

BULLETIN No. 169

JANUARY, 1913

ALABAMA
Agricultural Experiment Station

OF THE

Alabama Polytechnic Institute

AUBURN

**Local Fertilizer Experiments With Cotton in
South Alabama in 1912.**

BY

J. F. DUGGAR,
J. T. WILLIAMSON and
L. J. HAWLEY.

Opelika, Ala.
Post Publishing Company
1913

COMMITTEE OF TRUSTEES ON EXPERIMENT STATION.

HON. R. F. KOLB ----- Montgomery
HON. H. L. MARTIN ----- Ozark
HON. A. W. BELL ----- Anniston

STATION STAFF.

C. C. THACH, President of the College.
J. F. DUGGAR, Director of Station

DEPARTMENTAL ORGANIZATION.

AGRICULTURE:

J. F. Duggar, Agriculturist.
E. F. Cauthen, Associate.
M. J. Funchess, Assistant.
J. T. Williamson, Field Agent.
L. J. Hawley, Field Agent.
J. F. Duggar, Jr., Assistant.

VETERINARY:

C. A. Cary, Veterinarian.
I. S. McAdory, Assistant.

CHEMISTRY:

B. B. Ross, Chemist, State Chemist
J. T. Anderson, Chemist, Soil & Crops
C. L. Hare, Physiological Chemist
T. Bragg, First Assistant.

EXTENSION:

L. N. Duncan, Superintendent.*
J. B. Hobdy, Assistant.*
S. I. Bechdel, Assistant.*
Mrs. Birdie I. Robinson, Assistant.*

*In cooperation with United States Department of Agriculture.

BOTANY:

J. S. Caldwell, Botanist.
C. S. Ridgway, Assistant.

PLANT PATHOLOGY:

F. A. Wolf, Pathologist.

HORTICULTURE:

E. P. Sandsten, Horticulturist.
J. C. C. Price, Assistant.
H. M. Conolly, Field Agent

ENTOMOLOGY:

W. E. Hinds, Entomologist.
W. F. Turner, Assistant.
J. A. Dew, Field Agent.

ANIMAL INDUSTRY:

Jesse M. Jones, Animal Husbandman.
L. W. Summers, Assistant.
L. W. Shook, Assistant.
S. S. Jerdan, Assistant.*
A. R. Gissendanner, Assistant.
J. M. Johnson, Assistant.

LOCAL FERTILIZER EXPERIMENTS WITH COTTON IN SOUTH ALABAMA IN 1912

BY

J. F. DUGGAR, J. T. WILLIAMSON, L. J. HAWLEY

SUMMARY.

Bulletin No 169 records the results of fertilizer experiments with cotton conducted by the Alabama Experiment Station in the counties of the southern half of Alabama in 1912.

Extremely wet weather and other unfavorable conditions made some of these experiments inconclusive. The following summary is based on only the twenty-one conclusive experiments.

In two experiments on prairie (lime) upland soil, kainit was highly effective, while cotton seed meal and acid phosphate were also important.

In two experiments made on comparatively fresh sandy land (second and fifth years since clearing), acid phosphate was the fertilizer constituent that was most profitable.

In one experiment on red rocky soil in Greene county, no potash was needed, but both phosphate and cotton seed meal profitably increased the yield.

In one experiment on non-calcareous reddish soil near Greensboro, and in one test on sandy loam near Tallassee, nitrogen was the only fertilizer constituent that notably increased the yield.

In 14 other conclusive experiments located south of Montgomery, all on old grayish sandy soils of the Coastal Plain Region, kainit was needed as one constituent of the fertilizer in 93 per cent of the tests; kainit and acid phosphate were about equally effective in 50 per cent of these tests; and kainit was more important than acid phosphate in 43 per cent of these tests; nitrogen was highly effective as one constituent of the fertilizer in 79 per cent of these experiments on old sandy land.

The following table shows the average increase in seed cotton per acre and the average profit, when all of these 21 conclusive experiments are averaged:

Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	Average increase over unfertilized plot; seed cotton per acre.	Average profit from fertilizer per acre.
	Lbs.		Lbs.	
1	200	C. S. Meal -----	122	\$1.86
2	240	Acid Phosphate ---	73	1.26
3	000	No fertilizer -----		
4	200	Kainit -----	117	3.27
5	200	C. S. Meal -----	279	6.46
	240	Acid Phosphate ---		
6	200	C. S. Meal -----	296	7.20
	200	Kainit -----		
7	000	No fertilizer -----		
8	240	Acid Phosphate ---	228	6.04
	200	Kainit -----		
9	200	C. S. Meal -----	372	8.80
	240	Acid Phosphate ---		
10	200	Kainit -----	345	8.44
	240	Acid Phosphate ---		
11	100	Kainit -----	341	8.74
	000	No fertilizer -----		
12	240	Acid Phosphate ---	341	8.74
	100	Kainit -----		
	100	Nitrate of Soda(ate)		

This table shows that as a rule the complete fertilizers (Plots 9, 10 and 12) were more profitable than fertilizers applied singly or in pairs. The complete fertilizers were also the most profitable applications in 1911 in South Alabama.

In the general average it was more effective and more profitable in 1912 to apply 200 pounds of kainit in a complete fertilizer (Plot 9) than to use only 100 pounds of kainit (Plot 10).

The average of the conclusive experiments shows that 200 pounds of cotton seed meal applied before planting was in 1912 very slightly more effective than 100 pounds of nitrate of soda applied after the plants were six inches high.

Introductory

The chief object of these local fertilizer experiments or soil tests has been to ascertain the best combination of fertilizer or fertilizers for cotton, growing on each of the principal soils of the southern half of Alabama.

The results recorded in this bulletin were obtained in fertilizer experiments conducted by funds provided by the Legislature of Alabama in February, 1911.

This bulletin deals only with fertilizer experiments carried to a conclusion in 1912 in the southern half of the state. For convenience the counties grouped together in this bulletin are those lying south of or within the Central Prairie or Lime Region.

The results of fertilizer experiments made in the counties lying wholly north of the Central Prairie Region will appear in a later bulletin.

Local fertilizer tests constitute only one of many lines of experiments instituted in 1911 by the Alabama Experiment Station with the support of State funds.

Local fertilizer experiments as now conducted are made by farmers especially recommended as being men likely to take the necessary pains to secure accurate results. These experiments, located all over the State, are visited and supervised by representatives of the Experiment Station, who are expected to select and measure the land, make periodic visits, and take notes on the progress and results of the experiment, and, so far as practicable, assist in harvesting the crop.

WEATHER CONDITIONS

The season of 1912 was especially unfavorable for conducting fertilizer experiments. This was an exceedingly wet year, especially in spring and summer. This resulted in difficulty in selecting farms and farmers for the experiments, in delaying the time of planting many of the tests, in preventing in some cases proper cultivation, in reducing the stand, and in making the results less clear than they would have been in a year of normal rainfall.

The average rainfall in the part of Alabama covered by these experiments is given below by months, according to data furnished by the Alabama Weather Service. The total was 70.25 inches.

	Inches		Inches		Inches		Inches
Jan.	6.70	April	11.77	July	4.98	Oct.	3.11
Feb.	5.13	May	3.52	Aug.	5.66	Nov.	2.41
Mar.	9.71	June	5.05	Sept.	5.44	Dec.	6.77

Doubtless, the heavy rains resulted in the leaching and wasting of the fertilizer on certain soils and plots.

In spite of these and other serious obstacles, the majority of the experiments afforded useful results. In nearly every test one or more fertilizer mixtures were decidedly profitable. If we would

know the fertilizer requirements of our soils, tests must be made in unfavorable as well as favorable seasons.

“What fertilizer does my soil need” is a question which can only be answered by repeated tests made on the same or similar soils, so that average results extending through several years may be obtained.

The reader should bear in mind that there are great numbers of different soils in Alabama, and that even the same soil would give different results in the same year, depending on how it had been cropped, fertilized, and cared for in the year or two immediately preceding the test. Patient repetition of these tests is necessary before we can positively answer the above question.

It is the purpose of the authors in later years to publish bulletins classifying the soils on which all these tests are made and drawing conclusions relative to the needs of each class of soils. However, before this can be safely done, these experiments must be repeated, so that the average results may teach clearly the fertilizer requirements of each distinct type of soil.

Averaging the results obtained on dissimilar soils will not afford the desired information. Neither will chemical analysis of the soil indicate what fertilizers are needed.

Other fertilizer tests in South Ala. This bulletin does not contain the results of all the fertilizer experiments made in South Alabama in 1912. Those testing the effects of lime, acid phosphate versus ground rock phosphate, complete fertilizer experiments in which nitrate of soda was the carrier of nitrogen, etc., are reserved for publication in later years, because of insufficient funds for printing.

In 1912 killing frost occurred early, that is on October 27 and November 2.

Small lots of carefully weighed and mixed fertilizers were supplied to each experimenter. Detailed instructions as to how to conduct the experiment and blank forms for reporting results were also furnished. Representatives of the Station inspected the experiments here published as often as practicable.

LOCATION OF EXPERIMENTS.

The following list gives the name and address of each experimenter who has reported the results of fertilizer experiments made

in 1912 in the part of the State indicated, together with the page of this bulletin where the results may be found.

