

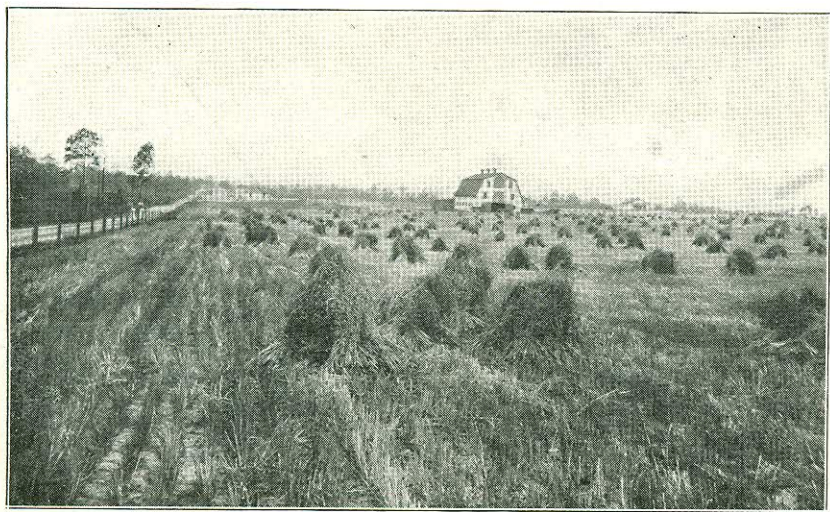
# GEORGIA COASTAL PLAIN EXPERIMENT STATION TIFTON, GA.

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June 1, 1922

Bulletin 2.

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SECOND ANNUAL REPORT  
1921

S. H. STARR, Director.



## BOARD OF TRUSTEES.

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S. H. Starr, Director.

W. J. Davis, Agronomist.

Otis Woodward, Horticulturist.

\*J. C. Hart, Tobacco Specialist.

Fred Bell, Farm Superintendent.

\*To assume duties January 1, 1922, in co-operation with the U. S. Department of Agriculture and the State College of Agriculture.

Tifton, Ga., June 1, 1922.

To His Excellency, Thomas W. Hardwick,  
Governor of Georgia.

In accordance with the regulations of the Board of Trustees, I have the honor to transmit to you herewith the Second Annual Report of the Georgia Coastal Plain Experiment Station during the administration of the late Chairman, Hon. H. H. Tift, for the year 1921, as submitted to the Board, May 5, 1922.

Very respectfully,

R. W. GOODMAN, Chairman.



Tifton, Ga., May 5, 1922.

To the Honorable Board of Trustees of the  
Georgia Coastal Plain Experiment Station.

Gentlemen:

In accordance with your regulations, I submit herewith the Second Annual Report of the Georgia Coastal Plain Experiment Station covering the work for the year 1921.

The second year's work has resulted in placing the station in position to develop the lines of investigation under way and begin work on some of the many other problems confronting the farmers of the coastal plain area of Georgia. Owing to seasonal and other variations affecting field work it is necessary to conduct the experiments over a sufficient period of time to furnish reliable data before drawing conclusions. Already, however, the results with bur clover and wheat are outstanding, and other lines of work show promise of interesting and important results. The work with pasture grasses and forage crops will, no doubt, have an important bearing on the establishment of pastures in the vast cut-over lands and the development of live stock production in South Georgia.

Increased diversity of farm crops after the advent of the boll weevil has made the problems of the farmer more complex. Many crops that heretofore occupied relatively unimportant places in the cropping system are now major or cash crops. With large areas in pecans, peaches, melons, sweet potatoes and other truck crops; with increased diversification, including such enterprises as cattle, hogs, poultry and dairy products; with the introduction of tobacco as a new crop; with new crop pests and diseases appearing; with the need of greater utilization of by-products; and with the problems connected with the production of grades or standards of farm products to meet the complex marketing situation, the need is obvious for careful investigation and research by trained men working under conditions where soil and climate are typical of the large coastal plain area of the state. Agriculture is the state's largest and most impor-

tant industry. By helping to solve the problems of this great industry, the experiment station is in position to render service that should result in the state's investment bearing high returns.

### DEVELOPMENT WORK

As during the previous year, the larger portion of the work has consisted of stumping, ditching, clearing land and other lines of development work preparatory to establishing the different lines of research, but at the same time the lines of experimental work already established have been enlarged and new experiments undertaken. Fifty acres of cut-over land was stumped and cleared in addition to drainage work and that of establishing pastures.

The newly cleared land was, in most cases, planted to field crops in order that it might, by tillage, be brought to a state of uniformity, which is necessary for experimental work. The yield of early planted sweet potatoes on such land was 88 bushels per acre when harvested the 10th of August, but the yield of such other field crops as corn and Meade cotton was low. As was true the previous year, early sweet potatoes made the heaviest yield. Very good results were obtained with tobacco on new land.



