CIRCULAR No. 47 FEBRUARY, 1923

Alabama Agricultural Experiment Station

OF THE

Alabama Polytechnic Institute

AUBURN

DAN T. GRAY, *Director*

Results of Cotton Variety Tests

By

THE DEPARTMENT OF AGRONOMY

SUMMARY AND RECOMMENDATIONS

The following summary and recommendations are based on a careful study of the results of the cotton variety tests reported herein, and also on earlier tests conducted by this Station.

1. In north Alabama early or medium early varieties lead. The results recorded in Tables 1 and 2 indicate that the best varieties for north Alabama are Cook 1010, King, Trice, Bottoms, and Acala. Cook 1010, a product of the Alabama Experiment Station, has given splendid results, but unfortunately the supply of seed is very limited. Long staple varieties are not generally recommended.

2. For central Alabama, on wilt-free land, Cook 1010, Cook 588, Cleveland-Piedmont, Cleveland-Wannamaker, College No. 1, Toole strains, and Acala are recommended. Acala is the only one of these varieties that will produce an inch, or better than an inch, staple. Lone Star has given fairly good results, but is a little too late for general use. Results of variety tests are shown in Tables 3, 4, and 5, pages 5 and 6.

3. In south Alabama, on wilt-free land, Cook 1010, Cook 588, Cleveland-Piedmont, College No. 1, Toole and Acala are recommended. (See Tables 6 and 7, page 7.)

4. For central and south Alabama, on land infected with wilt, only wilt-resistant varieties should be planted. A summary of all tests of the resistant varieties shows that Cook 307-6, a wilt-resistant strain developed by the Alabama Experiment Station, is the leading variety. Resistant strains of Toole, Dixie-Triumph, and Dixie-Cook are also good varieties for wilt-infected land. Yields obtained in variety tests are shown in Tables 8 and 9, pages 8 and 9.

RESULTS OF COTTON VARIETY TESTS

By

THE DEPARTMENT OF AGRONOMY

The purpose of this circular is to present briefly the hitherto unpublished results of cotton variety tests conducted by the Department of Agronomy of the Alabama Experiment Station. In an effort to determine the best variety for the several sections of the State tests have been conducted in north, central, and south Alabama in addition to those made on the Experiment Station at Auburn.

RESULTS IN NORTH ALABAMA

In Table 1 the average results of four tests made in north Alabama between 1914 and 1920 are recorded. The specific dates of these tests are not known because the original records were destroyed by fire. The average results of more recent tests are recorded in Table 2. A careful study of the tables shows clearly that for north Alabama early or medium early varieties are best. Those interested in Acala and Cleveland-Piedmont varieties can find their relative standing by studying the results for 1922 in Table 2. King, Simpkins, Trice, Bottoms, and Cook 1010 are apparently better suited to north Alabama conditions than are the later maturing varieties.

TABLE 1.—COTTON VARIETY TESTS, NORTH ALABAMA

Average yields of four crops, between 1914 and 1920

Variety	Pounds of seed cotton per acre
Trice	889
King	793
Simpkins	781
Half and Half	763
Cleveland-Wannamaker	760
Sunbeam	748
Dixie	720
Triumph	683
Webber 49	653

In the tests recorded in Table 1, Cook 1010 and Bottoms were not used, because these varieties have been available for tests only in recent years. Since these two varieties were added they have out-yielded

either King or Trice, which varieties were formerly leaders in production.

The following table shows the results of the recent variety tests in north Alabama.

TABLE 2.—COTTON VARIETY TESTS, CHEROKEE CO., 1920-1922

Variety	Per cent lint Av. 1921 and 1922	Length of lint 1922 crop	Yield lint per acre		
			1922	Two-year average 1921 and 1922	Three-year average 1920, 1921, and 1922
			Lbs.	Lbs.	Lbs.
Cook 1010	44.9	7/8	332	332	356
Bottoms	35.8	1.0	286	290	322
King	37.9	3/4	288	284	293
Trice	35.9	3/4	273	251	292
Culpepper	37.5	7/8	262	296	285
Express 432	35.5	-----	220	252	279
Cleveland-Wannamaker	39.2	7/8	266	274	279
Simpkins	37.8	7/8	272	272	277
Cook 307-6	39.0	7/8	285	279	257
Lone Star	39.8	1.0	231	255	249
Toole-Wilkinson	39.0	3/4	243	243	230
Webber 49	33.1	1 1/8	232	215	214
Cook 588	41.4	3/4	290	294	---
College No. 1	37.5	7/8	270	285	---
Dixie-Triumph	38.2	7/8	221	263	---
Mexican Big Boll	36.2	1.0	224	239	---
Acala No. 5	39.9*	1 1/16	271	---	---
Cleveland-Piedmont	37.9*	7/8	242	---	---
Express 350	32.4*	1 1/8	240	---	---
Webber-Delta Type	33.5*	1 1/4	194	---	---
Trice 270-41	33.9*	1 1/4	183	---	---

*Per cent lint 1922 only.

