2-1-1914

Cotton experiments, 1913

G. R. Hightower

E. R. Lloyd

W. F. Hand

William Newton Logan

J. S. Moore

See next page for additional authors

Authors

G. R. Hightower, E. R. Lloyd, W. F. Hand, William Newton Logan, J. S. Moore, A. B. McKay, R. W. Harned, Daniels Scoates, H. B. Brown, E. M. Ranck, J. R. Ricks, C. F. Briscoe, Early C. Ewing, J. K. Morrison, E. G. Wade, R. N. Lobdell, Mary Gay, Eugene Beverly Ferris, C. T. Ames, and G. B. Walker

Mississippi Agricultural Experiment Station

BULLETIN No. 164

COTTON EXPERIMENTS, 1913

AGRICULTURAL COLLEGE, MISSISSIPPI.

FEBRUARY, 1914.

TUCKER PRINTING HOUSE JACKSON MISS

STATION STAFF

G. R. HIGHTOWER	President
E. R. LLOYD	Director and Animal Husbandman
W. F. HAND	Chemist
W. N. LOGAN	Geologist
J. S. MOORE	Dairy Husbandman
A. B. McKAY	Horticulturist
R. W. HARNED	Entomologist
DANIELS SCOATES	Agricultural Engineer
H. B. BROWN	Botanist
E. M. RANCK	Veterinarian
J. R. RICKS	Agronomist
C. F. BRISCOE	Bacteriologist
E. C. EWING	Cotton Breeding
J. K. MORRISON	Poultryman
A. G. HALL	Drainage Engineer*
R. N. LOBDELL	Assistant Entomologist
MISS SIDNEY GAY	Stenographer
E. B. FERRIS	Assistant Director, McNeill Station
C. T. AMES	Assistant Director, Holly Springs Station
G. B. WALKER	Assistant Director, Delta Station

*In co-operation with U. S. Department of Agriculture.

Cotton Experiments, 1913.

Introduction.—In this bulletin are given the results from some of the cotton experiments for 1913 from the four Mississippi Experiment Stations. These are the Central Station at the A. & M. College, the McNeill Branch Station at McNeill, the Holly Springs Branch Station at Holly Springs, and the Delta Branch Station at Stoneville.

The results from similar cotton experiments previous to 1913 are published in Bulletins 155 and 161. These bulletins may be had upon application to the Director of the Experiment Station, Agricultural College, Miss.

The variety test at the Central Station does not seem to have been reliable, on account of the poor stands secured and the wilt and rust which was prevalent in the field, consequently the results of this test will not be published.

Results from the Central Station.

By J. R. Ricks.

THE WEATHER.

From the following table it will be noted that the rainfall here in 1913 was just about normal, inasmuch as the ten-year average is 52 inches.

Table 1.—Temperatures and Rainfall, 1913.

	Temperatures.				Rainfall.	
	Minimum.	Average Minimum.	Maximum.	Average Maximum.	Total rain-fall inches.	No of days on. which rain fell.
January	26	40.55	74	61.8	7.74	16
February	20	36.1	75	54.36	7.80	10
March	27	43.4	82	65.4	6.16	12
April	40	50.9	88	75.5	2.53	7
May	52	59.3	93	83.8	4.12	10
June	49	67	100	90.26	1.79	10
July	65	71.9	101	94.93	3.58	12
August	61	70.5	100	95.64	2.09	6
September	45	64.1	103	84.9	7.93	16
October	29	51.5	90	76	2.71	7
November	30	46.8	85	71	2.63	4
December	28	39.2	68	55.4	3.72	12
Total rainfall					52.80	122

RESULTS WITH FERTILIZERS.

Table. 2—Fertilizer Tests—Seven Years.

No. of Plat.	Frrtilizer per Acre.	Yield of Seed Cotton—1907.	Yield of Seed Cotton—1908.	Yield of Seed Cotton—1909.	Yield of Seed Cotton—1910.	Yield of Seed Cotton—1911.	Yield of Seed Cotton—1912.	Yield of Seed Cotton—1913.	Average total yield of Seed Cotton—7 yrs.
1	Kainit 288 lbs.	1468	1940	1744	1352	904	952	1304	1380
2	Acid Phosphate 288 lbs.	1540	1688	1352	1656	1120	904	848	1301
3	C. S. Meal 288 lbs.	1268	1376	832	1232	1016	856	640	1071
4	No Treatment	1280	1384	1240	1192	936	784	592	1058
5	Manure 4 tons Lime 800 lbs.	1528	2432	1744	1528	1496	1336	1224	1612
6	C. S. Meal 288 lbs. Kainit 288 lbs.	1664	1912	1616	1536	984	976	1232	1417
7	C. S. Meal 288 lbs. Kainit 288 lbs. Acid Phosphate 288 lbs.	1760	1872	1592	1464	1064	1000	1456	1458
8	Manure 8 tons	1736	2352	2440	1856	2152	1448	2176	2027
9	Manure 4 tons Acid Phosphate 288 lbs.	1616	2032	1792	1592	1888	1048	1808	1682
10	Manure 4 tons Kainit 288 lbs.	1440	2096	1680	1496	1536	1192	1808	1607
11	Kainit 288 lbs. Acid Phosphate 288 lbs.	1296	1680	1624	1264	864	840	1076	1248
12	C. S. Meal 288 lbs. Acid Phosphate 288 lbs.	1040	1382	1040	1048	1000	624	800	961

Table 3.—Relative Earliness from Fertilizer Plats as Shown by the Different Pickings.

