

ANNUAL REPORT
OF THE
EXPERIMENT STATION
OF THE
SOUTHEAST ALABAMA
AGRICULTURAL SCHOOL
ABBEVILLE, ALABAMA

From January 1, 1907, to January 1, 1908.

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ANNUAL REPORT

EXPERIMENT STATION

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A REPORT OF THE EXPERIMENTS MADE AT
THE THIRD DISTRICT AGRICULTURAL EX-
PERIMENT STATION DURING 1907.

A great many of the experiments made during 1907 have been successful, and we are quite sure that much useful information has been obtained, which will be of great benefit to the farmers of this section.

We are glad to say that our farmers are now taking a greater interest in the station work than they have done in the past. Quite a number of the most progressive farmers of this section visited the station last year, and we will be delighted to have them come at any time during this year.

VARIETY TEST OF COTTON.

This experiment consisted of a trial of thirteen leading varieties. The land on which this test was made belongs to the Orangeburg type of soils.

It is an intense red clay, such as is considered a typical cotton soil.

The season was favorable and the yield of all was fairly good. The land was broken broadcast in January with a two-horse plow. Every row was fertilized alike. The planting was done on the same day and the intercultural tillage was identical.

The plots consisted of 1-12 of an acre each. Each plot was fertilized with 30 pounds of an 8-2-2 guano and 10 pounds of nitrate of soda. The guano was applied to the soil, mixed with a scooter and the land bedded.

The nitrate of soda was applied to the growing crop in June. The experiment received the same cultivation which the regular crop received.

The seed cotton of the varieties were stored in separate bins and all weighed under like conditions to prevent any possible variation resulting from atmospheric influence in the field weights.

Some varieties can withstand drought better than others, while some can withstand wet weather best.

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To substantiate this you can examine the bulletins of the different experiment stations for several years past and you will observe that no one variety remained at the head of the list any definite period. Several varieties of long staple cotton appear in the list.

This year Cook's Improved stands at the head of the list while Shankhigh is at the bottom. It will be noticed that there is quite a difference in the value of the yield of these two varieties. The test clearly shows that Cook's Improved is adapted to our Orange type of soils while the Shankhigh is not. On the Cecil soils of South Carolina and North Georgia the Shankhigh is one of the best varieties.

The following table gives the results in this test:

	Yield per acre at each picking in lbs. of seed cotton.			Total yield.	Lbs. lint per acre.	Lbs. seed.	Value of lint at 12 cts. per lb.	Value of seed at 80 cts. per 100 lbs.	Total value of lint and seed.
Cook's Improved	527	812	394	1,733	674	1,059	\$80.88	\$ 8.47	\$89.35
Toole	538	842	335	1,715	660	1,055	79.20	8.44	87.64
Corley	468	559	533	1,558	529	1,029	63.48	8.23	71.71
King	568	647	273	1,488	530	958	63.60	7.66	71.26
Peterkin	440	462	331	1,233	468	765	57.16	6.12	64.82
Hawkins	428	482	368	1,278	442	836	53.04	6.68	60.72
Floradora	436	612	380	1,428	408	1,020	48.96	8.16	57.12
Russell	342	457	434	1,233	406	827	48.72	6.61	55.33
Truitt	357	495	346	1,208	398	810	47.76	6.48	54.24
Columbia	325	516	401	1,242	388	861	46.56	6.88	53.44
Sunflower	352	473	409	1,234	386	848	46.32	6.78	53.10
Allans long staple	363	537	412	1,312	367	945	44.04	7.56	51.60
Shankhigh	289	452	399	1,140	374	766	44.88	6.12	51.00

According to the foregoing table Cook's and Toole's are the two best varieties for Southeast Alabama.

Much has been said recently about the theory of adaptation and there is no doubt but what it is a subject of great importance. Farmers ordering seed should know on what kind of soil the variety has been grown and select the variety according to the type of the soil of their own farms.

Cook is said to be adapted to red clay soils or soils with clay subsoils, while Toole is better adapted to sandy soils.