STUMPING LOW LAND.

## PERSONNEL

There being such a large amount of clearing and development work necessary to get the station tract in suitable condition for experimental work, the director and farm superintendent, with a crew of laborers, handled all of the work of the station until June 20th, at which time Mr. W. J. Davis assumed charge of the agronomy or field crop experiments, and Mr. Otis Woodward the horticultural experiments. It was expected that the U. S. Department of Agriculture would place a tobacco specialist at the station on July 1st, but at this time a man was not available for the place, which resulted in our having to carry on the tobacco work with our own forces until January 1, 1922. With the additions in personnel, the following lines of work were undertaken:

Agronomy, or field crop experiments;

Horticulture, or orchard and truck crop experiments;

Tobacco experiments;

Cattle and hog grazing and pasture experiments.

## AGRONOMY

The work with small grain was continued. This included variety tests, dates of seeding and dates of applying nitrogenous fertilizer, the results of which were published as Circular No. 1, entitled "Fall Sown Grain."

**WHEAT:** Rather striking results were secured with two varieties of wheat: The Georgia Red, a selection of blue stem, and a variety number C.I.-4159. The former produced 31.8 bushels per acre and the latter 26.3 bushels per acre. Both varieties had the desirable characters of early maturity and marked resistance to stem rust, the latter being very probably due to the earliness of maturity. These desirable characters were much more pronounced with the two varieties mentioned than with any of the others tested. The C.I.-4159 wheat pro-



duced large well filled heads, was early and although it was second in yield, due to not tillering or stooling so well, bids fair through proper selection to become an important variety in the coastal plain. Work will be continued in selecting these two varieties and making crosses with the end in view of improving or developing a variety that will be of greater value to the farmers of South Georgia.



FARMERS INSPECTING SMALL GRAIN.

**OATS:** The variety work with oats, continued from the previous year, resulted in the highest yield being made by Texas Rust Proof oats, the yield being  $62\frac{1}{2}$  bushels per acre. Dates of seeding tests conducted for the past two years showed rather clearly that the time of seeding has more influence on the yield of oats than any other factor studied. The results would indicate that about November 1st seems to be the best date to seed in this section. Tests conducted to determine the influence of sulphate of ammonia applied at different dates as a top dressing on oats indicated that for the past two years the application made February 1st gave the largest returns.

**RYE:** Abruzzes rye gave slightly the best yield in the variety test, the yield being 38.3 bushels per acre, while the



next best yield was 35.1 bushels per acre with the South Georgia rye. The other varieties tested, Virginia and Rosen, made poor yields in comparison.

BARLEY: Several varieties of barley were planted to determine their value as a grazing crop in the coastal plain area. One of these, the Hanchann, showed promise of being of value in this section.

COTTON: The following table shows results obtained in a variety test including 27 kinds of cotton. The cotton was seeded April 7th; one area being dusted with calcium arsenate as a boll weevil control measure, while the other area was untreated. On account of the frequent rains during the time the calcium arsenate was applied, no great benefit was derived from this treatment, the average increase in yield being 198 pounds of seed cotton per acre.

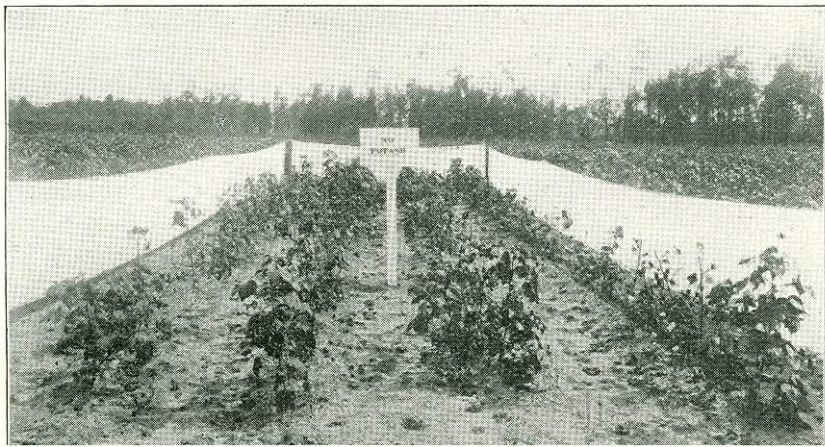
A test of this sort not only enables the determination of a variety giving the highest yields under our conditions, but offers opportunity for study and selection of a cotton which sets its fruit early and has a large number of fruiting branches and other characters desired under boll weevil conditions.

