



University of Tennessee
Agricultural Experiment Station

Research Report 86-05
March 1986

S
541.5
.T4U2
1986
#5

Performance of Cotton Varieties in 1985

P. E. Hoskinson



Department of Plant
and Soil Science

Performance of Cotton Varieties in 1985

P. E. Hoskinson¹

Tennessee participates in the National-Regional Cotton Variety Testing Program. The three variety tests contain a number of standard entries that are common to equivalent experiments in a number of states. Entries from across the cotton-belt are included, and not all of them are adapted to Tennessee conditions.

Twenty-four cotton varieties were evaluated at three locations in 1985. Weather conditions at Jackson and Milan were very favorable for cotton production and both locations produced an average of approximately 1100 pounds of lint per acre. Inadequate rainfall during July followed by excessive rainfall during maturation limited lint yields at Ames Plantation to 654 pounds lint and encouraged late vegetative growth.

GaT 72-56 (since released as Tifcot 56), Coker 208, and McNair varieties were yield leaders in 1985. Deltapine 41, DES 422, and Stoneville 506 yielded well at one or more locations.

Three-year average lint yields are given in Table 5. McNair 235 and Stoneville 825 have yielded more than other varieties during this period. Wide maturity differences are also evident in Table 5.

Grade,² staple length, and micronaire values are given for each location. Staple length and micronaire values are summarized in Table 5.

¹Associate Professor of Plant and Soil Science, The University of Tennessee, Jackson, Tennessee.

²The author is indebted to Mr. Marcus Talbott and associates at the Memphis Cotton Classing office for providing the classing data reported in this publication.

Staple length and micronaire values were very satisfactory at all three locations. Grades were fair at Jackson and Milan, but they were very poor at Ames Plantation. Varietal differences are evident in Tables 2 and 3 and may influence the economic value of each entry.

Tables 6 and 8 reveal lint yield, maturity, and gin turnout data for eight varieties no-tilled into wheat and old stubble at Milan. One variety was conventionally planted and cultivated in each experiment and served as a check. Lint quality data for the two experiments are given in Tables 7 and 9. All measured properties were comparable for the two cultural methods.

Table 1. Averaged lint yield and other characteristics of 24 cotton varieties grown in Cotton Variety Tests at three Tennessee locations¹ in 1985.

Variety	Yield per Acre			Lint Quality		Gin Turnout
	Total	First Harvest		Staple	Micronaire	
	LBS	LBS	%	32's		%
GaT 72-56	1069	858	79	35.0	4.23	35.5
Coker 208	1050	871	80	35.3	4.27	36.2
McNair 235	1039	781	71	36.0	4.27	35.9
McNair 220	1035	819	77	35.7	4.37	35.7
KNX 2019	1035	715	65	35.3	4.70	35.7
GaT 77-27	1028	758	71	35.7	4.27	35.0
DES 422	1010	779	74	35.7	4.20	36.5
Stoneville 825	1003	754	71	35.7	4.40	35.0
Coker 3131	1003	746	73	35.3	4.13	35.3
Deltapine 41	993	752	71	35.7	4.13	39.2
Coker 315	974	708	71	35.7	4.10	36.7
Stoneville 506	967	741	73	36.0	3.93	36.6
Deltapine 102	965	735	73	35.0	4.10	35.2
Deltapine 50	961	700	71	35.0	4.47	32.8
Deltapine 69	952	685	69	35.7	4.53	34.4
Delcot 390	948	755	79	35.3	4.07	35.3
PD 1	926	687	72	36.3	4.20	35.2
Deltapine 90	894	584	61	35.3	4.40	34.6
Stoneville 213	878	606	63	35.3	4.50	35.3
QS 129	871	578	60	36.3	4.53	35.1
QS 137	866	620	68	35.0	4.30	34.2
Stoneville 112	862	591	68	35.7	4.00	34.2
Paymaster 145	846	698	81	35.0	4.00	35.2
Acala SJC-1	745	576	76	36.7	4.13	33.3
Average	954	713	71	35.5	4.26	35.2

¹Jackson, Milan, and Ames Plantation.

