CANEBRAKE

Agricultural Experiment Station,

UNIONTOWN, ALABAMA.

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SUBJECTS:

COTTON, FERTILIZERS, VARIETIES.

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EXPERIMENTS WITH COTTON--1890.

W. H. NEWMAN.

EXPERIMENT WITH FERTILIZERS ON "BLACK SLOUGH" BOTTOM.

This land produced a crop of wheat, without fertilizing, in 1889, and then a crop of pea-vine hay the same season. The plats were 1–15 of an acre. They were "flushed" in December, 1889, and bedded to four foot rows in January, 1890.

The fertilizers were applied in the drill April 8th, and the seed planted the same day with a planter.

They were cultivated with the hoe and the Terrell heel scrape.

There was only a slight difference in the yield of the plats by pickings.

Each plat was picked four times. The fertilizer neither hastened the maturity nor increased the yield to any great extent. There was no difference in the appearance of the plants of the different plats, the unmanured producing as large and as vigorous plants as the manured.

The increased yield in no instance paid for the fertilizers and cost of application. Sul. ammonia and Dis. Bone Black. combined, produced the greatest yield, and floats alone, the least.

Sul. Ammonia increased the yield except where combined with Kainit.

The results will be found in the table. The seed cotton from each plat was stored in separate compartments in the gin house as gathered and ginned in December.

The seed and lint from each plat was carefully weighed and the gin thoroughly cleaned after ginning each lot before commencing another.

Soil Test of Fertilizers on "Black Slough" Lands.

	Fertilizers.	Lint in lbs. per acre.	Seed in lbs. per acre.	Total.
1.	90 lbs. Sul. Ammo	513¾	1,278¾	1,792½
2.	195 lbs. Dis. Bone Black	510	1,233¾	1,743¾
3.	150 lbs. Kainit	450	1,068¾	1,518¾
4.	No manure	495	1,207½	1,702½
5.	90 lbs. Sul. Ammo. & 150 lbs. Kainit	491¼	1,185	1,676¼
6.	90 lbs. Sul. Amo,&196 lbs. Dis. Bone Black.	521¼	1,237½	1,758¾
7.	150 lbs. Kainit &195 lbs. Dis. Bone Black.	457½	1,091¼	1,548¾
8.	No manure	487½	1,166¼	1,653¾
9.	90 lbs. Sul. Ammo. & 150 lbs. Kainit x 195 lbs. Dis. Bone Black	517½	1,196¼	1,713¾
10.	Floats 300 lbs	427½	963¾	1,391¼
11.	300 lbs. Floats & 90 lbs. Sul. Amo	472½	1,136¼	1,608¾

These results simply repeat the indications plainly presented for the last five years, viz: That commercial fertilizers are not profitably used upon this class of soil.

Experiment with C. S. Meal on Red Prairie Land.

In this experiment 1–6 acre plats were used, that had grown a crop of oats followed by peas the previons season. The land was flushed in the fall of 1889, and bedded to four foot rows in February, 1890.

The meal was applied in the drill a few days before planting the seed. The seed were planted April 5th, and each plat was cultivated with the hoe and Terrell heel scrape. There was only a few pounds difference in the yield by pickings. The unmanured plat produced 8.12 pounds more lint than the manured.

Cotton after Peas on Red Prairie Lands.

1.	400 lbs. C. S. Meal	409.50	960.75	1,370.25
2.	No manure	417.37	962.32	1,379.69

Cotton Experiments.

(a) Acre No. 1. Drained land, 2,000 lbs. cotton seed applied in the drill and bedded on December 13th, 1889. Planted April 7th, 1890.

Yield, Lint—446½ lbs. seed cotton, 1,518.

(a) Acre 1. Undrained—Manured and planted as acre 1 drained land.

Yield 515½ lbs. Lint—seed cotton 1,736½.

(b) Acre No. 2. Drained—No manure.

Yield 406 lbs. Lint—Seed cotton 1,355 lbs.

(b) Acre No. 2. Undrained—No manure.

Yield 359 lbs. Lint—Seed cotton 1,212.

(c) Acre No. 3. Drained—400 lbs. C. S. Meal in drill. Planted April 23rd.

Yield 435 lbs. Lint—Seed cotton 1,456.

(c) Acre No. 3. Undrained—Manured and planted as acre No. 3 drained land.

Yield 214 lbs. Lint—Seed cotton 749 lbs.

(d) Acre No. 4. Drained—200 lbs. C. S. Meal in drill. Planted April 23rd.

Yield 420 lbs. Lint—Seed cotton 1,390.

(e) Acre No. 5. Drained—200 lbs. C. S. Meal in drill before planting and 200 lbs. broadcast in middles June 25th. Planted April 23rd.