It will be noticed that four varieties of long staple cotton are in the list. The prices of long staple cotton are so irregular and uncertain that it was averaged at the same price of the short staple.

The price depends nearly all together upon the length of the staple and the method of growing. The local buyers are only paying a premium of one cent per pound this year.

NOTES ON THE VARIETIES TESTED.

(1) Cook's Improved.—This variety stands first in the number tested. The bolls are rather large with usually five locks. The per cent of lint is very high, from 38 to 40 per cent. In the test at nearly all the experiment stations it has been one of the most prolific varieties. Productiveness and high per cent of lint have recently brought Cook's cotton into great popularity.

Toole.—This is the second time this variety has been tested and it did well on both occasions. The plants are of medium size and all abundantly supplied with limbs and bolls. It is an early variety with small bolls. The per cent of lint is very high.

(3) Corley.—This is the first time the Corley has been tested.

The leaves are large and broad.

It is a vigorous growing, medium early sort, stalks large and well branched. The seed are large and gray in color.

It will produce from 35 to 40 per cent lint. This is a new variety originated by W. A. Corley, Tallapoosa County, Ala.

(4) King.—This is one of the earliest maturing varieties. It is considered a favorite in those sections of the cotton belt where the seasons are short. It is also popular in the boll weevil districts of Texas.

The great objection to King is the small size of bolls and the shortness of staple.

(5) Peterkin.—It is one of the best of the small boll varieties. Stalks are of medium size, abundantly supplied with branches.

The bolls are rather small, averaging 76 per pound of seed cotton.

Peterkin is one of the most popular of all varieties.

(6) Hawkins.—A splendid medium boll cotton. It is early and seems to withstand drought well. The per cent of lint is from 33 to 35 per cent.

(7) Floradora.—This is one of the best of the long staple sorts. The staple is long and fine. It usually commands a premium over ordinary uplands.

(8) Russell.—It is probably more extensively grown in Alabama than any other variety. The plants are of medium size and well limbed. The per cent of lint is rather low. The seed are large, densely covered with fuzz and are of a green or greenish brown color.

(9) Truitt.—This variety was originated by George W. Truitt of LaGrange, Ga. The plants are well shaped and greatly resemble the semi-cluster type. The seed are white and of large size. The bolls are large and usually contain five locks. Matures late. The per cent of lint is rather low.

(10) Columbia.—A new long staple variety of some merit. The bolls are larger and easier to pick than Allan's or Floradora. The seed are large.

(11) Sunflower.—This is a long staple variety with plants, bolls and fiber typical of the group. Fiber long; per cent of lint low.

(12) Allan's Long Staple.—This variety originated with J. B. Allen, Port Gibson, Miss. It is one of the most popular of the long staple sorts.

Bolls are small with 4 to 5 locks. Lint is very long and fine.

(13) Shankhigh.—This variety originated in the Piedmont region and is adapted to portions of North Georgia and probably South Carolina. It is not adapted to the coastal plain region of the cotton belt.

WHERE SEED CAN BE OBTAINED.

The station cannot furnish cotton seed from the varieties tested, because they have become more or less mixed, but we can give the following list of names from whom the seed can be obtained:

- Cook's Improved—J. R. Cook, Ellaville, Ga.
- Toole—W. W. Toole, Augusta, Ga.
- Corley—W. A. Corley, Kellyton, Ala.
- King—T. J. King & Son, Richmond, Va.
- Peterkin—J. A. Peterkin, Fort Motte, S. C.
- Hawkins—B. W. Hawkins, Nona, Ga.
- Floradora—L. A. Stoney, Allendale, S. C.
- Russel—G. F. Park, Alexander City, Ala.
- Truitt—George W. Truitt, LaGrange, Ga.
- Columbia—Amzi Godden & Co., Birmingham, Ala.
- Sunflower—Marx Shaefer, Yazoo City, Miss.
- Allan's Long Staple—James B. Allan, Port Gibson, Miss.
- Shankhigh—Amzi Godden & Co., Birmingham, Ala.

SELECTION OF SEED.