Table 2. Lint yield and other characteristics of 24 cotton varieties grown in the Cotton Variety Test at Jackson,¹ Tennessee in 1985.

Variety	Yield per Acre			Lint Quality			
	Total	First Harvest		Grade	Staple	Micro- naire	Gin Turnout
	LBS	LBS	%		32's		%
Coker 208	1314	1212	92	41	35	4.2	36.4
McNair 235	1256	1083	86	51	36	4.2	37.1
GaT 72-56	1219	1067	88	42	35	4.2	35.6
KNX 2019	1217	955	78	50	36	4.8	36.7
Stoneville 506	1212	1063	88	50	36	4.0	36.8
DES 422	1210	1042	86	50	35	4.2	36.7
Stoneville 825	1166	992	85	50	35	4.4	35.9
Deltapine 41	1158	979	85	41	35	3.9	39.7
McNair 220	1150	1002	87	51	35	4.1	35.1
Deltapine 69	1126	884	79	42	35	4.4	34.6
QS 129	1111	827	74	50	37	4.4	38.0
GaT 77-27	1107	884	80	50	36	4.3	35.8
QS 137	1104	914	83	42	35	4.2	36.0
Coker 315	1101	890	81	42	36	4.0	36.0
Stoneville 213	1081	864	80	50	36	4.4	36.6
Coker 3131	1076	874	81	52	35	4.1	35.1
Deltapine 50	1072	842	79	41	35	4.2	32.1
Deltapine 102	1066	886	83	42	35	4.0	35.1
Paymaster 145	1064	938	88	50	35	4.0	37.7
Deltapine 90	1052	758	72	42	35	4.4	36.0
Delcot 390	1032	890	79	42	35	4.1	35.5
PD 1	988	819	83	42	36	4.1	35.1
Stoneville 112	970	762	86	50	36	3.8	35.5
Acala SJC-1	888	763	86	41	37	4.1	35.5
Average	1115	925	83		35.5	4.19	35.9
Min. L.S.R. .05	146.5	189.6					
Max. L.S.R. .05	182.0	235.6					
C.V. %	11.7	18.2					

Planted May 8; harvested October 10 and October 29.

¹Dexter silt loam (2% to 5% slopes).

Table 3. Lint yields and other characteristics of 24 cotton varieties grown in the Cotton Variety Test at Milan,¹ Tennessee in 1985.

Variety	Yield per Acre			Lint Quality			
	Total	First Harvest		Grade	Staple	Micro- naire	Gin turnout
	LBS	LBS	%		32's		%
KNX 2019	1213	900	74	50	36	4.7	37.7
Deltapine 41	1212	984	81	50	36	3.9	42.3
GaT 77-27	1199	987	82	50	35	4.1	36.5
McNair 220	1194	1017	85	51	36	4.4	36.6
McNair 235	1178	937	80	51	37	4.0	37.0
Deltapine 102	1172	946	81	41	35	4.1	37.7
PD 1	1151	868	75	50	37	4.2	36.9
Stoneville 825	1134	955	84	50	36	4.0	37.6
GaT 72-56	1133	944	83	50	35	4.0	37.0
Deltapine 50	1130	894	79	41	35	4.7	35.5
Deltapine 90	1130	800	71	41	36	4.4	35.9
Deltapine 69	1128	847	75	40	36	4.5	36.5
Coker 3131	1113	920	83	51	36	4.1	38.0
QS 129	1101	757	69	50	35	4.5	36.1
DES 422	1091	885	81	50	36	4.0	38.6
Coker 315	1076	797	74	50	36	4.0	39.0
Stoneville 213	1072	789	74	50	35	4.5	37.0
Coker 208	1061	903	85	50	36	4.2	37.9
Stoneville 506	1059	822	78	50	36	3.8	39.0
Delcot 390	1040	907	87	51	36	3.9	37.7
Stoneville 112	1013	754	74	42	36	4.1	35.0
QS 137	970	666	69	50	35	4.2	34.6
Acala SJC-1	885	651	74	50	36	4.1	34.4
Paymaster 145	813	700	86	51	35	3.8	35.5
Average	1094	860	78		35.8	4.18	37.1
Min. L.S.R. .05	133.2	113.4					
Max. L.S.R. .05	165.6	141.0					
C.V. %	10.8	11.7					

Planted April 22; harvested September 18 and October 8.