COUNTY	POST OFFICE	NAME	Page
Autauga	Prattville	W. A. Davis	17-18
Barbour	Clayton	D. C. Nix	39-42
Bullock	Perote	E. A. Brooks	39-42
Butler	McKenzie	J. C. Arant	39-42
Clarke	Bashi	T. M. Pugh	35-36
Clarke	Grove Hill	J. Winters Calhoun	36
Clarke	Thomasville	R. L. Hearon	39-41
Coffee	Elba	J. S. Windham	31
Coffee	Enterprise	D. H. McGee	30-31
Conecuh	Evergreen	G. M. Harper	22-23
Crenshaw	Luverne	F. L. Hawkins	23-24
Dale	Ozark	J. W. Byrd	24-26
Dallas	Cahaba	C. Kirkpatrick	38-41
Dallas	Selma	A. R. Moses	40
Elmore	Tallassee	Mitchell Pittman	18-19
Escambia	Canoe	F. J. German	39-41
Geneva	Hartford	Geneva Co. High School	26
Geneva	Hartford	G. E. Grantham	28-29
Greene	Clinton	W. W. Morgan	15-16
Greene	Knoxville	T. H. Chambers	14
Hale	Greensboro	P. A. Tutwiler, Jr.	20-21
Hale	Prairieville	J. H. Collins	11
Henry	Headland	C. F. Wilkerson	37-38
Houston	Dothan	J. W. Tharp	40-42
Lowndes	Letohatchie	J. B. Mitchell, Jr.	40
Lowndes	Lowndesboro	C. E. Reese	38-41
Macon	Ft. Davis	F. M. Davis	21
Macon	Notasulga	B. H. May	39-42
Macon	Tuskegee	T. F. Proctor	40
Macon	Tuskegee	C. W. Thompson	40
Macon	Tuskegee	W. W. Thompson	39-42
Monroe	Jones Mill	A. L. Harrison	38-41
Monroe	Monroeville	J. R. Carter	32-33
Pike	Troy	H. W. Ballard	39-42
Russell	Seale	P. G. Porter	27-28
Sumter	Geiger	E. A. Gilbert	12-14
Sumter	Geiger	A. J. Payne	10-11
Washington	St. Stephens	W. C. Pruitt	33-34
Wilcox	Allenton	E. B. Carter	38-41
Wilcox	Camden	G. M. Cook	40
Wilcox	Sunny South	G. M. Carmichael	38-41

Additional experiments were started in the following counties of South Alabama but for various reasons the results were not available for publication: Butler, Choctaw, Covington, Dale, Henry, Marengo, Pike and Washington.

The directions sent to each experimenter stated that the land employed for this test should be level and uniform, not manured in recent years, not in cowpeas the preceding year, and that it should be representative of large soil areas in its vicinity. The need of perfect uniformity and standard treatment for all plots (except as to kind of fertilizer used) was emphasized.

Fertilizers were applied in the usual manner—that is, drilled before planting, except nitrate of soda which was directed to be applied when the plants were 6 to 10 inches high.

THE FERTILIZERS USED

The following prices are used, as representing approximately the average cash price in local markets during the last few years:

	Per Ton
Acid Phosphate (16 per cent available).....	\$14.00
Cotton seed meal.....	\$30.00
Kainit.....	\$14.00

Prices naturally vary in different localities. Any one can substitute the cost of fertilizers in his locality for the prices given above.

In each experiment three plots were left unfertilized, these being plots 3, 7, and 11. When these yields differed widely the experiment was classed as inconclusive. The increase on plots 4 to 6 is calculated on the assumption that the gradation in fertility is uniform from plots 3 to 7; likewise the increase is calculated for plots 8 to 10 inclusive.*

PRICE ASSUMED FOR SEED COTTON

The price assumed is \$18.00 per ton for seed, and 12 cents per pound for lint. This is equal to 4.6 cents per pound for seed cotton turning out $33\frac{1}{3}$ per cent of lint. Deducting $\frac{6}{10}$ cents per pound as the average cost of picking and ginning, and we have left 4 cents as the net value per pound of the increase of seed cotton due to fertilizers. This latter is the figure used in all financial calculations.

*For the standard method of calculation employed, see Alabama Station Bulletins 160 or 162.

Pounds per acre of fertilizers; nitrogen, phosphoric acid, and potash used and composition of each mixture.

Plot No.	FERTILIZERS		MIXTURE CONTAINS			COST OF FERTILIZERS	
	Amount per acre	KIND OF FERTILIZER	Nitrogen	† Available phosphoric Acid	Potash	Per ton	Per acre
1	Lbs. 200	Cotton seed meal ----- <i>In 100 lbs. c. s. meal*</i> -----	Lbs. 13.58 6.79	Lbs. 5.76 2.88	Lbs. 3.54 1.77	\$30.00	\$3.00
2	240	Acid phosphate ----- <i>In 100 lbs. acid phos.</i> -----		38.40 16.00		14.00	1.68
4	200	Kainit ----- <i>In 100 lbs. Kainit</i> -----			24.60 12.30	14.00	1.40
5 {	200	Cotton seed meal -----	13.58	44.16	3.54	21.27	4.68
	240	Acid phosphate ----- <i>In 100 lbs. above mixt.</i> -----					
6 {	200	Cotton seed meal -----	13.58	5.76	28.14	22.00	4.40
	200	Kainit ----- <i>In 100 lbs. above mixt.</i> -----					
8 {	240	Acid phosphate -----				13.99	3.08
	200	Kainit ----- <i>In 100 lbs. above mixt.</i> -----					
9 {	200	Cotton seed meal -----	13.58	44.16	28.14	19.00	6.08
	240	Acid phosphate -----					
	200	Kainit ----- <i>In 100 lbs. above mixt.</i> -----					
10 {	200	Cotton seed meal -----	13.58	44.16	15.84	20.13	5.38
	240	Acid phosphate -----					
	160	Kainit ----- <i>In 100 lbs. above mixt.</i> -----					
12 {	240	Acid phosphate -----	14.00	16.00	12.30	22.17	4.88
	100	Kainit -----					
	100	Nitrate of soda ----- <i>In 100 lbs. above mixt.</i> -----					

*Average of many analysis.

†Counting all the phosphoric acid in cotton seed meal as available.

Those farmers who are more accustomed to the word ammonia than to the term nitrogen, can change the figures for nitrogen into their ammonia equivalents by multiplying by $1\frac{3}{4}$.

SUMTER COUNTY, 3 MILES NORTHWEST
OF GEIGER

A. J. PAYNE.

Dark prairie soil—(Houston clay)

This is upland prairie. There was no damage from insects. The stand was good. The land is subject to rust, but no report on this disease was made in 1912. Planting was done on May 18th.

Plainly, kainit was the most effective and profitable fertilizer. The plot receiving 200 pounds of kainit alone, per acre, made a profit of \$15.00 per acre. Every fertilizer in which this amount of kainit was used proved profitable. One hundred pounds of kainit was not as effective as twice that amount.

The average increase due to cotton seed meal was 72 pounds per acre; to acid phosphate, 52 pounds per acre; and to kainit, 218 pounds per acre.

In this year of continuous heavy rains, cotton seed meal was more effective than nitrate of soda.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	72 lbs.
To acid phosphate plot.....	212 lbs.
To kainit plot.....	—68 lbs.
To acid phosphate and kainit plot.....	70 lbs.
<i>Average increase with cotton seed meal.....</i>	<u>72 lbs.</u>

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	104 lbs.
To cotton seed meal plot.....	244 lbs.
To kainit plot.....	—140 lbs.
To cotton seed meal and kainit plot.....	—2 lbs.
<i>Average increase with acid phosphate.....</i>	<u>52 lbs.</u>

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	410 lbs.
To cotton seed meal plot.....	270 lbs.
To acid phosphate plot.....	166 lbs.
To cotton seed meal and acid phosphate plot.....	24 lbs.
<i>Average increase with kainit.....</i>	<u>218 lbs.</u>

Experiments in Sumter and Hale Counties (Prairie Lands).

			GEIGER			PRAIRIEVILLE		
Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	Yield seed cot-	Increase over	Profit from fertilizer	Yield seed cot-	Increase over	Profit from fertilizer
			ton per acre	unfertilized plot		ton per acre	unfertilized plot	
			Lbs.	Lbs.	\$	Lbs.	Lbs.	\$
1	200	C. S. Meal	312	72	\$0.12	904	112	\$1.48
2	240	Acid Phosphate	344	104	2.48	968	176	5.36
3	000	No fertilizer	240			792		
4	200	Kainit	688	410	15.00	928	178	5.72
5	200	C. S. Meal	632	316	7.96	864	156	1.56
	240	Acid Phosphate						
6	200	C. S. Meal	696	342	9.28	808	142	1.28
	200	Kainit						
7	000	No fertilizer	392			624		
8	240	Acid Phosphate	664	270	7.72	888	270	7.72
	200	Kainit						
9	200	C. S. Meal	736	340	7.52	960	348	7.84
	240	Acid Phosphate						
10	200	Kainit	672	274	5.58	888	282	5.90
	240	Acid Phosphate						
11	000	No fertilizer	400			600		
	240	Acid Phosphate						
12	100	Kainit	576	176	2.16	832	232	4.40
	100	Nitrate of Soda						

HALE COUNTY, ONE AND ONE-FOURTH MILES
NORTHEAST OF GALLION—NEAR PRAIRIEVILLE

J. H. COLLINS.

Black prairie upland ✓

This land has been in cotton for the last eight years, and in cultivation for at least fifty years. The stand appeared to be uniform, and rust was not especially injurious.

Every fertilizer and every combination resulted in a profitable increase in the yield. The greatest profit was on Plot 9, receiving a complete fertilizer consisting per acre of:

- 200 pounds cotton seed meal,
- 240 pounds acid phosphate, and
- 200 pounds kainit.