These plats are the same as those shown in the preceeding table.

No. of Plat.	Fertilizers per Acre.	Lbs. Seed Cotton per Acre first Picking.	Lbs. Seed Cotton per Acre second Picking.	Lbs. Seed Cotton per Acre third Picking.	Total yield Seed Cotton per Acre.
1	Kainit 288 lbs.	416	672	216	1304
2	Acid Phosphate 288 lbs.	464	320	64	848
3	C. S. Meal 288 lbs.	400	208	32	640
4	No Treatment	256	264	72	592
5	Manure 4 tons Lime 800 lbs.	256	744	224	1224
6	C. S. Meal 228 lbs. Kainit 288 lbs.	368	752	192	1312
7	C. S. Meal 228 lbs. Kainit 288 lbs. Acid Phosphate 288 lbs.	464	720	272	1456
8	Manure 8 tons	712	984	480	2176
9	Manure 4 tons Acid Phosphate 288 lbs.	824	744	240	1808
10	Manure 4 tons Kainit 288 lbs.	456	960	392	1808
11	Kainit 288 lbs. Acid Phosphate 288 lbs.	312	592	272	1176
12	Acid Phosphate 288 lbs. C. S. Meal 288 lbs.	512	248	40	800

Table 4.—Manure and Kainit to Prevent Rust, 1913.

PLAT.	First Picking Lbs. Seed Cotton per Acre.	Second Picking Lbs. Seed Cotton per Acre.	Third Picking Lbs. Seed Cotton per Acre.	Total yield Lbs. Seed Cotton per Acre.
Manure 10 tons per acre Applied 1910	680	980	140	1800
Kainit 400 lbs. per acre	640	470	80	1190
No Treatment	484	304	0	788
New manure 10 tons per acre	750	748	188	1686

We have never gotten any profitable results at this Station from the use of potash, which has for the most part been applied in the form of kainit, other than on soils where cotton rusts badly. During 1913 there was rust in practically all of our experimental plats except those to which had been applied barnyard manure and kainit. The increased yields from the use of nitrogenous and phosphatic materials have also been small. However, the reverse of this is true on the brown loam and piney woods soils of the state, since these fertilizers give profitable returns when used there. In all of our plats where acid phosphate was used we have noted that the cotton opened up much earlier in the fall.

DISTANCE EXPERIMENTS.

Table 5.—Width of Rows.

Results in 1913.

PLAT	Average Height in Feet.	First Picking Lbs. Seed Cotton per Acre.	Second Picking Lbs. Seed Cotton per Acre.	Total Yield Lbs. Seed Cotton per Acre.
5 ft. rows	4	870	40	910
4½ ft. rows	4	970	50	1020
4 ft. rows	4	1140	90	1230
3½ ft. rows	4	1330	180	1510
3 ft. rows	4	1580	200	1780

Table 6.—Distances in the Drill for 1913.

PLAT	First Picking Lbs. Seed Cotton per Acre.	Second Picking Lbs. Seed Cotton per Acre.	Third Picking Lbs. Seed Cotton per Acre.	Total Yield Lbs. Seed Cotton per Acre.
12 inches	523	1340	170	2040
20 inches	273	1172	163	1608
30 inches	246	807	147	1200

In the above experiment the rows were 3 feet, 8 inches apart and the cotton grew to about 4 feet in height.

Table 7.—Results from Picking up Squares Punctured by Boll Weevil.

PLAT.	Cost two Pickings.	Yield Seed Cotton per Acre.
1.—Squares picked	$3.00	792 pounds.
2.—No squares picked		527 pounds.

The weevils did not appear in large quantities until the latter part of August. The squares from the above plat were picked twice. The first were picked August 15th, and the last August 25th.

Results from McNeill Branch Experiment Station, 1913

By E. B. Ferris.

