2	....	13.9	....	21.3	(1.19)	1.75	26.5	22.5	5.1
109	RLbP	2.0	15.3	17.1	....	15.6	....	26.3	(1.13)	3.33	25.5	24.3	7.5
110	RLbPK	4.1	10.1	21.6	....	21.8	....	22.4	(1.57)	4.25	38.4	27.0	10.7

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

TABLE 71.—*Continued*
(1902-1913)

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1902 Oats[1]	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	15.8	.4	....	36.1	(.93)	14.2	1.7	27.9	8.3	5.3	11.7	3.7
202	R	16.1	.6	....	46.7	(1.08)	15.1	2.9	31.3	9.8	5.8	17.1	5.4
203	RL	14.1	.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	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	RLPbK	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

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

TABLE 71.—*Continued*

(1902-1913)

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1902 Corn[1]	1903 Cow-peas[2]	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	19.5	....	53.1	23.0	12.1	(1.24)	39.3	7.4	11.7	11.3	30.3	3.0
302	R	10.7	....	48.8	19.4	13.7	(1.29)	31.4	9.2	7.8	11.7	27.8	2.9
303	RL	8.8	....	44.1	30.3	19.2	(.87)	33.0	5.0	26.3	6.9	44.2	2.4
304	RLbP	10.7	....	44.1	39.2	21.1	(.94)	43.0	5.2	32.4	9.5	46.6	3.1
305	RLbPK	14.5	....	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	7.5	....	29.4	24.8	11.2	(1.24)	28.6	3.4	6.3	6.1	27.7	3.4
307	R	10.0	....	31.6	24.5	15.5	(1.34)	28.3	3.9	4.4	6.8	35.7	2.9
308	RL	10.0	....	42.8	22.0	20.7	(1.14)	37.5	3.0	19.6	5.8	51.9	5.0
309	RLbP	15.6	....	45.9	26.3	24.8	(.94)	42.6	1.4	31.3	7.0	55.9	4.6
310	RLbPK	16.3	....	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	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

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

TABLE 71.—*Concluded*
(1902-1913)

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1902 Cowpeas[1,2]	1903 Corn	1904 Oats	1905 Wheat	1906 Clover	1907 Corn	1908 Soybeans	1909 Wheat	1910 Cowpeas	1911 Corn	1912 Soybeans	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	15.4	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	1914 Soybeans	1915 Corn	1916 Soybeans	1917 Wheat	1918 Clover[2]	1919 Corn	1920 Soybeans	1921 Wheat	1921 Stubble clover	1922 Sweet clover	1923 Corn	1924 Soybeans
		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	9.3
403	RL	14.2	46.3	7.6	26.0	....	4.0	17.8	20.5	(.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	....	.2	15.4	15.0	(0.00)	0.00	24.2	7.5
408	RL	12.2	45.3	5.8	19.7	....	1.7	14.8	22.2	(.22)	.83	9.7	10.4
409	RLbP	9.8	41.7	4.1	23.1	....	2.0	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

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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)	(1.52)
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 Timothy	1914 Corn	1915 Oats	1916 Timothy and clover	1917 Timothy	1918 Timothy	1919 Corn	1920 Oats[2]	1921 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)	.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	(1.04)	(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)	.1	....	(.30)
506E	RKL(sP)	(1.04)	2.2	80.8	(1.08)	(1.52)	(1.52)	2.6	....	(1.64)

[1]No residues. [2]Crop 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

[1]On 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. [2]No 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	..[5]
1907	RLbP	46.8	(1.27)[1]	24.0	51.5	(1.39)[1]	30.0	..[5]
1908	RLbP	48.0	9.6	30.7	58.3	8.8	27.7	..[5]
1909	RLbP	24.4	.7	23.3	39.2	1.5	25.5	..[5]
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]	..[5]
1913	RLbP	7.3	..[2]	22.7	10.3	3.9	40.8	..[5]
1914	RLbP	7.3	2.2	12.8	2.0	4.4	23.3	..[5]
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	..[5]
1919	RLbP	.7	..[3]	32.8	7.7	..[3]	26.7	..[5]
1920	RLbP	54.7	19.4	..[2]	66.7	21.1	..[2]	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

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

OQUAWKA FIELD, HENDERSON COUNTY

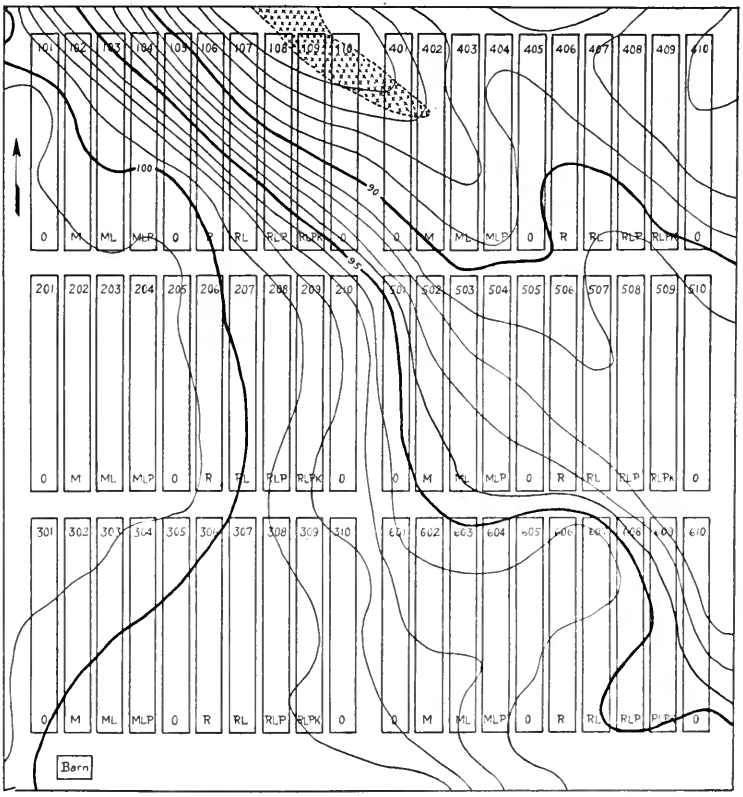
ESTABLISHED 1915

Location.—About one mile northeast of Oquawka. Chiefly in the N.W. ¼ of the N.W. ¼, 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.



SOIL MAP OF OQUAWKA FIELD

TABLE 75.—OQUAWKA FIELD: SERIES 100-600

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1914 Corn[1]	1915 Soybeans[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)	(1.08)	(.88)
102	M	21.0	(1.24)	13.1	(0.00)	13.9	(0.00)	(.38)	(0.00)	(.91)	(1.85)	(1.10)
103	ML	17.1	(1.38)	12.8	(1.03)	21.2	(.80)	(.45)	(.88)	(2.25)	(3.09)	(3.45)
104	MLrP	23.5	(1.53)	14.2	(1.47)	26.9	(.58)	(.52)	(1.13)	(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)

		Rye[1]	Corn	Soybeans	Wheat[3]	Sweet clover	Soybeans[4]	Rye	Corn	Soybeans	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	M	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	13.2	13.5	22.6	0.00	19.3
207	RL	6.2	9.2	2.2	....	(1.10)	14.6	17.2	50.3	15.1	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

		Cowpeas[1]	Rye[2]	Corn	Soybeans	Wheat	Sweet clover	Rye	Corn	Soybeans	Wheat	Sweet clover[5]
301	0	(.50)	21.4	14.5	(1.48)	8.3	(0.00)	13.7	23.9	8.8	11.1	....
302	M	(.55)	21.0	12.7	(1.62)	10.2	(0.00)	12.5	22.5	8.1	15.2	....
303	ML	(.54)	20.7	13.2	(1.70)	12.4	(1.18)	25.6	42.6	11.5	19.4	....
304	MLrP	(.55)	23.4	13.0	(1.56)	14.6	(1.07)	17.3	41.0	12.3	19.3	....
305	0	3.5	19.1	11.8	7.0	12.0	0.00	14.8	21.4	7.8	14.0	....
306	R	3.6	21.2	13.0	4.3	11.1	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	....

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

TABLE 75.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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]	Wheat	Cowpeas	Rye	Corn	Soybeans	Wheat	Sweet clover	Rye	Corn	Soybeans
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	15.3
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

		Cowpeas[1,2]	Alfalfa seeding[3]	Alfalfa seeding[3]	Alfalfa seeding[3]	Alfalfa[3]	Corn	Soybeans	Wheat	Sweet clover	Rye	Corn
601	0	....	....	....	....	(0.00)	22.1	(.80)	4.3	0.00	11.8	10.1
602	M	....	....	....	....	(0.00)	33.3	(.88)	6.3	0.00	13.1	17.1
603	ML	....	....	....	....	(4.43)	42.8	(1.62)	14.9	1.54	32.2	30.0
604	MLrP	....	....	....	....	(5.00)	33.0	(1.45)	14.8	1.33	31.5	33.9
605	0	....	....	....	....	(0.00)	20.5	2.8	6.1	0.00	10.3	11.2
606	R	....	....	....	....	(0.00)	21.6	3.9	5.8	0.00	12.1	12.9
607	RL	....	....	....	....	(4.56)	27.1	9.2	15.4	.80	26.3	25.9
608	RLrP	....	....	....	....	(4.45)	23.5	8.3	11.8	1.04	26.0	21.4
609	RLrPK	....	....	....	....	(4.01)	35.7	5.8	10.8	.83	29.4	22.4
610	0	....	....	....	....	(0.00)	12.0	(.38)	3.0	0.00	10.0	4.9

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

PALESTINE FIELD, CRAWFORD COUNTY

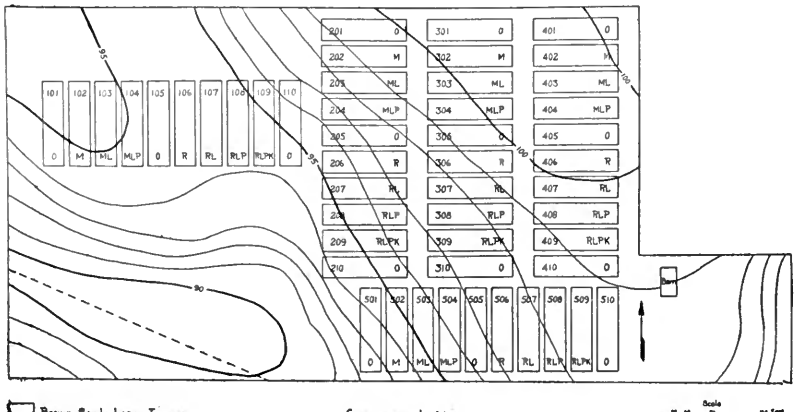
ESTABLISHED 1919

Location.—Just south of the Township High School in Palestine. A part of the S.W. ¼ of the S.W. ¼, 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.



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	0	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	0	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	0	24.2	8.7	9.6	.10	7.7

		Wheat[1]	Corn	Soybeans	Rye	Sweet clover
201	0	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	0	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	0	4.5	19.8	6.0	10.5	0.00

		Soybeans[1]	Wheat[2]	Corn	Soybeans	Rye
301	0	(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	0	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	0	(.90)	9.5	21.6	17.0	12.0

		Rye[1]	Sweet clover[2]	Wheat	Corn	Soybeans
401	0	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	0	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	0	13.9	0.00	17.3	13.8	(1.03)

		Soybeans[1]	Rye[2]	Sweet clover	Wheat	Corn
501	0	(.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	0	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	0	(.83)	9.6	0.00	6.3	25.0

[1]Minerals only. [2]No manure.

PANA FIELD, CHRISTIAN COUNTY

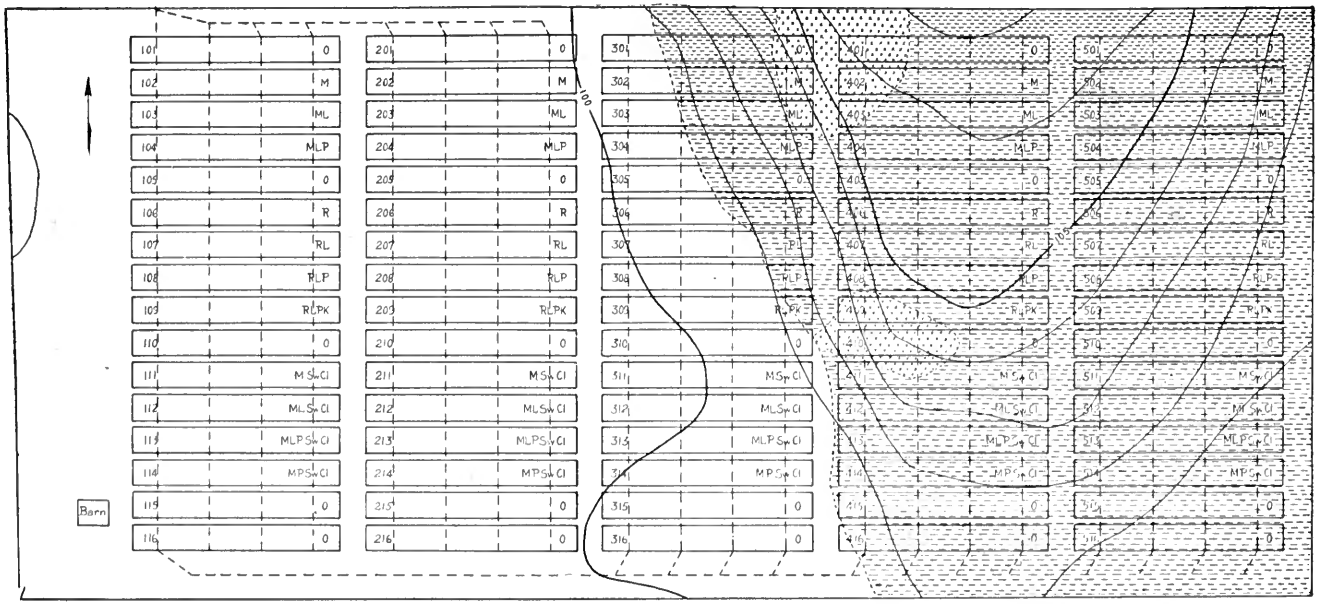
ESTABLISHED 1912—DISCONTINUED 1924

Location.—About a mile north and east of the Illinois Central and Big Four passenger station at Pana. A part of the N. ½ of the N.W. ¼, 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 tiled, but did not drain well on account of the impervious nature of the subsoil. 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.



