

Alabama

cotton



cotton

Variety Tests, 1974

Department of Agronomy and Soils
AGRICULTURAL EXPERIMENT STATION
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1974 ALABAMA COTTON VARIETY REPORT^{1/}

A Report of the Performance of Cotton Varieties
Tested at Nine Locations in Alabama During 1974

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The Alabama Cotton Variety Test is a continuing evaluation of available cotton varieties from both private companies and state experiment stations. Breeding lines that are likely to be released as varieties are also tested. All tests are conducted on units of the Agricultural Experiment Station by Experiment Station personnel. All phases of culture are as generally recommended by the Experiment Station to farmers. Every effort is made to test the varieties and present the data in an unbiased manner.

Experimental Design and Plot Size

A randomized block design in four replications was used at each of nine locations. Length of plots at different locations varied from 34 to 142 feet. All plots were single row.

Seasonal Conditions for the Tests

In general, weather conditions were marginal for successful establishment. The spring was cool and wet; however, it was necessary to replant skips only at the Tennessee Valley Substation, Belle Mina. Midseason conditions were good with frequent showers and no extended drouth periods. Late summer and fall were again cool and wet. At the Sand Mountain Substation, Crossville, the first freeze was early, occurring October 3. All northern locations had large numbers of near mature bolls killed by the first freeze.

^{1/}February 1975

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Fall conditions in southern Alabama were generally dry and warm through harvest. However, boll rot was a serious problem at the Wiregrass Substation, Headland. At Brewton, the season was ideal and insect control was especially effective. Yield of the best variety, McNair 511, was in excess of 3 bales per acre.

The test at the Plant Breeding Unit, Tallassee, was severely damaged by exceptionally high numbers of banded-wing whitefly, Trioleurodes abutilonea. Control efforts were largely unsuccessful.

Explanation of Data

Yield of Seed Cotton: Tests at Prattville, Tallassee, Belle Mina, Crossville, Brewton, Monroeville, and Auburn were harvested by a mechanical spindle picker. The tests at Winfield and Headland were harvested by hand. Average weight of seed cotton per acre was determined for each variety at each location.

Lint Percentage: A sample of seed cotton of each variety from each location was taken at harvest and ginned on a 10-saw gin. Lint percentage was calculated by dividing weight of lint by weight of seed cotton.

Yield of Lint: Lint yield was determined by multiplying the lint percentage by yield of seed cotton.

Fiber Properties: Measurements of fiber properties are not available at this time. A supplement to this report will be made when this information is available.

Fusarium Wilt: Reaction of varieties to Fusarium wilt was evaluated at the Plant Breeding Unit, Tallassee, by growing the varieties in fields with a high

natural incidence of Fusarium wilt. Results of these tests vary from year to year and also from different areas of the field in the same year. Therefore, it is necessary to have several year's data to realistically characterize a variety's wilt reaction. These data are summarized in Table 7. Auburn 56 is the only variety tested each year that has been highly resistant. Several other varieties appear to have resistance but are either inconsistent in response or have been tested for a relatively short period. These are McNair 511, Deltapine 25, Delcot 277, Stoneville 603, and Coker 310.

Stoneville 213 and Hancock have consistently shown a large incidence of wilt. Hancock was not tested in 1972; however, in 1973 and 1974 and years prior to 1972 it was extremely susceptible. All other varieties that have been tested for at least 3 years have some tolerance to Fusarium wilt. Judgment of resistance should not be made on a single year's data.

New and Experimental Varieties

Acala 1517-70 and Lockett 4789A were included in tests that were part of a national variety testing program. These are Western varieties included as uniform standards and are not adapted to our area. Coker 312 as a tight boll type developed for western conditions. It will not be offered for planting in this area and will not be included in future Alabama variety tests. Coker 8304 is an early maturity advanced line which will probably be released and available in 1976 under the name Coker 304. Deltapine 652 is to be released soon and may be available for planting in 1976. It is earlier than Deltapine 16 with a similar tolerance to Fusarium wilt. Stoneville 731N is a nectariless line which may be released but no sooner than 1976.

McNair 71317, 6x6-19B, lx6-56, and CS28-3M2-1 are lines used in narrow row research and were included only for comparative purposes when grown with conventional culture.