Introduction.—A good deal of work was done with cotton at the McNeill Station in 1913 and we consider it valuable mainly for what it taught us about the workings of the boll weevil. In 1912 practically as good yields of cotton were grown here as had ever been grown before the weevil appeared and we had indulged in the hope that this pest had grown less active, and that perhaps the time might come when cotton could again be grown here at a profit. We mentioned in the report for last year that the scarcity of the weevils in 1912 might have been due to unusually cold weather the winter before; but chiefly to the fact that the army worm had destroyed all the young growth on the cotton early in the fall of 1911 so that practically all the weevils starved between the time they got the last cotton in the fall and the first cotton the following spring. The winter preceding the crop of 1913 was a very mild one, no army worms destroyed the cotton foliage as had been the case the year before, and although dairy cows were allowed to eat the cotton leaves and stalks as soon as the picking season was over, the weevils began to appear in large quantities early in 1913, whereas in 1912 we had not been able to find more than a dozen weevils before the first of August. On account of the good results in 1912 a number of people were encouraged to plant a little cotton last year; however, not enough was grown to justify the operation of a cotton gin within reach of McNeill, and our cotton had to be shipped to Hattiesburg for ginning.

In 1913 twenty-six varieties of cotton were tested here in connection with similar work at the other stations in the state. The land on which this work was done is a typical sandy loam soil of the long leaf pine belt and the year before had grown a crop of corn, followed by cow peas. The peas had been grazed off by cattle and hogs and the corn stalks and the remains of the pea-vines were turned into the soil when the ground was bedded in the fall. On March 28, 1913, this ground was fertilized at the rate of 500 pounds per acre with a mixed fertilizer containing ten per cent of phosphoric acid and two per cent each of nitrogen and potash, and was immediately rebedded. These beds were then harrowed down to where they were only slightly higher than the average of the field and on April 9th the seed from the twenty-six varieties were planted with a Ledbetter planter. One row of each variety was planted in the order in which the varieties appear in the table and in this order

were repeated twice. Each row was four feet wide and contained one-thirty-sixth of an acre, so that the area of the three rows was one-twelfth of an acre.

This cotton did not come up to a perfect stand and had to be replanted one month later. The boll weevils appeared in great numbers early in the year, and for about one month from the time the first weevils were seen the cotton was picked over one or more times per week to catch these weevils. After this, the squares were so numerous that further picking of the weevils was impracticable. Then for several weeks the fallen squares were picked up and burned. With four years' experience in growing cotton here with the boll weevil, we have been convinced that under normal infestations it cannot be done at a profit, and that the people of this immediate section have been wise in discarding the crop almost entirely.

Anthracnose, or pink boll rot, appeared in great quantities in this cotton, also some rust and blight, so that in certain parts of the field almost no cotton was made, but this was confined largely to the lower and damper parts of the field. Since the several varieties were scattered over the land fairly uniformly they were all affected to somewhat the same degree. On the whole, however, we do not feel that the yields obtained under such unfavorable conditions are a very good index to either the relative or the actual merits of the several varieties. The fact is that growing cotton here even before the coming of the boll weevil was always done on a very narrow margin of profit, due to the diseases above mentioned and the frequency of summer showers which caused the cotton to shed its fruit. When, in addition to these, we have the boll weevil to fight, it is a practical impossibility to grow cotton profitably.

This cotton was gathered in two pickings and samples of the first picking were sent to the A. & M. College where they were ginned and records made of the percentages of lint, seed, etc. This information with yields per acre obtained here is given in detail in the table following:

Table 8.—Variety Test.

No. Plat	NAME OF VARIETY.	Weight of Pickings.		Total	Seed Cottor per acre	Per cent Lint	Yield Lint per acre
		Sept. 10	Oct. 3				
1	Lone Star	22	13	35	420	35	147
2	Rublee	30	12	42	504	34	171
3	Express	31	10	41	492	29	143
4	Calhoun	22	11.5	33.5	402	33	133
5	Columbia	16	7	23	276	31	86
6	Simpkins	31	8	39	468	35	164
7	Rowden	19	13.5	32.5	390	34	133
8	Sunflower	17	6.5	23.5	282	27	76
9	Triumph	16	8	24	288	38	109
10	Durango	23	9	32	384	32	123
11	Station Cook	19	6.5	25.5	302	38	115
12	Cleveland	19	7	26	312	35	109
13	Trice	27	8	35	420	31	130
14	Foster	28	7	35	420	31	130
15	Dodd's Favorite	32	12	44	528	30	158
16	Uncle Sam	21	10	31	372	35	134
17	Dodd's Prolific	37	7	44	528	31	164
18	Allen's Multiplier	29	6.5	35.5	426	31	132
19	Cook from Cook	35	10.5	45.5	546	38	207
20	Dixie	27	17	44	528	32	169
21	Wannamaker-Cleveland	33	12.5	45.5	546	37	202
22	Brandon	30	13	43	516	37	191
23	Truitt's 90-Day	28	9	37	444	33	147
24	Unknown	30	9	39	468		
25	Simpkins' from Simpkins	26	7	33	396	35	139
26	No Name	25	8.5	33.5	402		

Tests with fertilizers under cotton.—Thirty plats of land of one-twentieth acre each that had been fertilized the same way for a number of years were used for this work. Each test was made in triplicate and the plats fertilized the same way were so distributed over the entire acreage devoted to the work as to do away with variations in yield due to inequalities of the soil, and to make the average results more reliable than single plats would have done. This land had been devoted to tests with fertilizers under corn in 1912 and peas had been grown as a catch crop in the corn. After gathering the corn in the fall of 1912, cattle and hogs were allowed to glean the field and the land was bedded in the late fall so as to turn under all litter that had been left on it. On March 18, the several plats were fertilized as shown in the following table, the land was rebedded, and on April 10, Trice cotton seed were planted with a Ledbetter planter after the beds had been knocked down to where they were only slightly higher than the middles. This cotton had to be replanted one month later and the replants were too late to make under boll weevil conditions. Weevils were fought on this cotton the same as on the varieties above described, and squares were later picked up and burned when it was no longer possible to catch the weevils.