A great deal has been said in the various agricultural papers about adopting the intensive system of farming.

The scarcity of labor has brought this subject prominently before the cotton farmers for consideration.

Several methods have been suggested by which this can be accomplished and among the most important are the better selection of seed, better method of cultivation and the use of a greater amount of fertilizer. Unfortunately most farmers do not pay enough attention to the proper selection of their cotton seed.

In Iowa and Illinois the yield of corn has been increased in many instances as much as fifty per cent by

the selection of seed according to the methods originated by Prof. P. G. Holden.

One method of selecting cotton seed is to start with some well established variety which is suited and adapted to your soil and gradually improve it. Any variety of cotton will deteriorate in three or four years unless some method of seed selection is adapted.

In the beginning of the cotton picking season go over the field yourself and select the stalks and types which are the best developed, most vigorous and most prolific and that conform most to your ideal of a perfect plant.

Mark these stalks with a cotton string and hire a careful hand by the day to pick the cotton from them.

Spread the cotton out in a room where it can become perfectly dry.

Of course care should be used in ginning so that the seed will not mix in the operation.

Continue this process from year to year and you will improve any variety of cotton no matter how well it has been developed.

Great care should be taken to see that the seed are not mixed at the gin. Oftentimes the seed are so badly mixed at the gin as to become almost worthless for planting purposes.

FERTILIZER TEST WITH COTTON.

The field selected for this test is slightly rolling and of a sandy nature with a clay subsoil. It was planted in corn the year before and made a satisfactory yield. Ten plots were laid off, each one-tenth of an acre in area. Especial care was taken to see that each row of every plant should receive the same quantity of fertilizer. The rows were laid off 3 1-2 feet apart and the fertilizer was applied in the drill.

The same kind of seed was used upon all the plots. Great care was exercised in picking.

The following table will give the yield per acre in lint cotton:

Plot.	Fertilizer per acre.	No. lbs. lint cotton per acre.
1	200 lbs. cotton seed meal -----	192
2	240 lbs. acid phosphate -----	134
3	No fertilizer -----	78
4	200 lbs. kainit -----	83
	200 lbs. cotton seed meal -----	
5	240 lbs. acid phosphate -----	198
	200 lbs. cotton seed meal -----	
6	200 lbs. kainit -----	167
	240 lbs. acid phosphate -----	
7	200 lbs. kainit -----	163
8	No fertilizer -----	80
	200 lbs. cotton seed meal -----	
9	240 lbs. acid phosphate -----	236
	200 lbs. kainit -----	
	200 lbs. cotton seed meal -----	
10	240 lbs. acid phosphate -----	227
	100 lbs. kainit -----	

VARIETY TEST OF CORN.

The piece of land which was used is an upland, sandy soil, which has been in cultivation for many years.

Each variety was planted on a plot which consisted of one-tenth of an acre. All the plots received the same amount of fertilizer and were cultivated like the regular field crops.

It is to be remarked that a single year's test of varieties cannot be safely relied upon as conclusive in the matter of relative productiveness.

This has been established in the variety tests of the last ten years.

The variety of corn that gives the best results in the long run or the best average during five or six years, is the one that should be selected by the farmer.

A variety may be at the head of the list as to productiveness in one season and at the very next it may be found toward the foot of the list in this respect.

The varieties which were used in the experiment were as follows:

Number of Bushels of Shelled Corn Per Acre.

	Bushels.
Mosby -----	16.36
Cocke's Prolific -----	15.48
Sanders' Improved -----	14.75
Marlboro -----	13.29
Boone Co. White -----	12.13
Leaming Yellow -----	11.56
Blount's Prolific -----	11.25
Hickory King -----	10.68
Iowa Silver Mine -----	10.25
Riley's Favorite -----	9.86

The importance of a careful selection of seed corn is apparent to all. In some of the western states the yield has been increased 50 per cent by careful selection alone. Many farmers, in fact a majority of them, are content to make a more or less careful selection of the soundest and best appearing ears from the corn crib just at planting time. They will continue to plant the same variety year after year without testing its productiveness.