Coker 1104, Coker 220, Coker 202, Coker 11067, Dixie King 135, and Stoneville 164 are advanced breeding lines which are being evaluated as potential varieties.

Acknowledgment

I wish to express my appreciation to Dr. A. J. Kappelman, Jr., for Fusarium wilt ratings, to superintendents J. K. Boseck, J. T. Eason, Robert Moore, J. G. Starling, F. T. Glaze, Emmett Carden, and J. W. Langford for growing and harvesting the variety tests, and to Research Data Analysis for assistance in summarizing the data.

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Table 1. Performance of Cotton Varieties in Northern Alabama, 1974

Variety	Yield of lint per acre				Lint percentage			
	Belle	Cross-	Win-	Av.	Belle	Cross-	Win-	Av.
	Mina	ville	field		Mina	ville	field	
	Lb.	Lb.	Lb.	Lb.	Pct.	Pct.	Pct.	Pct.
Delcot 277	833	639	521	664	40	38	39	39
Hancock	763	573	480	605	40	40	41	40
Coker 1104	700	564	436	567	40	40	40	40
Coker 201	675	499	495	556	42	40	41	41
Deltapine 652	797	329	499	542	42	41	42	42
Coker 8304	612	514	483	536	42	42	44	43
Coker 312	587	526	455	523	42	41	43	42
Deltapine 16	652	507	397	519	39	39	40	39
McNair 210	621	506	429	519	39	37	38	38
Coker 220	530	462	551	514	41	39	43	41
Coker 202	597	493	415	502	41	39	41	40
Deltapine 45A	575	444	482	500	40	39	39	39
Stoneville 213	660	417	388	488	39	39	40	39
McNair 612	471	529	454	485	43	40	42	42
Coker 417	642	383	412	479	39	39	39	39
Dixie King III	527	433	474	478	42	39	40	40
Auburn 56	501	433	488	474	38	37	38	38
McNair 511	363	617	439	473	40	41	42	41
Coker 310	523	468	391	461	42	39	41	41
Stoneville 603	498	418	396	437	38	39	38	38
Deltapine 25	446	394	356	399	40	40	39	40
(The following varieties were not tested at all locations)								
McNair 71317	645	554			37	37		
6x6-19B	681				38			
CS28-3M2-1	665				39			
1x6-56	553				39			
Hy-Bee 200A		482				37		
Acala 1517-70		386				36		
Lockett 4789A		366				36		

Table 2. Performance of Cotton Varieties in Northern Alabama,
Two-year Average, 1973-74

Variety	Yield of lint per acre				Lint percentage			
	Belle	Cross-	Win-	Av.	Belle	Cross-	Win-	Av.
	Mina	ville	field	Lb.	Mina	ville	field	Pct.
	Lb.	Lb.	Lb.	Lb.	Pct.	Pct.	Pct.	Pct.
Delcot 277	816	509	505	610	42	39	41	41
Hancock	736	540	531	602	42	42	42	42
Deltapine 652	800	317	529	549	44	42	44	43
Coker 8304	634	470	500	535	45	43	45	44
Coker 220	640	427	516	527	43	41	44	43
Stoneville 603	638	437	505	527	40	40	39	40
Dixie King III	618	474	455	515	43	41	41	42
Stoneville 213	736	378	431	515	41	40	41	41
Deltapine 16	677	432	418	509	42	41	41	41
Auburn 56	565	440	519	508	40	38	39	39
Coker 201	642	441	440	508	44	42	42	43
McNair 612	548	481	470	500	45	42	44	44
McNair 210	597	446	432	492	40	38	39	39
Coker 310	612	435	372	473	44	41	43	43
Deltapine 45A	609	355	426	463	42	40	40	41
Coker 417	588	425	354	456	41	41	40	41
Deltapine 25	563	364	389	439	42	42	41	42
McNair 511	397	471	375	414	41	40	42	41

(The following varieties were not tested at all locations)

