

12-1-1924

## Report, Raymond Branch Experiment Station 1923 and 1924

C. B. Anders

Follow this and additional works at: <https://scholarsjunction.msstate.edu/mafes-bulletins>

---

### Recommended Citation

Anders, C. B., "Report, Raymond Branch Experiment Station 1923 and 1924" (1924). *Bulletins*. 713.  
<https://scholarsjunction.msstate.edu/mafes-bulletins/713>

This Article is brought to you for free and open access by the Mississippi Agricultural and Forestry Experiment Station (MAFES) at Scholars Junction. It has been accepted for inclusion in Bulletins by an authorized administrator of Scholars Junction. For more information, please contact [scholcomm@msstate.libanswers.com](mailto:scholcomm@msstate.libanswers.com).

REPORT  
Raymond Branch Experiment  
Station  
1923 and 1924

By  
C. B. Anders

## STATION STAFF

---

D. C. Hull, M. Sc. ....	President of College
J. R. Ricks, M. Sc. ....	Director and Chief in Agronomy
M. H. Moore .....	Secretary and Financial Agent
Hugh Critz, B. Sc. ....	Agricultural Editor
E. B. Ferris, M. Sc. ....	Asst. Director, South Miss. Branch Station
C. T. Ames, B. Sc. ....	Asst. Director, Holly Springs Branch Station
C. B. Anders, B. Sc. ....	Asst. Director, Raymond Branch Station
W. E. Ayres, M. Sc. ....	Asst. Director and Plant Breeder, Delta Branch Station
S. W. Greene .....	In Charge of Coastal Plains Branch Station*
W. F. Hand, M. Sc., Ph. D. ....	Chemist
J. S. Moore, M. Sc. ....	Chief in Dairy Husbandry
R. W. Harned, B. S. A. ....	Chief in Entomology
Geo. S. Templeton, B. Sc. ....	Animal Husbandman
C. F. Briscoe, A. M., Ph. D. ....	Bacteriologist
J. M. Beal, M. Sc. ....	Botanist
E. P. Clayton .....	Poultry Husbandman
W. C. Morse, M. Sc. ....	Geologist
A. B. McKay, B. Sc. ....	Chief in Horticulture
D. C. Neal, B. Sc., M. A. ....	Plant Pathologist
J. N. Lipscomb, M. Sc. ....	Farm Management
J. F. O'Kelley, M. Sc. ....	Plant Breeder
J. C. C. Price, B. Sc. ....	Horticulturist
C. J. Goodell, B. Sc. ....	Associate in Farm Management
K. U. Jones, B. Sc., V. M. D. ....	Veterinarian
H. W. Allen, B. Sc., M. Sc. ....	Asst. Entomologist
R. N. Lobdell, M. Sc. ....	Zoologist
W. C. Cowsert .....	Asst. Dairyman
W. S. Anderson, B. Sc. ....	Horticulturist, South Miss. Branch Station
H. F. Wallace, B. Sc. ....	Asst. at Holly Springs Branch Station
H. A. York, B. Sc. ....	Asst. at Delta Branch Station
H. H. Harned, M. S. ....	Associate in Bacteriology
Rowland Cowart, B. Sc. ....	Associate Agronomist
Miss Kittie Sue Johnson, A. B. ....	Secretary-Stenographer
Miss Fannie Page .....	Stenographer
Miss Mary Alice Lanier .....	Addressograph Operator
D. W. McIlwain .....	Superintendent of Farm
D. Maxwell .....	Foreman and Herdsman
B. V. Evans .....	Farm Foreman, South Miss. Branch Station
J. C. Ryan .....	Farm Foreman, Holly Springs Branch Station
J. C. Peyton .....	Farm Foreman, Raymond Branch Station
K. C. Livingston .....	Farm Foreman, Delta Branch Station
F. O. Cork, B. Sc. ....	Supt. Farm Management Vocational Project
H. B. Brown, Ph. D. ....	Collaborator
E. C. Ewing, M. Sc. ....	Collaborator

\*In co-operation, Bureau Animal Industry, U. S. Department of Agriculture.

# Report of The Work at the Raymond Branch Experiment Station

By C. B. Anders

---

## INTRODUCTION

This report contains a summary of the results of the more important experiments conducted here during the seasons 1923 and 1924. It does not contain all the results obtained here, as many of the tests have not progressed far enough for the results to be of general interest. Detailed results of all tests are kept on file in the Station office and can be had on request.

The year 1923 was a very disappointing one to us in getting comparable results, as well as in general yields. The extreme amount of rainfall, by drowning out plats and ruining stands, made conditions such that we were unable to obtain reliable results from many of our tests. In such cases no yields were recorded. The results published herein are only from such plats as were uniform enough for comparison.

The year 1924 has also been an unusual one, no rain of any consequence having fallen between June 1 and December 4. Under this condition the cotton crop held up fairly well; we had no boll weevil, and consequently made a good crop. Corn, however, suffered greatly, and very little data were obtained from any of the corn or lespezeza tests.