This mixture afforded a profit of \$7.84 per acre, which is 127 per cent profit on the cost of fertilizer. Two hundred pounds of kainit was more profitable than one hundred pounds.

Probably in a season with average weather conditions, cotton seed meal and nitrate of soda would have afforded much larger increases than in this extremely wet year.

Increase of seed cotton per acre when cotton seed meal was added:	
To unfertilized plot.....	112 lbs.
To acid phosphate plot.....	—20 lbs.
To kainit plot.....	—36 lbs.
To acid phosphate and kainit plot.....	78 lbs.
<i>Average increase with cotton seed meal.....</i>	34 lbs.

Increase of seed cotton per acre when acid phosphate was added:	
To unfertilized plot.....	176 lbs.
To cotton seed meal plot.....	44 lbs.
To kainit plot.....	92 lbs.
To cotton seed meal and kainit plot.....	206 lbs.
<i>Average increase with acid phosphate.....</i>	130 lbs.

Increase of seed cotton per acre when kainit was added:	
To unfertilized plot.....	178 lbs.
To cotton seed meal plot.....	30 lbs.
To acid phosphate plot.....	94 lbs.
To cotton seed meal and acid phosphate plot.....	192 lbs.
<i>Average increase with kainit.....</i>	124 lbs.

Increase from use of different quantities of kainit:	
To use of 200 pounds kainit.....	192 lbs.
To use of 100 pounds kainit.....	126 lbs.
Increase from use of cotton seed meal.....	78 lbs.
Increase from use of nitrate of soda.....	28 lbs.
<i>Cotton seed meal better than nitrate by.....</i>	50 lbs.

SUMTER COUNTY, 1½ MILES SOUTH OF GEIGER

E. A. GILBERT

↓ *Light colored, stiff, branch bottom, with red clay subsoil.*

This field is not a lime soil, although only a mile or two outside of the prairie belt. The land has been long in cultivation. This is the second year in which the same fertilizer experiment with cotton has been made on the same land. This land is subject to cotton wilt and to cotton rust. Both did some damage, especially on Plots Nos. 1 to 5. The stand was uniform and good.

The large increase due to kainit, whether applied alone or in any combination, is very noticeable; the increase with potash being several times greater than that with either cotton seed meal or phosphate. The average increase in pounds of seed cotton per acre was 72 pounds per acre from cotton seed meal; 132 pounds from acid phosphate; and 400 pounds from kainit.

However, every fertilizer was needed, as shown by the fact that the largest profits were obtained on Plots No. 9 and No. 12, which received the complete fertilizers. The largest profit, \$18.56 per acre, or 305 per cent on the investment in fertilizers, resulted from the use of a complete fertilizer of cotton seed meal, acid phosphate, and 200 pounds of kainit per acre (Plot 9). A profit of \$18.48 per acre resulted on Plot 12, from the use of a complete fertilizer containing nitrate of soda.

Reducing the amount of kainit from 200 pounds to 100 pounds per acre materially reduced the yield. Nitrate of soda was a little more effective than cotton seed meal.

Mr. Gilbert's results in 1912 closely agree with those obtained by him in 1911. In 1911 his average increase with cotton seed meal was 133 pounds of seed cotton per acre; with acid phosphate, 156 pounds; and with kainit, 274 pounds.

The results of the two years differ chiefly in the greater effect of kainit in 1912, and in cotton seed meal proving more effective than in 1911.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	—48 lbs.
To acid phosphate plot.....	128 lbs.
To kainit plot.....	72 lbs.
To acid phosphate and kainit plot.....	<u>136 lbs.</u>
<i>Average increase with cotton seed meal.....</i>	72 lbs.

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	—8 lbs.
To cotton seed meal plot.....	168 lbs.
To kainit plot.....	152 lbs.
To cotton seed meal and kainit plot.....	<u>216 lbs.</u>
<i>Average increase with acid phosphate.....</i>	132 lbs.

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	328 lbs.
To cotton seed meal plot.....	448 lbs.
To acid phosphate plot.....	488 lbs.
To cotton seed meal and acid phosphate plot.....	<u>496 lbs.</u>
<i>Average increase with kainit.....</i>	440 lbs.

Increase from use of different quantities of kainit:

To use of 200 pounds kainit.....	496 lbs.
To use of 100 pounds kainit.....	384 lbs.
Increase from use of nitrate of soda.....	216 lbs.
Nitrate of soda surpassed cotton seed meal by.....	80 lbs.

Experiments in Sumter and Greene Counties.

Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	GEIGER			KNOXVILLE		
			Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer	Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer
			Lbs.	Lbs.		Lbs.	Lbs.	
1	200	C. S. Meal.....	296	—48	—\$4.92	808	—56	—\$5.24
2	240	Acid Phosphate.....	352	—8	—2.00	864	—192	—9.36
3	000	No fertilizer.....	344			864		
4	200	Kainit.....	688	328	11.72	896	36	0.04
5	200	C. S. Meal.....	496	120	0.12	952	96	—0.84
	240	Acid Phos.....						
6	200	C. S. Meal.....	792	400	11.60	952	100	—0.40
	200	Kainit.....						
7	000	No fertilizer.....	408			848		
8	240	Acid Phosphate.....	888	480	16.12	1048	238	6.44
	200	Kainit.....						
9	200	C. S. Meal.....	1024	616	18.56	1056	284	5.28
	240	Acid Phosphate.....						
10	200	C. S. Meal.....	912	504	14.78	1000	266	5.26
	240	Acid Phosphate.....						
11	100	Kainit.....	408			696		
	000	No fertilizer.....						
12	240	Acid Phosphate.....	992	584	18.48	1136	440	12.72
	100	Kainit.....						
	100	Nitrate of Soda.....						

GREENE COUNTY, 16 MILES NORTHEAST
OF EUTAW

T. H. CHAMBERS.

Grey sandy loam with reddish subsoil

This land has been cleared seven years. It is reported as having been in cotton the three years prior to 1912.

In this test, unlike all others, the fertilizer was not applied until June, on account of the loss of the first lot of fertilizers in transit. It was applied as a side application when plants were small.

Under these unfavorable conditions, kainit was the only fertilizer giving somewhat uniformly profitable results. However, acid phosphate and cotton seed meal were also helpful, especially in the complete fertilizers.

Nitrate of soda was much more effective than a June application of cotton seed meal.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	—56 lbs.
To acid phosphate plot.....	288 lbs.
To kainit plot.....	64 lbs.
To acid phosphate and kainit plot.....	46 lbs.
<i>Average increase with cotton seed meal.....</i>	86 lbs.

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	—192 lbs.
To cotton seed meal plot.....	152 lbs.
To kainit plot.....	202 lbs.
To cotton seed meal and kainit plot.....	184 lbs.
<i>Average increase with acid phosphate.....</i>	87 lbs.

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	36 lbs.
To cotton seed meal plot.....	156 lbs.
To acid phosphate plot.....	430 lbs.
To cotton seed meal and acid phosphate plot.....	188 lbs.
<i>Average increase with kainit.....</i>	203 lbs.

Increase from use of different quantities of kainit:

To use of 200 pounds kainit.....	188 lbs.
To use of 100 pounds kainit.....	170 lbs.

Increase from use of nitrate of soda..... 220 lbs.

Nitrate of soda surpassed cotton seed meal by..... 174 lbs.

GREENE COUNTY, CLINTON 15 MILES NORTH OF EUTAW

W. W. MORGAN

Red sandy and rocky land, with sandy clay subsoil ✓

This test was made on old land which has been in cultivation about 75 years, and the original growth was oak and short leaf pine. Insects did no material damage to this crop, and rust was not noticeable. All fertilizers afforded a profit. The largest profit, \$12.92 per acre, or 255 per cent on the investment in fertilizers.

was afforded by Plot 5, fertilized by cotton seed meal and acid phosphate. The next largest profit per acre, \$11.18, was on Plot 10, which received a complete fertilizer, containing only a half ration of kainit.

Nitrogen was somewhat more effective than phosphate, but the latter was also essential to fair yields. Potash was apparently not needed.

The average increase in pounds of seed cotton per acre due to cotton seed meal was 215 pounds; to acid phosphate, 180 pounds; and to kainit, 12 pounds. Cotton seed meal in this test was superior to nitrate of soda.

Experiment in Greene County.

CLINTON

Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer
1	200	C. S. Meal -----	Lbs. 480	Lbs. 184	\$4.36
2	240	Acid Phosphate ----	528	232	7.60
3	000	No fertilizer -----	296		
4	200	Kainit -----	304	000	-1.40
5	200	C. S. Meal -----	752	440	12.92
	240	Acid Phosphate ----			
6	200	C. S. Meal -----	656	336	9.04
	200	Kainit -----			
7	000	No fertilizer -----	328		
8	240	Acid Phosphate ----	560	218	5.64
	200	Kainit -----			
9	200	C. S. Meal -----	704	348	7.84
	240	Acid Phosphate ----			
	200	Kainit -----			
10	200	C. S. Meal -----	784	414	11.18
	240	Acid Phosphate ----			
11	100	Kainit -----	384		
	000	No fertilizer -----			
	240	Acid Phosphate ----			
12	100	Kainit -----	608	224	4.08
	100	Nitrate of Soda ----			

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot	184 lbs.
To acid phosphate plot	208 lbs.
To kainit plot	336 lbs.
To acid phosphate and kainit plot	130 lbs.
<i>Average increase with cotton seed meal</i>	215 lbs.