In addition to the thirty plats above described, four plats of land on what is known as the parked area were fertilized in two different ways and the results are reported in the table below:

Table 9—Fertilizer Test.

No. of Plat	Cotton-seed Meal.	Acid Phosphate	Kainit.	Raw Phosphate Rock.	Thomas Slag.	Yield of Seed Cotton calculated in lbs. per Acre.
1	0	0	0	0	0	43
2	200	0	0	0	0	210
3	0	200	0	0	0	300
4	0	0	200	0	0	120
5	200	200	0	0	0	440
6	200	200	200	0	0	496
7	200	0	0	200	0	447
8	200	0	0	0	400	330
9	400	200	0	0	0	530
10	200	400	0	0	0	453
11	200	200	0	Parked land		450
12	200	200	200	Parked land		390

Holly Springs Branch Experiment Station.

By C. T. Ames.

Remarks.—All of the fertilizer plats planted to cotton in 1913 were planted about as early as weather will permit in this latitude The growth was somewhat retarded early in the season on account of cool wet weather, but taking the season as a whole, it may be considered as normal.

Conclusions.—The use of both nitrogen and phosphorus, either alone or in combination, has given very satisfactory results.

Phosphorus hastens maturity and valley land that is slow in maturing a crop can be very greatly benefitted by its use.

The use of potash, either alone or in combination with other elements, appears to be unnecessary in these soils.

On thin uplands, the use of an equal mixture of acid phosphate and cottonseed meal, at the rate of 200 lbs. to 300 lbs. per acre gives very satisfactory results, and has done so for the past eight years. Two hundred pounds of this mixture has increased the yield of seed cotton in many instances over 500 lbs. per year. On the more fertile soils the quantity of phosphorus may be increased to advantage.

After leguminous crops, acid phosphate alone, 200 lbs. to 300 lbs. per acre, can be used to profit.

Where leguminous crops are to be grown (no legume will make satisfactory growth on the thin uplands of this section without the use of about two tons of crushed or ground limestone per acre), the use of 300 lbs. to 400 lbs. of rock floats under the legume will give good results.

Where the rock floats is mixed with manure, or with compost, the phosphorus is made available for plant use.

Holly Springs Branch Experiment Station.

Table 10.—Variety Test with Cotton.

Date of planting.—April 22, 1913. **Soil.**—Brown loam valley.
Plats.—One row each, repeated six times, making a total of 1-12.25 of an acre per each variety.

No. of Plat.	VARIETIES.	Weight of Pickings			Total per Plat.	Lbs. of Seed Cotton per Acre	Per cent of Lint	L'gth. of Staple	Lbs. Lint.	Lbs. Seed.	Total Value per Acre.
		Sept. 25.	Oct. 14	Nov. 15.							
1	Dixie	26	44.5	43.5	114	1396	32%	7-8	447	949	$ 68.88
2	Brandon	27.5	37.5	45.5	110.5	1353	37%	1	500	853	76.39
3	Allen's Multiplier	31	34	39.5	104.5	1280	33%	5-8	422	858	64.96
4	Dodd's Prolific	37	45	46.5	128.5	1574	31%	1	488	1086	77.62
5	Truitt's 90 Day	32	39	49.5	120.5	1476	33%	3-4	487	989	75.05
6	Simpkins	38	40	39	117	1433	35%	7-8	502	931	76.89
7	Trice	49	50.5	51	150.5	1843	31%	1	571	1272	90.86
8	Rublee	41	42.5	47.5	131	1604	34%	3-4	545	1059	83.39
9	Ashcraft Double Jointed	31	45	43	119	1457	33%	1	481	976	75.93
10	Half & Half	40	40	46	126	1512	39%	3-4	590	922	87.43
11	Cook from Cook	45	44.5	46.5	136	1666	38%	7-8	633	1033	95.20
12	Cook from Station	35.5	41	43.5	120	1470	38%	1-2	558	912	83.19

Table 10—Variety Test With Cotton (Continued)