¹Vicksburg silt loam (0% to 2% slopes).

Table 4. Lint yield and other characteristics of 24 cotton varieties grown in the Cotton Variety Test at Ames Plantation,¹ Tennessee in 1985.

Variety	Yield per Acre			Lint Quality			
	Total	First Harvest		Grade	Staple	Micro- naire	Gin Turnout
	LBS	LBS	%		32's		%
GaT 72-56	854	564	66	52	35	4.5	33.9
Coker 3131	820	445	54	63	35	4.2	32.8
GaT 77-27	778	402	52	52	36	4.4	32.7
Coker 208	776	499	64	52	35	4.4	34.2
McNair 220	761	439	58	62	36	4.6	35.5
Coker 315	746	436	59	52	35	4.3	35.2
DES 422	730	410	56	52	36	4.4	34.3
Delcot 390	721	468	65	52	35	4.2	32.6
Stoneville 825	710	316	45	52	35	4.8	31.4
McNair 235	683	322	47	63	35	4.6	33.7
Deltapine 50	680	365	54	52	35	4.5	30.8
KNX 2019	674	290	43	53	35	4.6	32.6
Paymaster 145	662	457	69	52	35	4.2	32.4
Deltapine 102	658	372	56	52	35	4.2	32.8
PD 1	638	373	58	53	36	4.3	33.7
Stoneville 506	629	339	54	53	36	4.0	34.0
Deltapine 41	609	292	48	53	36	4.6	35.5
Stoneville 112	603	257	43	63	35	4.1	32.1
Deltapine 69	602	323	54	52	36	4.7	32.2
QS 137	525	279	53	52	35	4.5	32.1
Deltapine 90	501	195	39	53	35	4.4	31.9
Stoneville 213	480	165	34	53	35	4.6	32.2
Acala SJC-1	463	315	68	53	36	4.2	30.0
QS 129	402	149	37	53	36	4.7	31.1
Average	654	353	53		35.4	4.42	32.7
Min. L.S.R. .05	142.2	124.4					
Max. L.S.R. .05	176.8	154.6					
C.V. %	19.5	32.3					

Planted May 13; harvested October 9 and November 6.

¹Memphis silt loam (2% to 5% slopes).

Table 5. Averaged lint yield and other characteristics of 16 cotton varieties grown in seven Cotton Variety Tests in Tennessee during the three-year period 1983-1985.

Variety	Yield per Acre			Lint Quality		
	Total	First Harvest ¹		Staple	Micro- naire	Gin Turnout
	LBS	LBS	%	32's		%
McNair 235	930	782	76	35.3	4.21	35.8
Stoneville 825	929	770	75	35.1	4.29	36.2
McNair 220	919	818	80	35.2	4.13	35.2
DES 422	913	766	78	35.3	4.09	36.7
Deltapine 69 ²	906	729	74	35.6	4.54	35.5
Deltapine 50	894	743	76	34.7	4.32	34.0
Stoneville 506	891	764	78	35.6	4.02	35.6
Coker 3131	891	753	77	35.1	4.10	36.1
Deltapine 41	884	742	75	35.3	4.18	38.5
Coker 208	876	779	79	35.0	4.25	35.9
Stoneville 213	870	628	68	34.7	4.38	35.5
Coker 315	862	725	75	35.4	3.92	36.9
Deltapine 90	861	661	69	35.1	4.27	35.4
QS 129	836	611	67	35.0	4.34	34.9
QS 137	804	634	73	34.8	4.08	34.8
PD 1 ³	777	640	75	35.9	4.01	35.7
Average	876	721	75	35.2	4.20	35.9

¹No first harvest data are available for two experiments conducted in 1983.

²Tested as Deltapine 733 in 1983.

³Tested as PD 4548 in 1983 and 1984.

Table 6. Lint yield and other characteristics of 8 cotton varieties grown in wheat residue and compared with Stoneville 213 conventionally planted at Milan,¹ Tennessee in 1985.