The management has been very much encouraged this year by the interest that has been shown in the Station by the farmers of this section, parties from several counties having visited the Station during the growing season, and all seemed well pleased with the work that is being conducted. A great part of the work here consists in showing visitors over the farm, answering questions, and otherwise carrying results to the farming people.

The tests here pertain only to crops, there being no live stock kept other than work animals. Some of the leading questions pertaining to money, feed, and truck crops have been taken up and are reported under the crop heads.

## COTTON

VARIETIES—Tests of the promising varieties have been conducted here for four years. Tables I, II, and III show their comparative performance. In studying these tables it is well to keep in mind that 1923 was a wet year with heavy boll weevil infestation; while 1924 was dry with no boll weevil infestation. In table III only such varieties as have been in the test for four years are given.

Table 1. Cotton Variety Test 1923.

VARIETY	Yield Seed C. Per A.	Yield Lint C. Per A.	Per Cent of Lint	Length of Staple	Price of Lint	Money Value Per A.	Rank Money Value
Miss. Sta. Trice	325.3	99.9	30.7	1 $\frac{1}{16}$	34	39.61	1
Cleveland, Wannamaker	145.1	53.5	36.9	13-16	32 $\frac{3}{4}$	19.81	19
Cleveland, Piedmont	225.5	75.1	33.3	15-16	33 $\frac{1}{2}$	28.92	6
Cleveland 54	210.7	73.5	34.9	15-16	33 $\frac{1}{2}$	28.04	7
Half & Half	194.6	73.8	37.9	$\frac{3}{4}$ F	32 $\frac{1}{4}$	26.82	9
Cook 588	163.3	60.4	37.0	$\frac{7}{8}$	33 $\frac{1}{4}$	22.65	16
Willis	253.6	88.0	34.7	15-16F	33 $\frac{1}{2}$	33.62	2
Miller	195.8	65.0	33.2	1 $\frac{1}{16}$	34	25.37	11
Acala No. 5	190.1	68.8	36.2	1 $\frac{1}{16}$	34	26.42	10
Lone Star—65	226.0	75.7	33.5	1 $\frac{1}{8}$	34 $\frac{1}{2}$	29.88	5
Salsbury	166.3	54.4	32.7	1 $\frac{1}{8}$ F	34 $\frac{1}{2}$	21.57	18
Webber 49-4	184.8	56.5	30.6	1 $\frac{1}{4}$	36 $\frac{1}{2}$	23.83	14
Webber Deltatype	212.6	63.6	29.9	1 $\frac{1}{4}$ F	37	27.25	8
Sunpress	199.0	54.9	27.6	1 $\frac{1}{4}$ F	37	23.91	13
Delfos 631	228.4	75.1	32.9	1 $\frac{3}{16}$ F	35 $\frac{1}{4}$	30.30	4
Delfos 6102	168.2	54.2	32.2	1 $\frac{3}{16}$	35	21.82	17
Express, Walcott	148.9	44.4	29.8	1 $\frac{3}{16}$	35	18.51	20
Express 782	115.9	38.1	32.9	1 $\frac{3}{16}$	35	15.30	22
Express, Lightning	252.6	76.8	30.4	1 $\frac{1}{16}$	35	31.23	3
Express 630	196.3	60.1	30.6	1 $\frac{3}{16}$	35	24.44	12
Express, D. & P. L. No. 3	118.6	36.3	30.6	1 $\frac{1}{4}$	36 $\frac{1}{2}$	15.31	21
Express 350	196.6	55.6	28.3	1 $\frac{3}{16}$	35	22.99	15

Note: Willis cotton has heretofore been called Willis Triumph. It is so different from ordinary Triumph that the Experiment Station organization has decided to call it Willis.

Table II. Cotton Variety Test 1924.

VARIETY	Yield Seed C. Per A	Yield Lint C. Per A.	Per Cent of Lint	Length of Staple	Price of Lint	Total Money Value	Rank in Money Value
Lone Star 65	1305	462.1	35.4	1 $\frac{1}{8}$	25.00	132.39	1
Acala	1232	469.5	38.1	1 1-32	24.75	131.46	2
D. & P. L. No. 4	1194	461.2	38.6	1 $\frac{1}{8}$ F	25.25	131.11	3
Willis	1277	461.1	36.1	15-16F	24.40	128.84	4
Delfos 6102	1258	438.9	34.9	1 $\frac{1}{8}$ F	25.25	127.20	5
Cleveland 54	1227	455.3	37.1	15-16	24.25	125.85	6
Delfos 911	1196	416.3	34.8	1 $\frac{1}{8}$	26.00	123.84	7
Miller	1227	439.5	35.9	1	24.50	123.43	8
Half & Half	1131	468.2	41.4	13-16	23.50	123.23	9
Salsbury	1229	428.9	34.9	1 $\frac{1}{8}$	25.00	123.23	10
Cleveland, Piedmont	1163	436.2	37.5	$\frac{7}{8}$ F	24.00	119.23	11
Lightning Express	1145	374.5	32.7	1 $\frac{3}{8}$	27.00	116.54	12
Cook 1346	1075	425.9	39.6	$\frac{7}{8}$	23.75	114.14	13
Cleveland, Coker	1063	411.5	38.7	15-16	24.25	112.83	14
Delfos 631	1111	376.8	33.9	1 $\frac{1}{8}$	26.00	112.67	15
Lone Star 65-A2	1112	385.9	34.7	1 $\frac{1}{8}$	25.00	111.01	16
Express 782	1056	354.8	33.6	1 $\frac{1}{8}$ F	26.50	108.05	17
D. & P. L. No. 5	1001	345.4	34.5	1 $\frac{3}{8}$	27.00	106.37	18
Miss Sta. Trice	1090	360.8	33.1	1	24.50	102.98	19
Cleveland, Wannamaker	909	361.7	39.8	$\frac{7}{8}$	23.75	96.84	20
Burdett Trice	946	320.8	33.9	15-16	24.25	90.30	21
Deltatype Webber	811	232.0	28.6	1 $\frac{3}{8}$	27.00	74.32	22
Webber 49-6	778	231.0	29.7	1 $\frac{3}{8}$	27.00	73.30	23