Yield 339 lbs. Lint—Seed cotton 1,181.

(f) Acre No. 6. Undrained—Seeded to melilotus two years; cost of melilotus 3.25. Planted April 8th,

Yield 475.6 lbs. Lint—Seed cotton 1,607.2.

(g) Acre No. 7. Undrained—Seeded to peas two years. Planted April 8th. Cost of peas $7.00.

Yield 464.12 lbs. Lint—Seed cotton 1,602.28.

(h) Acre No. 8. Undrained—Broadcasted with 18 tons of stable manure October, 1889. Bedded to five foot rows. Planted April 5th.

Yield 448 lbs. Lint—Seed cotton 1,326½.

(i) Acre No. 9. Drained—Checked four by four one stalk in hill. Land rich garden spot. Planted March 31st.

Yield 631 lbs. Lint—Seed cotton 1,857.

RECAPITULATION.

Experiment with Cotton.

		Lint.	Seed.	Total.
1	(a) Drained, 2,000 lbs. green cotton seed	446.5	1071.7	1518
1	(a) Undrained, 2,000 lbs. green cotton seed....	515.5	1221	1736 5
2	(b) Drained, no manure	406	949	1355
2	(b) Undrained. no manure.....	359	853	1212
3	(c) Drained, 400 lbs. C. S. meal.....	435	1021	1456
3	(c) Undrained, 400 lbs. C. S. meal.....	214	535	749
4	(d) Drained, 200 lbs. C. S. meal.....	420	970	1390
5	(e) Drained, 200 lbs. C. S. meal in drill before planting and 200 lbs. broadcast June 25th.	339	842	1181
6	(f) Melilotus two years.....	475 6	1131.6	1607.2
7	(g) Pea vines two years.....	464.12	1138.16	1602.28
8	(h) 18 tons stable manure	448	878.5	1326.5
9	(i) Checked four x four in rich garden spot ...	631	1226	1857

EXPERIMENTS WITH GREEN COTTON SEED AND C. S. MEAL ON COTTON.

Acres No. 1, 2, 3, drained and undrained land were on "shell ridge" land and had grown a crop of wheat and peas the previous season. The land was flushed in November and bedded in December, 1889. The green seed were applied in deep furrow and bedded on in December. The meal was applied in drill at the time of planting.

Acres 4 and 5 were lower down on the ridge where the "shell ridge" blended with the "black slough" bottom, and had been in oats and peas the previous season. The seed were planted April 7th, but the meal was not well mixed with the soil and killed them on acres 3, drained and undrained, and No. 4 and 5 drained land. They were replanted on April 23, and made a quick, rapid growth, and were chopped at the time acres 1 and 2 were. The late planted made a much larger weed, but was late, and the frost killed a heavy crop of bolls.

The plats on undrained land lay lower down on the ridge, and suffered from standing water that under-drainage would have carried off. Acres No. 1, where the seed were applied, were naturally well drained and did not suffer from standing water.

The increased yield by the application of a ton of seed on the undrained land was 156½ pounds of lint cotton, which paid for the cost of the seed and the cost of application. The increased yield on the drained was only 40½ pounds. The undrained land was naturally stronger and well surface drained. The increased yield by the application of the cotton seed meal did not pay. A ton of seed per acre is not practicable on a large area. Forty bushels per acre is quite a large application. Unless crushed, the seed should be applied very early so that they will be well decomposed by the time of planting. It is better to open water furrow and apply seed and bed on them, than to sow broad-cast.

PEA VINES AND MELILOTUS. ACRES 6 AND 7.

Acres 6 and 7 had been in melilotus and peas, respectively, two years. The cost of seeding to melilotus was $3.25, and to peas $7.00, or $3.50 each season. The land was in very impoverished condition when seeded to these crops. The acres were flushed in December, 1889, and bedded in January, 1890. A heavy crop of melilotus came up, but was very easily killed by the first plowing and hoeing. The acre in the melilotus produced 11.48 pounds more seed cotton per acre than the acre in peas. The appearance of the cotton on the melilotus land was very sickly, and it remained smaller and yellower until the latter part of June, when it commenced to grow rapidly and made a better growth than the acre that was in peas. Peas will give the best returns for one season, and melilotus for two, for the cost of seeding to peas for two seasons is double that of melilotus.

STABLE MANURE. ACRE NO. 8.