Coker 312	486	42
Hy-Bee 200A	404	40
Lockett 4789-A	345	37
Acala 1517-70	321	37

Table 3. Performance of Cotton Varieties in Northern Alabama

Three-year Average, 1972-74

Variety	Yield of lint per acre				Lint percentage			
	Belle	Cross-	Win-	Av.	Belle	Cross-	Win-	Av.
	Mina	ville	field		Mina	ville	field	
Lb.	Lb.	Lb.	Lb.	Pct.	Pct.	Pct.	Pct.	
Hancock	922	536	654	704	42	42	43	43
Delcot 277	940	473	631	681	42	41	42	41
Deltapine 652	948	349	656	651	44	44	45	44
Stoneville 213	896	400	601	633	41	41	42	42
Stoneville 603	807	425	612	615	40	41	40	40
Deltapine 16	855	426	552	611	42	42	42	42
Coker 201	789	433	593	605	44	43	43	43
Deltapine 45A	799	410	540	583	42	42	41	42
Coker 310	829	413	506	582	44	42	43	43
Auburn 56	707	441	598	582	40	39	39	40
McNair 210	724	444	548	572	40	39	39	39
Coker 417	791	410	504	568	41	41	41	41
Deltapine 25	757	408	535	567	42	43	43	43
McNair 511	572	482	514	523	42	40	42	41

(The following varieties were not tested at all locations)

Dixie King III		487	602			41	41
McNair 612	732				45		
Hy-Bee 200A		458				41	
Lockett 4789-A		317				38	
Acala 1517-70		289				33	

Variety	Head-land		Monroe-ville		Pratt-ville		Tallas-see		Lint percentage	
	Lb.	Pct.	Lb.	Pct.	Lb.	Pct.	Lb.	Pct.	Monroe-ville	Pratt-ville
Coker 11067	477	39	458	38	570	42				
Lockett 4789A										
Acala 1517-70										

Table 4. Performance of Cotton Varieties in Southern Alabama, 1974
(continued from preceding page)

Variety	Yield of lint per acre		Lint percentage	
	Au- burn Lb.	Head- land Lb.	Monroe- ville Lb.	Pratt- ville Lb.
Coker 11067	477	39	458	38
Lockett 4789A				
Acala 1517-70				

(Continuation of varieties which were not tested at all locations)

Coker 11067 570 42
 Lockett 4789A 477 39
 Acala 1517-70 458 38

Table 5. Performance of Cotton Varieties in Southern Alabama, Two-year Average, 1973-74.

Variety	Yield of lint per acre										Lint percentage			
	Au- burn Lb.	Brew- ton Lb.	Head- land Lb.	Monroe- ville Lb.	Pratt- ville Lb.	Tallas- see Lb.	Av. Lb.	Au- burn Pct.	Brew- ton Pct.	Head- land Pct.	Monroe- ville Pct.	Pratt- ville Pct.	Tallas- see Pct.	Av. Pct.
McNair 511	674	1,377	736	719	978	846	888	41	41	40	41	41	42	41
Deltapine 25	730	1,164	775	780	1,036	775	876	44	42	42	42	45	45	43
Coker 220	647	1,166	814	719	949	775	845	43	43	42	42	42	44	43
Stoneville 213	752	1,062	717	707	999	790	838	42	42	41	41	42	43	42
Coker 201	662	1,103	925	791	945	597	837	43	43	41	44	44	44	43
Coker 310	661	1,122	788	767	980	674	832	43	44	41	43	44	44	43
McNair 612	677	1,068	864	738	956	684	831	44	44	41	45	44	44	44
Dixie King III	664	1,189	693	751	985	690	829	42	41	39	42	43	42	41
Delcot 277	606	1,074	647	827	957	841	825	41	41	39	41	42	41	41
Auburn 56	654	1,076	816	700	868	779	816	40	39	38	39	40	39	39
Deltapine 16	694	1,007	666	775	926	786	809	43	41	39	42	42	43	42
Deltapine 652	672	972	727	764	970	742	808	44	44	42	43	45	46	44
Coker 417	651	1,149	710	716	986	610	804	42	42	40	41	42	42	41
Deltapine 45A	655	1,057	824	711	922	625	799	42	41	40	40	42	42	41
Stoneville 603	701	967	701	717	927	778	798	41	41	41	40	41	42	41
McNair 210	620	974	776	783	871	691	786	39	40	38	44	39	42	40
Hancock		1,244	729	780	957	617								
Hy-Bee 200A	761	1,049						42	39	42	42	43		
Lockett 4789-A	523							43	41					
Acala 1517-70	396							40						
								39						