RESULTS IN CENTRAL ALABAMA

In Tables 3 and 4 are recorded the average of a number of tests made at Auburn between 1916 and 1922. Only a few varieties were used continuously in these tests, but of those appearing throughout Cook strains, Cleveland, and Toole are the leaders. An exhaustive analysis of all the variety tests made during the past ten or twelve years shows that these three varieties were usually among the leaders.

TABLE 3.—RESULTS OF COTTON VARIETY TESTS AT AUBURN 1916-1918, 1921-1922

Variety	Pounds lint cotton per acre Five year average
Cook—Best strain	381
Cleveland-Wannamaker	366
Toole	327
Lone Star	289
Express	273
Webber 49	247*
Trice	246

* Four year average.

Reference to the recent tests recorded in Table 4 shows that these same varieties, together with College No. 1 and Cleveland-Piedmont, continue to lead in the variety tests at Auburn. The relative yields of such varieties as Cook 1010, Acala, and Dixie-Triumph may be found by an examination of the results for 1922, in Table 4.

TABLE 4.—RESULTS OF COTTON VARIETY TESTS AT AUBURN 1921 and 1922

Variety	Percent lint, 1922	Lbs. lint cotton per acre		Two-year Av. Pounds	Length of staple 1922 crop only
		1922	1921		
Cook 307-6	40.5	342	349	345	7/8
Cleveland-Piedmont	38.2	326	343	334	7/8
Cleveland-Wannamaker	39.4	290	360	325	7/8
College No. 1	39.0	319	324	321	3/4
Bottoms	38.4	311	301	306	7/8
Toole-Wilkinson	37.8	265	346	305	7/8
Culpepper	36.3	283	318	300	7/8
King	38.2	275	324	299	7/8
Simpkins	36.0	273	318	295	3/4
Lone Star	39.2	273	296	284	1.0
Express 432	34.7	258	267	262	1 1/16
Trice	35.4	233	282	258	7/8
Cook 1010	43.4	334	---	---	3/4
Dixie-Triumph	37.9	334	---	---	7/8
Acala No. 5	39.7	311	---	---	1.0
Mexican Big Boll	36.6	292	---	---	1 1/16
Cook 588	36.1	275	---	---	7/8
Trice 270-41	34.4	256	---	---	1 1/16
Webber-Delta Type	32.5	223	---	---	1 1/4
Express 350	30.9	220	---	---	1 1/8
Webber 49	31.8	210	---	---	1 3/16

Between 1914 and 1920 a number of cotton variety tests were conducted at central Alabama points other than Auburn. Specific dates and results of the individual tests were destroyed by fire but the averages were recovered from students. These figures are recorded in Table 5.

TABLE 5.—COTTON VARIETY TESTS, CENTRAL ALABAMA
Average yield of four crops between 1914 and 1920

Variety	Pounds of seed cotton per acre
Cook—Best strain	720
Culpepper	700
Half and Half	699
Express	688
Triumph	655
Trice	626
Unknown	623
King	619
Dixie	615
Toole	609
Simpkins	582

Considered as a whole, these tests show that the list of leading varieties for central Alabama does not include a single very early variety. The average yields show that it is safest to plant such medium early varieties as Cook strains, Cleveland strains, College No. 1, or Toole strains, rather than very early kinds like King, Simpkins, or Trice. Where a variety with an inch to an inch and a sixteenth staple is wanted, Acala and Lone Star are the best varieties. All of the really long staple varieties like Express and Webber are rather low producers of lint cotton.

RESULTS IN SOUTH ALABAMA

Prior to 1920 three cotton variety tests were conducted in south Alabama, near Atmore. Only the averages for these tests are available for publication because the original records were destroyed by fire. These figures are recorded in Table 6.

TABLE 6.—RESULTS OF COTTON VARIETY TESTS IN SOUTH ALABAMA, FROM 1914 TO 1920

Variety	Three year average yield Pounds seed cotton per acre
Cook—Best strain	435
Toole	412
Cleveland-Wannamaker	408
Half and Half	398
Trice	364
Dixie	362
Express	361
Unknown	356
Sunbeam	342
Triumph	342
Simpkins	284
King	272

In 1922 a satisfactory test was conducted in Butler County, the results of which are recorded in Table 7.

TABLE 7.—COTTON VARIETY TEST, BUTLER CO., 1922

Variety	Per cent Lint	Length of lint	Yield lint cotton per acre—Lbs.
Acala No. 5	40.71	1 1/8	501
King	38.17	7/8	481
Cook 1010	42.42	7/8	471
College No. 1	37.05	7/8	469
Cook 588	38.70	1.0	464
Webber-Delta Type	34.48	1 1/4	445
Bottoms	36.89	1.0	443
Toole-Wilkinson	38.22	1.0	443
Simpkins	35.90	7/8	441
Dixie-Triumph	35.34	1.0	435
Cleveland-Piedmont	38.25	7/8	424
Trice	34.18	1 1/16	410
Trice No. 270-41	33.20	1 1/8	408
Culpepper	36.39	7/8	404
Webber 49	34.42	1 1/4	392
Mexican Big Boll	35.48	1 1/16	383
Cleveland-Wannamaker	39.10	1.0	375
Express 432	34.68	1 3/16	374
Express 350	30.17	1 3/16	317
Lone Star	36.48	1 3/16	317

Tables 6 and 7 indicate that medium early varieties like Cook 1010, Cook 588, Acala, College No. 1, and Toole are satisfactory for this section. No very early varieties are among the leaders, except King in the 1922

test. Long staple varieties made a very poor showing in the Butler County test.