Note: Willis cotton has heretofore been called Willis Triumph. It is so different from the ordinary Triumph that the Experiment Station organization has decided to call it Willis.

Table III. Summary Cotton Variety tests—1921-22-23-24.

VARIETY	Average Lint Per cent	Average Length of Staple	Total Money Value	Rank in Money Value
Miss. Station Trice	31.8	1 3-64	86.29	4
Cleveland, Wannamaker	38.1	51-64	73.61	13
Cleveland 54	36.1	55-64	84.35	7
Cleveland, Piedmont	35.7	13-16	81.46	11
Half & Half	42.2	11-16	84.99	5
Miller	34.3	1 3-64	82.44	8
Lone Star 65	33.9	1 $\frac{1}{8}$	95.28	2
Acala	33.9	1 3-64	84.65	6
Salsbury	33.8	1 3-64	81.89	10
Delfos—6102	33.0	1 5-32	98.21	1
Delfos—631	33.0	1 3-16	90.45	3
Express—782	32.9	1 3-16	82.12	9
Webber—49	30.1	1 15-64	68.60	14
Deltatype Webber	30.1	1 $\frac{1}{4}$	75.89	12

CONCLUSIONS—Based on the above information we recommend,

1. For hill land, Miss. Station Trice, Willis Triumph, Cleveland-54, Acala, and Miller.

2. For bottom and rich hill land, Delfos, Lone Star-65, Miss. Station Trice, Acala, and Miller.

FERTILIZERS—Tables IV and V show results from fertilizer work here for two years. It is interesting to note that fertilizers as a whole gave profitable results, even with as low yields as were obtained in 1923.

Table IV. Cotton Fertilizer Test—1923.

FERTILIZER USED Pounds Per Acre	Yield Per A.	Increase Per A.	Cost of Fertilizer	Value of Increase	Net Profit Per Acre
200 lbs. A.P., 100 lbs. N.S.	191.8	77.4	4.55	9.29	4.74
200 lbs. A.P., 150 lbs. N.S.	227.8	133.4	5.92	16.01	10.09
300 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	183.0	119.3	6.35	14.31	7.96
200 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	124.8	57.3	5.45	6.88	1.43
300 lbs. A.P., 200 lbs. N.S. and 100 lbs. Kainit	215.5	144.8	9.10	17.37	8.27
200 lbs. A.P., 200 lbs. N.S. and 100 lbs. Kainit	229.9	114.9	8.20	13.79	5.59
5 tons Stable Manure and 200 lbs. A.P.	338.5	218.6	6.80	26.23	19.43
5 tons Stable Manure and 200 lbs. A.P., 100 lbs. Kainit	288.3	140.0	7.70	16.79	9.09

All plats in this test are not recorded, some having been drowned out. Check plats are not given, all increase yields being figured from a non-fertilized plat adjoining each plat.

Table V. Cotton Fertilizer Test—1924.

Plot No.	FERTILIZER USED Pounds Per Acre	Yield Per Acre	Increase Per Acre	Cost of Fertilizer	Value of Increase	Net Profit Per Acre
1	100 lbs. Nitrate Soda	527.9	73.3	2.86	7.33	4.47
2	No Fertilizer	454.6				
3	200 lbs. Acid Phosphate	542.6	88.3	1.67	8.83	7.16
4	200 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	690.3	292.1	5.33	29.21	23.88
5	No Fertilizer	398.2				
6	200 lbs. A.P., 100 lbs. N.S.	484.2	136.0	4.53	13.60	9.07
7	150 lbs. A.P., 100 lbs. N.S. and 75 lbs. Kainit	528.0	188.4	4.72	18.84	14.12
8	No Fertilizer	344.6				
9	150 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	524.9	180.3	4.92	18.03	13.11
10	250 lbs. A.P., 100 lbs. N.S.	424.0	127.7	4.95	12.77	7.82
11	No Fertilizer	296.3				
12	250 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	499.4	203.1	5.75	20.31	14.56
13	300 lbs. A.P., 150 lbs. N.S.	397.1	138.7	6.80	13.87	7.07
14	No Fertilizer	258.4				
15	300 lbs. A.P., 150 lbs. N.S. and 100 lbs. Kainit	582.0	323.6	7.60	32.36	24.76
16	300 lbs. A.P., 200 lbs. N.S.	520.4	139.3	8.23	13.93	5.70
17	No Fertilizer	331.1				
18	300 lbs. A.P., 200 lbs. N.S. and 100 lbs. Kainit	608.8	277.7	9.03	27.77	18.74
19	400 lbs. A.P., 300 lbs. N.S. and 100 lbs. Kainit	683.5	284.1	11.3	28.41	17.11
20	No Fertilizer	399.4				