Entry	Yield per Acre			Gin Turnout
	Total	First Harvest		
	LBS	LBS	%	%
McNair 235	1156	1027	89	38.5
Deltapine 50	1131	996	88	37.5
Deltapine 69	1108	912	82	38.7
Stoneville 506	1073	912	85	37.8
Stoneville 825	1049	853	81	38.2
Stoneville 213 ²	1048	842	80	38.3
Paymaster 145	1045	917	88	37.1
Stoneville 213 No-till	1040	838	81	38.2
Coker 3131	1025	895	87	38.5
Average	1075	910	85	38.1
Min. L.S.R. .05	85.9	88.3		
Max. L.S.R. .05	99.1	101.9		
C.V. %	5.5	6.6		

Planted May 6; harvested October 5 and October 17.

¹Memphis silt loam (2% to 5% slopes)

²Conventionally planted and cultivated twice; all other entries were no-tilled into wheat residue.

Table 7. Lint quality data for 8 cotton varieties no-tilled into wheat residue and compared with Stoneville 213 conventionally planted at Milan,¹ Tennessee in 1985.

Variety	First Harvest			Second Harvest		
	Grade	Staple	Micronaire	Grade	Staple	Micronaire
	32's			32's		
Stoneville 213 ²	42	36	4.5	52	35	3.9
Stoneville 213	42	35	4.4	52	35	3.8
Coker 3131	51	36	4.5	52	35	3.7
Deltapine 50	42	35	4.6	42	35	4.0
Deltapine 69	42	35	4.8	42	36	4.3
McNair 235	50	36	4.3	52	35	3.8
Paymaster 145	51	36	4.2	52	35	3.9
Stoneville 506	42	35	4.6	42	36	3.7
Stoneville 825	50	35	4.7	42	35	3.9
Average		35.4	4.51		35.2	3.89

¹Memphis silt loam (2% to 5% slopes).

²Conventionally planted and cultivated twice; all other entries were no-tilled into wheat residue.

Table 8. Lint yield and other characteristics of 8 cotton varieties no-tilled in previous year's stubble and equivalent data for conventionally planted McNair 235 at Milan,¹ Tennessee in 1985.

Variety	Yield per Acre			Gin Turnout
	Total	First Harvest		
	LBS	LBS	%	%
McNair 235 No-tilled	1058	910	86	39.0
McNair 235 Conventional ² (All others no-tilled)	1028	830	81	37.4
Stoneville 506	982	821	84	37.7
Deltapine 50	978	825	84	37.3
Stoneville 825	966	733	81	37.9
Stoneville 213	927	669	72	38.1
Deltapine 69	917	717	78	38.0
Coker 3131	912	750	82	38.0
Paymaster 145	906	794	88	37.2
Average	964	783	81	37.8
Min. L.S.R. .05	71.8	85.3		
Max. L.S.R. .05	83.6	99.3		
C.V. %	6.4	9.3		

Planted May 6; harvested October 5 and October 17.

¹Memphis silt loam (2% to 5% slopes).

²"Conventional" is defined as repeated disking of the seedbed, firmed with a cultipacker and cultivated twice.

Table 9. Lint quality data for 8 cotton varieties no-tilled into previous year's stubble and for McNair 235 conventionally planted at Milan,¹ Tennessee in 1985.

Variety	First Harvest			Second Harvest		
	Grade	Staple	Micronaire	Grade	Staple	Micronaire
	32's			32's		
McNair 235						
"Conventional" ²	52	36	4.6	42	36	3.9
all others no-tilled						
McNair 235	51	36	4.3	50	36	3.8
Coker 3131	51	36	4.6	50	36	3.9
Deltapine 50	42	35	4.7	50	36	3.8
Deltapine 69	41	36	4.9	50	36	4.0
Paymaster 145	50	36	4.1	51	36	3.8
Stoneville 213	42	35	4.5	50	35	3.9
Stoneville 506	42	35	4.4	42	36	3.7
Stoneville 825	50	35	4.9	50	36	3.9
Average		35.6	4.56		35.9	3.86

¹Memphis silt loam (2% to 5% slopes).

²"Conventional" is defined as repeated disking of the seedbed, firmed with a cultipacker, and cultivated twice.