TABLE 1—COTTON VARIETY TEST

	Poisoned			Not Poisoned*	
	First Picking Sept. 6	Second Picking Sept. 20	Total Acre Yield Seed Cotton	First Picking Sept. 6	Total Acre Yield Seed Cotton
1. Petty's Toole .....	460	425	885	604	604
2. Poulnot .....	445	390	835	604	604
3. Coker's Dixie .....	290	505	795	333	333
Wilt Resistant					
4. Okra .....	595	180	775	540	540
5. Utopia .....	375	400	775	479	479
6. Texas Bur .....	390	290	680	333	333
7. Steinheimer's Cleve- land Big Boll .....	465	215	680	416	416
8. Coker's Webber (49-6B) .....	460	195	655	354	354
9. Hooper's .....	450	195	645	541	541
10. Cook's Improved .....	360	265	625	354	354
11. Fitzpatrick's Cleve- land Big Boll .....	390	230	620	407	407
12. Wannamaker's Cleve- land Big Boll .....	375	245	640	479	479
13. Coker's Hartsville (16-A) .....	235	370	605	322	322
14. College No. 1 (2-1-5-2-2) .....	470	125	595	729	729
15. Williams .....	290	305	595	385	385
16. Coker's Cleveland Big Boll (1-a-3) .....	375	215	590	333	333
17. Covington's Toole .....	290	295	585	333	333
18. Rexall .....	335	235	570	354	354
19. Coker's Webber (49-4) .....	335	220	555	333	333
20. Meade .....	265	275	540	333	333
21. Livsey's .....	360	145	505	291	291
22. Coker's Deltatype Webber .....	305	165	470		
23. Meadow's Early .....	305	130	435		
24. Half and Half .....	280	125	405	395	395
25. Broadwell's .....	280	55	335	479	479
Aver. Yield Per Acre			585		387

Gain from poisoning, 198 pounds seed cotton.

\*No second picking on unpoisoned area.



NO POTASH APPLIED TO COTTON.



POTASH APPLIED TO COTTON.

**COTTON FERTILIZER TEST:** In this work the triangular method of fertilization was used. It seems to be fairly well established that all three elements, viz.: phosphorus, nitrogen and potassium are required for maximum field crop production in the coastal plain area. It was the intention, therefore, of this



experiment to determine the combination giving the best yields, due consideration being given to rotation and the use of legumes in the cropping system. Eighteen formulas, or combinations of fertilizer ingredients, were used in this test. The first year's results would indicate that cotton on the station tract responded more readily to phosphorus and potassium than to nitrogen. This appeared to be on account of a leguminous crop being previously grown on this land. The results could not be classed as anything like conclusive on account of it being conducted over a period of only one year and due to variation in soil, especially with regard to moisture. The following table shows the results obtained with the combinations used:

**TABLE II—COTTON FERTILIZER TEST.**

Fertilizer—500 Pounds Per Acre of Eighteen Combinations.

Formula	Pounds Seed Cotton Per Acre
8-2-6*	850
9-2-3	850
8-0-8	840
10-0-6	800
8-2-2	750
10-2-4	740
10-0-4	720
8-4-4	720
8-8-0	670
8-6-2	662
14-0-2	630
12-2-2	560
$\frac{1}{2}$ Acid Phosphate- $\frac{1}{2}$ C. S. Meal	490
10-4-2	480
10-6-0	480
16-0-0	450
12-4-0	345
14-2-0	230
Check (no fertilizer)	230

\*8% Phosphorus, 2% Ammonia, 6% Potash.

CORN: The variety work with corn would indicate that the prolific varieties seem best adapted to the coastal plain area in point of yield. This year studies were made not only for high yielding strains but for those most resistant to weevil. Following is a table showing the yield of the varieties included in the test:

TABLE III—VARIETY TEST OF CORN.

Variety	Per Cent Good Ears	Per Cent Weevil Infested Ears	Per Cent Rotten	Per Cent Sh'led Corn	Per Cent Cob	Yield Per Acre In Bus.
Marlboro .....	53.0	32.5	5.3	84	16	62.6
Whatley's .....	73.5	23.1	3.4	94	6	56.4
Puckett's .....	40.7	54.5	5.1	82	18	55.4
Hasting's .....	57.9	39.6	2.5	89	11	53.44
Ellis .....	59.5	36.2	4.2	88	12	46.3
Garrick .....	47.0	49.2	3.8	85	15	46.0
Piedmont Two Ear .....	47.5	48.0	4.5	82	18	43.1
Rast .....	75.1	19.1	5.5	82	18	43.1
Hollis .....	73.0	21.8	5.2	83	17	41.5
South Georgia .....	81.7	15.0	3.1	87	13	40.3
Coker's Pedigreed Wil- liamson .....	53.9	37.0	6.0	83	17	40.1
Garden Corn .....	78.3	16.4	6.2	84	16	37.6
Newton .....	83.7	15.0	1.2	84	16	36.9
Florida Flint .....	42.5	53.2	4.1	88	12	36.1
Earl White Dent .....	48.3	43.7	8.0	83	17	35.9
Snowflake .....	31.0	57.8	10.5	84	16	33.0
Improved Golden Dent .....	54.5	34.2	10.7	87	13	32.7
Hutchison .....	84.8	11.2	6.5	82	18	30.0
Cockes .....	25.8	71.8	2.5	82	18	27.7
White Dent .....	50.0	39.2	10.8	84	16	26.2
Hickory King .....	37.7	49.3	13.0	86	14	25.5
Reid's Early Yellow Dent	30.7	69.3	.0	86	14	18.0