COOPERATIVE FERTILIZER TESTS—Tables VI, VII, VIII, and IX give results of tests made in cooperation with the farmers named. All measuring of land and weighing of fertilizer and yields were done by the writer.

Table VI. Cooperative Cotton Fertilizer Test with Mr. J. B. Brabston, Bovina, Miss.—1924.

FERTILIZER USED Pounds Per Acre	Yield Per Acre	Increase Per Acre	Cost of Fertilizer	Value of Increase	Net Profit Per Acre
100 lbs. Nitrate Soda	451.7	185.4	\$18.54	\$ 2.86	\$15.68
200 lbs. Acid Phosphate	274.6	8.3	.83	1.67	.84 loss
No Fertilizer	266.3				
200 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	454.0	187.7	18.77	5.33	13.44
200 lbs. A.P., 100 lbs. N.S. No Fertilizer	465.6 282.7	182.9	18.29	4.53	13.76
150 lbs. A.P., 100 lbs. N.S. and 75 lbs. Kainit	491.9	209.2	20.92	4.72	16.20
160 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	501.9	176.7	17.67	4.92	12.75
No Fertilizer	325.2				
250 lbs. A.P., 100 lbs. N.S.	536.0	211.8	21.18	4.95	16.23
250 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	550.4	196.2	19.62	5.75	13.87
No Fertilizer	354.2				
300 lbs. A.P., 150 lbs. N.S.	559.1	194.9	19.49	6.80	12.69
300 lbs. A.P., 150 lbs. N.S. and 100 lbs. Kainit	557.3	247.4	24.74	7.60	17.14
No Fertilizer	309.9				
300 lbs. A.P., 200 lbs. N.S.	631.0	322.0	32.20	8.23	21.97
300 lbs. A.P., 200 lbs. N.S. and 100 lbs. Kainit	652.1	342.2	34.22	9.03	25.19

o. rect  
he fol

Profit  
Acres  
99  
64 loss

Table V  
ovina,

16  
37

Fertili  
Pounds

16  
84

100# N1

87

200# A

88

No Fer

05

200# A

45

N. Sod

97

200# A

18

No Fer

18

150# A

87

75# B

88

150# A

87

100# B

87

No Fer

87

250# A

87

250# A

87

100# B

87

No Fer

87

300# A

87

300# A

87

1

87

1

87

1

87

1

87

1

87

1

87

1

87

1

87

1

87

1

87

Net Profit  
Per Acre  
\$10.55  
17.05

31.78  
15.34

25.50

26.46

9.00

6.18

10.95

13.19

11.49

19.95

Correction sheet for Bulletin 224, "Report Raymond Branch Station".  
The following tables should be as follows:

Table VI, Cooperative Cotton Fertilizer Test with Mr. J. B. Brabston,  
Oxona, Miss., -1924.

Fertilizer Used Pounds per Acre	Yield Per Acre	Increase Per Acre	Value of Increase	Cost of Fertilizer Per Acre	Net Profit Per Acre
100# Nitrate Soda	451.7	185.4	\$18.54	\$2.86	\$15.68
200# Acid Phosphate	274.6	8.3	.83	1.67	.84 loss
No Fertilizer	266.3				
200# Acid Phosphate 100# N Soda, 100# Kainit	454.0	187.7	18.77	5.33	13.44
200# A. P. 100# N. S.	465.6	182.9	18.29	4.53	13.76
No Fertilizer	282.7				
150# A. P. 100# N. S. & 75# Kainit	491.9	209.2	20.92	4.72	16.20
150# A. P. 100# N. S. & 100# Kainit	501.9	176.7	17.67	4.92	12.75
No Fertilizer	325.2				
250# A. P., 100# N. S.	536.0	211.8	21.18	4.95	16.23
250# A. P. 100# N. S. & 100# Kainit	550.4	196.2	19.62	5.75	13.87
No Fertilizer	354.2				
300# A. P. 150# N. S.	559.1	194.9	19.49	6.80	12.69
300# A. P., 150# N. S. & 100# Kainit	557.3	247.4	24.74	7.60	17.14
No Fertilizer	309.9				
300# A. P., 200# N. S.	631.9	322.0	32.20	8.23	21.97
300# A. P., 200# N. S. & 100# Kainit	652.1	342.2	34.22	9.03	25.19

Table XVII. Tomato Variety Test, - 1924.