One acre of "black slough" bottom, that had been in corn, was flushed in October, and eighteen tons of stable manure was applied broad-cast the latter part of the month, and the land bedded to five foot rows in November. The manure was about two-thirds saw-dust, and cost from $1.00 to $1.50 per ton, including the hauling. The saw-dust probably prevented profitable effect of the stable manure. The acre produced 448 pounds of lint, and plots just across the slough produced 495 and 489½ pounds lint without manure. Stable manure has generally given good returns, when supplied in sufficient quantities, for several years. It is claimed by many that stable

manure gives the best results the second year on prairie lands; if so, the fact will be determined this season on corn and cotton, so far as one season's test will prove.

Acre No. 9, Checked Four by Four Feet.

This acre had been used as a garden for four years and during that time had received heavy applications of commercial fertilizers, green cotton seed and stable manure, and in 1890, 400 lbs. of C. S. Meal broadcast, before bedding.

The land was a mixture of red prairie and white lime rock, and was not suited for a garden.

The land was flushed in the fall of '89, and bedded in February, 1890, to four foot rows.

The seed were planted March 29th. A scooter furrow was run across the beds every four feet, and the seed dropped in the opening.

The hills were thinned to one stalk. The cotton made a very rank growth, and a large number of bolls rotted on account of the thick foliage, and a great many were killed by frost.

The acre produced 631 pounds of lint cotton.

The variety of cotton was Improved Peterkin, and was late in maturing, the last picking being made in December.

Experiment with Varieties of Cotton.

The varieties were planted on a small ridge where the "shell-ridge land" blended with the "red prairie."

The previous season, it had grown a crop of German millet, followed by peas. The land was flushed and then bedded to four foot rows. One sixteenth acre plats were used. They were planted March 29th, and all the varieties received the same cultivation the entire season.

The first pickings were made August 19th, and the second September 9th,

The Peterkin, Texas Storm and Drouth Proof were late in maturing. The other varieties producing from two to three times more seed cotton the first picking.

Peerless and Okra yielded the most the first and second pickings. Peterkin, Texas Storm and Drouth Proof yielded

more seed cotton the last two pickings. Peterkin, and Texas Storm and Drouth Proof made a very large weed with long branching limbs. The other varieties made a medium growth.

Peerless and Welborn's were the best types of cluster cotton.

The greatest yield was made by Peerless, Peterkin, and the Texas Storm and Drouth Proof. Brazier's Peterkin and Peterkin produced the largest per cent. of lint. Table I gives the yield per acre, and the % lint.

One hundred bolls of the first and second pickings were well dried and weighed and the average weight taken.

The result will be found in the table.

Experiment with Varieties of Cotton.

Varieties.	Pounds of Lint per acre.	Pounds of Seed per acre.	Total Seed Cotton.	Per cent. Lint.
1. Barnett	352	792	1,144	30.6
2. Brazier Peterkin	312	608	920	33.9
3. Cherry's Cluster	328	804	1,132	28 9
4. Hawkin's Imp	390	940	1,330	29 3
5. Jones Imp	372	904	1,276	29 1
6. King's Imp	372	884	1,256	29 5
7. Peterkin	472	944	1,470	32 1
8. Texas Storm and Drouth Proof	448	964	1,412	31 7
9. Okra	424	960	1,368	30.6
10. Peerless	520	1,178	1,698	30 6
11. Zellner	403	1,024	1,427	28 2
12. Welborn	360	888	1,248	28 8
13. Rameses	376	908	1,284	29 2

Average Weight of One Hundred Bolls.

1. Barnet	16¼ oz.
2. Brazier's Peterkin	17¾
3. Cherry's Cluster	16¼
4. Hawkins Improved	17
5. Jones Improved	17¾
6. King's Improved	16¼
7. Peterkin	18¼
8. Texas Storm and Drouth Proof	24½
9. Okra	16½
10. Peerless	19
11. Zellner	20¾
12. Welborn	20¾
13. Rameses	19¼

Brazier's Peterkin was obtained from Capt. W. H. Brazier, Uniontown, Ala., and the Texas Storm and Drouth Proof from W. J. Smilie, Baileyville, Texas.

The other varieties were from seed grown on the plats the previous season.

Zellner and Welborn seem to be the same variety.

Conclusions.

I. That it is a waste of time and money to fertilize prairie land upon which a crop of peas had grown the previous season.

II. That the mineral sources of Nitrogen are not beneficial on the "Black Prairie" lands.

The vegetable sources being the most beneficial and the cheapest.

III. That saw dust diminishes the efficiency of stable manure.

IV. That an improved variety of cotton is needed in the Canebrake. One that will produce a greater per cent. of lint and that is very prolific.

V. That greater distance should be given the cotton on the better qualities of Canebrake lands. The rows should be widened or greater distance given in the drill. The yield could be doubled by giving greater distance on the rich bottoms.

When planted thick it goes to weed and the bottom crop rots badly by being too much shaded.