The triangular fertilizer test was also used with corn, the results of which are recorded in Table IV. These results may be taken in only a very general way to indicate the influence of the fertilizer applied, as there was considerable variation in the soil used for this purpose.

TABLE IV—CORN FERTILIZER TEST—(Whatley's Prolific)

Formula	Per Cent Corn	Per Cent Cob	Yield Per Acre in Bushels
8-2-6*	92	8	60.7
8-4-4	94	6	55.3
8-2-2	82	8	52.4
8-0-8	86	14	51.3
8-6-2	86	14	50.4
12-0-4	95	5	49.0
9-2-3	77	23	47.2
$\frac{1}{2}$ Acid Phosphate- $\frac{1}{2}$ C. S. Meal	93	7	47.1
Check	88	12	46.6
10-0-6	83	17	46.0
10-4-2	86	14	45.3
8-8-0	87	13	45.2
10-2-4	87	13	43.6
10-7-0	92	8	43.5
12-2-2	91	9	42.4
16-0-0	86	14	42.4
14-0-2	84	16	42.0
12-4-0	85	15	39.1
14-2-0	86	14	34.9

\*8% Acid Phosphate, 2% Ammonia, 6% Potash.

**COWPEAS:** A number of the leading varieties of cowpeas were included in variety tests which were seeded at different dates in the spring and summer in order to study the fruiting habits of each variety and determine the influence of dates of seeding on the yield of fruit. In this connection, a part of each area was fertilized with acid phosphate and potash to determine the influence of the mineral fertilizer elements. No results were recorded, the failure of the cowpeas to mature fruit being apparently due to cowpea pod weevil.





COWPEA VARIETY TEST.

**VELVET BEANS:** A variety test of velvet beans seeded May 4th in corn and also planted separately showed that the bunch velvet bean has promise of being a valuable crop in the coastal plain. The yield of beans was low, but on account of its bunching habit the vines did not pull down or materially affect the yield of corn. The results secured are as follows:

**TABLE V—VELVET BEAN VARIETY TEST.**

**Beans Drilled Solid and Beans in Corn—No Fertilizer.**

Variety	Yield Per Acre of Beans (Pounds)		Yield Corn Per Acre (Bushels)
	Solid	In Corn	
Bunch Beans .....	804	640	15.6
Osceola Beans .....	1328	1200	4.6
90-Day Beans .....	148	640	4.2
120-Day Beans .....	246	778	1.8

Table VI shows results of tests of spacing velvet beans in corn; the 120-day variety being used for this purpose.

**TABLE VI—SPACING OF VELVET BEANS IN CORN.  
No Fertilizer—Seeded May 25.**

Method of Spacing	Yield Per Acre of Beans (Lbs.)	Yield Per Acre of Corn (Bus.)
Beans in Every Row with Corn .....	150	6.6
Beans in Every Other Row with Corn .....	75	9.1
One Row Beans—One Row Corn .....	75	11.0
One Row Beans—Two Rows Corn .....	58	12.6



**PEANUT VARIETY TEST.**

**PEANUTS:** In the variety of work with peanuts the area devoted to the varieties was divided, half of which received a fertilizer of 250 pounds of acid phosphate per acre, while the other half was not fertilized. The yields are recorded in Table VII.

**TABLE VII—PEANUT VARIETY TEST.**

Variety	Nuts on Unfertilized Area	Nuts on Fertilized Area
North Carolina .....	1531	1500
Spanish .....	1437	1500
Virginia Bunch .....	1375	1437
Improved Spanish .....	1281	1500
Valencia .....	1181	1249
McGovern .....	1062	1175



In another test with peanuts, the Spanish variety, spaced six inches in the drill, made a yield of 2625 pounds of unhulled nuts per acre, while a spacing of twelve inches in the drill, gave a yield of 2375 pounds of unhulled nuts per acre.



SOY BEAN VARIETY TEST.