Variety	Bulk Yield Lb. Per Acre	Per cent shipping Tomatoes	Yield Shipping Tomatoes Lb. Per A	Per cent of Bulk Picked Early	Per cent of Shippers Picked Early	Average Size of Shippers
Marvel	14,937	39.0	5,818	37.7	49.9	.295
Earli Belle	15,867	28.3	4,513	29.6	47.9	.337
Golden Market	20,214	27.7	5,636	32.6	55.8	.337
Detroit	12,078	30.3	3,682	32.5	44.8	.332
Justice	12,507	26.6	3,339	32.1	46.2	.320

Table VII. Cooperative Cotton Fertilizer Test with Mr. J. B. Brabston, Bovina, Miss.—1923.

FERTILIZER USED Pounds per Acre	Yield Per Acre	Increase Per Acre	Cost of Fertilizer	Value of Increase	Net Profit Per Acre
100 lbs. Nitrate Soda	131.2	64.5	\$ 7.74	\$2.75	\$4.99
200 lbs. Acid Phosphate	76.5	9.7	1.16	1.80	.64 loss
No Fertilizer	66.3				
200 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	171.9	105.1	12.61	5.45	7.16
200 lbs. A.P., 100 lbs. N.S. No Fertilizer	151.3	74.3	8.92	4.55	4.37
150 lbs. A.P., 100 lbs. N.S. and 75 lbs. Kainit	77.1				
150 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	176.5	99.5	11.94	4.78	7.16
No Fertilizer	162.1	65.3	7.84	5.00	2.84
250 lbs. A.P., 100 lbs. N.S.	96.9				
250 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	162.4	65.6	7.87	5.00	2.87
No Fertilizer	170.2	64.8	7.78	5.90	1.88
300 lbs. A.P., 150 lbs. N.S.	105.4				
300 lbs. A.P., 150 lbs. N.S. and 100 lbs. Kainit	196.2	90.7	10.88	6.83	4.05
No Fertilizer	192.3	118.2	14.18	7.78	6.45
300 lbs. A.P., 200 lbs. N.S.	74.2				
300 lbs. A.P., 200 lbs. N.S. and 100 lbs. Kainit	225.4	151.4	18.17	8.20	9.97
No Fertilizer	251.4	177.3	21.28	9.10	12.18

Table VIII. Coop. Cotton Fertilizer Test, with Dr. J. A. Beavers, Canton, Miss.—1923.

FERTILIZER USED Pounds Per Acre	Yield Per Acre	Increase per Acre	Cost of Fertilizer	Value of Increase	Net Profit Per Acre
100 lbs. Nitrate Soda	869.1	110.9	\$13.30	\$2.75	\$10.55
200 lbs. A.P.	920.2	157.1	18.85	1.80	17.05
No Fertilizer	763.0				
200 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	1023.4	310.2	37.23	5.45	31.78
200 lbs. A.P., 100 lbs. N.S. No Fertilizer	1073.4	165.7	19.89	4.55	15.34
150 lbs. A.P., 100 lbs. N.S. and 75 lbs. Kainit	762.1				
150 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	1014.4	252.3	30.28	4.78	25.50
No Fertilizer	1015.0	262.2	31.45	5.00	26.46
250 lbs. A. P., 100 lbs. N.S.	752.4				
250 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	869.5	116.7	14.00	5.00	9.00
No Fertilizer	811.9	100.7	12.08	5.90	6.18
300 lbs. A.P., 150 lbs. N.S.	711.4				
300 lbs. A.P., 150 lbs. N.S. and 100 lbs. Kainit	841.2	148.2	17.78	6.83	10.95
No Fertilizer	804.3	174.3	20.92	7.73	13.19
300 lbs. A.P., 200 lbs. N.S.	630.0				
300 lbs. A.P., 200 lbs. N.S. and 100 lbs. Kainit	794.1	164.1	19.69	8.20	11.49
No Fertilizer	945.6	242.1	29.05	9.10	19.95

Table IX. Cooperative Fertilizer Test with Mr. J. R. Anderson, Flora, Miss.—1923.

FERTILIZER USED Pounds Per Acre	Yield Per Acre	Increase per Acre	Cost of Fertilizer	Value of Increase	Net Profit Per Acre
100 lbs. Nitrate Soda	731.2	119.6	\$14.36	\$2.75	\$11.61
200 lbs. Acid Phosphate	585.4	25.2	3.02	1.80	1.22
200 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	742.0	129.4	15.53	5.45	10.08
200 lbs. A.P., 100 lbs. N.S.	647.2	114.3	13.72	4.55	9.17
150 lbs. A.P., 100 lbs. N.S. and 75 lbs. Kainit	701.0	168.1	20.17	4.78	15.39
150 lbs. A.P., 100 lbs. N.S. and 100 lbs. Kainit	723.4	185.5	22.26	5.00	17.26
250 lbs. A.P., 100 lbs. N.S.	685.2	150.6	17.07	5.00	12.07
300 lbs. A.P., 150 lbs. N.S.	688.6	154.0	18.48	6.83	11.65
300 lbs. A.P., 160 lbs. N.S. and 100 lbs. Kainit	752.4	221.2	26.54	7.73	18.81
300 lbs. A.P., 200 lbs. N.S.	838.0	306.8	36.82	8.20	28.62
300 lbs. A.P., 200 lbs. N.S. and 100 lbs. Kainit	837.6	306.4	36.77	9.10	25.67

CONCLUSIONS—The above tests indicate conclusively that soils in this section react profitably to high quantities of fertilizers. Acid phosphate should not be used alone, nitrate of Soda does fairly well alone. A mixture of 300 pounds acid phosphate, 200 pounds nitrate soda, and 100 pounds kainit has made an outstanding profit in all tests. We advise this mixture or as near to it as possible for this section. Potash proves itself valuable and should be used in all mixtures.