13	Wannamaker-Cleveland	47	47.5	53.5	148	1813	37%	7-8	671	1142	101.50
14	Cleveland Big Boll	40.5	46	44.5	131	1604	35%	1	561	1043	86.66
15	Triumph	39	41	46.5	126.5	1549	38%	1 1-16	588	961	89.92
16	Uncle Sam Big Boll	43.5	41	47	131.5	1610	35%	1 1-16	563	1047	87.67
17	Rowden	45.5	45	55	145.5	1782	34%	1 1-16	606	1176	94.99
18	Calhoun	41	45	50	136	1666	33%	1 1-16	550	1116	86.82
19	Lone Star	36.5	42	47.5	126	1543	35%	1 1-16	540	1003	84.08
20	Express	44.5	48.5	47.5	140	1721	29%	1 3-16	499	1222	90.12
21	Allen's Unknown	40	41.5	46	127.5	1562	31%	1 3-16	484	1078	84.86
22	Durango	35	43	36.5	114.5	1403	32%	1 3-16	449	954	78.14
23	Columbia	29	37.5	29	95.5	1169	31%	1 1-4	362	807	65.73
24	Foster (from College)	40	45	44	129	1580	31%	1 3-16	490	1090	85.88
25	Sunflower	34	40	32.5	106.5	1304	27%	1 3-8	352	952	71.74
26	Haaga No. 2	39	38	34	111	1360	28%	1 3-8	371	989	75.43
27	Dodd's Prolific	43.5	46	43.5	133	1629	30%	1 1-8	488	1141	82.58
28	Foster (from Haaga)	46	42	43.5	131.5	1609	31%	1 5-16	499	1110	93.71

Remarks.—Values on cotton of different staples at Aberdeen, Miss.; based on market of October 16th, New York futures for January closing at 12.05 on that date. All values based on strict middling grade:

$\frac{3}{4}$ inch, 12 7-8 cts.; 7-8 inch, 13 cts.; 1 inch, 13 1-8 cts. Full inch to 1 1-16, 13 1-4 cts. Full 1 1-16 to 1 1-8, 13 1-8 cts.; full 1 1-8 to 1 3-16, 14 cts. 1 3-16, 14 3-4 cts.; 1 3-16 full, 15 cts.; 1 $\frac{1}{4}$, 15 3-8 cts.; 1 $\frac{1}{4}$ full, 15 3-4 cts. 1 5-16, 16 cts.; 1 $\frac{3}{8}$, 17 cts.

Table 11.—Fertilizer Test with Cotton.

Date of planting.—April 23, 1913. **Variety.**—Cleveland Big Boll. **Soil.**—Rolling hill land. **Plats.**—1-20 acre each.

No. of Plat.	200 Lbs. Fertilizer Per Acre.	Weight of Pickings. Sept. 25.	Weight of Pickings. Nov. 5.	Total.	Lbs. Seed Cotton per Acre.	Total value at 5c lb. for Seed Cotton.
1	No Fertilizer	0	10	10	200	$10.00
2	200 lbs. Cottonseed Meal	3.5	23	26.5	530	26.50
3	200 lbs. Acid Phosphate	13	25	38	760	38.00
4	200 lbs. Kainit	0	16.5	16.5	330	16.50
5	No Fertilizer	0	11.5	11.5	230	11.50
6	100 lbs Cottonseed Meal 100 lbs. Acid Phosphate	9.5	27	36.5	730	36.50
7	100 lbs. Cottonseed Meal 100 lbs. Kainit	2	21	23	460	23.00
8	100 lbs. Acid Phosphate 100 lbs. Kainit	5.5	23.5	29	580	29.00
9	120 lbs. Acid Phosphate 40 lbs. Cottonseed Meal 40 lbs. Kainit	8	23.5	31.5	630	31.50

	400 Lbs. Fertilizer Per Acre.	Weight of Pickings. Sept.. 25.	Weight of Pickings. Nov. 5.	Total	Seed Cotton per Acre.	Total value of Seed Cotton at 5c per pound.
6½	200 lbs. Cottonseed Meal 200 lbs. Acid Phosphate	0	26	26	520	26.00
7½	200 lbs. Cottonseed Meal 200 lbs. Kainit	0	31	31	620	$31.00
8½	200 lbs. Acid Phosphate 200 lbs. Kainit	10.5	26	36.5	730	36.50
9½	240 lbs. Acid Phosphate 80 lbs. Cottonseed Meal 80 lbs. Kainit	7	23.5	30.5	610	30.50

Table 11—Fertilizer Test With Cotton. (Continued.)

10	No Fertilizer	1	11	12	240	12.00	10½	No Fertilizer	0	10.5	10.5	210	10.50
11	150 lbs. Cottonseed Meal 50 lbs. Acid Phosphate	10	22	32	640	32.00	11½	300 lbs. Cottonseed Meal 100 lbs. Acid Phosphate	16	34	50	1000	50.00
12	100 lbs. Cottonseed Meal 100 lbs. Acid Phosphate	12	21	33	660	33.00	12½	200 lbs. Cottonseed Meal 200 lbs. Acid Phosphate	13	26	39	780	39.00
13	50 lbs. Cottonseed Meal 150 lbs. Acid Phosphate	9	20	29	580	29.00	13½	100 lbs. Cottonseed Meal 300 lbs. Acid Phosphate	9	19	28	560	28.00
14	No Fertilizer	0	10	10	200	10.00	14½	No Fertilizer	0	14	14	280	14.00

Remarks.—All of these plats were located in the field as indicated in this table, with only a six foot space between the two sets of plats.