**SOY BEANS:** The test with soy beans indicated that several varieties show promise of becoming valuable as a hay crop. The soy beans were planted in plats adjacent to the cowpea varieties, and it was interesting to note that while the pea pod weevil destroyed the grain crop of the cowpeas, the soy beans were affected with no pest of that nature. Several of the soy bean varieties possess fine stems and produced a superior quality of hay. This work will be continued, with a two-fold purpose; first, to determine the comparative value of the bean as a hay and grain crop; second, to determine the extent to which it may be utilized profitably as a hog grazing crop.



TABLE VIII—SOY BEAN HAY AND GRAIN TEST

No Fertilizer.

Variety	Date Cut For Hay	Cured Hay Per Acre in Lbs.	Yield of Grain Per Acre in Bushels
Black .....	Sept. 12	3040	11.00
Mammoth Yellow .....	Sept. 6	2620	7.10
Brown .....	Sept. 12	2460	6.40
Edwards .....	Oct. 4	2280	13.30
B. P. I. No. 40658 .....	Sept. 12	2220	11.25
Easy Cook .....	Sept. 3	2200	12.10
B. P. I. No. 38457 .....	Sept. 12	2040	12.00
B. P. I. No. 37250 .....	Sept. 6	1832	19.50
Virginia .....	Sept. 1	1428	15.50
Hahto .....	Sept. 17	1400	9.10



STUDENTS OF THE SECOND DISTRICT A. & M. SCHOOL STUDYING  
FORAGE CROPS AT THE STATION.

**SUMMER HAY CROPS:** The comparison of summer hay crops was made on rather uneven land, i.e., land lacking in uniformity. The dry weather resulted in rather poor germination and uneven stands, which make the results indicated in the following table of interest only as approximations of what might be expected under normal conditions.

TABLE IX.

## TEST OF GRASS AND SUMMER LEGUMES FOR HAY.

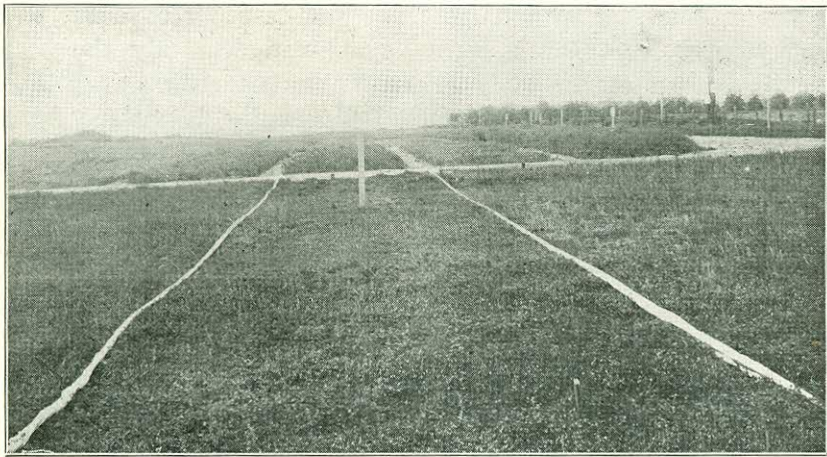
Name of Legume or Grass	Yield Per Acre		Yield Per Acre		Total Yield Per Acre in Lbs. of Hay
	First Cutting	Second Cutting	Drilled	Broad- Casted	
1. Sudan Grass .....	5728	1776	3648	3856	7504
2. Rhodes Grass .....					
(moist land) .....	2968	2216	....	....	5184
3. Rhodes Grass .....					
(dry land) .....	1344	1816	....	....	3160
4. Soy Beans (Mam- moth Yellow) .....	....	....	2932	1408	2170
5. Red Top Sorghum— & Brabham Cowpeas .....	....	....	1408	1468	1438
6. Brabham Cowpeas— & Velvet Beans .....	....	....	1304	1560	1432
7. Cowpeas (Brabham) .....	....	....	888	748	818

PASTURE GRASSES: A large number of grasses is being tested at this station and from the results secured so far the carpet grass and Dallas grass have given decidedly the best results of those under observation. These two grasses, together with Lespedeza (Japan clover) will undoubtedly, at present, form the basis of our pastures on moist land. It must be remembered, however, that at present no satisfactory grasses have been found that are sufficiently drought resistant to make a good pasture on our drier sandy hillsides. From time to time new grasses are being introduced which should lead in time to some very interesting and important results. Maiden cane and one of the Chloris species of grass show some promise for pasturage.





CANADA FIELD PEAS.



ADAPTATION TEST OF BUR CLOVERS.

**BUR CLOVERS:** A very detailed study is being made of bur clovers, that early spring pasturage may be provided. Of the large number of varieties under study one is outstanding and seems to be admirably adapted to conditions in this region. This variety (*Medicago rigidula*) was far more drought resistant than



others tested, made a vigorous growth and seeded freely. On account of the importance of early pasturage this work in adaptation of bur clover will be continued in the plot work and those that show promise will be transferred to the pasture to be tested out under grazing conditions.