SPACING—The value of close spacing has been previously proven. However, the following results are interesting:

Table X. Spacing Test—1924.

	Stalks per A.	Yield per A.	Increase in Yield	Value of Increase
Average of 7 Thin plats	10,000	641.0 lbs.		
7 thick plats	20,280	775.5 lbs.	134.5	\$13.45

This cotton was thinned entirely by negro labor. All plats were thinned too much.

## CORN

VARIETIES—The results of variety tests of 1923 and 1924 follow in tables XI and XII.

Table XI. Corn Variety Test—1923.

VARIETY	Yield Bu Ear Corn Per Acre	Per cent of Grain	Yield Bu Good Grain per acre	Yield Bu. damaged Grain Per Acre	Total Money Value per acre	Rank in Money Values
Williamson	24.00	78.28	20.31	2.25	21.64	6
Biggs Seven Bay	19.70	82.44	17.48	2.81	18.89	12
Whatley	25.36	81.56	22.65	2.32	23.81	1
Mosby, Station	22.41	82.72	20.93	1.48	21.67	5
Mosby, Delta	24.45	82.04	22.81	1.41	23.51	2
Cocke's Prolific, Sta.	24.90	80.76	22.14	2.15	23.21	3
Cocke's Prolific, Delta	22.30	84.48	20.27	2.41	21.47	7
Davis Prolific	19.02	82.96	17.04	2.01	18.04	15
Hastings	23.66	82.56	21.67	2.0	22.67	4
Vardaman	21.73	84.72	20.78	1.34	21.45	8
Marlboro	22.53	77.76	18.71	2.10	19.76	11
Laguna	20.72	83.96	15.15	2.05	16.17	18
Mexican June	21.17	82.96	19.77	1.37	20.45	10
Rockdale	19.70	84.96	16.40	3.90	18.35	13
Paymaster, Neals	19.70	82.84	12.57	7.22	16.18	17
Paymaster, Harpeth	19.36	83.44	13.86	5.65	16.69	16
Ellis	22.53	81.36	19.67	2.45	20.90	9
Delta Prolific	19.47	82.96	16.81	2.72	18.17	14
Yellow Dent, Ferguson	16.07	81.16	10.45	5.29	13.14	20
Yellow Dent, Stewart	15.06	80.40	11.99	2.44	13.21	19

Table XII. Corn Variety Test—1924.

VARIETY	Yield Bu. ear corn per acre	Per cent of grain to ear	Yield Bu. good grain per acre	Yield Bu damaged grain per acre	Total Money Value per acre	Rank in Money Value
Williamson	19.74	80.2	13.69	2.84	23.38	16
Biggs' Seven Bay	15.97	77.2	7.92	5.89	17.77	18
Whatley	23.21	83.8	15.89	4.54	28.38	6
Mosby, Station	21.75	79.6	12.41	6.17	24.79	14
Mosby, Delta	22.45	82.2	16.16	4.18	28.42	5
Mosby, Lee's	22.60	77.3	13.61	5.43	25.85	11
Mosby, Harpeth's	21.55	80.3	14.41	3.65	25.27	13
Cocke's Prolific, Station	25.02	77.5	16.72	6.43	31.51	3
Cocke's Prolific, Delta	21.49	81.3	15.69	4.09	27.63	10
Hastings	21.19	84.0	17.44	1.96	28.12	7
Laguna	28.63	78.8	24.01	2.32	38.34	1
Mexican June	28.78	80.3	23.37	1.47	36.53	2
Tennessee Red Cob	21.10	79.0	14.25	4.35	25.73	12
Paymaster	23.66	82.3	13.15	8.35	28.08	9
Ellis	22.00	80.5	17.07	2.51	28.12	8
Delta Prolific	21.40	82.7	17.92	1.71	28.59	4
Yellow Dent	18.23	74.9	8.73	6.91	20.01	17
Large Golden Dent	21.22	77.8	12.32	5.44	23.92	15

CONCLUSION—We recommend for general use, Whatley, Mosby, Cocks's Prolific, Hastings, and Ellis.

FERTILIZERS—In both 1923 and 1924 weather conditions ruined our corn fertilizer tests. For general conditions we recommend 200 pounds acid phosphate and 100 pounds nitrate soda.

### ENGLISH PEAS

FERTILIZERS—Table XIII gives results of a test to determine the best formula to use. Table XIV deals with the sources of nitrogen.