(The following varieties were not tested at all locations)

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Table 6. Performance of Cotton Varieties in Southern Alabama, Three-year Average, 1972-74

Variety	Yield of lint per acre										Lint percentage					
	Au- burn Lb.	Brew- ton Lb.	Head- land Lb.	Head- land village	Monroe- ville	Pratt- ville	Tallas- see	Av. Lb.	Au- burn Pct.	Brew- ton Pct.	Head- land Pct.	Head- land village	Monroe- ville	Pratt- ville	Tallas- see	Av. Pct.
Deltapine 25	635	1,133	747	736	1,020	818	848	43	43	42	42	43	45	44	43	
McNair 511	613	1,234	705	658	975	876	844	40	41	39	39	41	42	41	41	
Stoneville 213	669	1,005	766	715	983	815	826	42	40	40	40	42	42	42	41	
Delcot 277	597	1,061	757	740	918	861	822	40	42	39	39	41	42	41	41	
Coker 201	615	1,064	887	738	918	687	818	42	43	40	40	43	43	43	43	
Coker 310	632	1,001	798	718	931	754	806	42	43	40	40	43	44	43	43	
Auburn 56	593	1,021	836	667	861	806	798	39	39	37	37	39	40	39	39	
Deltapine 16	624	926	733	702	945	822	792	41	41	39	39	42	42	42	41	
Coker 417	598	1,061	766	679	952	690	791	41	42	39	39	41	42	41	41	
Deltapine 45A	586	1,001	774	662	929	720	779	41	42	40	40	41	43	42	41	
Deltapine 652	607	919	789	698	939	701	775	43	44	42	42	43	45	42	43	
Stoneville 603	635	903	769	665	902	767	773	40	41	40	40	41	41	41	41	
McNair 210	583	882	793	681	845	686	745	38	39	38	38	43	39	38	39	
(The following varieties were not tested at all locations)																
Hancock		1,077	788	748	944	694		42	42	39	39	42	42	42	42	
Dixie King III	612		720	993	737			41	44	41	41	42	43	42	42	
McNair 612		986	849	656				42	42			44				
Hy-Bee 200A	668	1,030						42	42							
Lockett 4789-A	496							39								
Acala 1517-70	333							38								

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Table 7. Percentage of Plants Showing Symptoms of Fusarium wilt^{1/}

Variety	2-yr av.		3-yr av.		4-yr av.		5-yr av.		6-yr av.		7-yr av.		8-yr av.	
	1974	1973-74	1972-74	1971-74	1970-74	1969-74	1968-74	1967-74						
Auburn 56	35.0	32.3	24.7	23.1	27.6	24.3	23.2	20.4						
Coker 201	16.7	10.5	12.4	22.3	32.4	33.4	28.6	36.9						
Deltapine 16	22.0	19.4	21.5	30.6	41.3	39.5	38.4	35.9						
Deltapine 45A	23.3	15.4	13.4	28.2	42.0	39.6	38.0	33.7						
Stoneville 213	39.5	57.9	49.0	49.8	58.8	63.3	68.1	64.8						
Coker 310	19.7	33.2	25.4	36.7	29.4	26.2								
Coker 417	24.7	30.5	30.3	35.0	37.9	40.5								
Stoneville 603	35.3	26.1	24.2	30.5	32.1	29.5								
Delcot 277	19.3	20.2	17.3	22.4										
Deltapine 25	21.3	30.7	24.9	27.0										
McNair 210	32.3	37.6	24.8	32.9										
McNair 511	27.9	28.5	24.7	27.8										
Coker 8304	33.0	31.9	30.1											
Deltapine 652	30.7	32.2	27.1											
Coker 220	9.7	28.1												
Coker 312	20.3	30.2												
Dixie King III	8.7	25.4												
Hancock	42.0	63.0												
McNair 612	27.5	40.0												
Coker 1104	15.0													
Coker 202	20.7													
Coker 11067	17.0													

^{1/}Data were taken from a field severely infested with the Fusarium wilt fungus and root-knot nematodes, Plant Breeding Unit, Tallahassee, Alabama.