Wilt Resistant Variety Tests

The presence of cotton wilt (blight or black root) in many fields of south Alabama makes cotton growing hazardous unless a wilt resistant variety is used. During recent years a number of wilt resistant varieties have been developed, and the relative yields of a few of the best of them are shown in Tables 8 and 9.

TABLE 8.—Results of Wilt Resistant Variety Tests, 1922

Variety	Pounds of lint cotton per acre at			Average of three crops
	Auburn	Troy	Benton	
Cook 307-6	296	306	249	284
Toole-Petty	294	280	232	269
Dixie-Cook	303	261	225	263
Toole-Wilkinson	295	264	218	259
Toole-Council	257	282	230	256
Lewis 63	243	261	233	246
Tri-Cook	292	207	233	244
Dixie-Triumph	296	188	224	236
Cook 588	274	323	100	232
Toole-Covington	243	227	207	226
Wood	236	180	233	216
Dixie	240	221	171	211
Desoto	266	194	158	206
Register	171	232	123	175

In the above table are given the results of the tests conducted in 1922. These figures agree very closely with those obtained in 1919 and 1921, making it necessary to consider only the general average recorded in Table 9.

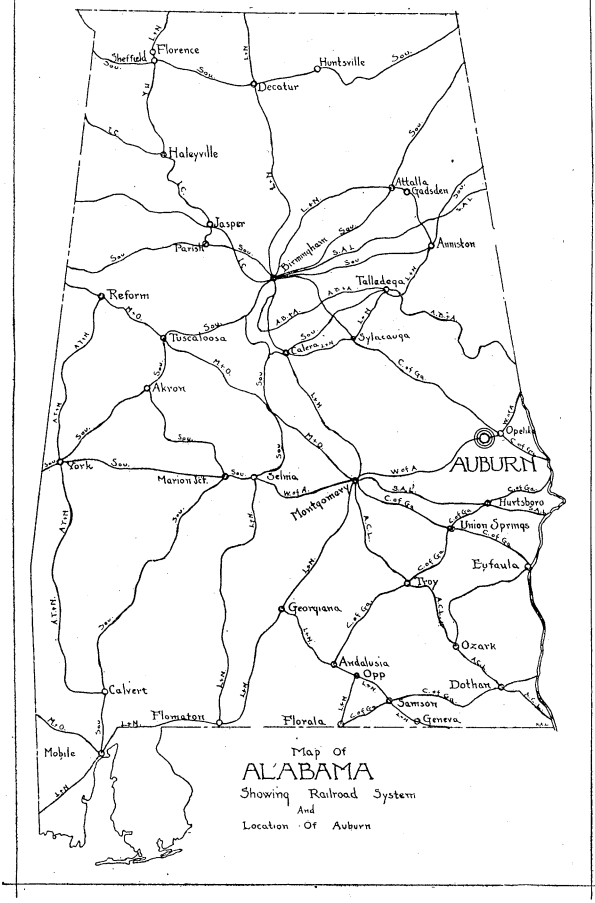
TABLE 9.—Results of Tests of Wilt Resistant Varieties of Cotton

Average of seven tests—1919, 1921, and 1922

Variety	Pounds lint cotton per acre
Cook 307-6	286
Toole Council	251
Dixie Triumph	249
Tri-Cook	249
Dixie Cook	248
Lewis 63	247
Toole-Wilkinson	246
Wood	229
Desoto	225
Dixie	210
Cook 588	195

An examination of this table shows clearly that Cook 307-6 is the best of the varieties used in these tests. Following this strain are several strains of Toole, several Cook hybrids, and Dixie-Triumph. Either of the first six or seven varieties listed in Table 9 will give satisfactory results on wilt-infected land.

Considering all of the varieties tested recently, the following usually produces a staple of 7-8 inch: Cook 1010, Bottoms, King, Trice, Culpepper, Cleveland (all strains), Cook 588, College No. 1, and Dixie-Triumph. The following usually produce a staple from 1 to 1 1-16 inches long: Lone Star, Mexican Big Boll, and Acala. Those that produce a staple of 1 2-16 to 1 4-16 are Webber 49, Webber-Delta Type, Express 432 and 350, and Register. Most of the high yielding varieties are in the short staple group.


Florence
Sheffield
Huntsville
Decatur
Haleyville
Attalla
Gadsden
Jasper
Parish
Birmingham
Anniston
Talladega
Reform
Tuscaloosa
Calera
Sylacauga
Akron
Opelika
AUBURN
York
Marion Jct.
Selma
Montgomery
Hurtsboro
Union Springs
Eufaula
Troy
Georgiana
Ozark
Andalusia
Opp
Dothan
Samson
Geneva
Calvert
Flomaton
Florala
Mobile
Map Of
AL'ABAMA
Showing Railroad System
And
Location Of Auburn