
CANE BRAKE

Agricultural Experiment Station,

Uniontown, Alabama.

BULLETIN NO. 7. - - FEBRUARY, 1890.

SUBJECTS

COTTON, CORN, PEAS, MELILOTUS.

THE BROWN PRINTING CO., PUBLIC PRINTERS AND BOOK BINDERS.

CANEBRAKE
AGRICULTURAL EXPERIMENT STATION,
UNIONTOWN, ALABAMA.

BULLETIN NO. 7.....FEBRUARY, 1890.

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REPORT OF ASSISTANT DIRECTOR.

COTTON—EXPERIMENT WITH VARIETIES, YIELD AND EARLINESS.

March 27th twelve varieties of cotton were planted on "black slough" bottom land, fertilized with 200 pounds of cotton seed meal per acre. One-tenth acre plots of very uniform fertility were used. A good stand of each variety was obtained. There were from one to two days difference in the time of blossoming and opening of the cotton of the different varieties.

The Okra cotton was the first to blossom and open, and produced the greatest amount of seed cotton the first picking, but less than others the second and third pickings. The worms appeared in August, but were destroyed by one application of Paris green. The second crop of worms in September destroyed about half the foliage, and the frost in October killed the remainder. They were all ginned on the same day, and the seed and lint carefully weighed.

Zellner, Barnett and Jones' improved produced the greatest yield of lint. Improved Long Staple, King's Improved Prolific, and Welborn's Pet the smallest.

Jones' improved was very hard to gin, the lint adhered so firmly to the seed.

Improved Long Staple produced the greatest per cent. of lint, and Welborn's Pet the smallest.

The following is report of Mr. L. A. Morgan, who classified the varieties of cotton :

Barnett, strict low middling.
Cherry's Cluster, middling.
Hawkins' Improved, middling.
Jones' Improved, middling.
Okra Cotton, low middling, stained.
Peerless, strict low middling.
King's Improved Prolific, middling.

Rameses, strict low middling.
 Truit; low middling, spotted.
 Welborn's Pet, barely middling.
 Zellner, strict low middling.
 Improved Long Staple, strict low middling.

UNIONTOWN, ALA., Feb. 3, 1890.

Mr. W. H. Newman, Manager Experiment Station, Uniontown, Ala.:

DEAR SIR—We have carefully examined the twelve samples of cotton grown by you at the Station, and find them classing from low middling to middling. There are no high grades or any very low. We found only two bales, however, of low middling, which, but for the stains, caused either from worms or from frost, would have classed fully a half grade better.

There is no merit in staple of any of the samples shown us—nothing better than the usual staple of the country.

Very truly, &c.,

L. A. MORGAN & Co.,
 Cotton Buyers.

TABLE I.
 Experiments with Varieties.

FERTILIZERS.	Yield of Lint Cotton Per Acre.	Yield of Seed Per Acre.	Per cent. Lint.
1 Barnett.....	420	975	30.10
2 Cherry's Cluster.....	390	900	30.23
3 Hawkins' Improved.....	375	907 $\frac{1}{2}$	29.23
4 Jones' Improved.....	412 $\frac{1}{2}$	952 $\frac{3}{4}$	30.21
5 Okra Cotton.....	337 $\frac{3}{4}$	742 $\frac{3}{4}$	31.25
6 Peerless.....	345	810	29.87
7 King's Improved Prolific.....	292 $\frac{3}{4}$	660	30.70
8 Rameses.....	382 $\frac{1}{2}$	915	29.48
9 Truit.....	382 $\frac{3}{4}$	862 $\frac{3}{4}$	30.72
10 Welborn's Pet.....	330	810	28.94
11 Zellner.....	427 $\frac{1}{2}$	1042 $\frac{3}{4}$	29.08
12 Improved Long Staple.....	255 $\frac{1}{2}$	570	30.90

EARLINESS OF COTTON FROM DIFFERENT LOCALITIES IN THE
 NORTHERN PART OF THE COTTON BELT.

The object of this experiment was to see if it is possible to get a variety from some northern point that would mature a crop before attacked by the worms. Seed were obtained from Somerville, Tenn., Carters, North Ga., and Raleigh, N. C. The seed from North Carolina were of an improved variety, and those from North Georgia and Tennessee were common. They were planted March 28th, on $\frac{1}{3}$ acre plots in "black slough" bottom land. The North Carolina cotton made a very large growth, and was much later in opening, but yielded more seed cotton per acre than the others. The Tennessee and North Georgia made a medium growth, and opened several weeks before the Uniontown and North Carolina cotton. The first picking, August 30th, yielded half the seed cotton that the North Georgia and Tennessee cotton produced.

The second picking of the North Carolina and Uniontown cotton gave largest yield. The first crop of worms appeared about August 16th, but did not damage any of the varieties. The second crop appeared about the middle of September and destroyed the foliage on all the plots by the first of October. Table II gives the yield of each in seed cotton for the first four pickings, and the total yield in lint and seed.