Crimson clover made excellent growth in the adaptation test and bids fair to become an important winter leguminous crop. Tests will be continued with crimson clover to determine the effect of seasonal conditions on inoculation and securing a stand.

VETCHES: From the large number of vetches in the adaptation test the Oregon variety was outstanding. It not only proved to be winter hardy, but made a vigorous growth and shows promise of being a valuable crop in the coastal plain area.

ALFALFA: Two varieties of alfalfa, Kansas and Peruvian, are being tested. The work has not progressed far enough to determine the value of these varieties in this section.

KUDZU: A fair growth was obtained by planting cuttings of Kudzu February 3rd and the indications are that the roots and larger stems are winter hardy. This crop shows some promise of being of value for dry land pasturage.

GRASSES: All of the pasture grasses and winter legumes are receiving close study in the plot work. Those that show promise of being of value under these conditions are tested out in the pasture under grazing conditions. In the pasture work different methods of establishing a grazing crop are being tried out. This work is being done with carpet grass, Dallas grass and lespedeza and so far it has been found that the best results are obtained where the native vegetation was destroyed and the soil allowed to become firm. Where stumps and piles of brush were burned the best growth of grass and lespedeza was obtained. This burning eliminated competition of native growth and did not disturb the soil. Heavy burning over a large area would not be practical, however, and it would seem from the results



COUNTY AGENTS INSPECTING THE WORK OF THE STATION.

obtained so far that on new land which is scarified with a disk harrow or plowed shallow with a one-horse scooter and allowed to pack down before seeding should give good results. On account of the very dry weather in the spring poor germination resulted on all of the pasture work. It was interesting to note, however, that the best germination was on "new" land where the brush was burned, the next best on "new" land which was scootered or disked with a harrow and the next on "old" land which had been thoroughly broken. Rather heavy grazing over low wet land where an attempt was being made to establish a carpet grass pasture proved helpful rather than detrimental as the grazing kept down the growth of native vegetation. This work of establishing a pasture is considered of very great importance and will be continued the coming year.

### HORTICULTURE

On account of the necessity of first clearing the land, work in this department was not begun until the latter part of June. This very materially limited the operations of the department, but considerable progress was made in studying varieties of

truck crops, fertilizer requirements and cultural methods with vegetable and orchard crops.

There is a great number of horticultural crops being grown on a commercial scale in the coastal plain section of the state. In many general cropping systems, such crops as melons and sweet potatoes, pecans, peaches, etc., form a large part of the farm income. The study, therefore, of factors that influence production of the horticultural crops known to be adapted, together with the selection and development of truck and fruit crops not yet in general use make the work of this department of widespread interest and importance.

## SWEET POTATOES

The yields obtained from the variety test of sweet potatoes were low due to the lateness in planting as was the case of late plantings generally. The test was conducted on new land which lacked uniformity on account of stump holes and oak runner beds and therefore the results will serve only as a rough indication of what might be expected when the soil has received further cropping and has reached a better state of uniformity.

**TABLE X—SWEET POTATO VARIETY TEST.**

**Fertilizer, 500 Pounds Per Acre of 9-2-3.**

**Date of Planting, June 26—Date of Harvesting, October 31.**

**Yields Expressed in Bushels Per Acre.**

Variety	Total Yield	No. 1 Potatoes	No. 2 Potatoes	Culls
York Yam .....	43.56	18.91	16.08	8.57
Red Bermuda .....	40.00	16.08	11.80	12.12
Triumph .....	33.21	22.50	7.14	3.57
Porto Rico .....	25.71	16.71	4.64	4.36
Golden Beauty .....	25.71	20.00	4.21	1.50
Nancy Hall .....	21.07	13.57	5.71	1.79
Yellow Yam .....	15.71	10.71	3.16	1.84



All of the work with sweet potatoes was done on new or freshly cleared land. The triangular fertilizer test was used to determine the combination of ingredients giving best results with this crop and are listed below in table XI. These results are by no means conclusive, but tend to show that acid phosphate has a relatively greater influence than any of the other fertilizer ingredients used on new land, although a combination of three elements produced the best results. This is a very important crop in South Georgia. Work will be continued with fertilizers, selections, curing, bedding, method of planting, cultural tests, etc., during the coming year.