SOIL MAP OF PANA FIELD

TABLE 77.—PANA FIELD: SERIES 100-500

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1912 Oats[1]	1913 Clover[2]	1914 Wheat[3]	1915 Corn	1916 Oats	1917 Clover	1918 Wheat	1919 Oat hay[4]	1920 Alfalfa[5]	1921 Alfalfa	1922 Corn	Soil treatment applied	1923 Wheat	1924 Corn
101	0	....	(.55)	41.8	20.7	53.6	(2.30)	3.0	(1.05)	....	(2.99)	44.5	Le	25.5	54.0
102	M	....	(.44)	40.7	26.8	51.6	(2.45)	3.2	(1.17)	....	(3.52)	50.7	LeML	26.3	62.3
103	ML	....	(.38)	42.1	27.7	58.9	(2.19)	6.2	(1.37)	....	(3.73)	61.1	LeML	30.7	64.0
104	MLrP	....	(.43)	42.7	27.6	55.8	(2.21)	11.2	(1.42)	....	(3.79)	58.0	LeMLrP	28.7	60.1
105	0	....	.50	39.7	24.2	51.6	.58	10.9	(1.19)	....	(3.54)	51.3	Le	21.5	50.6
106	R	....	1.08	41.1	24.1	50.6	.67	10.4	(1.10)	....	(3.42)	60.2	LeL	28.3	60.9
107	RL	....	.92	43.3	28.0	57.2	.50	14.5	(1.40)	....	(3.44)	58.2	LeL	30.0	61.5
108	RLrP	....	.58	41.8	25.8	53.3	.67	19.7	(1.45)	....	(3.66)	57.5	LeLrP	30.2	62.6
109	RLrPK	....	.92	42.1	28.9	55.0	.83	15.8	(1.47)	....	(3.87)	54.5	LeLrPK	30.9	62.8
110	0	....	(.38)	39.3	23.8	52.2	(2.33)	9.2	(1.14)	....	(3.31)	55.4	Le	18.1	40.6
111	CvM	....	(.38)	39.2	23.0	54.7	(2.10)	8.5	(1.14)	....	(3.13)	45.2	LeML	18.3	51.6
112	CvML	....	(.34)	39.4	27.4	50.3	(2.05)	11.8	(1.30)	....	(3.52)	53.6	LeML	16.0	43.6
113	CvMLrP	....	(.41)	33.9	30.7	56.1	(2.46)	25.8	(1.37)	....	(3.12)	57.8	LeMLrP	18.7	49.5
114	CvMrP	....	(.46)	39.8	25.6	60.5	(2.28)	27.0	(1.28)	....	(1.59)	66.8	LeMLrP	19.7	55.3
115	0	....	(.71)	31.5	30.7	56.1	(2.13)	30.6	(1.19)	....	(1.47)	62.3	Le	12.8	49.4
116	0	....	(.63)	36.2	31.1	46.1	(2.19)	18.4	(1.21)	....	(1.22)	60.5	LeL	15.4	47.6
		Corn[1]	Oats[2]	Clover[3]	Wheat[3]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover		Corn	Soy-beans[6]
201	0	23.6	11.1	(.41)	26.1	21.8	83.8	(2.00)	30.8	25.6	30.5	(2.15)	Le	23.1	17.5
202	M	24.0	11.1	(.40)	29.2	18.9	79.2	(2.61)	31.3	35.2	40.9	(2.21)	LeML	26.3	20.0
203	ML	21.0	11.4	(.57)	34.2	21.0	96.7	(2.38)	32.4	31.6	43.0	(2.63)	LeML	26.8	20.8
204	MLrP	21.3	11.7	(.67)	34.8	22.2	90.6	(2.06)	33.3	33.0	43.3	(2.59)	LeMLrP	31.2	21.2
205	0	24.2	11.4	.33	29.5	13.8	90.5	(1.44)	29.7	29.0	27.7	(2.19)	Le	23.4	21.0
206	R	26.4	10.6	.83	31.8	20.5	93.8	(1.16)	26.7	42.8	41.9	(2.40)	LeL	25.7	19.3
207	RL	26.3	11.4	1.17	33.5	31.7	94.8	(2.04)	31.9	46.1	58.1	(3.23)	LeL	29.2	18.5
208	RLrP	27.9	12.0	1.33	36.0	31.4	98.0	(2.14)	32.9	47.8	54.4	(3.28)	LeLrP	38.1	19.3
209	RLrPK	27.6	11.4	1.50	36.3	35.2	98.6	(2.27)	32.5	53.3	48.8	(3.17)	LeLrPK	31.2	23.8
210	0	28.8	13.4	(.81)	36.4	21.2	88.1	(1.91)	26.7	36.3	38.9	(2.47)	Le	26.4	21.9
211	CvM	28.7	9.5	(.93)	36.1	19.8	99.4	(1.59)	27.5	36.5	41.2	(2.52)	LeML	20.3	22.3
212	CvML	25.9	12.3	(1.04)	35.4	27.8	94.7	(2.70)	31.2	42.0	48.9	(3.01)	LeML	25.5	23.3
213	CvMLrP	31.0	10.6	(1.32)	36.2	31.3	99.5	(2.77)	30.9	50.8	52.5	(2.94)	LeMLrP	27.0	29.4
214	CvMrP	31.5	10.2	(1.08)	35.5	27.1	100.8	(1.83)	30.2	45.6	45.6	(2.76)	LeMLrP	31.6	14.8
215	0	30.1	8.4	(.93)	37.9	28.8	91.9	(2.22)	30.3	31.3	38.3	(2.41)	Le	17.2	16.0
216	0	26.3	11.7	(.83)	38.7	26.3	91.9	(2.02)	29.8	38.1	41.1	(2.18)	LeL	14.5	15.3

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

TABLE 77.—*Continued*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1912 Oats[1]	1913 Corn	1914 Oats	1915 Clover	1916 Wheat	1917 Corn	1918 Oats	1919 Soy-beans	1920 Wheat	1921 Corn	1922 Oats	Soil treatment applied	1923 Wheat	1924 Corn
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	53.5	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[1]	Wheat[2]	Corn	Oats	Clover	Wheat	Corn	Oats	Soy-beans	Wheat	Corn		Oats	Oats[3]
401	0	(1.52)	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	(1.67)	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	(1.44)	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	(1.41)	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	9.0	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	11.5	16.6	12.2	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	24.7	64.2	2.42	31.7	32.0	41.9	9.8	34.3	41.6	LeL	55.5	67.8
408	RLrP	11.3	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	28.4	70.5	2.00	38.7	26.3	51.9	9.1	36.8	39.3	LeLrPK	63.0	65.9
410	0	(1.70)	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	(1.54)	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	(1.59)	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	(1.64)	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	(1.59)	14.2	19.4	54.1	(2.14)	35.2	30.1	48.0	(.46)	21.3	23.6	LeMLrP	52.3	55.8
415	0	(1.58)	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	(1.44)	15.7	18.1	55.6	(1.54)	12.6	20.5	31.1	(.33)	17.3	13.6	LeL	28.6	43.9

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

TABLE 77.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	1923 Corn	1924 Oats
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	MLrP	....	....	(3.73)	....	(2.62)	(3.73)	48.9	45.3	16.5	22.1	LeMLrP	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	RLrP	....	....	(3.89)	....	(3.39)	(3.68)	41.0	56.2	15.0	25.6	LeLrP	33.1	53.3
509	RLrPK	....	....	(4.10)	....	(3.45)	(3.74)	35.0	50.3	18.9	20.0	LeLrPK	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	CvMLrP	....	....	(3.70)	....	(2.99)	(2.61)	44.3	62.5	13.1	25.6	LeMLrP	42.0	56.3
514	CvMrP	....	....	(2.63)	....	(.04)	(0.00)	35.7	54.7	17.9	16.8	LeMLrP	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

[1]No 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

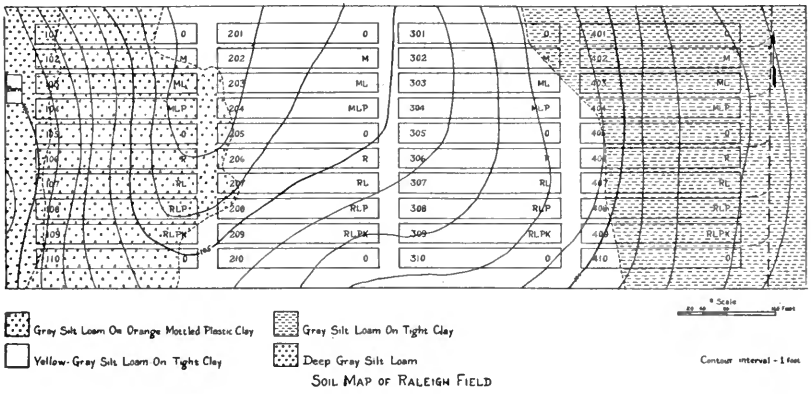
ESTABLISHED 1910

Location.—About one-half mile south of Raleigh. A part of the S. ½ of the N.E. ¼ of the N.W. ¼, 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 4¼ tons an acre and discontinued for an indefinite period.



SOIL MAP OF RALEIGH FIELD

TABLE 78.—RALEIGH FIELD: SERIES 100, 200, 300, 400

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1910 Wheat[1]	1911 Corn	1912 Oats	1913 Clover	1914 Wheat	1915 Corn	1916 Oats	1917 Soybeans	1918 Wheat	1919 Corn	1920 Oats	1921 Clover	1922 Wheat	1923 Corn	1924 Oats
101	0	9.5	28.0	11.9	(.22)	11.8	21.4	10.8	(.76)	10.2	18.2	4.1	(.12)	8.0	23.9	16.6
102	M	6.9	41.0	15.2	(.23)	10.9	35.1	11.2	(.84)	14.6	29.4	3.9	(.52)	9.5	47.5	32.8
103	ML	9.8	45.8	23.4	(.72)	27.5	57.2	12.0	(1.25)	25.9	35.0	5.2	(1.69)	15.3	67.0	50.3
104	MLrP	11.6	46.7	22.7	(.68)	26.8	52.3	14.7	(1.57)	29.2	44.4	5.3	(2.03)	17.5	65.8	57.5
105	0	7.3	24.9	14.1	.02	9.4	21.8	10.9	3.5	11.8	13.4	2.8	(.18)	6.3	27.1	29.1
106	R	9.0	24.4	12.8	.02	9.2	24.4	11.4	5.7	12.8	17.5	3.0	(.28)	9.9	31.2	29.1
107	RL	11.0	36.8	20.9	.08	25.1	43.5	10.6	10.4	22.2	40.0	8.0	(1.45)	20.6	53.9	47.8
108	RLrP	10.7	31.1	23.0	.01	27.2	42.0	14.7	12.9	27.2	48.0	7.7	(1.85)	18.5	59.7	58.1
109	RLrPK	12.7	39.5	25.8	.03	30.0	47.2	16.7	9.4	24.9	50.1	7.9	(1.92)	29.6	68.2	57.2
110	0	5.7	17.8	8.1	.01	7.2	22.3	9.2	(.67)	10.7	17.0	1.7	(.07)	4.5	22.8	16.6

		Cowpeas[1]	Wheat[3]	Corn	Oats	Soybeans	Wheat[4]	Corn	Oats	Clover	Wheat	Corn	Oats	Soybeans	Wheat	Corn
201	0	(.86)	12.1	20.5	.6	(.28)	....	22.9	17.5	(.26)	5.8	11.4	8.3	3.4	0.0	1.2
202	M	(.75)	12.7	36.5	2.0	(.30)	....	34.9	23.3	(.12)	10.9	26.4	7.3	4.3	.3	7.8
203	ML	(1.38)	17.5	55.1	3.1	(.26)	....	45.0	36.1	(.86)	23.5	56.9	15.8	8.7	2.9	33.2
204	MLrP	(1.35)	19.0	53.9	3.0	(.23)	....	43.2	36.7	(1.01)	24.1	60.7	15.2	9.3	3.9	34.4
205	0	(.74)	9.5	20.4	1.7	(.27)	....	23.6	20.3	0.00	9.3	15.2	6.9	5.5	0.0	2.2
206	R	(2)	12.3	29.9	2.0	2.5	....	24.7	25.9	0.00	12.6	22.6	12.7	5.7	0.0	6.0
207	RL	(2)	19.9	45.2	4.4	2.5	....	40.1	42.0	.21	21.7	42.8	17.8	11.1	2.0	33.0
208	RLrP	(2)	22.7	55.1	5.2	2.7	....	45.6	44.8	.25	24.7	44.8	19.8	14.2	2.2	32.2
209	RLrPK	(3)	22.8	56.5	7.2	1.8	....	46.8	47.7	.33	26.3	59.7	17.7	18.3	3.9	41.4
210	0	(1.09)	14.7	25.2	2.7	.7	....	30.0	30.2	(.12)	14.2	23.9	7.3	8.5	.2	2.6

[1]No manure or residues. [2]Growth plowed down. [3]No manure. [4]Crop destroyed by hail.

TABLE 78.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1910 Oats[1]	1911 Clover[2]	1912 Wheat[2]	1913 Corn	1914 Oats	1915 Soybeans	1916 Wheat	1917 Corn	1918 Oats	1919 Soybeans	1920 Oats[5]	1921 Corn	1922 Oats	1923 Soybeans	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
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	MLrP.....	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	..[3]	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	..[3]	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	RLrP.....	25.1	..[3]	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	..[3]	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	..[3]	4.7	7.4	5.0	.4	1.8	35.1	29.8	(.47)	13.4	26.4	3.0	13.6	1.5

		Corn[1]	Oats[2]	Cowpeas[2]	Wheat[2]	Corn	Oats	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	..[3]	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	..[3]	29.8	14.4	23.1	..[4]	37.2	23.8	22.8	(1.60)	25.3	46.5	29.5	(1.41)
408	RLrP.....	44.5	35.3	..[3]	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	..[3]	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)

[1]No manure or residues. [2]No manure. [3]Growth plowed down. [4]Seed lost before recleaning. [5]Substitute 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. ½ of the S.W. ¼, 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 ½ 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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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) 1.16
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) 1.00
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	96.9	(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) 1.58
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	49.4	55.6	(4.46)	68.6	51.8	86.6	(2.14) 1.33
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	60.9	.17	57.8	78.2	96.9	(2.37) 1.50
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) 1.67
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) 1.50
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) 1.33
117	RrP	67.8	61.9	53.1	(2.35)	75.0	65.8	75.3	23.0	55.4	50.6	64.4	.17	68.6	51.8	96.2	(1.91) .92
118	RrPK	65.9	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) .83
119	RLNrPK	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) .33
120	0	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)

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

TABLE 79.—*Continued*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1904 Corn[1]	1905 Oats[2]	1906 Clover[3]	1907 Corn	1908 Corn	1909 Oats	1910 Clover	1911 Corn	1912 Corn	1913 Oats	1914 Clover	1915 Corn	1916 Corn	1917 Oats	1918 Clover	1919 Corn
201	L	62.9	82.5	(1.09)	67.8	55.2	85.3	(1.60)	64.2	61.0	43.8	(4.27)	28.2	42.6	81.6	(2.00)	63.2
202	RL	61.8	78.4	(.84)	67.3	51.2	90.3	..[4]	68.8	65.8	49.1	.33	36.2	48.0	76.9	(2.12)	80.0
203	ML	69.2	75.3	(.82)	78.4	66.2	88.8	(1.64)	81.6	69.2	49.1	(4.36)	50.6	53.4	88.4	(2.82)	85.8
204	CvML	69.4	77.2	(1.07)	75.5	64.8	90.9	(1.75)	80.0	68.6	47.8	(2.42)[5]	45.0	51.2	90.0	(3.00)	85.8
205	L	65.3	77.5	(1.13)	69.6	55.8	83.4	(1.80)	72.4	54.4	41.9	(4.11)	28.0	39.2	86.9	(2.02)	68.6
206	LrP	62.4	78.4	(1.40)	72.9	61.6	95.6	(2.13)	74.0	62.6	51.2	(4.18)	32.4	35.6	99.1	(2.18)	74.0
207	RLrP	61.2	70.9	(1.25)	71.9	63.6	84.7	..[4]	78.6	71.6	52.8	.17	46.2	49.8	87.5	(2.25)	82.0
208	MLrP	69.6	82.2	(1.35)	81.2	73.6	95.6	(2.08)	81.4	67.3	50.6	(4.20)	53.4	55.4	93.1	(2.15)	91.6
209	CvMLrP	68.0	80.0	(1.35)	80.4	69.6	90.3	(2.11)	79.8	70.4	50.6	(2.48)[5]	50.2	51.4	100.3	(2.30)	87.8
210	L	65.2	80.3	(1.26)	71.5	51.8	86.3	(1.51)	73.4	49.6	42.2	(4.03)	22.0	36.8	82.2	(2.25)	70.4
211	LrPK	63.8	82.2	(1.42)	81.5	69.6	85.3	(2.17)	81.8	69.0	49.7	(4.59)	42.4	54.0	91.9	(2.85)	81.6
212	RLrPK	64.7	77.2	(1.33)	78.7	68.4	84.7	..[4]	79.8	75.0	50.0	.17	44.8	53.6	82.2	(2.25)	92.0
213	MLrPK	66.8	73.1	(1.26)	83.3	80.0	80.3	(2.26)	84.2	73.6	50.0	(4.55)	51.4	58.8	78.1	(2.85)	85.0
214	CvMLrPK	70.8	75.9	(1.44)	84.7	79.0	90.9	(2.37)	86.0	71.2	50.3	(2.47)[5]	53.4	52.4	95.6	(3.02)	85.2
215	L	72.5	78.1	(1.39)	76.6	58.8	85.6	(1.93)	72.0	51.8	43.8	.17	35.2	44.6	82.2	(3.02)	73.6
216	R	66.1	75.9	(1.34)	69.4	59.0	84.4	..[4]	78.4	68.4	47.5	.50	33.6	46.4	80.3	(1.52)	76.0
217	RrP	65.2	73.4	(1.33)	74.9	67.2	81.9	..[4]	78.0	67.4	52.5	.83	38.0	46.6	89.1	(1.42)	72.6
218	RrPK	64.2	77.5	(1.34)	77.0	72.8	90.6	..[4]	76.2	71.0	54.7	.50	40.0	53.4	83.8	(1.90)	83.8
219	RLNrPK	70.1	83.4	(1.62)	76.1	70.2	86.6	.[4]	78.4	75.2	59.4	.50	46.2	55.2	80.9	(1.98)	78.8
220	0	62.4	79.4	(.99)	63.5	53.0	83.4	(1.17)	68.8	49.2	49.7	(3.12)	4.0[6]	32.8	93.8	(.32)	69.8