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	232 lbs.
To cotton seed meal plot.....	256 lbs.
To kainit plot.....	218 lbs.
To cotton seed meal and kainit plot.....	12 lbs.
<i>Average increase with acid phosphate</i>	180 lbs.

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	0 lbs.
To cotton seed meal plot.....	152 lbs.
To acid phosphate plot.....	—14 lbs.
To cotton seed meal and acid phosphate plot.....	—92 lbs.
<i>Average increase with kainit</i>	12 lbs.

AUTAUGA COUNTY, 2½ MILES WEST OF PRATTVILLE

W. A. DAVIS.

Grey sandy loam with yellow clay subsoil ✓

Cotton grew on this land in 1909-10-11. This land is subject to rust. Plot 2 was damaged more than any other plot by it, and Plot 12 was damaged least. The stand was fairly good and uniform.

The complete fertilizer afforded the largest increase in yield. The most profitable plot was No. 12, fertilized with
 100 pounds nitrate of soda,
 240 pounds acid phosphate, and
 100 pounds kainit.

This afforded a profit of \$12.72 per acre, or 261 per cent on the investment in fertilizers. Plot 9, receiving a complete fertilizer containing cotton seed meal, was second in profit, with \$11.52 per acre.

The average increase in pounds of seed cotton per acre was, for cotton seed meal, 258 pounds; for acid phosphate, 120 pounds; and for kainit, 102 pounds.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	200 lbs.
To acid phosphate plot.....	384 lbs.
To kainit plot.....	224 lbs.
To acid phosphate and kainit plot.....	224 lbs.
<i>Average increase with cotton seed meal</i>	258 lbs.

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot	—16 lbs.
To cotton seed meal plot	168 lbs.
To kainit plot	176 lbs.
To cotton seed meal and kainit plot	176 lbs.
<i>Average increase with acid phosphate</i>	120 lbs.

Increase of seed cotton per acre when kainit was added:

To unfertilized plot	40 lbs.
To cotton seed meal plot	64 lbs.
To acid phosphate plot	232 lbs.
To cotton seed meal and acid phosphate plot	72 lbs.
<i>Average increase with kainit</i>	102 lbs.

Increase from use of different quantities of kainit:

To use of 200 pounds kainit (Plot 9)	72 lbs.
To use of 100 pounds kainit	16 lbs.

Increase from use of cotton seed meal (Plot 9)

224 lbs.	
Increase from use of nitrate of soda	280 lbs.
<i>Nitrate better than meal by</i>	56 lbs.

Experiments in Autauga and Elmore Counties.

			PRATTVILLE			TALLASSEE		
Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer	Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer
			Lbs.	Lbs.	\$	Lbs.	Lbs.	\$
1	200	C. S. Meal	528	200	\$5.00	728	104	\$1.16
2	240	Acid Phosphate	312	—16	—2.32	616	—8	—2.00
3	000	No fertilizer	—	—	—	624	—	—
4	200	Kainit	368	40	0.20	584	—6	—1.64
5	200	C. S. Meal	696	368	10.04	784	228	4.44
	240	Acid Phosphate						
6	200	C. S. Meal	592	264	6.16	752	230	4.80
	200	Kainit						
7	000	No fertilizer	—	—	—	488	—	—
8	240	Acid phosphate	544	216	556	552	52	—1.00
	200	Kainit						
9	200	C. S. Meal	768	440	11.52	716	204	2.08
	240	Acid Phosphate						
10	200	Kainit	712	384	9.98	736	212	3.10
	240	C. S. Meal						
11	000	No fertilizer	328	—	—	536	—	—
12	240	Acid Phosphate	768	440	12.72	848	312	7.60
	100	Kainit						
	100	Nitrate of Soda	—	—	—	—	—	—

ELMORE COUNTY, 4 MILES WEST OF TALLASSEE

MITCHEL PITTMAN.

Yellowish soil with red clay subsoil ✓

Cotton grew on this land in 1911, and oats followed by cow-peas in 1909 and 1910. The stand was uniform on all plots.

The experimenter reports that neither insects nor diseases were injurious.

The average increase of seed cotton per acre due to cotton seed meal was 182 pounds; to acid phosphate, 37 pounds; and to kainit, 39 pounds. Evidently nitrogen was the most needed constituent of a fertilizer. The largest profit from fertilizer was where a complete fertilizer containing nitrate of soda was used (Plot 12). This gave a profit of \$7.60, or 156 per cent on the investment in fertilizers. Cotton seed meal, when combined with either acid phosphate or kainit, gave fair profits. Nitrate of soda afforded a larger yield than did cotton seed meal.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	104 lbs.
To acid phosphate plot.....	236 lbs.
To kainit plot.....	236 lbs.
To acid phosphate and kainit plot.....	152 lbs.
<i>Average increase with cotton seed meal</i>	<u>182 lbs.</u>

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	-8 lbs.
To cotton seed meal plot.....	124 lbs.
To kainit plot.....	58 lbs.
To cotton seed meal and kainit plot.....	-26 lbs.
<i>Average increase with acid phosphate</i>	<u>37 lbs.</u>

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	-6 lbs.
To cotton seed meal plot.....	126 lbs.
To acid phosphate plot.....	60 lbs.
To cotton seed meal and acid phosphate plot.....	-24 lbs.
<i>Average increase with kainit</i>	<u>39 lbs.</u>

Increase from use of cotton seed meal.....	152 lbs.
Increase from use of nitrate of soda.....	252 lbs.
<i>Nitrate surpassed cotton seed meal by</i>	100 lbs.

HALE COUNTY, 1½ MILES SOUTHEAST
OF GREENSBORO

P. A. TUTWILER, JR.

Grey sandy soil with red clay subsoil

This land has been in cotton the last three years. There was no damage from rust or insect injuries. The stand was fairly uniform on all plots.

The most profitable application was a complete fertilizer containing nitrate of soda (Plot 12). This gave a profit of \$12.24, or 251 per cent on the investment in fertilizers. Nitrogen was more effective than either phosphate or potash. Cottonseed meal gave a satisfactory profit even when applied alone, and a much larger profit when used in combination (Plot 10) with both phosphate and 100 pounds of kainit per acre.

The average increase in seed cotton per acre was 214 pounds for cotton seed meal; 44 pounds for acid phosphate; and 72 pounds for kainit.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	112 lbs.
To acid phosphate plot.....	296 lbs.
To kainit plot.....	248 lbs.
To acid phosphate and kainit plot.....	200 lbs.
<i>Average increase with cotton seed meal.....</i>	<u>214 lbs.</u>

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	-64 lbs.
To cotton seed meal plot.....	120 lbs.
To kainit plot.....	84 lbs.
To cotton seed meal and kainit plot.....	36 lbs.
<i>Average increase with acid phosphate.....</i>	<u>44 lbs.</u>

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	-12 lbs.
To cotton seed meal plot.....	124 lbs.
To acid phosphate plot.....	136 lbs.
To cotton seed meal and acid phosphate plot.....	40 lbs.
<i>Average increase with kainit.....</i>	<u>72 lbs.</u>

Increase from use of different quantities of kainit:

To use of 200 pounds kainit.....	40 lbs.
To use of 100 pounds kainit.....	96 lbs.

Increase from use of nitrate of soda..... 300 lbs.

Nitrate better than cotton seed meal by..... 100 lbs.

Experiments in Hale and Macon Counties (Sandy Lands)

			GREENSBORO			FT. DAVIS		
Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer	Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer
			Lbs.	Lbs.	\$	Lbs.	Lbs.	\$
1	200	C. S. Meal	800	112	\$ 1.48	672	80	\$0.20
2	240	Acid Phosphate	624	-64	-4.24	752	160	4.72
3	000	No fertilizer	688			592		
4	200	Kainit	688	-12	-1.88	664	94	2.36
5	200	C. S. Meal	944	232	4.60	816	268	6.04
	240	Acid Phosphate						
6	200	C. S. Meal	960	236	5.04	808	432	6.88
	200	Kainit						
7	000	No fertilizer	736			504		
8	240	Acid Phosphate	832	72	-0.20	808	287	8.40
	200	Kainit						
9	200	C. S. Meal	1056	272	4.80	856	318	6.64
	240	Acid Phosphate						
	200	Kainit						
10	200	C. S. Meal	1136	328	7.74	880	325	7.62
	240	Acid Phosphate						
11	100	Kainit	832			572		
	000	No fertilizer						
12	240	Acid Phosphate	1360	428	12.24	912	340	8.72
	100	Kainit						
	100	Nitrate of Soda						

MACON COUNTY, ONE-HALF MILE SOUTH-
WEST OF FT. DAVIS

F. M. DAVIS

Grey soil with yellow subsoil

This experiment was located on sandy bottom land which has been cleared 50 years or more. It is subject to wilt, which did considerable damage. There was some damage by rust, especially on Plots 1, 3, 7 and 11. The damage to all plots appears to be uniform.

There was a slight to moderate profit from the use of every fertilizer or fertilizer combination.

The average increase due to cottonseed meal was 77 pounds of seed cotton per acre; to acid phosphate, 169 pounds; and to kainit, 118 pounds.