The greater yield of the North Carolina cotton was on account of it being an improved variety.

TABLE II.

SEED FROM.	1st Picking Seed Cotton Aug. 30th.	2nd Picking Seed Cotton Sept. 13th.	3rd Picking Seed Cotton Oct. 7th.	4th Picking Seed Cotton Nov. 4th.	Lint Cotton per Acre.	Seed per Acre.	Per cent. Lint.
Raleigh, N. C.....	302 $\frac{1}{2}$	533	230 $\frac{3}{4}$	175 $\frac{3}{4}$	429	793	35.10
Somerville, Tenn.....	438 $\frac{3}{4}$	380 $\frac{1}{2}$	94 $\frac{1}{4}$	81 $\frac{1}{4}$	282 $\frac{3}{4}$	676	29.49
Carters, North Geo.....	546	377	117	84 $\frac{1}{2}$	325	760 $\frac{3}{4}$	29.94
Uniontown, Ala.....	237 $\frac{1}{2}$	477 $\frac{3}{4}$	188 $\frac{1}{2}$	140 $\frac{3}{4}$	292 $\frac{1}{2}$	737 $\frac{1}{2}$	28.39

TABLE III.

MELILOTUS AND PEA VINES AS FERTILIZERS.	Yield of Lint Cotton per Acre.	Yield of Seed per Acre.	Per cent. Lint.	Per cent. Seed.
Melilotus, 3 years	277½	675	29.13	70.86
Melilotus, 2 years	360	862½	29.44	70.55
Pea Vines, 1 year	412½	997½	29.25	70.74

In this experiment 1-16 acre plots were used. The land on which the peas were sown had been in cultivation three years. Where the melilotus was had not been cultivated since the station was established.

The plots were on a hill-side, where the "Black Slough Bottom" blended with the "Red Prairie" lands.

The land was bedded in January, then harrowed, and re-bedded in February, but it was almost impossible to get the melilotus plots in good condition for planting. The plot on which pea vines had grown was very soft and mellow, and in good mechanical condition.

Each plot was thinned to as near an equal number of stalks as possible, and given the same treatment the entire season. The yield of seed and lint is given in table III.

From this season's experience we prefer "flushing" the melilotus land in the fall, and bedding after one or two good rains have fallen.

In October 1889, two acres of land that had been in melilotus two years was flushed, and as soon as it rained was harrowed and then bedded. At the same time two acres of land that had been in peas two years was treated in a similar manner. The melilotus land when bedded was in a much finer condition, and plowed very easily. The long tap root of the melilotus acted as drains, and the land was not as waxey as that on which peas had been sown.

EXPERIMENTS WITH COTTON AFTER PEA VINES.

In these experiments 1-10 acre plots were used.

The peas were sown after spring oats had been cut, in June, 1888. The plot where no vines were grown was left with the stubble on it until January, 1889.

The vines on plot two were cut for ensilage Oct. 2, 1888.

The plots were bedded in January, 1889, and the cotton seed planted March 23d.

The plants on the plot where no vines were sown had a sickly, yellow appearance, and did not make as vigorous growth as those on the other two plots.

Cotton grown where the vines were left on the land produced only ten pounds more lint than where the pea vines were cut for hay, and 87½ pounds more than the plot on which no vines were grown.

This, and all the previous experiments, have shown that cutting the vines for hay is the best method of utilizing them.

The increased yield by leaving the vines is small, and the land is much harder to prepare where the vines are left.

From two to five tons of hay can be cut from one acre in vines.

The increased cotton grown by leaving the vines to rot on the land was worth only \$8.75, while the vines, cured into hay, would be worth not less than three times that sum. The effect of the vines upon crops after the first season has not been ascertained.

TABLE IV.

PEA VINES AS A FERTILIZER	Yield of Lint Cotton per Acre.	Yield of Seed per Acre.	Per cent. Lint.
1 Pea vines left on ground	407½	985	29.26
2 Pea vines cut for hay	397½	967½	29.12
3 No vines	320	760	29.62

In the experiments conducted on canebrake lands during the last five years no fertilizing material has given as good results as growing pea vines upon the land, and either leaving them to be returned to the soil or cutting them for hay. This is not only the cheapest but the surest method of restoring the fertility of the worn soils of this State.

CORN—EFFECTS OF FERTILIZERS.

Table V gives the results of the application of fertilizers on very wet "Black Slough" bottom land. The land was bedded and rebudded early in January.

It was in corn the previous year without manure.

The bed was opened with a scooter, the fertilizers applied in the drills, and then mixed with the soil.

The corn was planted the same day, March 21st. The results are very uniform, and no increase can be attributed to the fertilizers.

The corn was gathered and weighed Sept. 10th. 1889.

TABLE V.
Fertilizers on Corn.