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

TABLE 79.—*Continued*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1904 Oats[1]	1905 Soy-beans[1]	1906 Corn	1907 Corn	1908 Oats	1909 Clover	1910 Corn	1911 Corn	1912 Oats	1913 Clover	1914 Corn	1915 Corn	1916 Oats	1917 Clover	1918 Corn	1919 Corn
301	L.....	59.7	(1.99)	84.4	49.4	40.3	(1.35)	55.0	52.0	57.8	(2.95)	69.2	27.6	83.4	(1.28)	25.4	58.8
302	RL.....	60.8	(2.04)	82.0	51.8	40.3	1.66	57.6	66.0	75.0	2.33	81.6	40.2	81.9	.50	56.4	72.0
303	ML.....	60.6	(2.07)	93.7	55.6	41.6	(1.76)	67.6	64.8	67.5	(3.48)	92.8	48.2	92.5	(2.18)	60.6	81.4
304	CvML.....	58.1	(1.81)	83.5	52.9	38.1	(1.98)	69.4	60.0	76.9	(3.53)	92.0	48.4	93.4	(1.80)[2]	60.6	80.8
305	L.....	55.6	(1.62)	77.5	44.7	33.1	(1.46)	56.0	47.2	61.9	(3.12)	73.6	24.2	78.8	(.87)	35.6	62.2
306	LrP.....	53.8	(1.88)	77.4	45.7	33.8	(1.59)	59.8	56.2	72.8	(3.60)	81.2	26.4	94.1	(1.20)	38.6	54.6
307	RLrP.....	57.0	(1.88)	78.4	48.4	35.0	.48	63.0	69.6	71.3	1.83	88.4	38.0	84.4	.33	75.2	71.8
308	MLrP.....	55.8	(1.87)	88.6	52.5	35.0	(2.07)	67.0	68.0	77.8	(3.91)	95.2	49.6	90.3	(2.60)	65.8	75.8
309	CvMLrP.....	58.9	(1.87)	85.6	54.3	35.3	(2.07)	68.0	66.4	70.9	(3.87)	93.6	49.0	91.6	(2.05)[2]	68.0	73.8
310	L.....	60.3	(1.66)	74.9	42.9	33.1	(1.40)	54.4	48.4	60.9	(2.98)	73.4	21.2	79.4	(.76)	45.8	64.4
311	LrPK.....	58.8	(1.84)	84.9	46.4	35.9	(2.09)	66.8	69.8	69.7	(3.97)	94.4	39.4	79.7	(2.37)	63.4	70.2
312	RLrPK.....	58.3	(1.96)	81.0	49.3	36.3	.50	69.0	72.4	75.0	1.83	99.6	44.6	82.8	.33	78.4	75.4
313	MLrPK.....	60.3	(1.97)	84.9	50.1	32.2	(2.37)	67.0	74.6	72.2	(4.03)	88.6	48.2	89.4	(2.87)	75.4	83.2
314	CvMLrPK...	61.2	(2.09)	85.2	53.2	33.8	(2.52)	69.0	70.2	74.4	(4.20)	88.0	47.4	89.7	(2.70)[2]	72.8	83.8
315	L.....	58.6	(1.96)	81.9	46.7	31.6	(1.70)	62.4	53.6	65.0	2.83	72.4	30.4	80.0	0.00	60.4	75.0
316	R.....	59.6	(2.00)	82.0	53.3	33.1	1.24	65.0	68.0	75.0	2.33	87.4	40.4	85.6	.33	68.4	72.4
317	RrP.....	56.3	(2.26)	87.1	58.3	37.8	1.83	66.6	68.2	73.4	2.17	89.6	40.2	81.9	.33	73.0	69.4
318	RrPK.....	57.5	(2.32)	93.5	60.6	36.9	2.04	69.4	68.4	77.2	1.83	89.4	43.4	83.8	0.00	83.4	76.4
319	RLNrPK.....	73.4	(2.62)	96.6	62.5	44.7	1.60	67.6	72.0	74.1	2.00	92.0	49.0	61.0	0.00	72.0	81.8
320	0.....	54.1	(1.87)	81.4	43.9	40.9	(2.39)	59.2	51.4	68.4	(3.68)	71.2	23.4	72.8	0.00	46.0	67.2

[1]No lime, residues, manure, or cover crop. [2]Yield 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*

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	1910 Corn	1911 Oats	1912 Soybeans	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	(2.19)	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	67.9	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	RLNrPK.....	(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

[1]No lime, residues, manure, or cover crop. [2]No manure. [3]Yield 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. ¼ of the S.W. ¼ of the S.E. ¼, Sec. 35, Twp. 25 N., R. 7 E. of the 3d P. M.

Description.—The field consisted of 7½ 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 tiled. 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	1902 Corn	1903 Corn	1904 Oats	1905 Wheat	1906 Corn	1907 Corn	1908 Oats	1909 Wheat	1910 Corn	1911 Corn	1912 Oats	1913 Wheat
		Bushels per acre											
101	0	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

TABLE 81.—SIBLEY FIELD: SERIES 200, 300, 400

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1902 Corn[1]	1903 Oats[2]	1904 Cow-peas[2]	1905 Corn	1906 Oats	1907 Cow-peas	1908 Corn	1909 Oats	1910 Clover	1911 Corn[5]	1912 Oats	1913 Clover
201	0.....	48.0	34.4	(.61)	55.6	45.6	(1.98)	25.8	55.0	(.86)	15.6	69.4	(.42)
202	Le.....	50.7	38.1	(.68)	51.1	42.8	(2.05)	26.0	50.9	..[3]	18.4	67.5	..[3]
203	M.....	52.0	42.5	(.97)	68.3	45.6	(2.23)	35.2	54.1	(1.46)	30.0	66.6	(.98)
204	LeL.....	46.7	42.5	(.83)	58.3	41.2	(2.10)	36.2	53.1	..[3]	23.9	74.1	..[3]
205	ML.....	50.7	43.4	(.92)	66.9	43.1	(2.25)	36.0	49.7	(1.47)	33.4	70.3	(1.02)
206	LeLbP.....	53.3	50.6	(1.31)	69.1	51.6	(2.88)	37.6	63.4	..[3]	39.3	62.2	..[3]
207	MLbP.....	53.3	45.0	(1.31)	70.3	47.8	(2.83)	30.0	66.3	(2.81)	38.2	63.1	(1.34)
208	LeLbPK.....	56.0	49.1	(1.44)	69.2	54.4	(2.83)	35.8	63.4	..[3]	40.2	72.2	..[3]
209	MLbPK.....	56.0	48.4	(1.35)	67.5	55.9	(3.05)	37.6	65.6	(3.52)	44.5	60.6	(1.57)
210	LbPK.....	57.3	42.2	(1.37)	64.4	59.1	(3.13)	30.8	59.7	(3.10)	36.0	62.5	(1.57)

		Oats[1]	Cow-peas[2]	Corn[3]	Oats[3]	Clover[3]	Corn	Oats	Clover	Corn[5]	Oats	Soy-beans	Corn
301	0.....	62.5	(1.30)	55.7	64.4	(1.71)	71.8	38.8	(1.08)	69.2	41.9	(2.51)	30.4
302	Le.....	59.4	(1.35)	58.5	68.4	(1.96)	80.8	38.8	..[3]	77.0	37.8	14.8	32.2
303	M.....	64.4	(1.35)	59.9	80.0	..[4]	81.6	43.7	(2.85)	78.6	43.8	(2.75)	31.4
304	LeL.....	59.4	(1.25)	56.2	78.1	..[4]	78.3	42.8	..[3]	68.6	41.9	15.1	30.8
305	ML.....	62.5	(1.13)	58.1	77.5	..[4]	79.0	40.0	(2.65)	65.0	48.4	(2.48)	30.2
306	LeLbP.....	65.0	(1.15)	59.9	76.2	(2.75)	82.8	40.6	..[3]	74.4	44.4	11.3	25.6
307	MLbP.....	65.6	(1.30)	58.3	71.9	(2.26)	78.0	31.9	(2.56)	62.6	48.7	(2.70)	19.4
308	LeLbPK.....	67.5	(.88)	56.4	70.6	(2.28)	75.0	32.5	..[3]	66.4	39.1	12.2	15.8
309	MLbPK.....	68.4	(1.00)	55.8	65.3	..[4]	74.3	32.5	(2.20)	64.4	55.0	(2.33)	13.2
310	LbPK.....	68.7	(.90)	51.9	67.8	..[4]	74.8	27.8	(1.17)	55.0	41.6	(2.48)	12.0

		Cow-peas[1,2]	Corn[3]	Oats[3]	Cow-peas[3]	Corn	Oats	Clover	Corn	Oats[5]	Clover	Corn	Oats
401	0.....	....	59.5	54.7	(2.27)	59.3	36.9	(2.45)	73.8	73.8	(.61)	64.6	48.1
402	Le.....	....	66.1	66.6	(2.37)	63.6	38.1	1.50	79.0	83.1	..[3]	71.8	53.8
403	M.....	....	69.5	72.5	(2.67)	66.3	41.3	(2.54)	79.4	90.0	(.79)	73.6	60.0
404	LeL.....	....	65.6	61.9	(2.31)	60.5	37.2	2.00	78.6	78.4	..[3]	75.0	55.0
405	ML.....	....	64.5	59.4	(2.20)	61.5	37.2	(2.29)	70.2	84.7	(1.06)	69.6	57.5
406	LeLbP.....	....	61.4	56.9	(2.41)	60.7	40.3	1.83	70.6	78.4	..[3]	73.6	52.2
407	MLbP.....	....	62.5	61.9	(2.56)	59.5	44.4	(2.43)	82.4	84.7	(1.55)	76.8	55.0
408	LeLbPK.....	....	63.8	66.6	(2.69)	59.2	43.8	1.83	79.6	84.7	..[3]	84.6	59.7
409	MLbPK.....	....	64.6	62.5	(2.74)	56.9	44.1	(1.58)	77.4	85.0	(1.72)	85.0	57.8
410	LbPK.....	....	60.4	58.8	(2.84)	51.7	43.1	(2.06)	61.6	72.2	(1.64)	82.6	49.7

[1]No manure or legume treatment. [2]Entire crop plowed under. [3]No manure. [4]All grass or weeds. [5]Crop residues in addition to legume treatment begun in 1910 on Series 300 and 400 and in 1911 on Series 200.

SIDELL FIELD, VERMILION COUNTY

ESTABLISHED 1912

Location.—About one mile east of Sidell. A part of the E. ½ of the S.E. ¼, 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.—SIDELL FIELD: SERIES 100, 200, 300, 400, 500

Bushels or (tons) per acre

Plot No.	Soil teatment applied	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)	(3.11)	(3.20)	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	..[5]	9.2	(.71)	....	(2.47)	(3.38)	(2.34)	54.6
107	RL	46.4	.92	34.9	52.1	54.2	..[5]	14.3	(1.31)	....	(2.82)	(3.88)	(2.83)	59.4
108	RLrP	44.8	.83	38.8	52.5	56.9	..[5]	19.8	(1.69)	....	(3.33)	(4.57)	(3.74)	60.4
109	RLrPK	38.4	1.00	41.2	51.4	57.2	..[5]	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)	(2.60)	26.8

		Corn[1]	Oats[2]	Soy-beans[3]	Wheat[2]	Corn	Oats	Clover	Wheat	Corn	Oats	Soy-beans	Wheat	Oats[6]
201	0	48.4	3.4	12.2	10.8	28.9	80.6	(3.66)	28.2	39.0	39.1	15.0	22.3	38.6
202	M	39.7	2.7	(1.58)	7.2	31.6	80.3	(3.85)	27.6	46.5	45.9	13.0	26.5	40.2
203	ML	39.5	2.7	(1.67)	6.2	31.9	80.5	(3.47)	24.2	54.6	41.7	14.8	27.4	39.8
204	MLrP	40.7	3.0	(1.57)	7.2	33.1	84.5	(4.11)	29.4	55.6	44.8	15.3	31.8	40.3
205	0	38.7	2.3	11.0	7.5	25.9	74.1	..[5]	27.9	54.5	39.8	12.0	24.3	40.2
206	R	42.7	1.9	11.4	6.7	34.7	75.2	..[5]	26.8	45.6	35.5	13.6	25.1	38.9
207	RL	24.8	2.7	10.0	6.2	33.6	73.6	..[5]	24.3	50.5	36.1	16.6	25.7	38.8
208	RLrP	42.6	2.3	9.2	6.9	34.8	76.9	..[5]	25.2	52.7	33.8	13.8	29.4	41.1
209	RLrPK	42.7	3.0	8.6	6.7	35.3	73.0	..[5]	27.7	57.4	34.8	16.4	32.8	36.7
210	0	43.2	3.1	9.2	5.5	24.9	65.2	(3.66)	29.2	43.2	39.8	17.2	22.1	29.8

		Oats[1]	Corn	Oats	Soy-beans	Wheat	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Wheat
301	0	52.5	40.9	46.2	(1.42)	24.6	65.1	59.2	(1.80)	18.4	60.3	42.0	(.55)	37.3
302	M	53.7	34.6	44.5	(1.20)	17.1	66.6	57.2	(1.60)	15.0	58.8	44.5	(1.00)	37.4
303	ML	52.0	33.3	42.5	(1.30)	10.4	63.3	56.2	(1.33)	14.1	58.4	49.5	(1.49)	39.8
304	MLrP	53.6	35.5	44.5	(1.22)	14.9	59.8	56.9	(1.76)	14.9	61.0	47.0	(1.81)	39.6
305	0	55.0	28.8	37.7	17.4	9.0	47.1	44.2	.33	10.4	44.4	29.7	(.69)	29.2
306	R	53.6	31.9	38.3	15.6	7.0	49.4	42.8	.42	9.6	50.6	30.8	(1.07)	29.4
307	RL	51.2	33.4	36.1	15.0	4.3	53.0	46.2	.46	8.0	53.9	38.4	(1.19)	38.0
308	RLrP	48.8	32.4	35.2	16.7	9.0	68.0	52.0	.48	14.2	55.9	39.5	(1.58)	36.2
309	RLrPK	50.0	31.8	43.0	17.8	9.9	67.8	54.7	.38	14.9	57.8	44.8	(1.62)	33.7
310	0	47.2	28.4	40.8	15.4	8.8	43.1	45.8	(1.62)	13.2	43.1	30.8	(.97)	28.8

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

TABLE 82.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1912 Soybeans[1]	1913 Wheat[2]	1914 Corn	1915 Oats	1916 Clover	1917 Wheat	1918 Corn	1919 Oats	1920 Soybeans	1921 Wheat	1922 Corn	1923 Oats	1924 Clover
401	0	(2.42)	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)	34.9	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)	37.5	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)	34.2	46.4	74.2	(2.43)	37.2	63.8	35.9	(1.90)	43.3	65.0	31.9	(2.96)
405	0	12.5	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	27.0	41.0	62.0	2.58	33.8	58.6	42.7	11.8	37.7	58.6	27.8	(1.91)
407	RL	12.9	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	24.8	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	22.4	43.7	62.2	2.92	32.9	53.5	37.8	10.8	40.5	65.7	39.4	(3.55)
410	0	(1.54)	20.1	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]	Corn[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)	(4.62)	(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	(.75)	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

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

SPARTA FIELD, RANDOLPH COUNTY

ESTABLISHED 1916

Location.—Immediately north of the city of Sparta. A part of the S.E. ¼ of the S.E. ¼, 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.

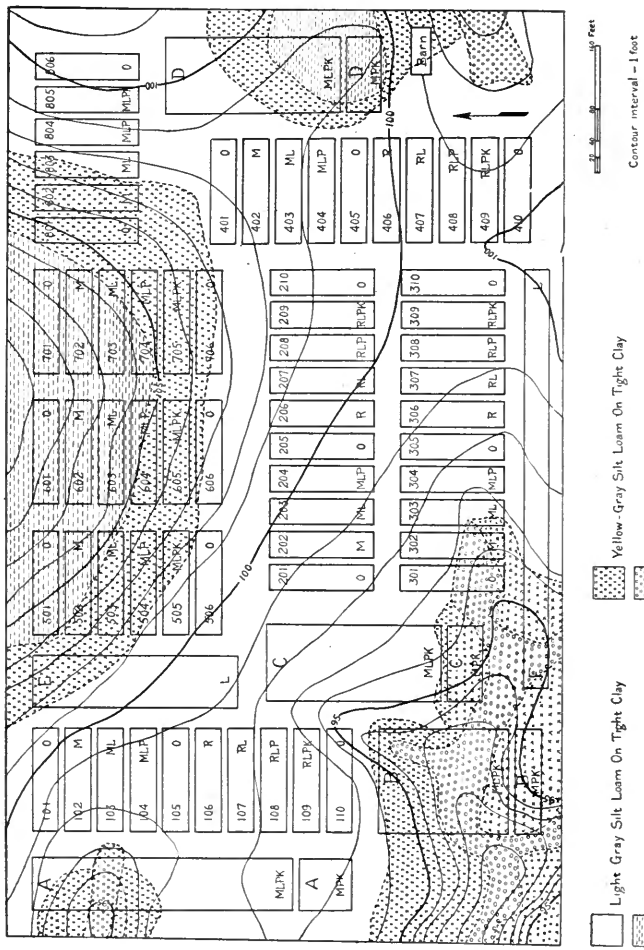
History.—The Sparta field was purchased by the citizens of Sparta and vicinity and donated to the University for experimental purposes. No information is available in regard to the previous history of the field.