Mr. Davis writes that there was less rust where kainit was used; also, less injury, he thinks, from wilt.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	80 lbs.
To acid phosphate plot.....	8 lbs.
To kainit plot.....	188 lbs.
To acid phosphate and kainit plot.....	31 lbs.
<i>Average increase with cotton seed meal.....</i>	<u>77 lbs.</u>

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	160 lbs.
To cotton seed meal plot.....	288 lbs.
To kainit plot.....	193 lbs.
To cotton seed meal and kainit plot.....	36 lbs.
<i>Average increase with acid phosphate.....</i>	<u>169 lbs.</u>

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	94 lbs.
To cotton seed meal plot.....	202 lbs.
To acid phosphate plot.....	127 lbs.
To cotton seed meal and acid phosphate plot.....	50 lbs.
<i>Average increase with kainit.....</i>	<u>118 lbs.</u>

CONECUH COUNTY, 9 MILES EAST OF EVER- GREEN, NEAR HERBERT

G. M. HARPER

Grey sandy soil with red subsoil

This land has been in cultivation 42 years. It is subject to cotton wilt, but was not seriously attacked this year. The stand was about 12 per cent deficient on Plot 12. Rust occurred, but it was least injurious on the plots where kainit was used.

On this soil every fertilizer, when used alone or in combination was profitable, but the best results were from the use of a complete fertilizer (Plot 9) containing cotton seed meal, acid phosphate, and 200 pounds of kainit per acre. This mixture afforded a profit of \$15.36 per acre, or 252 per cent on the investment in fertilizer.

The average increase attributable to cotton seed meal was 241 pounds of seed cotton per acre; to acid phosphate, 151 pounds; and to kainit, 171 pounds.

Reducing the amount of kainit from 200 to 100 pounds reduced the yield and the profits.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	432 lbs.
To acid phosphate plot.....	128 lbs.
To kainit plot.....	248 lbs.
To acid phosphate and kainit plot.....	156 lbs.
<i>Average increase with cotton seed meal.....</i>	<u>241 lbs.</u>

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	144 lbs.
To cotton seed meal plot.....	160 lbs.
To kainit plot.....	196 lbs.
To cotton seed meal and kainit plot.....	104 lbs.
<i>Average increase with acid phosphate</i>	151 lbs.

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	184 lbs.
To cotton seed meal plot.....	000 lbs.
To acid phosphate plot.....	236 lbs.
To cotton seed meal and acid phosphate plot.....	264 lbs.
<i>Average increase with kainit</i>	171 lbs.

Increase from use of different quantities of kainit:

To use of 200 pounds kainit.....	264 lbs.
To use of 100 pounds kainit.....	188 lbs.

Experiments in Conecuh and Crenshaw Counties

Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	EVERGREEN			LIVERNE		
			Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer	Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer
1	200	C. S. Meal.....	Lbs. 1032	Lbs. 432	\$14.28	Lbs. 712	Lbs. 56	-\$0.76
2	240	Acid Phosphate.....	744	144	4.08	704	48	0.24
3	000	No fertilizer.....	600	---	---	656	---	---
4	200	Kainit.....	744	184	5.96	720	34	-0.04
5	200	C. S. Meal.....	792	272	6.20	864	148	1.24
	240	Acid Phosphate.....						
6	200	C. S. Meal.....	912	432	12.88	888	142	1.28
	200	Kainit.....						
7	000	No fertilizer.....	440	---	---	776	---	---
8	240	Acid Phosphate.....	800	380	12.12	776	14	-2.52
	200	Kainit.....						
9	200	C. S. Meal.....	936	536	15.36	864	116	-1.44
	240	Acid Phosphate.....						
	200	Kainit.....						
10	200	C. S. Meal.....	840	460	13.02	832	98	-1.46
	240	Acid Phosphate.....						
11	000	No fertilizer.....	360	---	---	720	---	---
12	240	Acid Phosphate.....	632	---	---	936	216	3.76
	100	Kainit.....						
	100.	Nitrate of Soda.....						

CRENSHAW COUNTY, 1 MILE EAST OF LUVERNE

F. L. HAWKINS

Grey sandy upland with red clay subsoil

This experiment was made on the same plots where a similar test with inconclusive results was made in 1911.

In 1912 no fertilizer and no combination was highly profitable. Cotton seed meal was more effective than either kainit or acid phosphate. The largest profit, \$3.76, or 88 per cent on the investment in fertilizers, was made on Plot 12, where a complete fertilizer containing nitrate of soda was used.

The stand was uniform.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	56 lbs.
To acid phosphate plot.....	100 lbs.
To kainit plot.....	108 lbs.
To acid phosphate and kainit plot.....	102 lbs.
<i>Average increase with cotton seed meal</i>	92 lbs.

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	48 lbs.
To cotton seed meal plot.....	92 lbs.
To kainit plot.....	-20 lbs.
To cotton seed meal and kainit plot.....	-26 lbs.
<i>Average increase with acid phosphate</i>	24 lbs.

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	34 lbs.
To cotton seed meal plot.....	86 lbs.
To acid phosphate plot.....	-34 lbs.
To cotton seed meal and acid phosphate plot.....	-32 lbs.
<i>Average increase with kainit</i>	14 lbs.

Increase from use of cotton seed meal..... 102 lbs.

Increase from use of nitrate of soda..... 220 lbs.

Nitrate better than meal by..... 118 lbs.

DALE COUNTY, 1 MILE SOUTH OF OZARK

J. W. BYRD

Light grey sandy loam with reddish clay subsoil

This land has been cleared for 60 years and had been out of cultivation for 3 years prior to 1911. Rust was worse on Plot 5. The stand was uniform. Some cotton was beaten out and lost.

The highest estimated increase in yield was 528 pounds of seed cotton per acre with a mixture of cotton seed meal and acid phosphate (Plot 5). This gave a profit of \$16.44 per acre, or 377 per cent on the investment in fertilizers. The next largest profit, \$14.80 per acre, or 336 per cent on the investment in fertilizers, was on Plot 6, fertilized with a mixture of cotton seed meal and kainit. The average estimated increase of seed cotton per acre was 280 pounds with cotton seed meal; 148 pounds with acid phosphate; and 180 pounds with kainit. In a complete fertilizer, nitrate of soda was very slightly less effective than cotton seed meal; 100 pounds of kainit per acre was about as effective as 200 pounds.

Mr. Byrd's results in 1912 differ from those in his test made in 1911 chiefly in that in 1911 kainit was somewhat more effective, making the complete fertilizer the most profitable mixture in that year.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	124 lbs.
To acid phosphate plot.....	484 lbs.
To kainit plot.....	324 lbs.
To acid phosphate and kainit plot.....	78 lbs.
<i>Average increase with cotton seed meal</i>	280 lbs.

Increase of seed cotton per acre when acid phosphate was added

To unfertilized plot.....	44 lbs.
To cotton seed meal plot.....	404 lbs.
To kainit plot.....	194 lbs.
To cotton seed meal and kainit plot.....	—52 lbs.
<i>Average increase with acid phosphate</i>	148 lbs.

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	156 lbs.
To cotton seed meal plot.....	356 lbs.
To acid phosphate plot.....	306 lbs.
To cotton seed meal and acid phosphate plot.....	—100 lbs.
<i>Average increase with kainit</i>	180 lbs.

Experiments in Dale and Geneva Counties.

Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	OZARK			HARTFORD (High School.)		
			Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer	Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer
1	200	C. S. Meal.....	Lbs. 348	124	\$1.96	Lbs. 272	—24	—\$3.96
2	240	Acid Phosphate ..	268	44	0.08	544	248	8.24
3	000	No fertilizer.....	224	—	—	296	—	—
4	200	Kainit.....	364	156	4.84	360	94	2.36
5	200	C. S. Meal.....	720	528	16.44	656	420	12.12
	240	Acid Phosphate ..						
6	200	C. S. Meal.....	656	480	14.80	460	254	5.76
	200	Kainit.....						
7	000	No fertilizer.....	160	—	—	176	—	—
8	240	Acid Phosphate ..	520	350	10.92	368	148	2.84
	200	Kainit.....						
9	200	C. S. Meal.....	608	428	11.04	548	284	5.28
	240	Acid Phosphate ..						
10	200	Kainit.....	604	414	11.18	536	228	3.74
	20	C. S. Meal.....						
11	000	No fertilizer.....	200	—	—	352	—	—
12	240	Acid Phosphate ..	368	168	1.84	548	196	2.96
	100	Kainit.....						
	100	Nitrate of Soda ..						

GENEVA COUNTY, ONE-HALF MILE SOUTH
OF HARTFORD

GENEVA COUNTY HIGH SCHOOL
(B. H. BOYD, Principal)

Grey sandy upland with stiffer subsoil

This land had been in cultivation only two years. The preceding crop being corn. All stumps had been removed. On this soil, as is often the case on new ground, acid phosphate was the most important single fertilizer. However, the largest profit, \$12.12 per acre, was made on Plot 5, where a mixture of phosphate and cotton seed meal was applied. This is equal to a profit of 259 per cent on the cost of the fertilizer.

The stand on Plots 7 and 8 was slightly below the average.

Increase of seed cotton per acre when cotton seed meal was added:	
To unfertilized plot	—24 lbs..
To acid phosphate plot	172 lbs..
To kainit plot	160 lbs..
To acid phosphate and kainit plot	136 lbs..
<i>Average increase with cotton seed meal</i>	111 lbs..
Increase of seed cotton per acre when acid phosphate was added:	
To unfertilized plot	248 lbs..
To cotton seed meal plot	444 lbs..
To kainit plot	54 lbs..
To cotton seed meal and kainit plot	30 lbs..
<i>Average increase with acid phosphate</i>	194 lbs..
Increase of seed cotton per acre when kainit was added:	
To unfertilized plot	94 lbs..
To cotton seed meal plot	278 lbs..
To acid phosphate plot	—100 lbs..
To cotton seed meal and acid phosphate plot	—136 lbs..
<i>Average increase with kainit</i>	34 lbs..
Increase from use of nitrate of soda	104 lbs..
<i>Cotton seed meal better by</i>	32 lbs..