Each of the above plats have been fertilized, each year, for the past eight years, with the same kind and quantity of fertilizer as indicated in table.

Table 12.—Fertilizer Test with Cotton.

Date of planting.—April 24, 1913.

Soil.—Rolling hill land.

Plats.—One-twentieth acre each.

Variety.—Variety of cotton, Cleveland Big Boll.

No.	Lbs. Fertilizer Used.	Weight of Pickings.		Total.	Lbs. of Seed Cotton.	Total Value of of Seed Cotton at 5c per Pound.
		Sept. 25.	Nov. 4.			
1	No Fertilizer	4.5	17	21.5	430	$ 21.50
2	200 lbs. Cottonseed Meal	5	23	28	560	28.00
3	200 lbs. Acid Phosphate	7	24	31	620	31.00
4	200 lbs. Kainit	3	13	16	320	16.00
5	No Fertilizer	7.5	13	20.5	410	20.50
6	200 lbs. Rock Floats	6	21	27	540	27.00
7	400 lbs. Rock Floats	9	24	33	660	33.00
8	200 lbs. Acid Phosphate	11	20	31	620	31.00
9	100 lbs. Cottonseed Meal 100 lbs. Acid Phosphate	8	25	33	660	33.00
10	100 lbs. Cottonseed Meal 200 lbs. Rock Floats	1	29	30	600	30.00
11	No Fertilizer	0	23.5	23.5	470	23.50
12	100 lbs. Cottonseed Meal 200 lbs. Acid Phosphate	8.5	19	27.5	550	27.50
13	200 lbs. Acid Phosphate	2.5	17.5	20	400	20.00
14	400 lbs. Rock Floats	1.5	21	22.5	450	22.50
15	200 lbs. Kainit	5.5	16	21.5	430	21.50
16	No Fertilizer	4.5	15	19.5	390	19.50
17	200 lbs. Rock Floats	6.5	15	21.5	430	21.50

Table 13.—Fertilizer Test with Cotton.

Date of planting.—May 1, 1913 **Soil.**—Red clay table land. **Plats.**—Six rows four feet wide and ninety-two feet long, making one-twentieth acre each. **Variety.**—Trice.

		Yield of Seed Cotton			Yield of Seed Cotton			Yield of Seed Cotton
1	1000 lbs. Air-slacked Lime	780 lbs.	5	200 lbs Acid Phosphate	800 lbs.	9	200 lbs Cottonseed Meal	900 lbs.
2	No Fertilizer	640 lbs.	6	200 lbs. Kainit 100 lbs Cottonseed Meal 100 lbs. Acid Phosphate	780 lbs.	10	200 lbs. Untreated Phos. Rock	880 lbs.
3	100 lbs. Cottonseed Meal 100 lbs. Acid Phosphate	810 lbs.	7	100 lbs. Kainit	820 lbs.	11	No Fertilizer	890 lbs.
4	200 lbs. Untreated Phos. Rock	720 lbs.	8	No Fertilizer	890 lbs.	12	100 lbs. Cottonseed Meal 100 lbs. Acid Phosphate 100 lbs. Kainit	1050 lbs.

Remarks.—Plats are located in the field as indicated in above table. Soil is cold clay land, cotton made a very slow growth.

Table 14.—Fertilizer Test with Cotton.

Date of planting.—May 10, 1913.

Soil.—Very poor red clay hill land.

Plats.—One-twentieth acre each.

Variety.—Trice.

		Yield of Seed Cotton			Yield of Seed Cotton
1	200 lbs. Acid Phosphate	430 lbs.	5	No Fertilizer	360 lbs.
2	200 lbs. Basic Slag	520 lbs.	6	400 lbs. Acid Phosphate	390 lbs.
3	No Fertilizer	370 lbs.	7	400 lbs. Basic Slag	540 lbs.
4	400 lbs Untreated ground Phosphate Rock				480 lbs.

This Plat (4) extends length of both sets of plats, as indicated in table.

Remarks.—The basic slag contains about 50% of free lime and from 15 to 17 % phosphorus. It would appear that this slag has given the best results. There is no question but these soils are deficient in both lime and phosphorus.

Results from the Delta Branch Station

By G. B. Walker.

Variety test.—In the following table is given a list of forty-five varieties of cotton tested at the Delta Branch Station at Stoneville, Miss., in 1913, with data which gives the showing made by each variety.

This test was planted on May 7th, on fairly well drained loam soil that has been in cotton for several years. No fertilizer at all was used.