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1916 Corn[1]	1917 Soybeans[2]	1918 Wheat[2]	1919 Soybeans[2]	1920 Corn	1921 Soybeans	1922 Wheat	1923 Sweet clover	1924 Corn
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	MLrP	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	RLrP	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)	49.4	(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	RLrP	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

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

TABLE 83.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1916 Wheat[1]	1917 Soybeans[3]	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

		Soybeans[2]	Wheat[3]	Clover[3]	Corn	Soybeans	Wheat	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

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

TABLE 84.—SPARTA FIELD: SERIES 500, 600, 700, 800

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1916 Soybeans[1]	1917 Potatoes	1918 Wheat	1919 Clover	1920 Potatoes	1921 Wheat	1922 Oats	1923 Sweet clover	1924 Corn
501	0	(1.28)	25.5	12.8	(0.00)	30.2	17.5	1.9	0.00	25.0
502	M	(1.20)	35.0	17.2	(0.00)	46.2	17.7	3.8	0.00	37.2
503	ML	(1.28)	34.0	21.3	(1.22)	64.8	19.7	4.4	.82	52.8
504	MLrP	(1.22)	33.5	23.5	(1.63)	21.7	23.0	1.9	.71	38.2
505	MLrPK	(1.20)	23.3	23.5	(1.91)	0.0	24.3	1.3	1.14	25.4
506	0	(1.07)	12.2	14.3	(0.00)	0.0	21.8	.9	0.00	3.0
			Alfalfa[2]	Alfalfa[2]	Alfalfa[2]	Alfalfa[2]	Potatoes	Wheat	Oats	Stubble clover	Cowpeas
601	0	....	(.49)	(1.54)	(1.03)	(1.56)	39.5	11.0	21.9	(0.00)	(1.09)
602	M	....	(.58)	(1.80)	(1.10)	(1.70)	43.5	11.3	27.5	(0.00)	(1.54)
603	ML	....	(3.23)	(4.32)	(2.18)	(3.10)	51.3	15.0	31.3	(0.96)	(1.99)
604	MLrP	....	(3.25)	(3.67)	(2.00)	(2.40)	41.0	18.7	32.5	(0.99)	(1.74)
605	MLrPK	....	(1.72)	(2.96)	(1.27)	(1.01)	26.0	12.7	26.3	(0.94)	(1.45)
606	0	....	(0.00)	(0.00)	(0.00)	(0.00)	5.5	4.2	6.6	(0.00)	(.41)
		Wheat[1]	Soybeans[2]	Potatoes	Wheat	Clover	Oats	Potatoes	Wheat		Sweet clover
701	0	5.7	(1.51)	10.3	10.3	(0.00)	19.1	30.0	8.5		(0.00)
702	M	5.3	(1.52)	13.8	10.5	(0.00)	27.5	37.8	11.7		(0.00)
703	ML	5.2	(1.89)	20.7	16.0	(1.76)	55.0	51.7	16.2		(1.80)
704	MLrP	4.0	(1.80)	16.0	18.8	(1.59)	57.5	53.0	20.8		(2.60)
705	MLrPK	3.0	(1.89)	6.7	17.8	(1.59)	53.4	43.3	21.3		(2.80)
706	0	.3	(.91)	3.3	6.3	(.43)	17.8	18.3	5.7		(.13)
		Potatoes[1]	Wheat[2]	Clover[2]	Potatoes	Wheat	Clover	Soybeans	Corn		Wheat
801	0	30.3	24.8	(.72)	20.0	10.0	(0.00)	3.3	7.6		2.8
802	M	25.5	20.5	(.72)	32.7	15.8	(0.00)	3.7	9.2		3.2
803	ML	30.5	22.0	(.95)	26.2	19.2	(1.02)	6.3	16.8		7.8
804	MLrP	17.2	27.2	(.95)	4.2	20.2	(1.18)	5.7	16.4		8.7
805	MLrPK	17.2	30.2	(1.50)	1.8	25.2	(1.13)	7.0	16.4		11.7
806	0	32.0	22.3	(0.00)	1.3	11.2	(.54)	3.3	9.6		4.0

[1]Lime and phosphorus only. [2]No manure.

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	Stubble clover	Sweet clover	Alfalfa	Alfalfa	Alfalfa
B	MLrPK.....	5.0	2.4	(1.50)	17.7	37.8	(1.12)	1.57	(2.89)	(3.45)	(2.61)
B	MrPK.....	5.5	2.5	(0.00)	10.3	38.8	(0.00)	.33	(1.20)	(1.62)	(1.45)

		Soybeans[1]	Wheat	Winter oats[2]	Sweet clover	Wheat	Winter oats	Stubble clover	Sweet clover	Wheat	Alfalfa
C	MLrPK.....	5.3	33.5	....	(1.58)	24.7	53.1	(.73)	3.30	25.5	(2.97)
C	MrPK.....	5.7	21.3	....	(0.00)	12.2	29.4	(0.00)	.97	9.5	(2.13)

		Oats[1]	Sweet clover[1]	Wheat	Winter oats	Stubble clover	Sweet clover	Wheat	Oats	Sweet clover	Wheat
D	MLrPK.....	15.2	(1.21)	22.4	39.5	(1.58)	.67	23.8	6.9	.68	16.8
D	MrPK.....	25.0	(0.00)	18.2	36.2	(0.00)	0.00	15.5	4.7	.65	14.2

							Oat hay	Sweet clover	Soybeans	Wheat	Sweet clover
E	L.....	....	....	....	....	....	(.17)	.63	8.0	17.8	2.75

							Winter barley	Sweet clover	Wheat	Sweet clover	Wheat
F	L.....	....	....	....	....	....	18.1	.67	14.5	.64	12.0

[1]No manure. [2]Crop failure.

SPRING VALLEY FIELD, BUREAU COUNTY

ESTABLISHED 1915

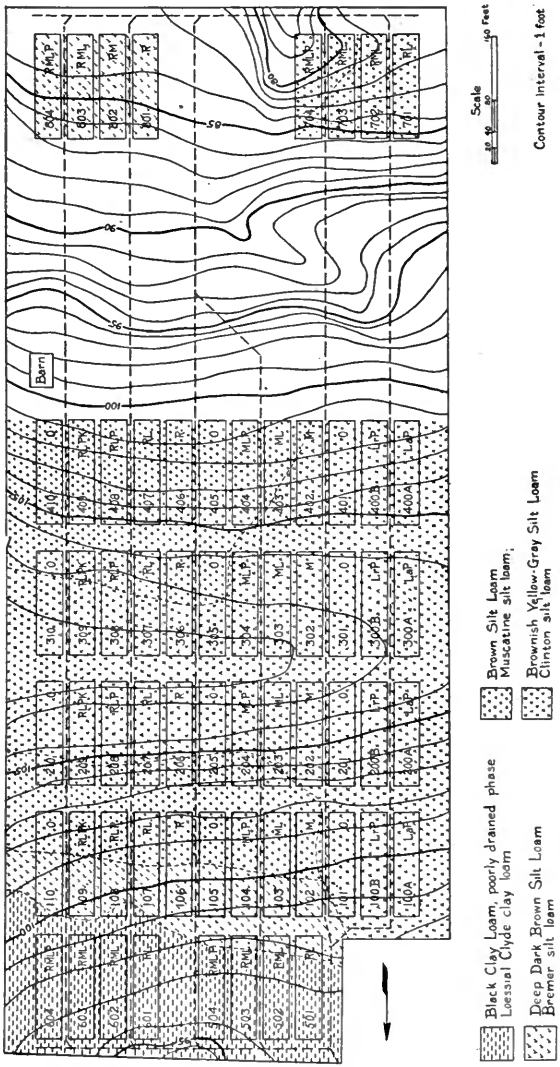
Location.—About one-half mile west of Spring Valley. A part of the W. ½ of the S.W. ¼, Sec. 34, Twp. 16 N., R. 11 E. of the 4th P. M.

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	0	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	0	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	0	35.0	35.9	(1.34)	45.2	30.8	48.1	(2.35)	40.8	40.4	66.9

Plot No.	Soil treatment applied	Wheat[3]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Wheat	Corn
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	0	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	0	15.8	14.6	40.9	(3.11) .25	33.5	39.0	51.6	(2.77)	42.8	37.6
206	R	15.5	19.8	39.7	(3.37) .42	30.8	47.4	50.0	(3.00)	43.8	43.2
207	RL	21.2	30.0	47.8	(3.35) .67	33.3	50.6	54.1	(3.06)	42.7	45.6
208	RLrP	20.8	26.2	55.6	(3.77) 1.17	33.8	53.0	50.6	(3.37)	44.2	49.2
209	RLrPK	18.8	25.0	42.2	(3.38) .50	31.3	53.4	48.8	(3.21)	46.2	55.6
210	0	13.5	20.2	42.5	(4.56)	31.5	35.6	42.8	(2.34)	38.2	39.0

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

TABLE 86.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1915 Soy-beans[2]	1916 Wheat[3]	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

Plot No.	Soil treatment applied	Oats[2]	Clover[3]	Wheat[3]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover
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	23.1	(1.92)	32.8	57.2	39.1	(2.22)	29.3	66.8	56.9	(3.97)
404	MLrP	34.7	(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) 1.40	33.0	53.4	49.7	(3.37)
406	R	28.8	.17	37.3	57.2	34.7	(1.58) 1.87	34.0	71.0	56.6	(3.79)
407	RL	38.1	.12	39.3	67.6	54.1	(1.58) 1.95	34.2	67.6	58.4	(3.82)
408	RLrP	32.5	.15	41.8	64.0	45.9	(1.68) 2.02	32.7	67.2	60.9	(3.96)
409	RLrPK	38.8	.15	39.0	76.8	48.8	(1.47) 1.87	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)

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied[2]	1917 Corn[3]	1918 Corn[4]	1919 Oats[4]	1920 Corn	1921 Corn	1922 Oats	1923 Corn	1924 Corn
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	Corn	Oats	Corn	Corn	Oats
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	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	Corn	Oats	Corn
801	0	....	(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

[1]Plot 504 lies in a basin, or depression, and the drainage is poor. [2]On 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. [3]Lime only. [4]No 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. ¼ of the S.W. ¼, 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

Plot No.	Soil treatment applied	Bushels per acre 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]

[1]125 pounds potassium sulfate per acre was applied to Plot 102 in 1904. [2]No 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. ¼ of the S.E. ¼, 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 untiled. 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.

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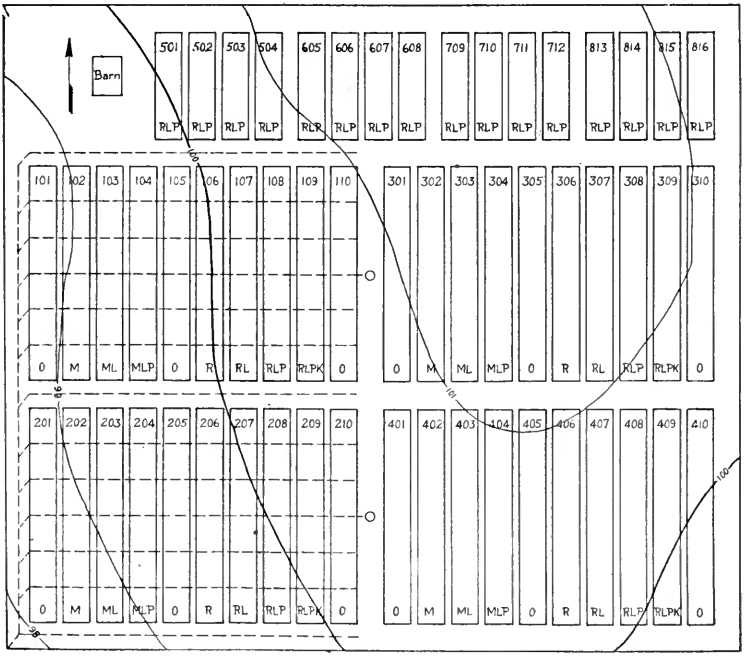
[1]For more complete information concerning this work, see Bulletin 258, entitled "Experiments with Subsoiling, Deep Tilling and Subsoil Dynamiting."



SOIL MAP OF TOLEDO FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	0	(.54)	11.2	33.7	28.4	(1.09)	5.1	20.8	19.5	(.09)	10.8	39.8	25.9
102	M	(.35)	11.4	31.4	27.8	(1.06)	7.8	23.9	23.4	(.35)	12.1	50.4	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	0	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	0	(.53)	7.0	22.0	24.1	(.74)	6.1	9.9	8.3	(.05)	9.1	11.4	31.3

		Oats[1]	Soy-beans[2]	Wheat[2]	Corn	Oats	Soy-beans	Wheat	Corn	Oats	Sweet clover	Wheat	Corn
201	0	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	.9	(.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	0	.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	22.1	47.9	21.7	3.42	26.8	45.6
210	0	1.1	6 7	8.8	17.6	16.1	(.28)	3.8	13.4	6.3	.46	8.8	8.4

[1]Lime only. [2]No manure.

TABLE 89.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	0	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	0	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	0	3.6	.3	(.87)	.1	6.6	43.8	(.58)	2.7	19.6	6.7	.06	8.0

		Oats[1]	Corn	Oats	Clover	Wheat	Corn	Oats	Clover	Wheat	Corn	Oats	Clover
401	0	.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	0	.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	0	.8	25.2	20.3	(.64)	2.5	17.1	12.5	(0.00)	4.0	14.8	13.3	(0.00)

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

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

Plot No.	1913 Corn	1914 Soybeans	1915 Corn	1916 Soybeans	1917 Wheat	1918 Sweet clover	1919 Corn	1920 Soybeans	1921 Wheat	1922 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	5.50	D. 44.2	28.8	5.9
	Oats	Corn	Wheat	Sweet clover[1]	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[2]	Sweet clover	Corn	Soybeans	Oats[3]	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.
[1]Crop plowed down. [2]Crop failure. [3]Oats substituted for wheat in 1920.

UNION GROVE FIELD, WHITESIDE COUNTY

ESTABLISHED 1907—DISCONTINUED 1923

Location.—About 1½ miles northwest of Union Grove, on the farm of Mr. A. N. Abbott. The N. ½ of the N.E. ¼ of the N.E. ¼, 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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	..[3]	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	..[3]	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	..[3]	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	(2.09)	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	..[3]	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	..[3]	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	..[3]	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	RLNrPK	50.6	53.3	..[3]	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

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

TABLE 91.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1907 Clover[1]	1908 Corn[2]	1909 Corn[2]	1910 Oats[2]	1911 Soybeans[2]	1912 Corn	1913 Corn	1914 Oats	1915 Clover	1916 Corn	1917 Corn	1918 Barley	1919 Clover	1920 Corn	1921 Corn	1922 Barley	1923 Soybeans
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	75.0	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	57.9	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)	35.3	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	RrP	....	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	RLNrPK	....	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

[1]No treatment; all plots harvested together. [2]Nitrogen, phosphorus and potassium only. [3]No lime or manure.

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1913 Potatoes	1914 Potatoes	1915 Potatoes	1916 Alfalfa	1917 Alfalfa[3]	1918 Alfalfa seeding	1919 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[1, 2]	Alfalfa[1]	Alfalfa[1]	Potatoes	Potatoes	Potatoes	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[1, 2]	Alfalfa[1]	Alfalfa[1]	Alfalfa[1]	Alfalfa[1, 3]	Soybeans[1]	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

[1]No manure. [2]All plots harvested together; the yield was 5.57 tons per acre. [3]Killed 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. ¼ of the N.W. ¼, Sec. 15, Twp. 16 S., R. 6 E. of the 3d P. M.

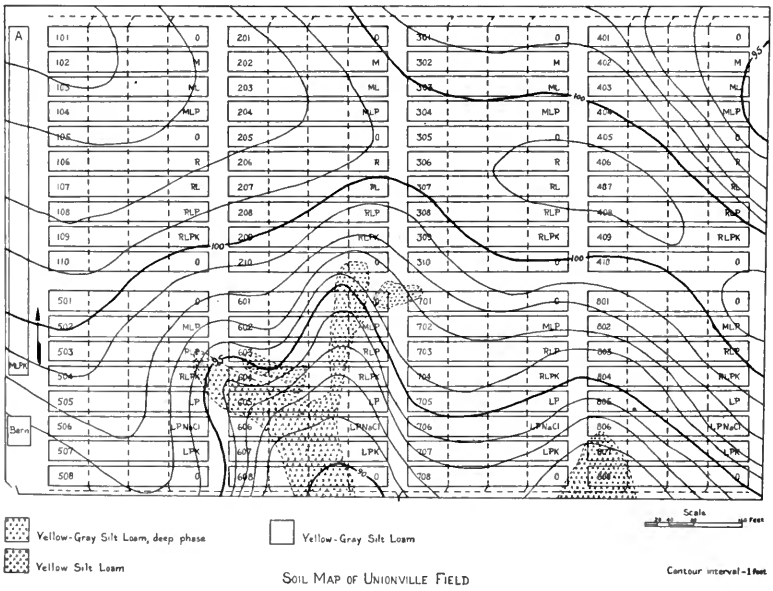
Description.—The field consists of 24½ acres of light-colored loessial upland soil of strong acidity. Three soil types have been mapped on this field: (1) Yellow-Gray Silt Loam, deep phase; (2) Yellow Silt Loam; and (3) Yellow-Gray Silt Loam. The prevailing type on this field is tentatively classified 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.



