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Performance of Cotton Varieties in 1983

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Dept. of Plant and Soil Science

Performance of Cotton Varieties in 1983

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Twenty-four cotton varieties were evaluated at three locations in 1983. Three-location average yields were 723 pounds of lint per acre. Three distinctly different weather patterns influenced Tennessee cotton yields in 1983. Slow emergence and seedling growth resulted from a wet, cool spring and much cotton was replanted one or more times. A hot, dry fruiting season produced small plants and smaller bolls. An almost perfect harvesting season matured cotton, opened bolls and enhanced defoliation. The Milan test was harvested once. More than ninety percent of the cotton was obtained at first harvest of the Jackson and Ames Plantation tests.

Stoneville 213 was a yield leader at all three locations. DES 422, Stoneville 825, McNair 235, and Deltapine 733 yielded well at one or more locations. Three experimentals were yield leaders in 1983.

Three-year average lint yields are given in Table 5. McNair 235, Coker 3131, and McNair 220 have yielded more than other varieties as shown in Table 5. Wide maturity differences are also evident in Table 5.

Grade^{2/}, staple length and micronaire values are given for each location and the data are summarized in Table 6. Lint quality was excellent at all three locations. The twenty-four varieties averaged 93.4 grade index, staple length of 34.6, and micronaire reading of 4.39. Varietal differences are evident and may influence economic value of each entry.

Three-year average values for quality are given in Table 7. Data in Table 7 reflect eight environments in three years, so the data should strongly indicate varietal differences.

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Table 1. Lint yields of 24 cotton varieties grown in Cotton Variety Tests at three locations in 1983.

Variety	Yield Per Acre			
	Average	Jackson	Milan	Ames Plantation
	-----LBS-----			
Stoneville 213	817	732	812	906
DES 422	810	718	841	870
Stoneville 825	791	733	805	835
McNair 235	784	706	757	889
Deltapine 733	769	672	774	862
QS 129	751	652	714	887
Deltapine 150	747	641	772	827
Coker 3131-2903	745	649	665	921
Stoneville 506	741	640	706	876
Deltapine 62	740	620	693	907
McNair 220	730	602	707	882
Deltapine 41	724	653	777	742
Delcot 311	722	654	693	818
Deltapine NSL	719	678	753	726
Coker 3131	718	611	658	885
Deltapine 90	708	585	738	800
Coker 602-609	704	633	689	789
Coker 208	699	618	660	820
QS 137	693	616	672	792
Lockett 77	687	602	667	793
Coker 304	685	633	666	756
Coker 315	671	611	625	778
PD 4548	632	555	595	747
Acala SJ-5	589	535	583	650
Average	723.4	638.8	707.7	823.7

Table 2. Lint yields and other characteristics of 24 cotton varieties grown at Jackson, Tennessee¹ in 1983.

Variety	Yield per acre	Gin Turnout	Lint Quality		
			Grade	Staple 32's	Micro- naire
	LBS	%			
Stoneville 825	733	35.1	50	36	4.8
Stoneville 213	732	34.8	41	34	4.6
DES 422	718	35.3	50	36	4.3
McNair 235	706	33.3	51	36	4.5
Deltapine NSL	678	35.2	32	33	4.3
Deltapine 733	672	32.0	41	35	5.0
Delcot 311	654	34.1	50	35	4.3
Deltapine 41	653	35.7	50	35	4.8
QS 129	652	34.2	50	35	4.6
Coker 3131-2903	649	33.8	51	35	4.4
Deltapine 150	641	31.0	41	35	4.8
Stoneville 506	640	31.9	50	36	4.5
Coker 304	633	32.8	41	34	4.1
Coker 602-609	633	34.7	41	34	4.5
Deltapine 62	620	32.2	41	35	4.7
Coker 208	618	32.8	41	35	4.2
QS 137	616	32.3	50	35	4.2
Coker 3131	611	34.9	51	34	4.5
Coker 315	611	34.7	50	35	4.0
McNair 220	602	31.6	51	34	4.5
Lockett 77	602	32.6	41	35	4.0
Deltapine 90	585	34.1	41	36	4.2
PD 4548	555	33.2	41	35	4.4
Acala SJ-5	535	31.6	42	36	4.6
Average	638.8	33.56		35.0	4.45
Min. LSR .05	73.2				
Max. LSR .05	90.9				
C.V. %	10.0				

¹ Dexter silt loam (2% to 5% slopes).

Planted May 25; more than 90% of cotton was obtained at first harvest on Oct. 14.

Table 3. Lint yields and other characteristics of 24 cotton varieties grown at Ames Plantation, Tennessee in 1983.

Variety	Yield per acre	Gin Turnout	Lint Quality		
			Grade	Staple 32's	Micro- naire
	LBS	%			
Coker 3131-2903	921	39.6	50	34	4.5
Deltapine 62	907	37.7	40	35	4.5
Stoneville 213	906	37.2	41	34	4.4
McNair 235	889	35.6	41	35	4.5
QS 129	887	36.7	41	34	4.3
Coker 3131	885	38.4	50	35	4.6
McNair 220	882	36.3	50	35	4.3
Stoneville 506	876	36.4	41	36	4.6
DES 422	870	38.5	41	36	4.2
Deltapine 733	862	37.5	31	35	4.9
Stoneville 825	835	37.4	50	34	4.2
Deltapine 150	827	37.1	40	34	4.6
Coker 208	820	37.8	40	36	4.3
Delcot 311	818	37.3	41	36	4.1
Deltapine 90	800	36.8	40	36	4.3
Lockett 77	793	36.7	40	34	4.2
QS 137	792	36.3	41	35	4.0
Coker 602-609	789	38.4	40	35	4.1
Coker 315	778	38.0	41	36	4.2
Coker 304	756	36.7	41	34	4.0
Deltapine NSL	753	38.7	31	34	4.5
PD 4548	747	36.8	41	37	4.3
Deltapine 41	742	39.3	41	36	4.4
Acala SJ-5	650	36.7	40	36	4.6
Average	823.7	37.28		35.1	4.36
Min. LSR .05	82.2				
Max. LSR .05	102.2				
C.V. %	8.7				

¹Memphis silt loam (2% to 5% slopes).