**TABLE XI—SWEET POTATO FERTILIZER TEST.**

**Fertilizer 500 Pounds Per Acre: Sixteen Combinations. Date of Planting, June 24; Date of Harvesting, October 31.**

**Yields Expressed in Bushels Per Acre.**

Fertilizer Formula	Total Yield	No.1 Potatoes	No.2 Potatoes	Culls
10-2-4*	33.51	26.54	6.18	.79
10-4-2	31.63	25.45	4.72	1.46
12-4-0	30.18	19.27	9.09	1.82
8-6-2	30.18	18.52	9.81	1.85
8-2-6	29.59	21.36	6.90	1.33
8-4-4	29.45	20.09	6.85	2.51
12-0-4	28.72	19.36	7.63	1.73
12-2-2	27.27	19.36	6.81	1.10
8-0-8	23.27	12.72	8.27	2.28
10-6-0	22.90	15.63	5.45	1.82
10-0-6	22.54	13.83	7.27	1.44
8-8-0	21.45	14.47	5.09	1.89
14-2-0	21.09	14.18	5.45	1.46
16-0-0	18.52	13.83	3.27	1.42
14-0-2	14.91	8.36	5.09	1.46
0-8-8	4.36	1.78	1.43	1.15
Check	3.73	1.09	1.43	1.21

\*10% Acid Phosphate, 2% Ammonia, 4% Potash.

Varying amounts of 9-2-3 fertilizer under all potatoes showed an increase up to 600 pounds as indicated in the following table.

**TABLE XII—VARYING AMOUNTS OF 9-2-3 FERTILIZER.**

**Applied to Sweet Potatoes.**

**Date of Planting, June 24.**

Amount Per Acre	Total Yield	No.1 Potatoes	No.2 Potatoes	Culls
200 lbs.	14.91	7.63	5.45	1.83
400 lbs.	20.36	12.72	6.18	1.46
600 lbs.	42.90	32.72	8.36	1.82
800 lbs.	36.72	26.54	8.36	1.82
1000 lbs.	42.90	32.36	9.09	1.45

## **TOMATOES**

The following tables XIII and XIV show the results of fertilizer tests with tomatoes planted late on freshly cleared land.

**TABLE XIII—TOMATO FERTILIZER TEST**

**Fertilizer—1000 Pounds Per Acre: 12 Combinations.**

**Date Set in Field, July 5; Date of First Picking, October 19.**

**Yield Expressed in Pounds—Variety, Ponderosa.**

Fertilizer Formula	Total Yield Per Acre in Lbs.
12-2-8*	4617.20
14-0-10	3864.80
14-10-0	3724.80
10-4-6	2540.00
8-6-4	2267.20
8-2-5	2087.20
8-2-3	1687.60
10-4-8	1669.60
6-8-2	1562.40
16% Acid Phosphate	1334.80
C. S. Meal	172.80
50% Potash	54.80
Check	7.60

\*12% Acid Phosphate, 2% Ammonia, 8% Potash.

**TABLE XIV—VARYING AMOUNTS OF 8-4-10 FERTILIZER  
APPLIED TO TOMATOES.**

**(New Stone Variety)**

Pounds Fertilizer Per Acre.	Yield Per Acre in Pounds
800 lbs. ....	7009.60
1000 lbs. ....	7884.80
1200 lbs. ....	9214.80
1400 lbs. ....	9232.40

### **BEANS**

A variety test was conducted with beans on new land as shown in the following table:

**TABLE XV—BEAN VARIETY TEST.**

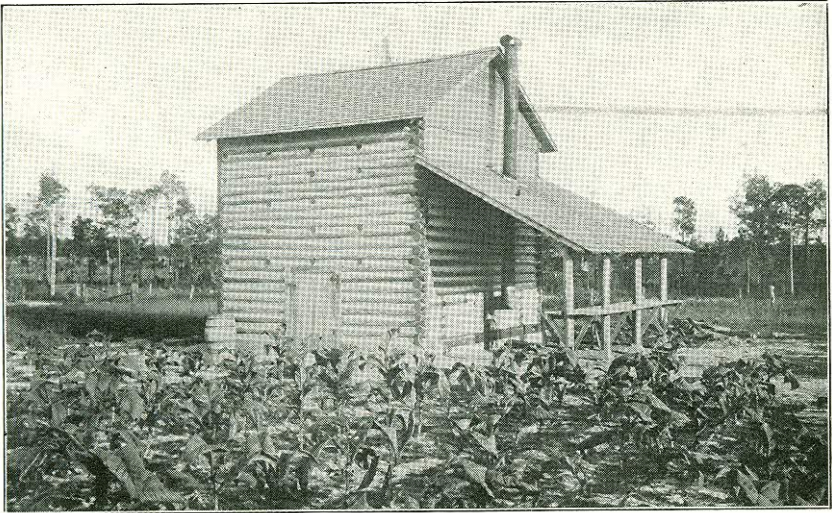
**Date Planted, July 24.**

Variety	Lbs. Per Acre (in Pod, Green Weight)
Henderson Bush Lima .....	857.75
McCaslan Pole .....	513.10
Old Homestead .....	265.34
Improved Round Pod Refugee (1000 to 1) .....	205.37
White Mexican Wax .....	132.67
Extra Early Refugee .....	109.95
Hodson Wax .....	27.37

### **ORCHARD WORK**

During the fall and winter the work of establishing an orchard began. Stress is being placed on pecan and peach work to study varieties, fertilizer requirements, insect and disease control and orchard management, but sufficient other nut and stone fruits, as well as pomaceous, citrus, vine and miscellaneous fruits and berries have been included in the orchard to furnish opportunity for adaptation, variety and other studies.