RUSSELL COUNTY, 2½ MILES NORTH FROM SEALE

P. G. PORTER

Light sandy loam, with red subsoil ✓

The stand was uniform. The most profitable fertilizer was the complete mixture on Plot 9, which afforded a profit of \$5.28 per acre, or 87 per cent on the investment in fertilizers. Cotton seed meal was more effective than either phosphate or kainit, but all three were needed.

The average increase in pounds of seed cotton per acre was, for cotton seed meal 141 pounds; for acid phosphate 49 pounds; and for kainit 55 pounds.

Cotton seed meal was slightly more effective than nitrate of soda.

Increase of seed cotton per acre when cotton seed meal was added:	
To unfertilized plot	192 lbs..
To acid phosphate plot	52 lbs..
To kainit plot	148 lbs..
To acid phosphate and kainit plot	170 lbs..
<i>Average increase with cotton seed meal</i>	141 lbs..

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	48 lbs.
To cotton seed meal plot.....	—92 lbs.
To kainit plot.....	108 lbs.
To cotton seed meal and kainit plot.....	130 lbs.
<i>Average increase with acid phosphate.....</i>	49 lbs.

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	6 lbs.
To cotton seed meal plot.....	—38 lbs.
To acid phosphate plot.....	66 lbs.
To cotton seed meal and acid phosphate plot.....	184 lbs.
<i>Average increase with kainit.....</i>	55 lbs.

Increase from use of different quantities of kainit:

To use of 200 pounds kainit.....	184 lbs.
To use of 100 pounds kainit.....	130 lbs.

Increase from use of cotton seed meal..... 170 lbs.
 Increase from use of nitrate of soda..... 132 lbs.
Cotton seed meal better by..... 38 lbs.

Experiments in Russell and Geneva Counties

Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	SEALE			HARTFORD (Grantham)		
			Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer	Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer
			Lbs.	Lbs.		Lbs.	Lbs.	
1	200	C. S. Meal.....	528	192	\$4.68	496	16	—\$2.36
2	240	Acid Phosphate.....	384	48	0.24	588	108	2.64
3	000	No fertilizer.....	336			480		
4	200	Kainit.....	352	6	—1.16	736	248	8.52
5	200	C. S. Meal.....	456	100	—0.68	848	352	9.40
	240	Acid Phosphate.....						
6	200	C. S. Meal.....	520	154	1.76	820	316	8.24
	200	Kainit.....						
7	000	No fertilizer.....	376			512		
8	240	Acid Phosphate.....	480	114	1.48	748	254	7.08
	200	Kainit.....						
9	200	C. S. Meal.....	640	284	5.28	992	516	14.56
	240	Acid Phosphate.....						
10	200	C. S. Meal.....	576	230	3.82	896	438	12.14
	240	Acid Phosphate.....						
11	100	Kainit.....	336			440		
	000	No fertilizer.....						
12	240	Acid Phosphate.....	528	192	2.80	912	472	14.00
	100	Kainit.....						
	100	Nitrate of Soda.....						

GENEVA COUNTY, 4 MILES WEST OF HARTFORD

G. E. GRANTHAM

Sandy loam, with red subsoil

All three fertilizer constituents were needed on this soil, the complete fertilizer (Plots 9, 12, and 10) affording the largest yields. The largest profit \$14.56 per acre, or 239 per cent on the investment in fertilizers was afforded by Plot 9.

The average increase in pounds of seed cotton per acre attributable to cotton seed meal was 148 pounds; to acid phosphate 163 pounds; and to kainit 215 pounds. It was more profitable to employ 200 pounds rather than 100 pounds of kainit in the complete fertilizer.

Nitrate of soda was slightly more effective than cotton seed meal.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	16 lbs.
To acid phosphate plot.....	244 lbs.
To kainit plot.....	68 lbs.
To acid phosphate and kainit plot.....	262 lbs.
<i>Average increase with cotton seed meal</i>	148 lbs.

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	108 lbs.
To cotton seed meal plot.....	336 lbs.
To kainit plot.....	6 lbs.
To cotton seed meal and kainit plot	200 lbs.
<i>Average increase with acid phosphate</i>	163 lbs.

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	248 lbs.
To cotton seed meal plot.....	300 lbs.
To acid phosphate plot.....	146 lbs.
To cotton seed meal and acid phosphate plot	164 lbs.
<i>Average increase with kainit</i>	215 lbs.

Increase from use of different quantities of kainit

To use of 200 pounds kainit.....	164 lbs.
To use of 100 pounds kainit.....	86 lbs.

Increase from use of cotton seed meal.....

Increase from use of cotton seed meal.....	262 lbs.
Increase from use of nitrate of soda.....	296 lbs.
<i>Nitrate better than meal by</i>	34 lbs.

COFFEE COUNTY, 4 MILES NORTH OF
ENTERPRISE

D. H. MCGEE

Reddish upland with clay subsoil

This experiment was made on land which had been pastured in 1911. The stand was somewhat thinned by grass worms.

The largest profit, \$15.52 per acre, or 237 per cent on the investment in fertilizers, was made on Plot 9, which received the full amount of cotton seed meal, phosphate and kainit.

Each of these three fertilizers was highly profitable in every mixture; but phosphate and meal, when used separately, were not very effective. The average increase of seed cotton per acre attributable to cotton seed meal was 195 pounds; to acid phosphate, 95 pounds; and to kainit, 241 pounds. Two hundred pounds of kainit was more profitable than one-half this amount.

Nitrate of soda and cotton seed meal were about equally effective.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot	152 lbs.
To acid phosphate plot	260 lbs.
To kainit plot	108 lbs.
To acid phosphate and kainit plot	258 lbs.
<i>Average increase with cotton seed meal</i>	195 lbs.

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot	56 lbs.
To cotton seed meal plot	164 lbs.
To kainit plot	4 lbs.
To cotton seed meal and kainit plot	154 lbs.
<i>Average increase with acid phosphate</i>	95 lbs.

Increase of seed cotton per acre when kainit was added:

To unfertilized plot	278 lbs.
To cotton seed meal plot	234 lbs.
To acid phosphate plot	226 lbs.
To cotton seed meal and acid phosphate plot	224 lbs.
<i>Average increase with kainit</i>	241 lbs.

Increase from use of different quantities of kainit:

To use of 200 pounds kainit	224 lbs.
To use of 100 pounds kainit	146 lbs.

Increase from use of nitrate of soda

<i>Nitrate of soda better than cotton seed meal by</i>	2 lbs.
--	--------

Experiments in Coffee County.

Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	ENTERPRISE			ELBA		
			Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer	Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer
1	200	C. S. Meal.....	Lbs. 448	Lbs. 152	\$3.08	Lbs. 408	Lbs. 128	\$2.12
2	240	Acid Phosphate ..	352	56	0.56	384	104	2.48
3	000	No fertilizer.....	296	-----	-----	280	-----	-----
4	200	Kainit.....	592	278	9.72	304	20	-0.60
5	200	C. S. Meal.....	648	316	7.96	464	176	2.36
	240	Acid Phosphate ..						
6	200	C. S. Meal.....	736	386	11.04	448	156	1.80
	200	Kainit.....						
7	000	No fertilizer.....	368	-----	-----	296	-----	-----
8	240	Acid Phosphate ..	648	282	8.20	400	112	1.40
	200	Kainit.....						
9	200	C. S. Meal.....	904	540	15.52	728	448	11.84
	240	Acid Phosphate ..						
10	200	Kainit.....	824	462	13.10	832	560	17.02
	240	Acid Phosphate ..						
11	100	Kainit.....	360	-----	-----	264	-----	-----
12	000	No fertilizer.....	824	464	13.68	872	608	19.44
	240	Acid Phosphate ..						
	100	Nitrate of Soda..						

COFFEE COUNTY, ELBA

J. S. WINDHAM

Sandy soil, with yellowish, stiffer subsoil

This land had been long in cultivation. The complete fertilizers were the only ones showing a large profit, showing plainly that this soil needed a complete fertilizer. The average increase attributable to cotton seed meal was 168 pounds of seed cotton per acre; to acid phosphate, 341 pounds; and to kainit, 82 pounds. Apparently 100 pounds kainit was preferable to 200 pounds. Nitrate of soda was more effective than cotton seed meal.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	128 lbs.
To acid phosphate plot.....	72 lbs.
To kainit plot.....	136 lbs.
To acid phosphate and kainit plot.....	336 lbs.

Average increase with cotton seed meal 168 lbs.

Increase of seed cotton per acre when acid phosphate was added:	
To unfertilized plot	104 lbs.
To cotton seed meal plot	48 lbs.
To kainit plot	92 lbs.
To cotton seed meal and kainit plot	292 lbs.
<i>Average increase with acid phosphate</i>	134 lbs.
Increase of seed cotton per acre when kainit was added:	
To unfertilized plot	20 lbs.
To cotton seed meal plot	28 lbs.
To acid phosphate plot	8 lbs.
To cotton seed meal and acid phosphate plot	272 lbs.
<i>Average increase with kainit</i>	82 lbs.
Increase from use of different quantities of kainit:	
To use of 200 pounds kainit	272 lbs.
To use of 100 pounds kainit	384 lbs.
Increase from use of cotton seed meal	
Increase from use of nitrate of soda	336 lbs.
<i>Nitrate of soda better than cotton seed meal by</i>	384 lbs.
	48 lbs.