FERTILIZERS.	Bushels Merchantable.	Unmerchantable per acre.	Total.
1 200 lbs. Acid Phosphate.....	18.74	1.96	20.70
2 200 lbs. C. S. Meal.....	17.76	2.76	20.52
3 120 lbs. C. S. hull ashes.....	19.91	1.69	21.60
4 No manure.....	18.12	2.94	21.06
5 200 lbs. Phosphate and 200 lbs. C. S. meal.....	18.03	2.32	20.35
6 200 lbs. Phosphate and 120 C. S. hull ashes.....	18.92	2.69	21.61
7 200 lbs. Phos., 200 lbs. C. S. M., and 120 C. S. H. A.....	19.28	1.61	20.89
8 200 lbs. C. S. M. and 120 lbs. C. S. H. A.....	19.91	2.32	22.23
9 No Manure.....	19.37	2.58	21.95

The above results afford cumulative evidence that the purchase of commercial manures for canebrake lands is a waste of money.

VARIETIES OF CORN.

March 22nd, 1889, twenty varieties of corn were planted on 1-20 acre plots. The plots were fertilized with cotton seed meal at the rate of 200 lbs. per acre. They were gathered and weighed September 9th.

Clayton's Bread, Head's Field, Lloyd's Stock, and Strawberry, were the only varieties not damaged by weevil when gathered. Cheney's White Pearl, Leaming's Improved Dent, Webb's Prolific, and White Giant Normandy were very badly damaged by them. Two-thirds of the Cheney's White and Leaming's Improved Dent was ruined by them.

The yield of each variety is given in Table VI.

TABLE VI.
Comparison of Varieties of Corn.

VARIETIES FROM JAS. CLAYTON, AUBURN, ALA.	Bushels Merchantable.	Unmerchantable. per acre.	Total
1 Brazilian Flour Corn.....	27.08	2.42	9.50
2 Clayton's Bread Corn.....	23.43	1.21	24.64
3 Clayton's Flint Pop Corn.....	10.20	0.72	10.92
4 Golden Beauty.....	21.73	3.15	24.88
5 Golden Dent.....	10.57	8.37	18.94
6 Head's Field.....	28.40	1.45	29.85
7 Mosby's Prolific.....	29.84	2.71	32.55
8 Madison County Red.....	25.98	2.30	28.28
9 Lee County Field.....	28.28	4.14	32.42
10 Lloyd's Stock.....	24.14	1.42	25.56
11 Parkman's Bread.....	22.85	2.00	24.85
12 Strawberry.....	24.59	0.71	25.30
13 Webb's Prolific.....	10.28	12.28	22.56
14 White Giant Normandy.....	10.00	10.57	20.57
VARIETIES FROM J. H. ALEXANDER & CO., AUGUSTA, GA.			
1 Brazilian Flour Corn.....	21.18	3.33	24.51
2 Blount's White Prolific.....	16.16	3.82	29.98
3 Cheney's White Pearl.....	5.10	12.50	17.60
4 Favorite Golden.....	15.66	9.77	25.43
5 Welborn's "Conscience".....	20.04	7.16	27.20
6 Leaming's Improved Dent.....	4.18	12.38	18.56

TABLE VII.
Corn at different distances.

DISTANCES.		Bushels per acre Merchantable.	Bushels per acre Unmerchantable.	Total.
1	4 by 2 feet.....	35.54	3.60	39.14
2	4 by 3 feet.....	26.17	2.85	29.02
3	4 by 4 feet.....	21.02	1.90	22.92
4	4 by 5 feet.....	16.05	2.28	18.33

In the above experiments 1-10 acre plots were used on "black slough" bottom lands, that had been in peas the previous year.

The ears on plots three and four were much finer than on plots one and two. The yield is decidedly in favor of thick planting on that character of land.

TABLE VIII.
Pea Vines as Fertilizer for Corn.

No. of Plot		Merchantabl Corn per acre.	Unmerchant- ble Corn per acre.	Total per acre.
1	No vines.....	24.62	3.05	27.67
2	Vines cut for hay.....	25.37	1.97	27.37
3	Vines left on land.....	29.70	1.90	31.60

In these experiments 1-10 acre plots were used in "black slough" bottom. The peas were sown in June, after oats were harvested.

The effect of the vines was not as marked on the corn as on the cotton.

No difference in the growth was observed, and the total yield, where the vines were cut, was .3 of a bushel less than no vines. The proportion of merchantable corn, however, was greater on plot two than on one. Where the vines were left the yield was increased 3.93 bushels.

In all the previous experiments the effect of the vines was very marked in the increased yield.

SUMMARY.

1. The experiment with cotton seed grown further north is worthy of repetition.
2. Pea vines seem to be the most reliable recourse for improvement of prairie as well as sandy soils.
3. Commercial fertilizers are not profitably used upon black prairie soils. This may be regarded as an established fact.
4. On black prairie bottom land thick planting of corn is desirable.
5. The comparison of melilotus and peas as soil-improvers needs further experiment in which discordant factors shall be eliminated.