SOIL MAP OF UNIONVILLE FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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[5]	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	525	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	33.6	468
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

		Wheat[3]	Seed cotton lbs.	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	395	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

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

TABLE 93.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	5.6	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	(1.52)	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	6.9	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	8.9	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

		Corn[1]	Cow-peas[3]	Wheat[2]	Seed cotton *lbs.*	Corn	Cow-peas	Wheat	Seed cotton *lbs.*	Corn	Cow-peas	Wheat	Corn	Rye	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	..[4]	1.8	245	36.6	.5	5.3	65	20.3	4.9	6.8	15.9	2.3	(.40)
407	RL	30.4	..[4]	10.9	200	46.8	.4	15.6	90	33.4	5.9	15.4	48.3	8.4	(.63)
408	RLrP	31.1	..[4]	13.2	250	53.6	.5	17.0	100	40.3	6.8	18.8	48.4	13.1	(.95)
409	RLrPK	36.2	..[4]	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)

[1]Lime only. [2]No manure. [3]No manure, phosphate, or potassium. [4]Crop plowed under.

TABLE 94.—UNIONVILLE FIELD: SERIES 500, 600, 700, 800 (1911-1919)

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1911 Cowpeas[1,2]	1912 Alfalfa seeding	1913 Alfalfa	1914 Alfalfa	1915 Alfalfa	1916 Soybeans	1917 Potatoes	1918 Winter oats	1919 Soybeans
501	0	....	....	(.09)	(.44)	(.42)	5.2	13.9	39.4	(.68)
502	MLrP	....	....	(1.16)	(1.33)	(1.97)	16.8	95.7	35.3	(2.08)
503	RLrP	....	....	(.66)	(1.09)	(1.47)	15.1	17.1	50.8	4 3
504	RLrPK	....	....	(.84)	(1.07)	(1.49)	14.5	27.5	49.8	3.7
505	0	....	....	(.15)	(.53)	(.88)	3.5	17.9	34.4	.7
506	0	....	....	(.33)	(.43)	(0.00)	5.3	20.2	37.3	0.0
507	0	....	....	(.62)	(.33)	(0.00)	9.4	20.3	40.9	0.0
508	0	....	....	(.38)	(.47)	(0.00)	7.5	18.7	37.5	(.70)

Plot No.	Soil treatment applied	Potatoes[2,3]	Wheat[1]	Clover[5]	Potatoes	Wheat	Alfalfa	Alfalfa	Alfalfa	Alfalfa
601	0	....	4.4	(.50)	23.2	11.4	(.66)	(.35)	(.21)	(0.00)
602	MLrP	....	7.7	(.95)	3.0	33.9	(5.05)	(2.83)	(2.86)	(2.84)
603	RLrP	....	7.7	.75	5.8	20.8	(3.79)	(1.86	(1.95)	(1.60)
604	RLrPK	....	11.6	.50	7.0	24.7	(4.34)	(1.94	(2.23)	(1.80)
605	0	....	7.0	(.60)	7.6	14.2	(1.44)	(.56)	(.50)	(0.00)
606	0	....	7.5	(.89)	13.2	15.8	(1.47)	(.68)	(.60)	(0.00)
607	0	....	5.5	(.99)	5.7	12.6	(1.50)	(.68)	(.55)	(0.00)
608	0	....	5.5	(1.16)	9.3	14.8	(1.78)	(.61)	(.50)	(0.00)

Plot No.	Soil treatment applied	Cowpeas[3]	Potatoes	Wheat	Soybeans	Potatoes	Wheat	Clover	Soybeans[6]	Winter oats
701	0	5.4	18.0	3.5	(.18)	21.6	4.5	(.52)	(.17)	18.9
702	MLrP	6.2	31.6	30.8	(.58)	218.4	23.8	(2.00)	(1.22)	39.8
703	RLrP	..[4]	11.8	18.5	1.1	45.0	13.7	1.42	6.0	40.6
704	RLrPK	..[4]	8.5	19.9	1.1	30.6	13.4	1.33	6.1	38.4
705	0	2.9	8.5	3.7	.5	18.7	4.4	(.41)	(.17)	30.3
706	0	0.0	12.3	5.6	(.17)	15.0	4.0	(.48)	(.21)	29.5
707	0	0.0	5.7	2.9	(.12)	13.1	3.4	(.39)	(.21)	24.7
708	0	0.0	9.3	4.8	(.13)	22.4	4.2	(.66)	(.33)	25.0

Plot No.	Soil treatment applied	Wheat[1]	Soybeans[5]	Potatoes	Wheat	Soybeans	Potatoes	Winter oats	Clover	Potatoes
801	0	16.0	(.29)	4.5	10.0	(.83)	3.2	21.1	(.11)	6.8
802	MLrP	18.3	(.66)	6.0	24.6	(2.44)	13.5	30.3	(1.37)	60.1
803	RLrP	15.5	2.8	6.4	24.4	6.8	3.7	46.2	.50	43.5
804	RLrPK	17.1	4.2	6.3	23.5	4.2	4.4	44.5	.67	42.1
805	0	15.2	1.2	4.0	13.5	1.9	1.2	26.7	(.34)	14.1
806	0	13.7	(.28)	7.8	14.5	(.88)	2.0	24.1	(.19)	11.3
807	0	14.0	(.31)	7.1	13.8	(1.08)	1.4	24.7	(.21)	10 3
808	0	14.0	(.35)	7.1	14.1	(1.26)	1.8	24.4	(.26)	3.8

[1]No manure or residues. [2]Crop failure. [3]Lime only. [4]Growth plowed down in 1911. [5]No manure. [6]Soybeans substituted for potatoes in 1918.

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 Timo-thy
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

[1]No shale. [2]Alfalfa winterkilled in 1921.

URBANA FIELD, MORROW PLOTS, CHAMPAIGN COUNTY

ESTABLISHED 1876[1]

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.

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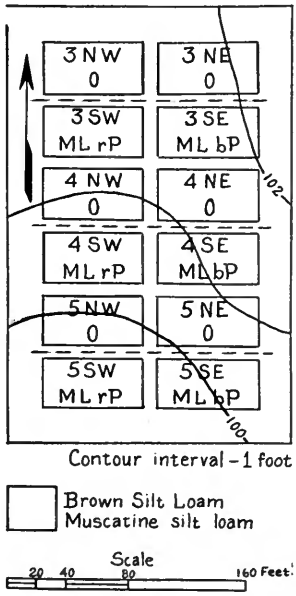
[1]It appears from the early bulletins of the Experiment Station that work actually began on these plots in 1876, altho according to the published records of the Board of Trustees of the University official sanction was first given these experiments in 1879.

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.



SOIL MAP OF MORROW PLOTS

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

Bushels or (tons) per acre

Years	Soil treatment applied	Corn every year	Two-year rotation		Three-year rotation			
		Corn	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	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	Two-year rotation		Three-year rotation		
		Corn	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	....	58.9	....
	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]

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

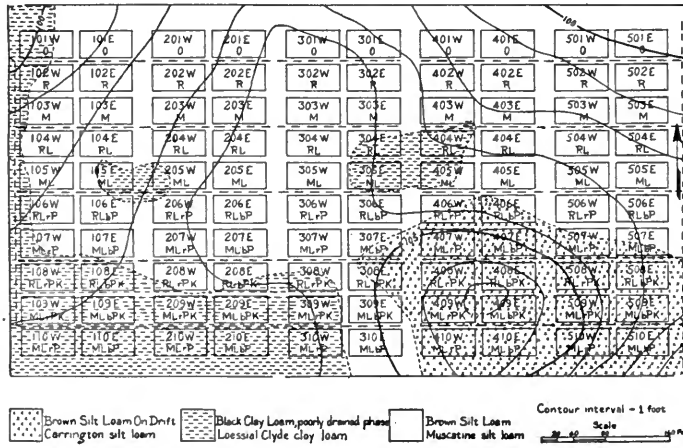
Cropping and Soil Treatment.—No definite program of soil treatment was started on these plots until 1902. In the meantime, however, from 1895, the plots were cropped in such manner that all plots of a given series grew the same kind of crop in any year, and yields were recorded by individual plots. In 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.



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

TABLE 97.—URBANA FIELD, DAVENPORT PLOTS: SERIES 100, 200, 300 (1895-1907)

Bushels or (tons) per acre

Plot No.	No soil treatment	1895 Corn	1896 Corn	1897 Corn	1898 Corn[1]	1899 Clover	1900 Clover	1901 Clover[1]	Soil treatment applied	1902 Corn[2]	1903 Oats[3]	1904 Clover[3]	1905 Corn	1906 Oats	1907 Clover
101	.....	30.0	87.9	69.0	....	(2.32)	(1.27)	....	0.....	78.3	47.5	(.43)	76.9	63.4	(2.15)
102	.....	29.1	89.5	68.6	....	(2.07)	(1.58)	....	R.....	82.2	28.9	(.31)	73.3	73.1	(.81) 1.50
103	.....	25.7	89.8	67.5	....	(2.01)	(1.65)	....	M.....	80.9	51.3	(.22)	82.8	73.4	(2.87)
104	.....	26.3	94.8	66.6	....	(2.31)	(1.55)	....	RL.....	80.1	35.0	(.25)	71.8	75.9	(.83) 1.86
105	.....	30.3	96.9	67.5	....	(2.28)	(1.46)	....	ML.....	80.1	66.3	(.28)	79.6	71.5	(2.90)
106	.....	31.1	99.5	66.8	....	(2.64)	(1.35)	....	RLbP.....	85.5	34.5	(.33)	82.3	92.5	(1.80) 1.77
107	.....	37.1	94.6	69.9	....	(2.62)	(1.41)	....	MLbP.....	87.0	56.3	(1.79)	82.1	97.5	(3.53)
108	.....	34.6	92.7	68.4	....	(2.72)	(1.37)	....	RLbPK.....	87.8	17.1	(.67)	83.9	94.1	(2.08) 1.67
109	.....	34.3	103.9	66.9	....	(2.85)	(1.48)	....	MLbPK.....	89.7	49.2	(2.79)	87.0	81.9	(3.60)
110	.....	36.3	102.2	68.5	....	(2.72)	(1.48)	....	Mx5LbPx5....	85.9	50.9	(2.50)	81.3	71.5	(3.66)
		Corn	Corn	Corn	Corn[1]	Oats[1]	Oats	Oats		Cow-peas[2]	Corn[3]	Oats[3]	Clover[3]	Corn	Oats
201	.....	26.3	87.7	65.9	....	....	51.9	33.9	0.....	(1.03)	72.8	45.6	(1.39)	57.0	27.2
202	.....	30.6	91.8	69.7	....	....	57.2	38.3	R.....	(1.01)	75.8	52.2	(.81) 1.58	56.5	32.8
203	.....	29.7	86.8	72.0	....	....	54.1	36.3	M.....	(1.02)	70 0	46.6	(1.37)	70.4	35.3
204	.....	14.6	94.1	73.2	....	....	45.3	39.7	RL.....	(1.01)	71.4	48.4	(.87) 1.25	57.6	35.6
205	.....	12.3	98.4	72.9	....	....	46.9	41.0	ML.....	(1.03)	73.0	45.6	(1.41)	73.6	37.8
206	.....	16.3	99.0	75.2	....	....	75.9	43.1	RLbP.....	(1.17)	83.6	60.3	(1.83) 1.25	84.2	45.3
207	.....	17.1	96.5	72.6	....	....	55.0	38.6	MLbP.....	(1.17)	81.8	50.3	(2.63)	87.4	44.4
208	.....	11.4	91.1	71.3	....	....	45.9	38.4	RLbPK.....	(1.24)	87.4	60.0	(2.00) 2.33	85.8	46.3
209	.....	13.7	97.5	70.2	....	....	43.1	37.2	MLbPK.....	(1.22)	86.9	46.9	(3.00)	86.6	43.8
210	.....	19.1	97.3	69.8	....	....	45.3	33.9	Mx5LPx5....	(1.19)	82.1	42.5	(3.09)	71.0	41.9
		Corn	Corn	Corn	Corn[1]	Cow-peas[1]	Corn[1]	Corn		Oats[3]	Clover[3]	Corn[3]	Oats[3]	Clover[3]	Corn
301	.....	30.0	89.6	64.7	....	....	....	43.6	0.....	53.4	(2.38)	75.0	49.1	(1.37)	80.5
302	.....	32.9	88.2	69.9	....	....	....	44.4	R.....	54.3	(2.50)	74.2	50.0	(.76) .83	75.8
303	.....	26.9	85.1	67.6	....	....	....	47.8	M.....	53.4	(2.63)	75.1	55.6	(1.43)	88.4
304	.....	32.9	92.0	73.2	....	....	....	54.7	RL.....	58.4	(2.44)	83.7	64.4	(.96) 1.00	87.4
305	.....	38.6	99.4	78.3	....	....	....	54.4	ML.....	62.8	(2.63)	89.2	70.0	(2.01)	101.1
306	.....	32.9	97.0	75.6	....	....	....	54.0	RLbP.....	62.8	(2.94)	94.9	74.4	(1.71) 1.50	104.6
307	.....	31.4	95.2	77.3	....	....	....	53.5	MLbP.....	63.1	(2.88)	97.5	72.8	(2.65)	110.1
308	.....	31.4	100.1	75.4	....	....	....	56.0	RLbPK.....	67.8	(3.44)	95.0	74.7	(1.75) 1.42	111.6
309	.....	35.7	99.9	71.4	....	....	....	56.6	MLbPK.....	66.8	(3.63)	94.8	75.0	(3.18)	113.1
310	.....	33.7	98.4	72.6	....	....	....	55.6	Mx5LbPx5....	66.2	(3.69)	91.5	75.6	(3.17)	118.0

[1]No yield recorded. [2]No residues or manure. [3]No manure.

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

Bushels per acre

Plot No.	No soil treatment	1895 Corn	1896 Corn	1897 Corn	1898 Corn	1899 Corn	1900 Corn	1901 Corn	Soil treatment applied	1902 Oats[1]	1903 Corn[2]	1904 Oats[2]	1905 Corn	1906 Oats	1907 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	34.6	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	65.6	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[2]	Oats[2]	Corn[3]	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	48.9	29.1
505	.....	29.1	96.0	72.4	57.1	64.0	51.4	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	Mx5LbPx5....	65.3	62.8	57.1	42.2	64.9	38.5

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	(5.23)	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)	(2.76)	(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)	(3.15)	(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*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1908 Clover[1]	1909 Corn	1910 Oats	1911 Soybeans	1912 Wheat	1913 Corn	1914 Oats	1915 Soybeans	1916 Wheat	1917 Corn	1918 Oats	1919 Clover	1920 Wheat	1921 Alfalfa	1922 Alfalfa	1923 Alfalfa[2]	1924 Oats[3]
201W	0	(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	66.3	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	0	(2.06)	32.8	39.4	21.9	5.7	44.0	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)	(2.79)	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

[1]West and east halves of plots harvested together. [2]Alfalfa so badly damaged by insect pests that it was plowed up after the second crop had been removed.
[3]Oats seeded as a nurse crop for alfalfa.

TABLE 99.—*Continued*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1908 Oats[1]	1909 Clover	1910 Corn	1911 Oats	1912 Soy-beans	1913 Wheat	1914 Corn	1915 Oats	1915 Stubble clover	1916 Clover	1917 Wheat	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)	(2.47)	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)	(2.44)	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)	(2.90)	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)	(3.34)	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	(1.22)	(3.12)	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)	(2.99)	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)	(2.24)	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)	(2.01)	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)	(2.57)	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	68.0	82.0	(1.13)	(3.14)	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	27.9	31.9	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)	(3.44)	40.7	86.0	48.1	(2.59)	38.6	76.7	75.6	(3.90)
310E	Mx5LbPx5 .	50.3	(3.14)	104.8	63.5	14.8	49.4	47.2	92.9	(1.31)	(2.99)	35.7	74.0	40.0	31.5	41.2	71.1	71.9	(4.33)

[1]West and east halves of plots harvested together.