Table XIII. English or Green Pea Fertilizer Test.—1924.

Amount of Application per Acre	Yield per Acre			Average Yield Per Acre
	10-3-3 Formula	8-3-3 Formula	8-4-3 Formula	
1500 pounds	2070	2120	2625	2272
1000 pounds	2308	2500	2865	2824
Average yield per A.	2189	2310	27.45	

Table XIV. English or Green Pea Fertilizer Test.—1924.

Amount of Application per Acre	Yield per Acre		Average Yield
	Yield using nitrate soda for nitrogen	Yield using Ammonium Sulphate for nitrogen	
1000 pounds per A.	3269	2820	3045
1500 pounds per A.	3189	2581	2885
Average yield per A.	3229	2701	

CONCLUSIONS—The above tables indicate that an 8-4-3 formula, using nitrate of soda as the source of nitrogen and applied at the rate of 1000 pounds per A. is most effective.

### SNAP OR GREEN BEANS

FERTILIZERS—Tables XV and XVI deal with formulas, sources of nitrogen and rate of application.

Table XV. Snap or Green Bean Fertilizer Test.—1924.

Amount of Application per Acre	Yield per Acre			Average
	using 10-3-3 Formula	using 8-3-3 Formula	using 8-4-3 Formula	
1500 pounds per A.	2400	1489	2188	2026
1000 pounds per A.	3357	3128	2767	3084
Average yield per A.	2879	2309	2478	

Table XVI. Snap or Green Bean Fertilizer Test.—1924.

Amount of Application per Acre	Yield per Acre		
	Using nitrate soda source of nitrogen	Using Amn. Sulphate as source of nitrogen	Average
	lbs.	lbs.	lbs.
1000 pounds per A.	3972	3829	3902
1500 pounds per A.	5079	5007	5043
Average yield per A.	4526	4418	

CONCLUSIONS—The above results indicate that 1500 pounds per acre of a 10-4-3 mixture with either nitrate soda, ammonium sulphate, or a combination of the two used as the source of nitrogen.

### TOMATOES

VARIETIES—See table XVII.

Table XVII. Tomato Variety Test.—1924.

VARIETY	Bulk Yield Lbs. per A.	Per cent shipping tomatoes	Per cent Shipping Tomatoes Lbs. per A	Per cent of bulk picked early	Per cent of shipped picked early	Average size of shippers
Marvel	14,937	39.0	5,818	37.7	49.9	.295
Earli Belle	15,867	28.3	4,513	29.6	47.9	.337
Gulf States Market	20,214	27.7	5,636	32.6	55.8	.337
Detroit	12,078	30.3	3,682	32.5	44.8	.332
Globe	12,507	26.6	3,339	32.1	46.2	.320

CONCLUSION—Of the varieties in the test the Gulf States Market stands high in bulk yield, yield of shippers, earliness, and size of fruit. The Marvel stood very high in yield of shippers, percent of shippers, and earliness. It was somewhat low in size of fruit. Gulf States Market or Earli Belle is recommended for soils not infected with wilt and Marvel for wilt infected soils.

FERTILIZERS—Several phases of this subject are covered as follows: Table XVIII deals with the use of potash; table XIX with formulas; table XX with sources of nitrogen. In all these tables comparisons of varying amounts per A. are included. In table XX a standard 8-4-3 mixture was used in all plats. Combination, means equal parts of nitrogen derived from the four sources in the test.

Table XVIII. Potash test with Tomatoes.—1924.

Formula and rate of application per acre	Bulk Yield Lbs. per Acre	Per cent shipping tomatoes	Yield of shippers	Per cent of bulk picked early	Per cent shippers picked early	Average size of shippers
8—4—0 at 1000 lbs.	15,163	38.6	5,811	33.3	51.6	.294
8—4—3 at 1000 lbs.	15,989	38.4	6,087	36.9	54.6	.310
8—4—6 at 1000 lbs.	18,070	43.8	7,609	37.2	51.2	.313
8—4—0 at 1500 lbs.	17,465	40.4	7,018	38.6	52.4	.276
8—4—3 at 1500 lbs.	16,158	42.5	6,928	32.2	40.3	.324
8—4—6 at 1500 lbs.	16,540	41.3	6,888	30.4	41.8	.311
8—4—0 at 2000 lbs.	17,198	42.6	7,330	32.4	42.2	.312
8—4—3 at 2000 lbs.	18,992	43.0	8,158	33.0	47.2	.317
8—4—6 at 2000 lbs.	17,900	45.2	8,077	29.6	39.4	.320
Summary of all formulas and rates of application.						
8—4—0	16,609	40.5	6,720	34.8	48.8	.294
8—4—3	17,046	41.3	7,058	34.0	47.4	.317
8—4—6	17,503	43.4	7,528	32.4	44.1	.315
1000 lbs. per A.	16,407	40.3	6,502	35.8	52.5	.306
1500 lbs. per A.	16,721	41.4	6,945	33.7	44.8	.304
2000 lbs. per A.	18,027	43.6	7,855	31.7	42.9	.316