Seed corn should be selected in the field, not in the crib as is the usual method.

Every farmer should have a breeding plot of both corn and cotton in order to produce the best results.

WHERE TO GET SEED.

The Station cannot supply seed of any of the varieties tested, and inquirers are referred to the following list of names from whom seed can be secured:

Mosby—Wesley N. Jones, Montgomery, Ala., Route 4.
Cooke's Prolific—Amzi, Godden & Co., Birmingham,
Ala.

Sander's Improved—Amzi, Godden & Co., Birmingham,
Ala.

Marlboro—T. W. Wood & Sons, Richmond, Va.

Boone Co. White—H. G. Hastings & Co., Atlanta.

Leaming Yellow—Amzi, Godden & Co., Birmingham,
Ala.

Blount's Prolific—Curry, Arrington & Co., Rome, Ga.

Hickory King—William F. Maulle, Philadelphia.

Iowa Silver Mine—William F. Maulle, Philadelphia.

Riley's Favorite—Amzi, Godden & Co., Birmingham,
Ala.

FERTILIZER TEST WITH CORN.

The land was prepared like the general field crop and was planted on March 18.

An almost perfect stand was secured. The soil was a sandy loam. The corn was cultivated like the regular field crop.

On October 27th the corn was gathered and carried to the barn where it was shelled and weighed.

The seed used in the experiment were grown on the Station Farm the previous year. The following table shows the amount of fertilizer used, and the yield per each plot:

Plot.	Fertilizer per acre.	No. bushels of corn per acre.
1	200 lbs. cotton seed meal -----	16.42
	240 lbs. acid phosphate -----	12.56
3	No fertilizer -----	8.92
4	200 lbs. kainit -----	10.02
5	200 lbs. cotton seed meal -----	17.62
	240 lbs. acid phosphate -----	
6	200 lbs. cotton seed meal -----	16.72
	200 lbs. kainit -----	
7	200 lbs. kainit -----	11.00
	240 lbs. acid phosphate -----	
8	No fertilizer -----	8.25
9	200 lbs. cotton seed meal -----	20.12
	240 lbs. acid phosphate -----	
	200 lbs. kainit -----	
10	200 lbs. cotton seed meal -----	18.43
	240 lbs. acid phosphate -----	
	100 lbs. kainit -----	

ROTATION EXPERIMENT.

A permanent rotation experiment was prepared by Prof. J. F. Duggar of the Alabama Experiment Station, at Auburn. This experiment is to be continued through a period of several years.

Prof. Duggar gives the following as the object of the experiment:

(1) Yield of cotton cultivated continuously on the same plots with or without vetch. Plots Nos. 3, 8, and 4, in comparison with cotton in two years' rotation. (Plots 2b and 7b), with two years' rotation (1a and 9a), and with three years' rotation. (Plots 10d, 11d, and 12b).

(2) Yield of corn cultivated continuously, with or without cowpeas between (Plots 2b and 9b), and with three years' rotation (Plots 10d and 11d).

(3) Increase in yield of cotton grown continuously on the same land, due to vetch. (Compare Plot 6 with Plots 3 and 8.)

(4) Increase in yield of corn, grown continuously, as the result of cowpeas between the rows.

(5) Value of total crops during a series of years, preferably six, produced by continuous culture, two years' rotation and three years' rotation.

(6) The most practical rotation for improving land. Fertilizers in kind and amount, to be the same for every plot, and to be the same every year, and not to obtain any nitrogen.

No fertilizer or cowpeas that follow oats or between corn. No fertilizer on oats or vetch mixed with oats.

PLAN OF ROTATION OUTLINED BY PROF. DUGGAR.