MONROE COUNTY, 3 MILES WEST OF MONROEVILLE

J. R. CARTER

Grey sandy loam with red clay subsoil

This land has been in cultivation about 30 years. It is partially infested with cotton wilt, or black root fungus. All plots had the same number of stalks, except Plot 11, on which the stand was deficient.

Under all conditions cotton seed meal was highly effective and profitable. The acid phosphate was next in average importance. Kainit too, was effective and profitable in most combinations. The average increase in pounds of seed cotton per acre from cotton seed meal was 274 pounds; from acid phosphate, 123 pounds; and from kainit, 109 pounds.

In all cases the largest profits were afforded from the three plots receiving a complete fertilizer. Plot 9 afforded the largest profit, \$17.92 per acre. This was 294 per cent profit on the investment in fertilizer.

Decreasing the kainit from 200 to 100 pounds decreased the yield. Cotton seed meal was slightly more effective than nitrate of soda.

Increase of seed cotton per acre when cotton seed meal was added:	
To unfertilized plot	392 lbs.
To acid phosphate plot	132 lbs.
To kainit plot	228 lbs.
To acid phosphate and kainit plot	344 lbs.
<i>Average increase with cotton seed meal</i>	274 lbs.

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot	160 lbs.
To cotton seed meal plot	100 lbs.
To kainit plot	158 lbs.
To cotton seed meal and kainit plot	274 lbs.
<i>Average increase with acid phosphate</i>	123 lbs.

Increase of seed cotton per acre when kainit was added:

To unfertilized plot	98 lbs.
To cotton seed meal plot	66 lbs.
To acid phosphate plot	96 lbs.
To cotton seed meal and acid phosphate plot	308 lbs.
<i>Average increase with kainit</i>	109 lbs.

Increase from use of different quantities of kainit:

To use of 200 pounds kainit	308 lbs.
To use of 100 pounds kainit	244 lbs.

Increase from use of cotton seed meal

Increase from use of cotton seed meal	344 lbs.
Increase from use of nitrate of soda	296 lbs.
<i>Cotton seed meal better by</i>	48 lbs.

Experiments in Monroe and Washington Counties.

			MONROEVILLE			ST. STEPHENS		
Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer	Yield seed cotton per acre	Increase over unfertilized plot	Profit from fertilizer
			Lbs.	Lbs.	\$	Lbs.	Lbs.	\$
1	200	C. S. Meal	736	392	\$12.68	776	182	\$4.28
2	240	Acid Phosphate	504	160	4.72	568	—26	—2.72
3	000	No fertilizer	344			594		
4	200	Kainit	432	98	2.52	680	109	2.96
5	200	C. S. Meal	616	292	7.00	888	339	8.88
	240	Acid Phosphate						
6	200	C. S. Meal	640	326	8.64	856	330	8.80
	200	Kainit						
7	000	No fertilizer	304			504		
8	240	Acid Phosphate	552	256	7.16	648	138	2.44
	200	Kainit						
9	200	C. S. Meal	888	600	17.92	872	356	8.16
	240	Acid Phosphate						
10	200	C. S. Meal	816	536	16.06	824	302	6.70
	240	Acid Phosphate						
11	100	Kainit	272			528		
	000	No fertilizer						
12	240	Acid Phosphate	760	488	14.64	832	304	7.28
	100	Kainit						
	100	Nitrate of Soda						

WASHINGTON COUNTY, 5 MILES NORTHWEST
OF CARSON, NEAR ST. STEPHENS

W. C. PRUITT

Red sandy loam with red subsoil

This land has been in cultivation for 25 years. Cotton has been the chief crop grown on it. No mention is made of damage by rust or other disease but boll weevils.

Cotton seed meal was more effective and more profitable than either phosphate or kainit. The average increase in seed cotton per acre due to cotton seed meal was 247 pounds; to acid phosphate, 47 pounds; and to kainit, 110 pounds.

Cotton seed meal and nitrate of soda were about equally effective. The largest profits, \$8.88 per acre, were afforded by Plot 5.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	182 lbs.
To acid phosphate plot.....	365 lbs.
To kainit plot.....	221 lbs.
To acid phosphate and kainit plot.....	218 lbs.
<i>Average increase with cotton seed meal.....</i>	247 lbs.

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	—26 lbs.
To cotton seed meal plot.....	157 lbs.
To kainit plot.....	29 lbs.
To cotton seed meal and kainit plot.....	26 lbs.
<i>Average increase with acid phosphate.....</i>	47 lbs.

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	109 lbs.
To cotton seed meal plot.....	148 lbs.
To acid phosphate plot.....	164 lbs.
To cotton seed meal and acid phosphate plot.....	17 lbs.
<i>Average increase with kainit.....</i>	110 lbs.

CLARKE COUNTY, 10 MILES WEST OF THOMAS-
VILLE, NEAR BASHI

T. M. PUGH

Sandy pine upland with clay subsoil

Cotton was the preceding crop. A similar experiment with cotton was conducted in 1911 in the same field as this, (see also Station Bulletin No. 160), but not on the same plots. In 1912 all plots not receiving kainit were damaged by rust.

The greatest profit was on Plot 6, fertilized with cotton seed meal and kainit. This gave profit of \$15.92 per acre, or 362 per cent on the investment in fertilizers.

The average results showing the increase due to each fertilizer in different combinations agree closely with those obtained in Mr. Pugh's test in 1911. They show that in both years the material chiefly needed was cotton seed meal; that kainit was next in average importance; and that acid phosphate, though profitable in some combinations (Plots 5 and 8), was of somewhat less importance than cotton seed meal and kainit.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	16 lbs.
To acid phosphate plot.....	216 lbs.
To kainit plot.....	472 lbs.
To acid phosphate and kainit plot	176 lbs.

Average increase with cotton seed meal **220 lbs.**

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	32 lbs.
To cotton seed meal plot	232 lbs.
To kainit plot.....	140 lbs.
To cotton seed meal and kainit plot	156 lbs.

Average increase with acid phosphate..... **62 lbs.**

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	36 lbs.
To cotton seed meal plot	492 lbs.
To acid phosphate plot.....	144 lbs.
To cotton seed meal and acid phosphate plot	104 lbs.

Average increase with kainit..... **194 lbs.**

Increase from use of different quantities of kainit:

To use of 200 pounds kainit	104 lbs.
To use of 100 pounds kainit.....	72 lbs.

Increase from use of nitrate of soda 96 lbs.
Cotton seed meal better by..... 80 lbs.

Experiments in Clarke County.

			THOMASVILLE (Bashi)			GROVE HILL		
Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	Yield seed cot- ton per acre	Increase over unfertilized plot	Profit from fertilizer	Yield seed cot- ton per acre	Increase over unfertilized plot	Profit from fertilizer
1	200	C. S. Meal.....	Lbs. 272	Lbs. 16	-\$2.36	Lbs. 896	Lbs. 128	2.12
2	240	Acid Phosphate ..	288	32	-0.40	960	192	6.0
3	000	No fertilizer.....	256			768		
4	200	Kainit.....	304	36	0.04	816	72	1.48
5	200	C. S. Meal.....	528	248	5.24	1056	336	8.76
	240	Acid Phosphate ..						
6	200	C. S. Meal.....	800	508	15.92	944	248	5.52
	200	Kainit.....						
7	000	No fertilizer.....	304			672		
8	240	Acid Phosphate ..	480	176	3.96	1024	312	9.40
	200	Kainit.....						
9	200	C. S. Meal.....	656	352	8.00	832	80	2.88
	240	Acid Phosphate ..						
10	200	C. S. Meal.....	656	320	7.42	960	168	1.34
	240	Acid Phosphate ..						
11	100	Kainit.....	304			832		
	000	No fertilizer.....						
12	240	Acid Phosphate ..	544	240	4.72	1120	288	6.64
	100	Kainit.....						
	100	Nitrate of Soda..						

CLARKE COUNTY, 8 MILES WEST OF WHATLEY,
NEAR GROVE HILL

J. WINTERS CALHOUN

Grey sandy soil with clay subsoil

This land has been cleared only six years. The last three years it has been in cotton. The stand was fairly uniform.

The largest average increase from a single fertilizer came from from the use of acid phosphate. In most combinations, cotton seed meal and nitrate of soda were also effective and profitable. A half ration of kainit (100 pounds per acre) was ample.

In this test, and in a similar one conducted on the same plots in 1911, the yield of Plot 9 was so low as to indicate some deficiency, in the natural fertility of the plot. Hence a more correct

idea of the needs of this land was to be had by disregarding that plot, as is done in the averages in the next paragraphs.

Increase of seed cotton per acre when cotton seed meal was added:

To unfertilized plot.....	128 lbs.
To acid phosphate plot.....	144 lbs.
To kainit plot.....	176 lbs.
<i>Average increase with cotton seed meal.....</i>	<u>149 lbs.</u>

Increase of seed cotton per acre when acid phosphate was added:

To unfertilized plot.....	192 lbs.
To cotton seed meal plot.....	208 lbs.
To kainit plot.....	240 lbs.
<i>Average increase with acid phosphate.....</i>	<u>213 lbs.</u>

Increase of seed cotton per acre when kainit was added:

To unfertilized plot.....	72 lbs.
To cotton seed meal plot.....	120 lbs.
To acid phosphate plot.....	120 lbs.
<i>Average increase with kainit.....</i>	<u>104 lbs.</u>

HENRY COUNTY, 1½ MILES NORTHWEST OF HEADLAND

C. F. WILKERSON

Sandy loam, with red subsoil

This land has been cleared about forty years. The previous crop was cotton. No injuries were reported as due to insects, or otherwise.