TOBACCO BARN.

## TOBACCO

Experimental work with tobacco was begun with the understanding that the U. S. Department of Agriculture would place a specialist in charge July 1st. No one was available at this time, however, which made the test conducted with our present force of a preliminary character. The tentative conclusions drawn from the tobacco work were that potash was probably not used in a sufficient quantity and there was considerable question as to whether it was used in the proper form. It was noted that the rains coming in July at the time the tobacco was ripening and being harvested proved very detrimental and resulted in second growth and consequent low grade or quality of leaf. As the quality of the product is the main factor influencing the price received the effects of dates of seeding and seasonal conditions should be thoroughly studied. Under the co-operative arrangements with the Department of Agriculture and the Georgia State College of Agriculture the tobacco work will be in charge of a

specialist and should be of much interest in the tobacco growing centers of the costal plain of Georgia.

### HOGS

A succession of grazing crops for hogs was established. It being necessary to place this on new land, the growth was not good but served to indicate that the work was entirely practicable and of value. Such a grazing system as will furnish a cheap and nutritious feed requiring a minimum of hand labor and result thereby in cheapening the cost of pork production would be looked on with much favor by the large per cent of farmers using hogs as one of their cash crops. The grazing system being tested is as follows:

1st period—Oats, rye and rape.

2nd period—Cattail millet and early amber sorghum.

3rd period—Spanish peanuts in early dent corn.

4th period—Sweet potatoes and North Carolina peanuts.

It is the purpose to continue this system as a basis and at the same time grow other grazing crops that appear to be of value in order to work out the system producing good results for the costal plain area.

### CATTLE

Pastures are being established to conduct grazing and feeding tests with cattle. It is the intention and desire to make the results as practical and useful as possible to the large number of farmers interested in growing live stock. It has been considered best, therefore, to work on grazing and feed crops rather than on breeds. With this in mind work was started on pastures and when they have become established cattle will be purchased to conduct the grazing and feeding tests.

### CONCLUSION

The most pressing needs of the station are housing accommodations and equipment. The experimental work has been

handled with a great deal of difficulty at times owing to lack of housing facilities, but plans have been perfected to remedy this situation the coming year. It has been possible to purchase only the barest necessities in the way of supplies and equipment, not only on account of limited funds, but because of the fact that it was August before any of the 1921 appropriations were received. This long delay in the receipt of funds, while unavoidable, made it necessary to hold down on expenditures to the point which made it very difficult to develop and expand the lines of work under way.

While the work of the station is just beginning and the facilities very limited, worthwhile results are in evidence. Increasing interest is being manifested in its activities as is evidenced by correspondence and visits of interested parties throughout the year. When the work has progressed far enough to justify conclusions it will be given publicity by bulletins, press articles and by encouraging personal inspection by parties of visiting farmers.

The work during the year has been pleasant in every respect and I feel deeply appreciative of the friendly and sympathetic co-operation at all times of the Executive Committee.

Respectfully submitted,

S. H. STARR, Director.



# REPORT OF TREASURER FOR THE YEAR ENDING DECEMBER 31st, 1921.

## RECEIPTS

Jan. 1st	Balance on hand .....	\$ 9,364.86
Aug. 2nd	State Appropriation .....	5,000.00
Oct. 18th	State Appropriation .....	10,000.00
Dec. 22nd	State Appropriation .....	5,000.00
	Farm Sales .....	923.10
		<hr/>
		\$30,293.96

## DISBURSEMENTS.

Salaries .....	\$ 6,491.63
Labor .....	4,559.40
Publications .....	189.10
Postage and Stationery .....	266.07
Freight and Express .....	79.97
Seeds and Plants .....	489.38
Supplies .....	776.88
Fertilizers .....	605.67
Feeding Stuffs .....	2.75
Library .....	5.00
Tools, Implements and Machinery .....	1,869.12
Furniture and Fixtures .....	71.17
Traveling Expenses .....	965.66
Contingent .....	478.66
Buildings and Repairs .....	131.54
Fences .....	279.22
Increase in Petty Fund .....	250.00
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Total Disbursements .....	\$17,511.22
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Balance on hand, Jan. 1st, 1922 .....	\$12,782.74