	1904.	1905.	1906.	1907.	1908.	1909.
1a	Cotton & vetch & oats, cut.	Cowpeas, cut.	Cotton & vetch & oats, cut.	Cowpeas, cut.	Cotton & vetch & oats, cut.	Cowpeas, cut.
2b	Cotton and vetch.	Corn and cowpeas.	Cotton and vetch.	Corn and cowpeas.	Cotton and vetch.	Corn and cowpeas.
3c	Cotton and vetch.	Cotton and vetch.	Cotton and vetch.	Cotton and vetch.	Cotton and vetch.	Cotton and vetch.
4	Corn.	Corn.	Corn.	Corn.	Corn.	Corn.
5	Corn and cowpeas.	Corn and cowpeas.	Corn and cowpeas.	Corn and cowpeas.	Corn and cowpeas.	Corn and cowpeas.
6	Cotton.	Cotton.	Cotton.	Cotton.	Cotton.	Cotton.
7b	Corn and cowpeas.	Cotton and vetch.	Corn and cowpeas.	Cotton and vetch.	Corn and cowpeas.	Cotton and vetch.
8c	Cotton and vetch.	Cotton and vetch.	Cotton and vetch.	Cotton and vetch.	Cotton and vetch.	Cotton and vetch.
9a	Cowpeas cut.	Cotton & vetch and oats cut.	Cowpeas, cut.	Cotton & vetch and oats cut.	Cowpeas, cut.	Cotton & vetch and oats cut.
10d	Corn and cowpeas.	Oats and cowpeas.	Cotton.	Corn and cowpeas.	Oats and cowpeas.	Cotton.
11d	Oats and cowpeas.	Cotton.	Corn and cowpeas.	Oats & cowpeas picked.	Cotton.	Corn and cowpeas.
12d	Cotton.	Corn and cowpeas.	Oats and cowpeas.	Cotton.	Corn and cowpeas.	Oats and cowpeas.

RESULTS OF ROTATION EXPERIMENT.

The results of the rotation experiment for 1907 are as follows per acre:

Plot 1—Cowpeas cut	1460 lbs.
Plot 2—Corn	13.40 bus.
Plot 3—Cotton in seed	601 lbs.
Plot 4—Corn	8.32 bus.
Plot 5—Corn	12.62 bus.
Plot 6—Cotton in seed	336 lbs.
Plot 7—Cotton in seed	610 lbs.
Plot 8—Cotton in seed	598 lbs.
Plot 9—Cotton in seed	624 lbs.
Plot 10—Corn	12.60 bus.
Plot 11—Oats as hay	1650 lbs.
Plot 12—Cotton	631 lbs.

LIME EXPERIMENTS WITH DIFFERENT CROPS.

One half acre of land was used for this experiment. The soil was broken broadcast and then thoroughly harrowed. The rows were laid off four feet apart.

These experiments were made under the direction of Prof. J. F. Duggar of the Auburn Experiment Station, who furnished the fertilizer and lime and gave the direction for their use. The lime was scattered broadcast over the plots.

CORN.

The following tables give the results of experiments with corn:

Plot.	Amt. lime used.	Yield per acre.	Increase due to lime.
1	Lime 2,000 lbs.	18.26 bu.	
2	No. lime.	13.14 bu.	5.12 bu.

We have an increase of 5.12 bus. in favor of lime. This makes an increase of more than one-third due to the use of lime.

LIME EXPERIMENT WITH COTTON.

The fertilizer was drilled as in the other experiments and the cotton cultivated as the regular field crop.

The difference was great enough with cotton to be easily detected with the eye. The staple was larger and the foliage greener on the lime plot.

Plot	Amt. lime per acre.	Amt. fert. per acre.	Yield seed cotton per acre.	Increase due to lime.
1	Lime 2,000	400	1462	
2	No lime	400	986	476

There was an increase in yield of 474 lbs. of seed cotton per acre. The increase would probably have been greater, if it had not been for the excessive rains.

LIME EXPERIMENT WITH SWEET POTATOES.

Plot.	Amt. lime. per acre.	Amt. fert. per acre.	Yield of potatoes per acre.	Increase due to lime.
1	Lime 2,000	400	186 bu.	
2	No lime	400	165 bu.	21 bu.

The lime increased the yield 21 bus. with potatoes.

LIME EXPERIMENT WITH GROUNDPEAS.