The season at the Delta Station during 1913 was nearly ideal and the yields were all very high, particularly so with the late varieties, as compared with 1912 yields. It will be remembered that the 1913 season was a very long one and it should be borne in mind when studying this table that the late varieties made a better final showing than can be expected of them in an average season, especially with a heavy infestation of boll weevil. By comparing weights of seed cotton at first and second pickings one should be able to judge, to some extent, the relative earliness of the different varieties. However, if the first picking could have been made earlier the differences at this picking would have been more marked.

Samples of lint from all the varieties were classed at Aberdeen, Leland, and Greenville, but our valuations are based on Greenville classification and valuations.

Boll weevil did not appear here until late in the season and hardly affected the yields at all.

Table 15.—Variety Test.

VARIETY.	Character of Foliage	Lbs. Seed Cotton per acre 1st pkng. Oct 1st.	Lbs. Seed Cotton per acre, Second picking.	Total yield of S. C. per acre.	Yield of lint per Acre.	Percentage of Lint.	Length of Staple according to Greenville classification.	Character of Lint.	Price per lb. of strict mdng gd Nov. 1st mkt.	Value of Lint per Acre.	Val. of Seed per Acre at $20.00 per ton.	Total value of lint and seed per acre.	Rnk as to money value pr acre
Half and Half	Medium	1284	943	2227	846	38%	7-8	Fair	$ .13 5/8	$ 115.25	$13.81	$ 129.06	1
Wannamaker-Cleveland	Medium	1566	690	2256	835	37%	1	Good	.13 3/4	114.81	14.21	129.02	2
Express	Light	1740	542	2282	662	29%	F. 1 1-8	Good	.16	105.92	16.20	122.12	3
Triumph	Dense	1066	900	1962	746	38%	1 1-16	Good	.14 1/2	108.17	12.16	120.23	4
Cook's Cook	Dense	1236	851	2087	793	38%	3-4	Poor	.13 1/2	107.05	12.94	119.99	5
Unknown	Medium	1494	567	2061	639	31%	F. 1 3-16	Good	.16 1/2	105.43	14.22	119.65	6
Tommy	Medium	1302	839	2141	642	30%	F 1 1-8	Good	.16	102.72	14.99	117.71	7
Miller	Dense	1092	958	2050	718	35%	F. 1 1-16	Good	.15	103.70	13.32	117.02	8
Hartsville	Dense	690	1250	1940	621	32%	1 3-16	Good	.16 1/2	102.46	13.19	115.65	9
Dixie	Medium	918	1349	2267	725	32%	1	Fair	.13 3/4	99.68	15.42	115.10	10
Uncle Sam	Medium	1056	946	2002	700	35%	1 1-16	Fair	.14 1/2	101.50	13.02	114.52	11
Richmond Bender	Medium	1464	690	2136	662	31%	F. 1 1-16	Good	.15	99.30	14.74	114.04	12
Calhoun	Dense	1134	946	2080	686	33%	1 1-16	Good	.14 1/2	99.47	13.94	113.41	13
Cleveland	Dense	1158	874	2032	711	35%	C. 1 1-16	Good	.14	99.54	13.21	112.75	14
Metcalfe	Light	1536	506	2042	633	31%	1 1-8	Good	.15 1/2	98.11	14.09	112.20	15
Sherard's Columbia	Dense	744	1188	1932	599	31%	C. 1 1-4	Good	.16 1/2	98.83	13.33	112.16	16
Durango	Medium	1068	660	1728	553	32%	F. 1 1-8	Good	.16	100.14	11.75	111.89	17
Rowden	Dense	1068	912	1980	673	34%	1 1-16	Good	.14 1/2	97.68	13.07	110.75	18
Brandon	Light	1296	736	2032	752	37%	3-4	Poor	.13 1/2	97.87	12.80	110.67	19
Acala	Medium	1032	784	1816	636	35%	1 1-8	Good	.15 1/2	98.58	11.80	110.38	20
Webber	Dense	696	1257	1953	605	31%	F. 1 1-8	Good	.16	96.18	13.48	110.28	21
Keno	Light	1344	651	1995	579	29%	1 3-16	Good	.16 1/2	95.53	14.16	109.69	22
Ashcraft	Dense	1224	759	1983	654	33%	1 1-16	Good	.14 1/2	94.83	13.29	108.12	23
Haaga No. 2	Medium	960	851	1811	507	28%	1 7-16	Good	.18 1/2	93.79	13.04	106.83	24

Table 15.—Variety Test. (Continued)