Table XIX. Fertilizer test with Tomatoes using different Formulas. 1924

Formula and rate of application per acre	Bulk Yield Lbs. per A	Per cent shipping tomatoes	Yield of shippers	Per cent of bulk picked early	Per cent of shippers picked early	Average size of shippers
10—3—3 at 1500 lbs.	13449	43.7	5883	34.0	42.5	.377
8—3—3 at 1500 lbs.	12474	43.8	5461	30.8	43.4	.378
8—4—3 at 1500 lbs.	9509	33.7	3205	25.5	33.0	.337
8—5—3 at 1500 lbs.	9513	43.2	4121	33.4	42.7	.383
10—3—3 at 2000 lbs.	16776	43.5	7297	33.6	40.5	.372
8—3—3 at 2000 lbs.	13477	43.3	5837	38.5	49.4	.398
8—4—3 at 2000 lbs.	12196	35.6	4348	30.8	40.2	.361
8—5—3 at 2000 lbs.	11716	37.4	4382	33.4	37.1	.324
Summary of formulas and rates of application.						
10—3—3	15113	43.6	6590	33.8	41.5	.376
8—3—3	12976	43.6	5649	34.7	46.4	.388
8—4—3	10853	34.7	3777	28.2	36.6	.349
8—5—3	10615	40.3	4257	33.4	39.9	.354
1500 lbs. per A.	11236	41.1	4668	30.9	40.4	.369
2000 lbs. per A.	13541	40.0	5466	34.1	41.8	.364

Table XX. Sources of Nitrogen in Fertilizers for Tomatoes—1924.

Source of Nitrogen and rate of application per acre	Bulk Yield Lbs. Per Acre	Per cent shipping tomatoes	Yield of shippers	Per cent of bulk picked early	Per cent of shippers picked early	Per cent size of shippers
Nitrate Soda						
1500 lbs. per A.	10880	36.3	3941	33.6	52.5	.319
Ammonium Sulphate						
1500 lbs. per A.	8536	35.7	3050	37.6	54.5	.292
Combination						
1500 lbs. per A.	8606	34.7	2992	35.8	53.0	.282
Tankage						
1500 lbs. per A.	7712	35.9	2765	27.2	36.0	.265
Cottonseed Meal						
1500 lbs. per A.	9383	34.0	3172	33.1	45.2	.282
Nitrate Soda						
2000 lbs. per A.	12769	39.9	5071	36.7	50.9	.280
Ammonium Sulphate						
2000 lbs. per A.	12436	40.5	5006	33.3	46.1	.267
Combination						
2000 lbs. per A.	14777	36.7	5428	31.3	44.3	.267
Tankage						
2000 lbs. per A.	13190	36.8	4836	33.3	47.1	.277
Cottonseed Meal						
2000 lbs. per A.	14245	37.0	5280	33.5	48.0	.277
Summary						
Nitrate Soda	11825	38.1	4506	35.2	51.7	.300
Ammonium Sulphate	10467	38.1	4026	35.5	50.3	.280
Combination	11692	35.7	4210	33.6	48.9	.274
Tankage	10451	36.4	3801	30.3	41.6	.271
Cottonseed Meal	11814	35.5	4226	33.3	46.6	.280
1500 lbs. per A.	9023	35.3	3184	33.5	48.2	.288
2000 lbs. per A.	13483	38.2	5124	33.6	47.3	.274

CONCLUSIONS—We have a clear indication of potash increasing the yield, however there seems to be a limit above which the yield decreases. There is a slight increase in the percent of marketable tomatoes, and in the size of fruit with the higher quantities of potash. Potash in high quantities made slightly later maturity. Some data were obtained relative to keeping qualities, but it was not conclusive enough to warrant definite recommendations. At least 3 percent of potash is considered necessary in a fertilizer formula.

In table XIX a 10-3-3 mixture gave highest yields. A variation of mixture affected earliness and percent of shippers very little.

In table XX nitrate of soda leads in yield as a source of nitrogen, closely followed by cottonseed meal, and a combination of sources. Nitrate of soda and ammonium sulphate led in percentage of shipping tomatoes, earliness, and size of fruit.

In all the tables 2000 pounds per acre gave the most profitable

yield, and the higher percent of shippers. A variation of quantity seemed to vary in its effect on earliness and size of fruit.

Based on these tests, we recommend the use of 2000 pounds per acre of a 10-4-3 mixture, the nitrogen derived, equal parts from nitrate soda, ammonium sulphate and cottonseed meal.

---

### GENERAL WORK

Experiments with Vetch, Burr clover, Lespedeza, Crimson clover, Soy beans and peas in rotation have not progressed sufficiently for conclusive data other than to say that: Vetch and Burr clover thrive well and reseed themselves in this section and are considered excellent soil builders and grazing crops. Soy beans grow well and are considered our best hay crop. Crimson clover thrives and is an excellent soil builder. Lespedeza is a standard hay and pasture crop here, and will yield more with less attention than any other crop.

No data are available, but outstanding results have been obtained in saving soil and crops by a small expenditure in terracing and ditching.