The fertilizer was applied in the drill and the lime applied broadcast as with the other crops. The foliage was of a richer, greener color where the lime was used and the yield was also increased.

Plot.	Amt. lime per acre.	Amt. fert. per acre.	Yield	Increase due to lime.
1	Lime 2,000 lbs.	400 lbs.	18.20 bu.	
2	No lime.	400 lbs.	14.12 bu.	4.08 bu.

We have here an increase of 4.08 bushels due to lime. The groundpeas were better filled out where the lime was applied.

LIME EXPERIMENT WITH SORGHUM.

Plot.	Amt. lime per acre.	Amt. fert. per acre.	Yield of hay per acre.	Increase due to lime.
1	Lime 2,000	400 bu.	6420 lbs.	
2	No lime.	400 bu.	4236 lbs.	21.84

The increase with sorghum due to lime was 2184 lbs.

Lime was also applied to velvet beans and sorghum but conditions were such that they could not be gathered and weighed.

However, there is no question but what lime is beneficial to these crops.

SUBSOIL TEST.

Four plots were devoted to this test—two of cotton and two of corn.

The plots consisted of one-tenth of an acre each. One plot was subsoiled by plowing as deep as possible with a two-horse plow and following in the same furrow with

a subsoil scooter. The plot was subsoiled at least eight or ten inches deep. In no instance was the clay turned up.

Another plot was broken with a turn plow three or four inches deep, but not subsoiled with a scooter. Both plots were planted in corn. Two plots were treated in the same manner and planted in cotton. The results were as follows per acre:

Corn on subsoil plot.....	17.29 bushels.
Corn on plot not subsoiled.....	14.38 bushels.
Cotton on subsoiled plot.....	760 lbs. seed cotton.
Cotton on plot not subsoiled.....	734 lbs. seed cotton.

There was a small increase in yield with both cotton and corn on the subsoiled plots.

NITRATE OF SODA WITH OATS.

The oats were sown October 22, 1906, and were well fertilized.

The experiment consisted of one and a quarter acres. Nitrate of soda was applied in March at the rate of 100 pounds per acre. Spaces were left to which no nitrate of soda was applied and the difference was remarkably striking. The results showed that nitrate of soda more than doubled the yield.

A good yield of oats can be had on poor land by applying a top dressing of this fertilizer.

TRUCK CROPS.

Much interest is being manifested in market garden crops in various sections of Alabama and the South. The returns from these crops far exceed the returns from cotton. This year enough acreage will be devoted to asparagus, beans and potatoes to make shipments to the different markets.

LIVE STOCK.

A Registered Shorthorn bull has been purchased and an effort will be made to improve the beef cattle in this section.

Several carloads of cattle are shipped annually from this locality to Charleston and the Savannah markets. However, they are mostly scrubs. A much larger profit could be made if the best type of beef cattle were crossed on our native cattle.

Some splendid specimens of Duroe-Jersey hogs have also been purchased.

POULTRY.

The Station owns a number of White Wyandotte chickens, also an incubator and brooder. An effort will be made to have them prove successful in a commercial way.

SCHOOL GARDEN.

Three years ago we established a school garden upon the campus. Quite a number of grasses and garden crops were planted. All the work was done by the students and the garden was used by them to study the nature and tendencies of different plants.

BREEDING PLOTS.

Breeding plots of both corn and cotton will be established this year.

Last fall a careful selection was made of about 40 of the best stalks of Mebane's Triumph cotton which grew upon half an acre. The seed from each stalk will be planted in a row and selections will be made this fall in the same manner. We hope to have a heavy yielding cotton in a few years and one that will be early enough to escape the devastation of the boll weevil when it appears in Alabama. Similar methods will also be pursued with corn.

VISITS TO THE FARM.

Frequent trips are made by the students to the farm where they are required to do a certain amount of work.

Last year the students assisted in making all of the experiments.

They are required to do a large amount of the farm work.

TO THE FARMERS OF THIS SECTION.

We desire to extend to the farmers of this section a cordial invitation to visit the Station and see what is being done. We are anxious to be of service to you in whatever way we can.