Planted on May 6; more than 90% of cotton was obtained at first harvest on Oct. 5.

Table 4. Lint yields and other characteristics of 24 cotton varieties grown at Milan, Tennessee¹ in 1983.

Variety	Yield per acre LBS	Gin Turnout %	Lint Quality		
			Grade	Staple 32's	Micro- naire
DES 422	841	39.1	41	34	4.5
Stoneville 213	812	38.5	41	34	4.6
Stoneville 825	805	39.1	50	34	4.4
Deltapine 41	777	40.6	50	34	4.4
Deltapine 733	774	38.1	31	35	4.8
Deltapine 150	772	36.6	31	33	4.4
McNair 235	757	38.6	41	33	4.4
Deltapine 90	738	37.6	31	33	4.5
Deltapine NSL	726	37.2	31	34	4.4
QS 129	714	36.5	41	33	4.3
McNair 220	707	35.8	50	35	4.1
Stoneville 506	706	36.0	50	35	4.5
Deltapine 62	693	35.8	40	33	4.3
Delcot 311	693	36.3	41	33	4.0
Coker 602-609	689	37.9	41	34	4.5
QS 137	672	36.8	41	34	4.2
Lockett 77	667	35.6	40	34	4.0
Coker 304	666	36.6	41	34	4.2
Coker 3131-2903	665	39.7	50	33	4.4
Coker 208	660	37.6	41	33	4.6
Coker 3131	658	38.0	41	34	4.4
Coker 315	625	37.9	50	33	4.0
PD 4548	595	36.8	41	35	4.0
Acala SJ-5	583	35.7	41	35	4.4
Average	707.7	37.42		33.8	4.35
Min. LSR .05	60.5				
Max. LSR .05	75.2				
C.V. %	7.5				

¹Collins silt loam (0% to 2% slopes).

Planted May 10; one only harvest on October 3.

Table 5. Three-year¹ average lint yields and other characteristics of 16 cotton varieties grown in the Tennessee Cotton Variety Tests.

Variety	-----Yield per Acre-----			
	Total	First Harvest ²		Gin Turnout
	LBS	LBS	%	%
McNair 235	1002	809	73	35.8
Coker 3131	977	800	72	37.1
McNair 220	971	856	78	34.9
Stoneville 506	941	794	76	34.6
Stoneville 825	937	756	75	36.7
Stoneville 213	927	657	66	35.7
DES 422	927	754	76	36.1
Deltapine 62	920	690	68	34.3
QS 137	918	801	78	34.7
Coker 304	909	751	73	35.9
Delcot 311	893	757	77	35.5
Coker 315	887	714	72	36.2
Deltapine 41	859	646	69	37.5
Lockett 77	835	737	80	34.1
PD 4548	825	616	67	35.8
Acala SJ-5	605	411	67	33.5
Average	896	722	73	35.5

¹Averages for 8 experiments during the 3-year period 1981-1983.

²Average for 5 experiments during the 2-year period 1981-1982.

Table 6. Averaged lint quality of 24 cotton varieties grown at three locations in 1983 Tennessee Variety Tests.

Variety	Lint Grade	Quality Staple	Averaged Micronaire
	Index	32's	
Stoneville 213	94	34.0	4.53
Coker 304	94	34.0	4.10
McNair 220	88	34.7	4.30
Acala SJ-5	93	35.7	4.53
McNair 235	91	34.7	4.47
Stoneville 825	90	34.7	4.47
Coker 315	91	34.7	4.07
Deltapine 41	91	35.0	4.53
Stoneville 506	91	35.7	4.53
QS 137	93	34.7	4.13
Delcot 311	93	34.7	4.13
Lockett 77	96	34.3	4.13
Deltapine 62	96	34.3	4.50
Coker 3131	90	34.3	4.50
DES 422	93	35.3	4.33
PD 4548	94	35.7	4.23
QS 129	93	34.0	4.40
Coker 208	95	34.7	4.37
Deltapine 90	97	35.0	4.33
Deltapine NSL	99	33.7	4.40
Deltapine 150	97	34.0	4.60
Deltapine 733	98	35.0	4.90
Coker 602-609	95	34.7	4.37
Coker 3131-2903	88	34.0	4.47
Average	93.4	34.6	4.39

Table 7. Three-year¹ average lint quality of 16 cotton varieties grown in the Tennessee Cotton Variety Tests.

Variety	Grade Index	Staple 32's	Micronaire
Stoneville 213	90	34.6	4.44
Coker 304	88	35.1	4.17
McNair 220	85	34.7	4.24
Acala SJ-5	88	35.2	4.25
McNair 235	86	34.7	4.37
Stoneville 825	87	34.9	4.38
Coker 315	87	35.2	4.11
Deltapine 41	89	35.3	4.24
Stoneville 506	90	35.4	4.27
QS 137	90	34.8	4.23
Delcot 311	92	34.8	4.07
Lockett 77	93	34.7	3.90
Deltapine 62	94	35.2	4.31
Coker 3131	86	34.7	4.29
DES 422	90	35.2	4.13
PD 4548	91	35.4	4.27
Average	89.1	35.00	4.23

¹/1981, 1982, and 1983.