TABLE 99.—*Continued*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1908 Oats[1]	1909 Corn	1910 Oats	1911 Corn	1912 Oats	1913 Clover	1914 Wheat	1915 Corn	1916 Oats	1917 Clover	1918 Wheat	1919 Corn	1920 Oats	1921 Clover	1922 Wheat	1923 Corn	1924 Oats
401W	0.....	38.4	40.8	54.4	23.3	63.1	(1.35)	16.7	63.2	51.9	(1.20)	40.0	47.2	43.9	(1.01)	34.5	33.3	52.5
402W	R.....	36.9	23.2	51.9	27.9	54.9	.43	15.0	61.2	48.1	.47	37.0	48.0	37.4	(.71) .80	31.5	34.7	51.9
403W	M.....	35.9	48.0	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	61.9	63.8
404W	RL.....	34.7	52.4	63.8	41.4	68.1	1.20	29.3	74.8	65.0	1.33	48.0	71.6	61.3	(1.46) 1.27	40.5	58.3	68.1
405W	ML.....	39.7	50.8	62.1	36.9	75.7	(2.32)	32.0	84.8	81.9	(2.39)	46.7	68.4	76.5	(2.26)	43.1	62.7	66.9
406W	RLrP.....	49.1	59.2	66.3	36.9	76.9	2.10	43.0	74.8	78.8	2.27	58.7	68.8	79.6	(1.40) 1.63	42.0	56.7	88.1
407W	MLrP.....	45.3	42.8	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	56.2	78.1
408W	RLrPK.....	49.4	63.2	66.3	36.2	73.3	1.43	34.7	80.4	82.5	1.83	47.3	70.0	75.4	(1.58) .43	42.4	70.8	77.5
409W	MLrPK.....	45.9	55.2	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	64.8	86.3
410W	Mx5LrPx5...	55.3	72.8	65.6	30.0	80.0	(3.14)	47.7	80.4	86.9	(3.08)	43.7	58.0	77.8	..[2]	34.2	63.7	72.5
401E	0.....	38.4	51.6	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	42.7	64.4
402E	R.....	36.9	54.0	53.1	39.8	73.8	1.05	28.7	72.4	62.5	.60	45.7	67.2	56.2	(.94) .80	36.5	45.8	60.0
403E	M.....	35.9	48.8	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	61.0	63.8
404E	RL.....	34.7	34.8	51.9	28.4	61.6	.87	20.0	71.6	56.2	1.83	42.0	71.2	54.6	(1.28) .77	36.7	53.6	59.4
405E	ML.....	39.7	43.6	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	62.6	64.4
406E	RLbP.....	49.1	56.0	70.6	45.1	77.9	2.86	50.7	86.8	84.4	2.40	51.0	70.8	80.3	(1.48) .57	44.6	67.8	78.8
407E	MLbP.....	45.3	49.2	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	62.1	78.1
408E	RLbPK.....	49.4	54.4	64.4	34.7	73.6	1.40	46.7	81.6	82.5	1.60	48.0	70.4	99.6	(1.58) .80	41.7	69.6	79.4
409E	MLbPK.....	45.9	48.0	62.1	25.8	79.0	(2.43)	43.0	86.4	90.0	(3.28)	52.7	74.0	70.9	(2.42)	43.0	64.4	70.6
410E	Mx5LbPx5..	55.3	72.4	50.0	27.2	79.0	(2.74)	48.3	83.6	90.0	(3.00)	45.0	61.6	67.4	..[2]	34.5	61.7	78.8

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

TABLE 99.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	0.....	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	....	(.03)	(2.33)	(2.37)	(4.10)	36.8	86.2	(2.32) 2.37	28.0	64.4	41.6	1.27	25.7	35.2
503W	M.....	33.0	49.4	56.8	....	(.08)	(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	....	(.07)	(2.24)	(2.68)	(3.82)	38.0	82.5	(2.16) 2.27	30.7	82.0	47.5	2.37	31.3	50.8
505W	ML.....	40.8	50.0	61.2	....	(.37)	(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)	(5.67)	(4.44)	(5.75)	49.6	103.1	(2.69) 3.40	27.3	90.0	56.6	1.10	43.3	60.0
507W	MLrP.....	46.3	56.9	67.6	....	(1.04)	(5.22)	(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	....	(.99)	(5.15)	(4.36)	(5.72)	48.0	115.0	(2.27) 3.00	21.3	88.8	57.4	.97	38.7	70.4
509W	MLrPK.....	40.8	54.4	61.2	....	(1.21)	(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	Mx5LrPx5...	75.5	52.5	103.2	....	(1.67)	(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	0.....	39.5	48.8	58.0	....	(.51)	(3.23)	(4.21)	(4.87)	38.4	80.0	(3.66)	26.3	71.2	55.8	(1.29)	27.3	39.6
502E	R.....	44.5	38.1	62.4	....	(.08)	(2.61)	(2.75)	(4.28)	38.4	88.1	(2.44) 2.70	28.3	77.2	52.4	2.40	33.0	39.2
503E	M.....	33.3	46.9	54.0	....	(.06)	(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	....	(.05)	(1.90)	(2.51)	(3.91)	40.8	80.6	(2.23) 2.33	31.3	78.0	46.8	2.43	35.0	54.8
505E	ML.....	38.5	45.0	57.6	....	(.27)	(2.57)	(3.09)	(4.27)	44.0	89.4	(3.61)	30.7	88.4	61.4	(1.92)	40.3	68.0
506E	RLbP.....	72.8	50.6	92.8	....	(.73)	(5.25)	(4.36)	(5.48)	42.4	106.2	(2.39) 3.87	27.0	92.0	59.8	1.43	39.7	58.8
507E	MLbP.....	46.0	52.5	70.0	....	(.94)	(5.37)	(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	....	(1.04)	(4.93)	(4.13)	(5.91)	42.0	104.4	(2.51) 3.10	22.7	92.8	65.9	1.00	39.0	74.0
509E	MLbPK.....	38.8	48.8	64.0	....	(1.14)	(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	Mx5LbPx5...	74.5	45.6	95.6	....	(1.72)	(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)

Bushels per acre

Plot No.	No soil treatment	1895 Corn	1896 Corn	1897 Corn	1898 Corn	1899 Corn	1900 Corn	Soil treatment 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)

Bushels per acre

Plot No.	No soil treatment	1896 Corn	1897 Corn	1898 Corn	1899 Corn	1900 Corn
701		82.9	70.5	60.8	62.4	60.0
702		83.5	74.4	61.3	62.9	54.9
703		81.8	74.9	48.0	60.4	62.1
704		84.3	79.6	30.5	60.7	62.9
705		89.4	77.8	30.1	60.4	63.9
706		86.1	79.1	55.8	59.1	60.3
707		82.5	78.7	76.6	63.1	58.1
708		77.5	76.3	68.6	62.0	57.6
709		76.2	82.7	64.7	62.7	56.3
710		82.4	75.5	67.5	62.6	55.1

Plot No.	Soil treatment applied	1901 Corn	1902 Corn	1903 Corn	1904 Corn	1905 Corn
701W	LNbP	33.6	63.0	54.0	74.5	64.0
701E		37.3	61.6	54.3	73.0	56.8
702W	LNbP	36.5	68.0	55.3	75.7	60.0
702E		41.1	66.6	56.3	81.0	57.5
703W	LNK	41.1	60.8	48.8	64.8	65.3
703E		45.6	62.2	59.3	80.0	62.5
704W	LNK	38.9	60.2	55.0	64.8	63.3
704E		46.7	58.4	53.8	79.5	63.0
705W	LbPK	42.9	62.6	48.0	60.2	52.8
705E		42.9	64.2	46.8	58.8	45.8
706W	LbPK	39.2	66.4	50.8	68.7	51.8
706E		42.7	72.6	50.0	72.2	53.0
707W	LNbPK	41.9	66.4	58.5	79.2	59.8
707E		41.1	73.0	54.8	85.5	57.3
708W	LNbPK	35.5	70.2	53.3	78.7	56.5
708E		36.8	68.2	55.8	80.0	58.5
709W	NbPK	33.9	63.0	45.8	79.2	59.0
709E		38.4	70.4	55.5	78.0	62.3
710W	NbPK	38.6	68.0	54.5	83.2	62.3
710E		40.3	73.0	48.0	81.0	65.0

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

Bushels per acre

Plot No.	Soil treatment applied	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.

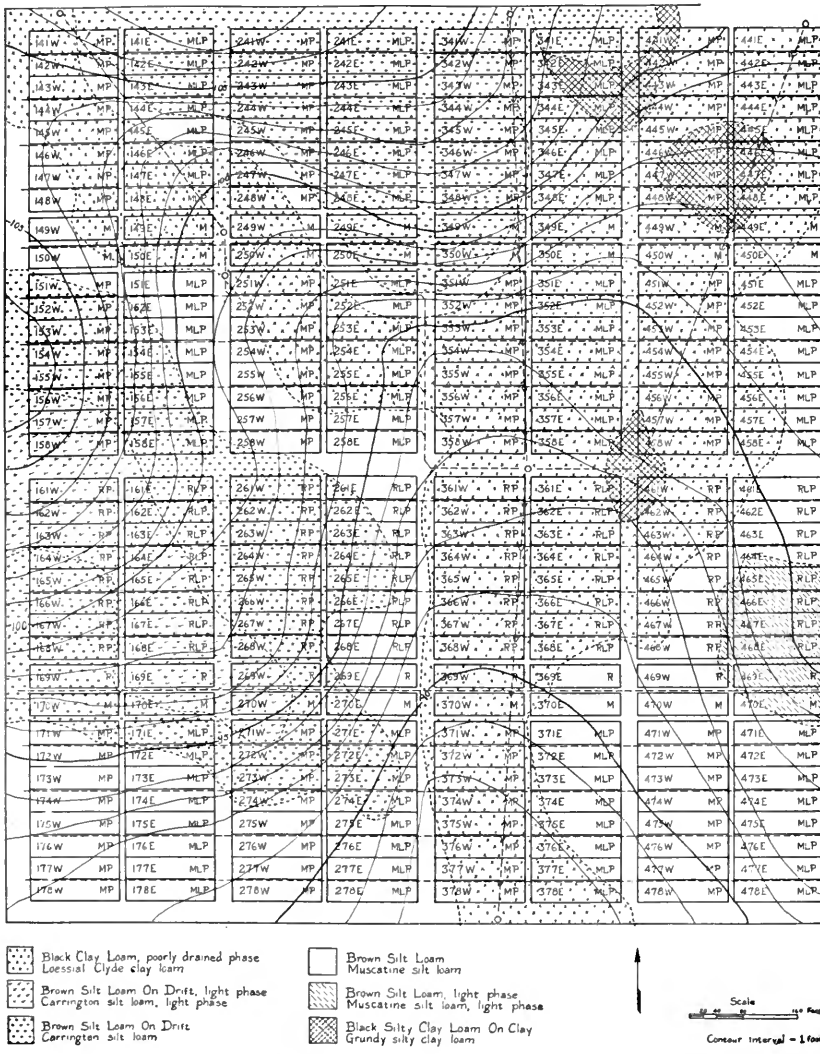
On the north divisions of Series 100, 200, 300, and 400 a rotation of potatoes, corn, soybeans, and alfalfa has been practiced. Alfalfa has remained on one division for seven years, while the other three crops rotate twice, after which the alfalfa is shifted to another division. This rotation is known 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 plotted in 1903, a uniform application of limestone at the acre rate of ½ 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 ½ 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)

Bushels or (tons) per acre

Plot[1] No.	Soil treatment applied	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	....	..[2]	(4.01)	(6.40)	(2.78)	(2.96)	(3.71)	103.0	60.0	18.8	57.4
146W	MrP	....	..[2]	(4.01)	(6.70)	(2.43)	(1.86)	(3.55)	83.2	59.3	18.1	58.5
149W	M	....	..[2]	(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 Corn	1915 Soybeans	1916 Potatoes	1917 Corn	1918 Soybeans	1919 Potatoes	1920 Corn	1921 Soybeans	1922 Potatoes	1923 Corn	1924 Soybeans
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		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	(1.76)	115.1	92.9	(2.22)	136.2	79.2	37.9	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		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		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		22.4

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

TABLE 104.—*Continued*
(1903-1913)

Bushels or (tons) per acre

Plot[1] No.	Soil treatment applied	1903 Sugarbeets	1904 Corn	1905 Vetch	1906 Potatoes	1907 Corn	1908 Vetch	1909 Potatoes	1910 Corn	1911 Soybeans	1912 Potatoes	1913 Corn
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	(11.2)	54.9	3.5	69.1	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	47.2
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	1914 Soybeans	1915 Potatoes	1916 Corn	1917 Soybeans	1918 Potatoes	1919 Corn	1920 Soybeans	1921 Potatoes	1922 Corn	1923 Soybeans	1924 Alfalfa
243W	MrP	21.9	70.4	38.7	11.6	160.6	59.8	25.0	116.3	50.9	(1.74)	..[2]
246W	MrP	25.8	63.0	41.1	12.4	173.1			106.3	47.4		(4.12)
249W	M	28.8	68.2	43.2	11.9	159.2	68.7	25.5	84.9	48.7	(1.91)	(3.43)
250W	M	(2.09)	67.6	51.4	(1.16)	150.6	65.7	24.8	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)	..[2]
256W	MrP	(1.97)	60.3	52.9	(1.26)	153.3			135.6	62.7		(4.09)
243E	MLrP	20.1	55.7	43.3	11.6	173.0	63.7	26.0	117.5	58.2	(1.83)	..[2]
246E	MLrP	25.0	57.4	49.6	11.9	171.1			117.9	55.4		(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)	..[2]
256E	MLrP	(2.24)	49.7	55.7	(1.21)	130.3			54.8	60.0		(3.83)

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

TABLE 104.—*Continued*

(1903-1913)

Bushels or (tons) per acre

Plot[1] No.	Soil treatment applied	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	(.92)	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	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)	(5.16)	(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

[1]The plots were not divided into west and east halves until 1909. [2]Vetch 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	MrP	....	43.9	69.0	(1.03)	50.7	72.0	....	(2.97)	(3.34)	....	(3.89)
446W	MrP	....	49.2	62.4	(1.04)	45.9	76.0	....	(2.99)	(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	MrP	....	60.6	67.1	(.81)	70.8	73.4	....	(3.90)	(3.51)	....	(4.29)
456W	MrP	....	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	1919 Soybeans	1920 Potatoes	1921 Corn	1922 Soybeans	1923 Potatoes	1924 Corn[4]
443W	MrP	(4.28)	(4.00)	(2.02)	91.2	78.2	(2.27)	61.6	81.4	28.3	145.0	....
446W	MrP	(3.88)	(4.40)	(2.12)	74.1	86.6	(2.43)	60.8	81.8	20.3	137.4	....
449W	M	(3.57)	(3.88)	(2.17)	105.0	83.5	(2.20)	63.1	88.3	20.7	149.5	....
450W	M	(3.40)	(4.03)	(2.12)	108.2	81.8	(2.38)	72.7	85.6	22.5	164.9	....
453W	MrP	(4.23)	(4.56)	(2.58)	110.3	78.2	(2.43)	71.7	87.1	27.6	175.4	....
456W	MrP	(3.52)	(4.50)	(2.75)	97.9	91.5	(2.77)	68.2	85.7	26.4	161.6	....
443E	MLrP	(4.41)	(4.09)	(2.34)	96.1	86.5	(2.50)	64.7	99.2	31.3	150.2	....
446E	MLrP	(4.03)	(4.36)	(2.22)	84.9	96.8	(2.61)	62.2	92.0	29.0	144.4	....
449E	M	(3.90)	(4.24)	(2.30)	100.6	88.7	(2.41)	71.7	86.8	26.8	155.7	....
450E	M	(3.82)	(3.93)	(2.17)	109.4	67.7	(2.31)	72.8	86.6	26.4	162.9	....
453E	MLrP	(3.13)	(4.38)	(2.97)	108.3	88.4	(2.24)	64.2	91.2	19.2	146.4	....
456E	MLrP	(2.80)	(4.43)	(3.19)	91.3	88.5	(2.32)	60.1	89.9	26.4	161.2	....