In this test, by mistake, the fertilizers were applied at a higher rate than in other tests, and higher than was intended. However, every fertilizer used alone gave a slight profit; when used in groups of two, each combination gave a moderate profit; and on Plots 9 and 10, receiving a complete fertilizer, the profits were strikingly large. Evidently this soil needs a complete fertilizer.

Each of the single fertilizers, (meal, phosphate, and kainit), was about equally effective.

Experiment in Henry County.

HEADLAND

Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	Yield seed cot-	Increase over	Profit from fertilizer
			ton per acre	unfertilized plot	
			Lbs.	Lbs.	
1	333	C. S. Meal -----	600	160	\$1.39
2	400	Acid Phosphate ---	574	134	2.55
3	000	No fertilizer -----	440		
4	333	Kainit -----	640	174	4.62
5	333	C. S. Meal -----	920	427	9.26
	400	Acid Phosphate ---			
6	333	C. S. Meal -----	820	301	4.69
	333	Kainit -----			
7	000	No fertilizer -----	546		
8	400	Acid Phosphate ---	880	364	8.81
	333	Kainit -----			
9	333	C. S. Meal -----	1280	793	21.56
	400	Acid Phosphate ---			
10	333	C. S. Meal -----	1093	636	16.45
	400	Acid Phosphate ---			
	167	Kainit -----			
11	000	No fertilizer -----	427		
12	400	Acid Phosphate ---	587		
	167	Kainit -----			
	167	Nitrate of Soda ---			

In DALLAS COUNTY, C. Kirkpatrick, conducted an experiment ten miles southwest of Selma, near Cahaba. This proved inconclusive because of lack of uniformity in the unfertilized plots. The yields are given in the table on page 41.

In LOWNDES COUNTY, C. E. Reese conducted an experiment south of Lowndesboro Station, on red, oak and hickory land. The results were inconclusive. See page 41.

In WILCOX COUNTY, an experiment was conducted by G. M. Carmichael, at Sunny South. It is classed as inconclusive because of poor stand and lack of uniformity in yield of the unfertilized plots. The yields are given in the table on page 41.

In WILCOX COUNTY, an experiment was conducted by E. B. Carter, two miles east of Allenton. This proved inconclusive because of the late date at which the cotton came up. A report of the yields can be found in the table on page 41.

In MONROE COUNTY, an experiment was conducted by A. L. Harrison, near Jones' Mill, on grey sandy soil with reddish subsoil which had been in

cultivation about 8 years. The crop in 1911 was oats followed by cowpeas, and the cotton in 1912 was not planted until June 12, following a crop of oats. The late planting and the effects of the preceding crop of cowpeas make the experiment inconclusive. See page 41 for table of yields.

In CLARKE COUNTY, an experiment was conducted on grey sandy loam by R. L. Hearon, six miles west of Thomasville. This proved inconclusive because of the difference in the natural fertility of the three unfertilized plots. A report of the yields is given on page 41.

In ESCAMBIA COUNTY, 2 miles east of Canoe, F. J. German conducted an experiment. This proved inconclusive, probably because of the unfavorable season and some difference in fertility between the different unfertilized plots. Injury from boll weevil was slight. See page 41.

In MACON COUNTY, an experiment was conducted by B. H. May, five miles west of Notasulga. This proved inconclusive because of variations between the unfertilized plots, etc. See page 42.

In MACON COUNTY, 7 miles west of Tuskegee, W. W. Thompson conducted the experiment on light gray, fine sandy loam soil, with yellow subsoil. This experiment proved inconclusive because of apparently richer soil on Plot 1 than on other plots. However the results suggest that all fertilizers whether single or in combination, were effective. The largest profit, \$16.30, was afforded by Plot 10, which was fertilized, per acre, with 200 pounds cotton seed meal, 240 pounds of acid phosphate, and 100 pounds of kainit. See page 42 for table of results.

In BULLOCK COUNTY, E. A. Brooks conducted an experiment eleven miles southeast of Inverness, near Perote. This proved inconclusive because of the difference in the fertility of the plots on which no fertilizer was applied. See page 42.

In BARBOUR COUNTY, 3 miles northwest of Clayton, an experiment was conducted by D. C. Nix. This experiment proved inconclusive because of failure to have three unfertilized plots, according to directions. Assuming that the land is uniform, the results suggest that every fertilizer, whether used alone or in combination, was profitable; that the land needed a complete fertilizer containing more than 100 pounds of kainit per acre. The largest profit \$21.36 per acre, was afforded by Plot 12, which received a complete fertilizer containing nitrate of soda. See page 42 for table of results.

In PIKE COUNTY, 7 miles south of Troy, H. W. Ballard conducted an experiment on a dark red sandy loam soil. This proved inconclusive because of some variation in fertility between the different plots, and probably because the land was sufficiently fertile to produce 200 pounds of seed cotton per acre. See page 42 for table of results.

In BUTLER COUNTY, one-half mile south of McKenzie, an experiment was conducted by J. C. Arant, which proved inconclusive because of damage from wilt. However, it is evident that kainit was especially effective, and that the other fertilizers were also helpful. See page 42.

In **HOUSTON COUNTY**, J. W. Tharp conducted an experiment two miles southwest of Dothan. This proved inconclusive because of the difference in the fertility of the three unfertilized plots. See page 42

In **DALLAS COUNTY**, an experiment was conducted by A. R. Moses, five miles north-east of Selma. This proved inconclusive because of late planting and unfavorable weather conditions. See table below.

In **MACON COUNTY**, T. F. Proctor conducted an experiment near Tuskegee, on sandy soil. Poor stands rendered the experiment inconclusive.

In **WILCOX COUNTY**, an experiment was conducted by G. M. Cook, on his farm, six miles west of Camden. This proved inconclusive because of late planting and continuous wet weather. See table below.

In **LOWNDES COUNTY**, J. B. Mitchell, Jr., conducted an experiment on black prairie bottom land. This proved rather inconclusive because of differences in the three unfertilized plots. However, the results suggested that all combinations of fertilizers were effective and profitable. See table below.

In **MACON COUNTY**, an experiment conducted by Chas. W. Thompson, near Tuskegee, proved inconclusive because of extremely late planting.

Inconclusive Experiments in Dallas, Wilcox and Lowndes Counties.

			SELMA		CAMDEN		LETOHATCHIE	
Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER	Yield seed cotton per acre	Increase over unfertilized plot	Yield seed cotton per acre	Increase over unfertilized plot	Yield seed cotton per acre	Increase over unfertilized plot
			Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
1	200	C. S. Meal	200	8	592	240	1336	428
2	240	Acid Phosphate	184	—8	520	168	1052	144
3	000	No fertilizer	192	—	352	—	908	000
4	200	Kainit	328	118	416	58	776	—41
5	200	C. S. Meal	288	60	496	132	960	234
	240	Acid Phosphate						
6	200	C. S. Meal	360	114	640	270	984	349
	200	Kainit						
7	000	No fertilizer	264	—	376	—	544	000
8	240	Acid Phosphate	424	122	608	218	952	374
	200	Kainit						
9	200	C. S. Meal	400	60	664	260	1416	804
	240	Acid Phosphate						
	200	Kainit						
10	200	C. S. Meal	448	70	760	242	1224	578
	240	Acid Phosphate						
	100	Kainit						
11	000	No fertilizer	416	—	432	—	680	000
12	240	Acid Phosphate	568	152	528	96	760	80
	100	Kainit						
	100	Nitrate of Soda						

Inconclusive Fertilizer Experiments in Dallas, Lowndes, Wilcox, Monroe, Clarke and Escambia Counties.

		CAHABA		L'WND'SB'RO		SUNNY S'UTH		ALLENTON		JONES' MILL		THOM'VILLE		CANOE		
Plot No.	Amt. fertilizer per acre	KIND OF FERTILIZER		Yield seed cot- ton per acre	Increase over unfertilized plot	Yield seed cot- ton per acre	Increase over unfertilized plot	Yield seed cot- ton per acre	Increase over unfertilized plot	Yield seed cot- ton per acre	Increase over unfertilized plot	Yield seed cot- ton per acre	Increase over unfertilized plot	Yield seed cot- ton per acre	Increase over unfertilized plot	
1	200	C. S. Meal	760	-136	880	80	640	96	432	184	576	88	780	176	594	54
2	240	Acid Phosphate	816	-80	720	-80	536	-8	320	72	520	32	664	60	630	90
3	000	No fertilizer	896		800		544		248		488		604		540	
4	200	Kainit	1064	144	880	140	608	56	272	38	736	280	840	201	648	148
5	200	C. S. Meal	1032	88	920	240	752	192	432	212	744	320	904	230	630	170
	240	Acid Phosphate														
6	200	C. S. Meal	1216	248	800	180	744	176	280	74	600	208	880	171	702	282
	200	Kainit														
7	000	No fertilizer	992		560		576		192		360		744		378	
8	240	Acid Phosphate	1040	156	680	110	584	58	312	122	560	178	688	12	540	135
	200	Kainit														
9	200	C. S. Meal	904	128	720	140	616	140	368	180	664	260	684	76	576	144
	240	Acid Phosphate														
	200	Kainit														
10	200	C. S. Meal	776	108	640	50	504	78	352	166	664	238	936	396	630	171
	240	Acid Phosphate														
	100	Kainit														
11	000	No fertilizer	560		600		376		184		448		472		486	
12	240	Acid Phosphate	712	152	720	120	576	200	312	128	544	96	712	240	594	108
	100	Kainit														
	100	Nitrate of Soda														