VARIETY	Character of Foliage.	Lbs. Seed Cotton per acre 1st pkng. Oct. 1st.	Lbs. Seed Cotton per acre, Second picking.	Total yield of S. C. per acre.	Yield of lint per acre.	Percentage of Lint.	Length of Staple according to Greenville classification.	Character of Lint.	Price per lb. of strict mdlng gd Nov. 1st mkt.	Value of Lint per acre.	Val. of Seed per acre at $20.00 per ton.	Total value of lint and seed per acre.	Rnk as to money value pr acre
Lone Star	Dense	798	1019	1817	636	35%	F. 1 1-16	Good	.14¾	93.81	12.81	106.62	25
Rublee	Light	1260	736	1996	679	34%	1	Fair	.13¾	93.35	13.17	106.52	26
Peerless	Light	1230	750	1980	594	30%	1 1-8	Good	.15½	92.07	13.86	105.93	27
Foster	Light	1164	660	1824	565	31%	1 3-16	Good	.16½	93.22	12.59	105.81	28
Richmond Long Staple	Light	1368	555	1923	558	29%	1 3-16	Good	.16½	92.07	13.65	105.72	29
Dodd's Favorite	Light	1332	697	2029	609	30%	C. 1 1-8	Good	.15	91.35	14.20	105.55	30
Trice	Light	1518	506	2024	627	31%	1 1-16	Good	.14½	90.91	13.97	104.88	31
Dodd's Prolific	Light	1488	529	2017	625	31%	1 1-16	Fair	.14½	90.62	13.92	104.56	32
Kentucky Bender	Light	1440	572	2012	624	31%	1 1-16	Poor	.14½	90.48	13.88	104.36	33
Sunflower	Light	1296	544	1840	497	27%	1 3-8	Good	.18	89.46	13.43	102.89	34
Haaga No. 1	Dense	576	1150	1726	535	31%	1 1-4	Good	.17	90.95	11.91	102.86	35
Davis Long Staple	Light	1158	667	1825	511	28%	1 5-16	Good	.17½	89.42	13.14	102.56	36
Mary Mac Special	Light	1134	636	1770	496	25%	1 5-16	Good	.17½	86.80	12.74	99.54	37
Foster Haaga	Light	956	667	1623	503	31%	F. 1 3-16	Good	.17	85.51	11.20	96.71	38
Station Cook	Dense	900	782	1682	639	38%	3-4	Poor	.13½	86.26	10.43	96.68	39
Columbia	Dense	924	885	1709	530	31%	1 3-16	Good	.16	84.80	11.17	96.59	40
Simpkins	Light	1350	414	1764	617	35%	3-4	Poor	.13½	83.29	11.47	94.76	41
Keenan	Dense	660	857	1517	501	33%	1 3-16	Good	.16½	82.66	10.16	92.82	42
Multiplier	Light	1542	253	1795	592	33%	3-4	Poor	.13½	79.92	12.03	91.95	43
Ninety-Day	Light	1266	506	1772	585	33%	3-4	Poor	.13½	78.97	11.87	90.84	44
Black Rattler	Light	792	846	1638	442	27%	1 3-16	Good	.16½	72.93	11.96	84.89	45

AVAILABLE BULLETINS AND CIRCULARS.

The following bulletins and circulars of the Station may be had upon request:

BULLETINS.

No.
84—Report of Field Work at the College Station for 1903.
90—San Jose' Scale.
94—Report of Work at the McNeill Branch Station for 1905.
104—Inspection and Analyses of Cottonseed Meal.
122—Report of Work at the Holly Springs Branch Station for 1908.
139—The Boll Weevil in Mississippi, 1909.
140—Cotton Diseases in Mississippi.
141—Control of Diseases of Fruits, Flowers, and Vegetables.
145—Inspection and Analyses of Commercial Feeding Stuffs.
146—Suggestions for Growing Home Fruits.
147—Apple Growing in Mississippi.
148—Inspection and Analyses of Cottonseed Meal.
149—Inspection and Analyses of Commercial Feeding Stuffs.
150—Inspection and Analyses of Commercial Fertilizer.
151—Inspection and Analyses of Cottonseed Meal.
152—Inspection and Analyses of Commercial Feeding Stuffs.
153—Inspection and Analyses of Commercial Feeding Stuffs.
154—Inspection and Analyses of Commercial Feeding Stuffs.
155—Recent Cotton Experiments.
156—Inspection and Analyses of Cottonseed Meal.
158—Report of Work at the McNeill Branch Station for 1907-1911.
159—Clearing Pine Lands.
160—The Cut Over Lands of South Mississippi.
161—Cotton Experiments, 1912.
162—Cottonseed Meal as a Feed for Laying Hens.
163—Truck Crops for South Mississippi.

TECHNICAL BULLETINS.

No.
2—Some Scale Insects of Mississippi.
3—Form and Structure of Certain Plant Hybrids in Comparison with the Form and Structure of their Parents.
4—The Soils of Mississippi.

CIRCULARS.

Blackleg.
Boll Weevil.
Insect Pest Law.
Underground Waters of Mississippi.
Tuberculosis in Dairy Cattle.
Report of Work on Alfalfa at the Holly Springs Branch Station.
Diseases Prevalent among Horses and Cattle in Mississippi.

Address,

AGRICULTURAL EXPERIMENT STATION,
Agricultural College, Mississippi.