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

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

Bushels or (tons) per acre

Plot[1] No.	Soil treatment applied	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 Soybeans	1915 Wheat	1916 Corn	1917 Oats	1918 Soybeans	1919 Wheat	1920 Corn	1921 Oats	1922 Clover	1923 Wheat	1924 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		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		30.5	52.3

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

TABLE 105.—*Continued*

(1903-1913)

Bushels or (tons) per acre

Plot[1] No.	Soil treatment applied	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	25.3	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	38.2	48.0	68.6	(1.34)
263E	RLrP	....	....	....	....	....	....	....	49.0	50.3	78.9	13.2
266E	RLrP	....	....	....	....	....	....	....	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 Wheat	1915 Corn	1916 Oats	1917 Soybeans	1918 Wheat	1919 Corn	1920 Oats	1921 Clover		1922 Wheat	1923 Corn	1924 Oats
263W	RrP	30.6	57.9	57.0	(1.93)	36.7	68.2	44.8	(.94)	1.47	40.6	49.6	67.4
266W	RrP	33.9	56.4	58.5	(1.90)	40.0	69.8	42.7	(1.13)	1.35	37.7	57.6	57.3
269W	R	16.1	45.9	51.6	(1.68)	17.0	60.8	31.1	(.82)	1.25	27.5	40.0	60.8
270W	M	17.4	57.0	58.9	(1.73)	18.6	64.1	37.0	(1.56)		29.5	47.7	59.9
273W	MrP	37.2	61.5	76.9	(1.74)	38.8	70.0	44.8	(3.29)		38.0	58.7	67.8
276W	MrP	42.0	57.6	74.8	(1.85)	38.8	68.9	47.3			38.0	69.4	72.4
263E	RLrP	40.4	50.0	65.5	(2.01)	28.5	75.7	42.8	(1.08)	1.60	37.9	74.9	71.1
266E	RLrP	36 0	55.8	64.0	(2.08)	34.6	79.3	38.4	(1.32)	1.70	34.9	74.4	70.9
269E	R	20.7	53.3	60.0	(2.28)	23.5	64.6	36.0	(1.05)	1.57	29.0	57.9	65.2
270E	M	20.1	55.5	66.8	(1.81)	26.8	64.8	42.3	(2.00)		29.2	53.4	65.2
273E	MLrP	46.2	49.6	78.4	(1.90)	37.7	72.0	44.0	(3.28)		37.5	69.2	63.2
276E	MLrP	49.0	53.5	75.9	(1.96)	40.0	72.4	42.0			36.4	74.5	68.5

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

TABLE 105.—*Continued*

(1903-1913)

Bushels or (tons) per acre

Plot[1] No.	Soil treatment applied	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	MLrP	....	....	....	....	....	....	....	....	....	....	40.2
376E	MLrP	....	....	....	....	....	....	....	....	....	....	36.7

(1914-1924)

Plot No.	Soil treatment applied	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	44.6	75.5	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	MLrP	57.3	85.5	(2.94)	31.9	70.3	42.7	(1.14)	33.4	62.1	63.2	(3.43)
376E	MLrP	50.7	80.7	(2.89)	26.0	68.0	38.7	(.95)	33.4	59.4	61.3	(3.26)

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

TABLE 105.—*Concluded*

(1903-1913)

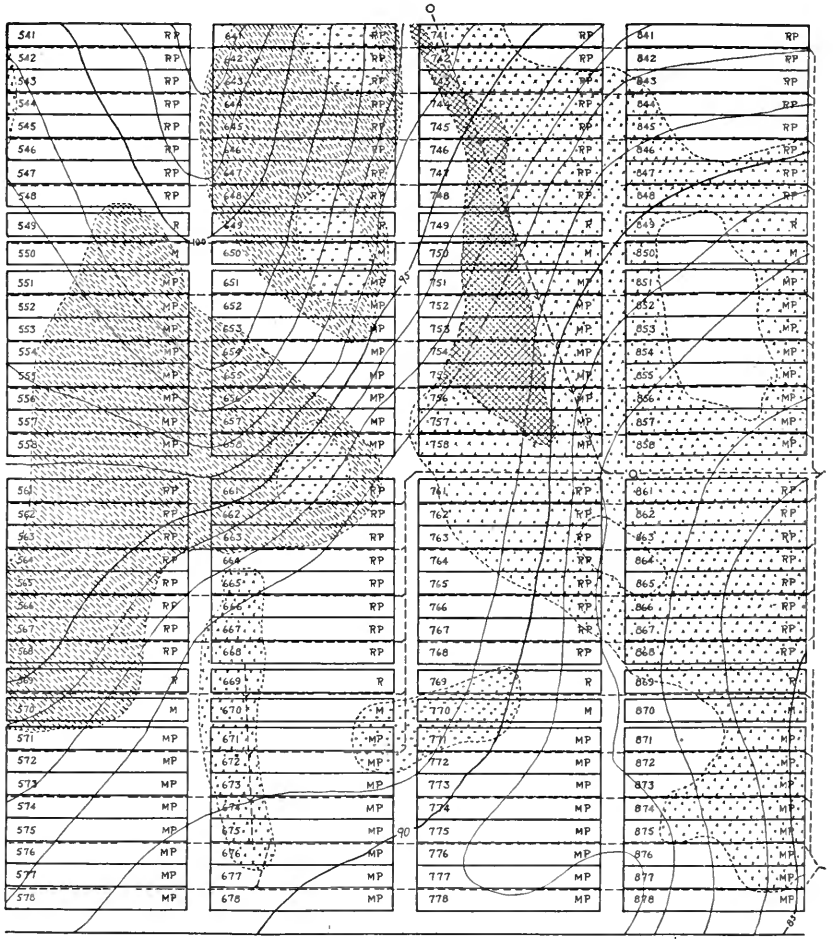
Bushels or (tons) per acre

Plot[1] No.	Soil treatment applied	1903 Clover[2]	1904 Clover[3]	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	RLrP	....	....	....	....	....	....	....	....	....	14.1	44.0
466E	RLrP	....	....	....	....	....	....	....	....	....	19.1	43.0
469E	R	....	....	....	....	....	....	....	....	....	15.1	31.5
470E	M	....	....	....	....	....	....	....	....	....	(.83)	38.3
473E	MLrP	....	....	....	....	....	....	....	....	....	(1.15)	57.8
476E	MLrP	....	....	....	....	....	....	....	....	....	(1.07)	52.5

(1914-1924)

Plot No.	Soil treatment applied	1914 Oats	1915 Soybeans	1916 Wheat	1917 Corn	1918 Oats	1919 Clover	1920 Wheat	1921 Corn	1922 Oats	1923 Soybeans	1924 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)	40.6
476W	MrP	53.9	(1.92)	43.3	78.7	67.2	(2.71)	43.2	82.4	49.4		41.4
463E	RLrP	49.5	23.3	40.2	66.8	62.6	.68	45.1	80.2	48.8	24.5	39.9
466E	RLrP	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	MLrP	55.4	(2.01)	41.1	88.1	63.0	(2.91)	47.1	89.4	54.5	(2.90)	41.7
476E	MLrP	54.4	(2.02)	42.0	85.6	70.5	(2.73)	46.0	92.5	53.1		40.1

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



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

TABLE 106.—URBANA FIELD, SOUTH FARM: ROTATION, CORN, CORN, OATS, CLOVER

(1903-1913)

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	41.0	62.1	(1.30)	64.0	(2.41)	67.1	67.4	48.6	(1.14)	70.8	35.7
556	MrP	45.4	55.7	(.49)	59.8	(2.40)	59.9	..[1]	52.3	(1.11)	63.2	47.9
		Corn	Corn	Corn	Soybeans	Corn	Corn	Oats	Clover	Corn	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 Oats	1915 Soybeans	1916 Corn	1917 Corn	1918 Oats	1919 Clover	1920 Corn	1921 Corn	1922 Oats	1923 Clover	1924 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			49.7	0.00	46.3
549	R	36.6	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)			47.6		50.2
		Soybeans	Corn	Corn	Oats	Clover	Corn	Corn	Oats	Clover	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		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		61.0		72.9	55.0

[1]Error in harvesting in 1909.

TABLE 106.—*Concluded*

(1903-1913)

Plot No.	Soil treatment applied	1903 Corn	1904 Corn	1905 Corn	1906 Corn	1907 Corn	1908 Oats	1909 Clover	1910 Corn	1911 Corn	1912 Oats	1913 Clover
743	RrP	38.3	54.8	51.2	37.2	51.1	17.0	.59	90.7	28.9	80.0	1.10
746	RrP	37.8	49.4	52.5	47.7	41.0	19.5	.72	61.3	30.1	77.2	1.04
749	R	35.6	48.5	44.3	46.7	51.0	18.7	.56	72.7	33.4	75.3	.96
750	M	36.5	42.3	48.2	44.2	48.3	17.8	(1.83)	68.5	25.7	80.7	(1.55)
753	MrP	33.2	43.3	49.0	54.5	54.5	20.3	(2.30)	70.9	31.4	82.6	(1.82)
756	MrP	32.9	41.3	46.0	54.2	43.2	21.2	(1.49)	67.3	29.4	80.4	(1.80)
		Soy-beans	Soy-beans	Corn	Corn	Oats	Clover	Corn	Corn	Oats	Soy-beans	Corn
843	RrP	14.0	17.5	70.2	54.7	61.2	.80	68.1	70.0	41.9	14.2	36.8
846	RrP	13.3	12.6	67.3	60.2	51.8	.91	62.7	63.0	41.2	15.8	52.9
849	R	13.8	14.5	73.6	62.8	47.0	.75	59.1	60.7	36.9	12.8	33.2
850	M	13.2	(1.80)	74.3	61.9	45.0	(2.29)	54.3	64.1	35.1	(.75)	38.3
853	MrP	13.2	(1.60)	72.2	59.0	50.0	(2.92)	56.1	68.2	41.3	(.74)	44.3
856	MrP	12.3	(1.50)	71.9	58.1	50.4	(2.45)	52.9	62.6	39.1	(.89)	41.2

(1914-1924)

Plot No.	Soil treatment applied	1914 Corn	1915 Corn	1916 Oats	1917 Soybeans	1918 Corn	1919 Corn	1920 Oats	1921 Clover		1922 Corn	1923 Corn	1924 Oats
743	RrP	49.5	66.5	81.1	18.0	53.9	54.8	48.9	(1.36)	.80	59.9	54.6	73.7
746	RrP	50.4	57.8	85.5	18.0	56.5	59.9	42.7	(1.30)	1.00		61.9	73.3
749	R	48.9	54.3	90.9	18.5	53.9	49.1	40.5	(1.01)	.95	57.5	57.9	67.4
750	M	52.6	57.5	81.4	(2.52)	58.4	53.7	44.3	(1.49)		59.6	61.9	70.9
753	MrP	52.2	61.5	91.8	(2.45)	57.9	54.0	45.7	(2.71)		62.0	68.1	75.1
756	MrP	52.2	60.2	90.6	(2.39)	64.2	57.5	52.4				53.7	73.8
		Corn	Oats	Clover	Corn	Corn	Oats	Clover	Corn		Corn	Oats	Clover
843	RrP	41.6	72.4	.94	62.4	59.2	41.3	1.70	67.0		38.4	66.1	(3.21)
846	RrP	51.9	75.1	1.11	69.1	60.8	39.2	1.50			56.9	63.3	(2.92)
849	R	47.2	74.3	.60	66.5	49.1	37.6	1.10	66.3		41.0	57.0	(2.76)
850	M	42.1	75.5	(2.26)	70.1	66.5	37.9	(2.27)	67.7		43.5	58.9	(2.74)
853	MrP	46.6	82.7	(2.47)	70.8	66.2	40.6	(2.65)	72.3		64.9	65.0	(2.72)
856	MrP	50.4	80.9	(2.42)	73.7	63.6	39.5	(2.36)			64.1	65.3	(2.57)

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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
		Corn	Corn	Corn	Soybeans	Corn	Corn	Corn	Soybeans	Corn	Corn	Corn
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

(1914-1924)

Plot No.	Soil treatment applied	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			{ 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	(1.60)	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	} 51.7	39.9	{ (2.01)	35.0
576	MrP	37.8	(1.58)	30.4	66.8	35.2	(1.79)	55.5			{ (2.10)	36.1
		Soybeans	Corn	Corn	Corn	Soybeans	Corn	Corn	Corn	Soybeans	Corn	Corn
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)

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1903 Corn	1904 Corn	1905 Corn	1906 Corn	1907 Corn	1908 Corn	1909 Soybeans	1910 Corn	1911 Corn	1912 Corn	1913 Soybeans
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	51.3	63.5	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	Corn	Corn	Soybeans	Corn	Corn	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	1918 Corn	1919 Corn	1920 Corn	1921 Soybeans	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		52.4	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	49.5
		Corn	Corn	Soybeans	Corn	Corn	Corn	Soybeans	Corn	Corn	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)

[1]No 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. ¼ of the N.E. ¼, Sec. 9 and a part of the S.E. ¼ of the S.E. ¼, 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 tiled. 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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1902 Corn[1]	1903 Corn	1904 Cowpeas[2]	1905 Wheat	1906 Cowpeas[3]	1907 Corn	1908 Wheat	1909 Cowpeas[5]	1910 Corn	1911 Cowpeas[2]
101	0	15.5	9.3	....	1.3	....	16.7	.0	....	33.5	....
102	Le	13.3	5.0	....	10.8	....	17.8	.0	....	35.4	....
103	LeL	14.9	8.3	....	18.2	....	30.3	4.5	....	44.7	....
104	LeLbP	12.5	7.4	....	25.6	....	37.1	8.3	....	46.6	....
105	LeLbPK	19.9	11.6	....	30.0	....	38.1	9.8	....	58.3	....

		Oats[1]	Cowpeas[1,2]	Wheat	Corn	Wheat	Clover	Corn	Wheat	Clover	Corn
201	0	19.1	....	6.7	37.5	3.8	(.65)[4]	35.2	4.6	(.26)	34.2
202	Le	18.8	....	7.1	42.9	5.4	(.81)[4]	35.6	6.8	(.04)	30.8
203	LeL	19.8	....	10.0	61.9	17.9	(1.92)	43.9	9.6	(1.45)	38.8
204	LeLbP	20.0	....	14.8	57.2	11.3	(2.56)	42.9	12.8	(1.85)	23.4[6]
205	LeLbPK	31.7	....	17.5	56.5	15.0	(2.23)	50.6	11.3	(2.19)	32.0[6]

		Cowpeas[1,2]	Wheat	Corn	Cowpeas[2]	Corn	Wheat	Cowpeas[6]	Corn	Wheat	Clover
301	0	....	.4	30.5	....	41.2	4.3	....	23.0	3.1	(.13)[4]
302	Le	....	.6	35.5	....	40.6	6.1	....	24.9	8.7	(.16)[4]
303	LeL	....	.7	49.1	....	48.9	13.0	....	31.3	13.7	(.97)
304	LeLbP	....	8.0	49.4	....	40.9	13.6	....	32.6	14.4	(.92)
305	LeLbPK	....	11.0	44.7	....	40.9	15.6	....	33.5	14.6	(.98)

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

NEW VIENNA FIELD, JOHNSON COUNTY

ESTABLISHED 1916—DISCONTINUED 1924

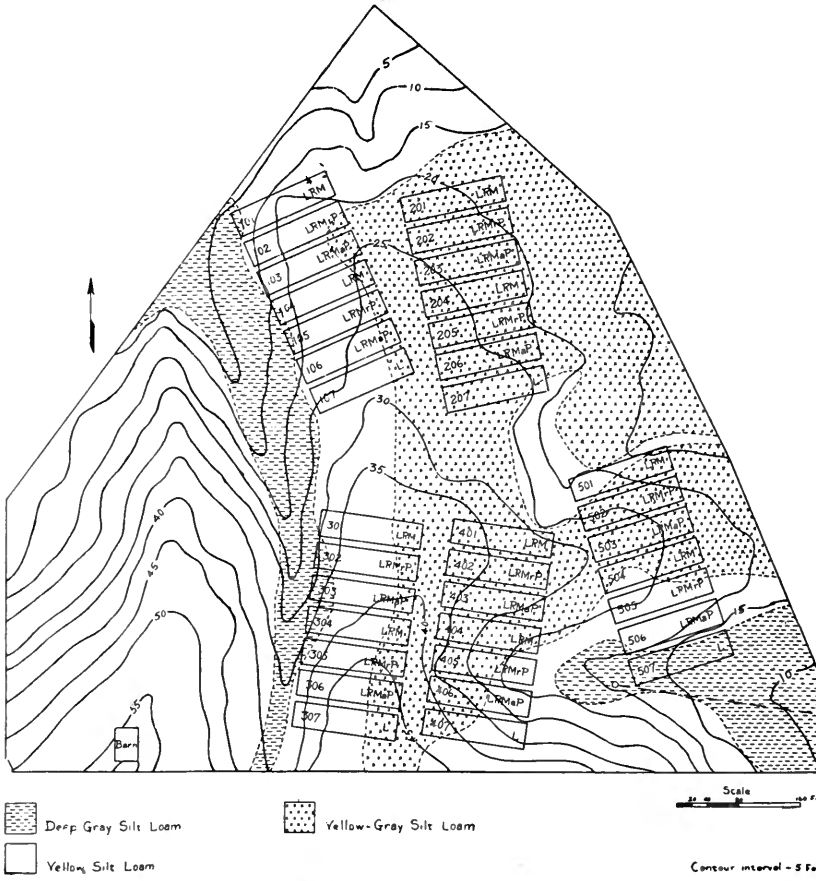
Location.—About one mile southeast of Vienna. A part of the N.W. ¼ of the N.E. ¼, Sec. 9, and a part of the S.W. ¼ of the S.E. ¼, Sec. 4, Twp. 13 S., R. 3 E. of the 3d P. M.

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.



SOIL MAP OF NEW VIENNA FIELD

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

[1]No soil treatment. [2]No yields taken. [3]No manure. [4]Wheat 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. ¼ of the S.W. ¼, 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)

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	..[3]	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	..[3]	63.3	64.7
105	ML	51.5	41.9	(2.10)	76.1	51.9	(2.75)	79.2	43.4	(1.29)	69.1	53.4
106	RLbP	50.5	46.9	(2.45)	79.9	66.6	(2.70)	85.4	52.5	..[3]	68.8	67.8
107	MLbP	56.0	42.8	(2.00)	79.5	55.9	(2.65)	86.6	58.7	(1.24)	74.4	56.6
108	RLbPK	55.8	41.3	(2.10)	82.8	61.9	(2.80)	83.8	45.3	..[3]	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	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	..[3]	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	..[3]	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	..[3]	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	..[3]	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

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

TABLE 110.—*Continued*

(1902-1912)

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1902 Oats[1]	1903 Cow-peas[2]	1904 Corn[2]	1905 Oats[2]	1906 Cow-peas[2]	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	..[3]	83.0	48.1	..[3]
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	..[3]	75.0	35.9	..[3]
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	RLbP	56.3	(1.10)	73.5	50.3	(2.72)	73.1	15.0	..[3]	100.6	58.4	..[3]
207	MLbP	56.3	(1.00)	67.5	49.1	(2.78)	72.6	12.5	(2.89)	101.2	53.8	(3.90)
208	RLbPK	56.3	(1.22)	75.6	49.7	(2.63)	69.4	14.1	..[3]	100.8	54.7	..[3]
209	MLbPK	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 Corn	1914 Oats	1915 Clover	1916 Corn	1917 Oats	1918 Clover	1919 Corn	1920 Oats	1921 Soybeans	1922 Corn	1923 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	RLbP	50.4	26.2	.50	59.0	90.6	1.00	64.6	51.9	5.8	56.4	61.6
207	MLbP	51.4	29.7	(3.89)	49.6	87.2	(2.38)	70.4	48.4	10.2	65.0	45.3
208	RLbPK	50.6	29.7	.33	46.4	86.2	.33	70.2	35.3	9.0	57.8	68.8
209	MLbPK	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

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

TABLE 110.—*Concluded*
(1902-1912)

Plot No.	Soil treatment applied	1902 Cow-peas[1,2]	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
		Bushels or (tons) per acre										
301	0	....	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	..[5]	70.2	55.3	..[5]	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	..[5]	63.0	46.9	..[5]	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	..[5]	64.0	61.3	..[5]	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	..[5]	61.8	45.0	..[5]	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 Oats	1914 Soybeans	1915 Corn	1916 Oats	1917 Clover	1918 Corn	1919 Oats	1920 Clover	1921 Corn	1922 Oats	1923 Annual Sweet clover[2]
301	0	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	72.0	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	....

[1]No residues or manure. [2]Crop failure. [3]No manure. [4]Yields of clover in 1908 include stubble clover in 1907. [5]No seed harvested in 1908 and 1911.

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	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	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]	Soybeans[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

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

WEST SALEM FIELD, EDWARDS COUNTY

ESTABLISHED 1912

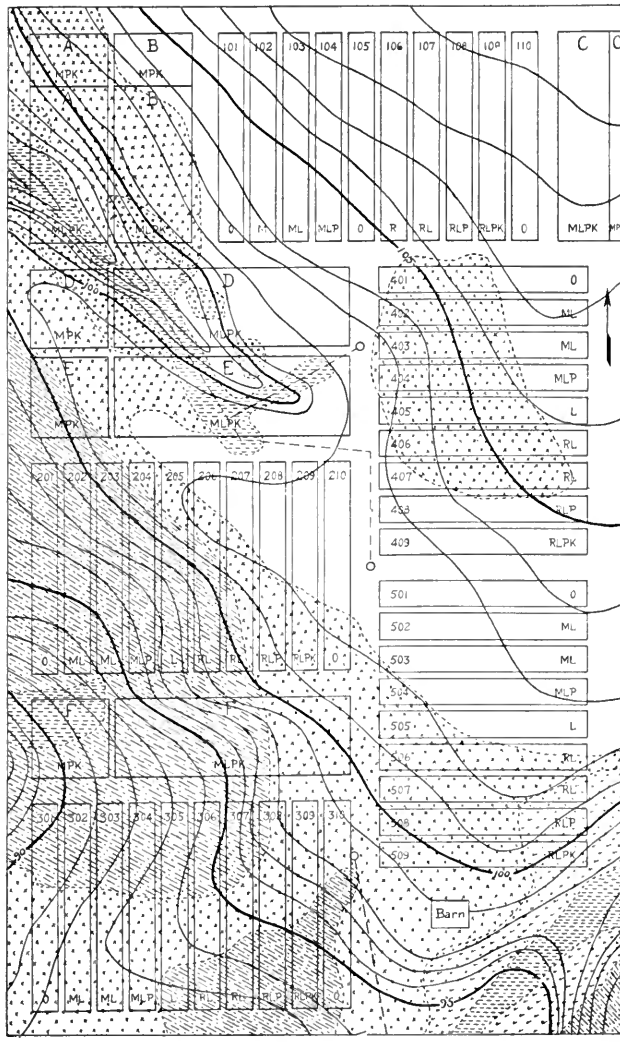
Location.—About a mile west of West Salem. A part of the west side of the S.W. ¼ of the N.W. ¼, Sec. 18, Twp. 1 N., R. 11 E. of the 3d P. M.

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.



SOIL MAP OF WEST SALEM FIELD

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied[1]	1912 Oats[2]	1913 Soybeans[4]	1914 Wheat[4]	1915 Corn	1916 Soybeans	1917 Oats	1918 Clover	1919 Wheat	1920 Corn	1921 Soybeans	1922 Oats	1923 Sweet clover	1924 Wheat
101	0	14.4	(.32)	.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)	2.5	39.3	(1.86)	32.8	(.71)	10.8	22.1	8.2	13.0	.81	5.9
103	ML	11.7	(.36)	2.7	36.6	(1.57)	35.8	(.65)	11.8	33.9	8.8	16.9	1.14	9.7
104	MLrP	12.0	(.39)	7.4	38.9	(1.68)	41.4	(.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	25.4	44.9	13.7	17.0	.55	30.2
110	0	10.8	3.7	.2	16.8	(.97)	17.2	(0.00)	3.6	11.5	6.3	6.3	0.00	1.4

		Cowpeas[2]	Oats[4]	Soybeans[4]	Wheat[4]	Corn	Soybeans	Oats	Soybeans	Wheat	Corn	Soybeans	Oats	Sweet clover
201	0	(1.05)	7.3	(.18)	3.5	25.4	(1.06)	25.0	(.82)	.2	25.5	10.0	16.7	0.00
202	ML	(1.05)	7.3	(.20)	6.6	40.8	(1.22)	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)	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)	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	..[3]	6.1	.8	6.8	33.4	7.5	33.1	5.8	.9	28.9	8.7	20.8	0.00
207	RL	..[3]	5.2	.9	8.2	34.7	8.0	40.2	7.2	2.7	33.8	11.6	29.2	3.92
208	RLrP	..[3]	7.3	1.6	15.7	49.6	10.7	46.1	9.6	3.5	39.8	15.3	29.7	5.08
209	RLrPK	..[3]	8.6	1.2	22.7	48.0	10.6	49.5	9.7	7.8	39.9	15.8	33.0	5.67
210	0	(.94)	6.1	(.09)	1.7	15.3	(.46)	23.0	3.7	0.0	19.3	6.8	12.7	0.00

		Corn[2]	Soybeans[4]	Oats[4]	Oat hay	Soybeans[4]	Wheat[4]	Corn	Soybeans	Oats	Soybeans	Wheat	Corn	Soybeans	Oats
301	0	14.8	(.67)	1.1	(.11)	(1.40)	0.0	17.8	(.95)	6.6	(.13)	5.0	24.8	6.4	22.0
302	ML	20.2	(.59)	1.2	(.12)	(.90)	.1	29.4	(1.19)	13.0	(.36)	8.5	34.2	8.2	31.6
303	ML	17.3	(.67)	.9	(.16)	(.90)	.1	34.2	(1.29)	15.6	(.73)	11.7	41.6	11.0	41.1
304	MLrP	12.2	(.64)	1.1	(.19)	(.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)	6.4	.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	3.5	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	(.04)	(.99)	0.0	10.3	3.4	5.6	(.23)	1.6	12.9	4.1	5.6

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

TABLE 113.—*Concluded*

Bushels or (tons) per acre

Plot No.	Soil treatment applied[1]	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[2]	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	..[3]	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	..[3]	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	..[3]	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	..[3]	11 1	17.2	13.2	27.0	8.8	18.2	36.6	11.6	54.1	3.33	19.3	51.1

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

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

Bushels or (tons) per acre

Plot No.	Soil treatment applied	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
		Potatoes	Corn	Soybeans	Wheat	Sweet clover	Potatoes	Kafir corn	Soybeans	Wheat	Sweet clover	Wheat	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
		Corn[1]	Soybeans[1]	Wheat[1]	Sweet clover[1]	Potatoes	Varieties sorghum[2]	Soybeans	Wheat	Stubble clover	Sweet clover	Wheat	Sweet clover	Timothy
B	MLrPK	10.8	1.3	4.3	.85	29.6	....	(.84)	4.7	(.23)	.78	24.3	.35	(2.57)
	MrPK	10.5	.8	5.9	.11	15.2	....	(.35)	.4	(0.00)	0.00	8.9	.30	(.91)
		Soybeans[1]	Wheat[1]	Sweet clover[1]	Potatoes	Corn	Soybeans	Wheat	Sweet clover		Timothy mixture	Timothy	Timothy	Sweet clover
C	MLrPK	3.2	9.5	(2.35)	42.7	34.5	(1.03)	22.3	(1.19)		(.82)	(2.58)	(2.64)	(2.23)
	MrPK	2.3	1.0	(1.43)[2]	9.2	11.6	(.38)	7.3	(0.00)		(.16)	(.99)	(1.14)	(.79)
		Wheat[1]	Sweet clover[1,2]	Potatoes	Corn	Soybeans	Wheat	Legume hay	Potatoes		Wheat	Corn	Wheat	Corn
D	MLrPK	7.8	....	123.4	42.8	8.5	10.9	(3.66)	15.2		24.8	54.5	8.6	44.9
	MrPK		....	45.1	22.8	3.4	7.6	(.29)	14.7		14.9	25.9	4.9	12.4
		Oats[1]	Potatoes	Corn	Soybeans	Wheat	Sweet clover	Alfalfa	Alfalfa[3]		Corn	Wheat	Corn	Soybeans
E	MLrPK	6.6	2.8	63.9	12.9	25.6	(1.20)	(1.01)	....		42.2	18.8	51.9	(1.25)
	MrPK	0.0	.6	38.6	2.1	8.5	(0.00)	(0.00)	....		31.3	11.9	40.7	(.69)
		Alfalfa	Alfalfa[3]	Alfalfa	Alfalfa[3]	Alfalfa	Alfalfa	Potatoes	Soybeans		Timothy mixture	Timothy	Timothy	Sweet clover
F	MLrPK	(1.10)	....	(4.33)	....	(1.69)	(1.70)	1.9	10.4		(1.44)	(2.47)	(2.51)	(1.47)
	MrPK	(.24)[2]	....	(.55)[2]	....	(.36)[2]	(0.00)	0.0	7.1		(.66)	(1.53)	(1.53)	(.50)

[1]No manure. [2]Growth mostly weeds. [3]No 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 tenative 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, A_1 corresponds to the surface soil, A_2 to the subsurface, B_1 to the upper subsoil, and C_1 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*)

A_1—0 to 8 inches, light or yellowish brown silt loam
A_2—8 to about 20 inches, distinctly yellowish brown, friable silt loam
B_1—20 to about 28 inches, brownish yellow, friable, non-mottled, non-compact silt loam
C_1—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*)

A_1—0 to 8 inches, brown silt loam

A_2—8 to 18 inches, light brown or yellowish brown silt loam

B_1—19 to 30 inches, mottled,[2] pale yellow, medium-compact clay loam or silty clay loam

C_1—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 A_2 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 A_1 horizon is too light colored to be typical of Muscatine and the B_1 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 A_1 horizon is light brown in color and the A_2 and B_1 horizons are yellow. The degrees of mottling, of compaction, and of placticity 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 A_1 horizon is about 14 inches in thickness, and B_1 is 3 or 4 inches deeper but usually no thicker.

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

[2] The 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*)

A_1—0 to 8 or 9 inches, dark brown silt loam
A_2—9 to 19 inches, brown silt loam with gray cast
B_1—20 to 30 inches, strongly mottled, pale yellow, heavy, compact clay loam
C_1—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 B_1 horizon is grayer than is usual for the type, and on the Clayton field the B_1 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 A_1 is 7 to 8 inches in depth and light brown in color.

2. Grayish phase, in which A_1 may or may not have a grayish cast, but in which A_2 is drabbish or grayish brown and B_1 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 A_2 in some areas, but in which B_1 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*)

A_1—0 to 9 or 10 inches, black silty clay loam
A_2—10 to 19 inches, drabbish brown silty clay loam frequently splotched with reddish brown or yellow spots
B_1—20 to 30 or 35 inches, strongly mottled, yellowish gray or drab clay, compact, and medium plastic
C_1—Below B_1 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 A_1 horizon is unusually shallow (6 to 7 inches), and on the DeKalb field the B_1 horizon occurs at a depth of only about 10 or 11 inches, thus reducing the A_2 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*)

A_1—0 to 8 inches, black clay loam
A_2—9 to 19 inches, grayish or drabbish brown clay loam

B_1—20 to 35 inches, gray clay loam splotched with black iron concretions and yellow mottling, not very compact or plastic

C_1—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.

A_1—0 to about 14 inches, dark brown silt loam

A_2—14 to about 24 inches, yellowish brown to drabbish black silty clay loam

A_3—24 inches to depth sampled (40 inches), strongly mottled, yellowish gray or drabbish 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:

A_1—0 to 9 inches, black clay loam

A_2—10 to 22 inches, drabbish black clay or clay loam

B_1—23 to 30 or 40 inches or more, drab or strongly mottled pale yellow, plastic, compact clay

C_1—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 splotched 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 drabbish 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 drabbish 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 B_1, 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 C_1 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:

A_1—0 to about 8 inches, brown silt loam
A_2—8 to about 18 inches, yellowish brown silt loam
B_1—18 to about 30 inches, mottled yellow, medium-compact, sandy or gravelly clay
C_1—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 A_1 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:

A_1—0 to 7 inches, light, slightly reddish brown silt loam
A_2—8 to 15 inches, yellowish brown silt loam with reddish cast
B_1—16 to 25 inches, dark reddish brown, sandy, gravelly clay loam, medium compact
C_1—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:

A_1—0 to 8 inches, brown silt loam
A_2—9 to about 18 inches, light brown or yellowish brown silt loam
B_1—19 to about 28 inches, yellowish brown, medium-compact clay, or sandy and gravelly clay
C_1—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:

A_1—0 to 9 inches, dark brown silt loam
A_2—10 to 18 inches, grayish brown silt loam
B_1—19 to 29 inches, grayish drab or strongly mottled yellow clay, heavy and compact
C_1—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.

A_1—0 to 8 inches, black silty clay loam
A_2—9 to 13 inches, brownish black silty clay loam
A_3—14 to 18 inches, drabbish black silty clay loam
B_1—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 B_1 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:

A_1—0 to 8 inches, yellowish gray silt loam, frequently with a brownish cast
A_2—9 to 18 inches, mottled, yellowish brown silt loam
B_1—19 to 35 inches, compact, mottled, yellowish brown silty clay loam
C_1—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 A_1 and A_2 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.

A_1—0 to 7 inches, grayish yellow silt loam
A_2—8 to 15 inches, yellowish gray silt loam
B_1—16 to 31 inches, compact, mottled, bright yellow silty clay loam
C_1—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 A_1, 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 B_1, 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 A_1, horizon and the heavy mottling below a depth of about 13 inches. There is an incipient compact, or B_1, 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.

A_1—0 to 7 inches, yellowish brown to yellowish gray silt loam
A_2—8 to about 12 inches, grayish yellow silt loam
A_3—13 to about 21 inches, gray silt loam splotched with yellow (the amount of yellow splotching varying according to the drainage conditions)
B_1—22 to about 34 inches, mottled yellowish brown to gray splotched with yellowish red, compact, medium-plastic clay loam
C_1—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:

A_1—0 to 6 inches, slightly brownish gray silt loam
A_2—7 to 13 inches, mottled, pale yellow silt loam
A_3—14 to 20 inches, gray silt loam
B_1—21 to 34 inches, strongly mottled, plastic, reddish yellow clay
C_1—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 A_2 horizon. Its topography is usually so steep as to subject it to serious erosion. A profile description of the type follows:

A_1—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.

A_1—0 to 7 inches, light gray silt loam
A_2—8 to 16 inches, light gray to white silt loam with a slightly yellowish cast when moist
B_1—17 to 35 inches, compact, highly plastic, gray or drabbish gray clay

C_1—36 inches to depth sampled (40 inches), fairly friable, gray silty clay loam abundantly supplied with reddish brown iron concretions

Frequently no C_1 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:

A_1—0 to 6 inches, gray silt loam

B_1—7 to 22 inches, reddish brown, plastic clay

C_1—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:

A_1—0 to 8 inches, brownish gray silt loam

A_2—9 to 12 inches, slightly mottled, brownish gray silt loam containing some yellow spots

A_3—13 to 16 inches, gray silt loam heavily splotched with orange red

B_1—17 to 21 inches, highly plastic, gray clay heavily splotched with orange red

C_1—21 inches to depth sampled (40 inches), friable, gray silty clay loam heavily splotched 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:

A_1—0 to 7 inches, yellowish gray to yellowish brown silt loam

A_2—8 to 14 inches, grayish yellow silt loam becoming somewhat compact and mottled with orange red at about 11 inches

B_1—15 to 24 inches, compact, medium-plastic, orange-mottled silty clay loam with the mottling disappearing at about 20 inches

C_1—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:

A_1—0 to 8 inches, brownish gray silt loam

A_2—9 to 18 inches, gray silt loam

B_1—19 to 32 inches, strongly mottled, yellowish brown, highly plastic clay

C_1—32 inches to depth sampled (40 inches), gray or drabbish gray, friable silty clay loam containing many yellowish brown and black iron splotches

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.

A_1—0 to 7 inches, yellowish brown silt loam

A_2—8 to about 14 inches, mottled, yellowish brown silt loam

B_1—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:

A_1—0 to 7 inches, light brown sandy loam

A_2—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 A_1, horizon, the material consisting of incoherent yellow sand.

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