

Cotton

Missouri Crop Performance 1978



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INTRODUCTION

Locations

Cotton performance trials were planted at six Missouri locations in 1978. These locations were in Stoddard (1), New Madrid (2), and Pemiscot (3) Counties. The Stoddard County location was characterized by a sandy loam soil. The site was wilt-free. Irrigation was applied as needed. The two New Madrid County locations represented different soil types. The site near Frailey had a clay loam, wilt-free soil, whereas that near Clarkton had a sandy soil infested with fusarium wilt. The three trials in Pemiscot County were near the Delta Research Center of the University of Missouri at Portageville. These tests represented the following conditions: 1) May 15 planting on a wilt-free soil; 2) May 11 planting on a verticillium wilt infested soil; and 3) May 19 planting on a wilt-free soil. In all cases the soil was a sandy loam. See Figure 1 for the location of the sites.

EXPERIMENTAL METHODS

Seed Source

Seed companies, the Missouri Seed Improvement Association, and interested agricultural experiment stations included entries in the 1978 Missouri Cotton Performance Trials. Entries were submitted voluntarily or by invitation.

Field Plot Design

Individual entries were planted in four-row plots with six replications. A randomized block design was used to minimize the effects of soil and management differences on each single entry. Individual plots had a length of 38 feet. The distance between rows was 38 inches. The center two rows were used for all yield and fiber information.

Yield

Yield is expressed in total pounds of lint per acre. This value was calculated by taking the gin percentage (lint percent) times the seed cotton yield.

Stand

The number of plants in the center two rows of each plot was counted and converted into plants per acre. The cotton was planted at the rate of 4 seeds per foot or approximately 55,000 seeds per acre.

Maturity

The number of days to flower was recorded to give a relative measurement of maturity.

Seedling Vigor

Seedling vigor notes were taken soon after emergence to give a relative indication of the survival capability of the young plant. Seedling vigor was rated from 1 to 5 with 1 indicative of high vigor and 5 indicative of poor vigor.

Height and Lodging

These agronomic characteristics were measured at several locations. Where given, height is the average distance in inches from the soil surface to the top of the plant. Lodging was given a rating with 1 indicative of no significant lodging.

FIBER QUALITY

Micronaire

The micronaire test measures in combination the maturity and fineness of cotton fibers. The air-flow through a 'plug' of cotton by the micronaire instrument is used extensively in cotton buying and manufacturing to aid in evaluating cotton quality.

Fineness is a relative measure of either the diameter of individual cotton fibers or the weight per unit length. Fine cottons produce stronger yarns but require a reduced rate of processing.

Fiber maturity is a relative measure of the cell-wall development throughout the entire length of the cotton fiber. Immature fibers result in decreased rates of processing, dyeing problems, and the production of yarns and fabrics with low appearance grade.

Length

Long-fibered cottons are desirable because fiber length positively relates to: yarn strength, spinning of finer yarns, and high speed processing. The 2.5 percent span length measures the length in inches spanned by 2.5 percent of the fibers. The 50 percent span length is another measurement of fiber quality. This measures the length in inches spanned by 50 percent of the fiber.

Strength

Yarn strength and ease of manufacturing are positively correlated with strong-fibered cottons. The following chart categorizes strength readings and aids in the interpretation of strength values.

Strength Rating	1/8-inch Gauge
	--grams/tex--
Very high	Above 24.9
High	23.0 - 24.9
Average	21.0 - 22.9
Low	19.0 - 20.9
Very low	Below 19.0

Elongation

Cottons having high fiber elongation values have less end breakage during the weaving process than fiber with low values.

The following designations will aid in the interpretation of the elongation values.

Descriptive Designation	Fiber Elongation
	--Percent--
Very low	5.3 and below
Low	5.4 - 6.2
Average	6.3 - 7.1
High	7.2 - 8.0
Very high	8.1 and above

SUMMARY

Twenty cotton varieties were evaluated in 6 trials in Southeast Missouri during 1978. Data presented for each hybrid include yield, percent lint, plant population, seedling vigor, and days to flower. Yield is expressed in total pounds of lint per acre.

Average yield for the 20 varieties was 746 pounds of lint cotton per acre. The two highest yielding tests were conducted at the Delta Research Center on a sandy loam soil. The lowest average yield was achieved at the Malden location on a site infested with fusarium wilt. Data for individual sites are given in Tables 2, 5, 8, 11, 14, and 17. Combined results for all 6 locations are given in Table 20.

Performance of most of the cotton varieties evaluated was not consistent across locations. Results for the varieties which averaged the highest yield over all six locations are listed below. Their average yields and number of locations at which they were among the top yielding varieties are also indicated. Top yielding varieties at each location are those which did not yield significantly less than the highest yielding variety. The number of times a variety appears in the top yield group is a measure of the yield stability.

Table 1. Top yielding cotton varieties in 1978 evaluations at six Southeast Missouri locations.

Variety or Brand	Six-Location Yield (lbs/acre)	Times in Top Yield Group (lbs/acre)
Stoneville 731N	889	4
MO 74-944	888	4
Stoneville 603	855	5

Fiber analysis data is provided for each variety evaluated. Cotton buyers and manufacturers utilize such results to determine the value and end usage of a particular lot of cotton. Knowledge concerning cotton quality is an essential tool in growers successfully marketing their raw product.

Table 2. Cultural practices applied to the 1978 cotton evaluation plots.

Location	Soil Type	Fertilizer			Insecticide*	Herbicide*	Plot Size		Planting Date	Harvest Date	Cooperator (County)
		N	P ₂ O ₅	K ₂ O			Rows (no.)	Length (ft.)			
Portageville (early)	sandy loam	32-	32	- 105	*	Treflan+ Cotoran	4	38	5-11	10-23	Delta Research Center (Pemiscot)
Portageville (verticillium)	sandy loam	32-	32	- 105	*	Treflan+ Cotoran	4	38	5-11	10-23	Delta Research Center (Pemiscot)
∞ Frailey (early)	clay	60-	30	- 60	*	Treflan+ Cotoran	4	38	5-15	10-20	Jimmie Wilson (Pemiscot)
Clarkton (fusarium)	sandy	45-	32	- 105	*	Treflan	4	38	5-09	10-04	Delta Research Center (New Mad.)
Portageville (late)	sandy loam	32-	32	- 105	*	Treflan+ Cotoran	2	38	5-19	10-23	Delta Research Center (Pemiscot)
Sikeston (early)	sandy loam	27-	81	- 162	*	Treflan+ Cotoran	4	38	5-10	10-18 11-07	Robert Matthews (Stoddard)

* Herbicides and Insecticides applied at recommended rates. See MU Guide 4236 for 1978 weed control recommendations.

MISSOURI COTTON EVALUATION TRIAL LOCATIONS



FIG. 1

▲ = regular locations

△ = disease locations

Table 3. Yield performance of cotton varieties grown near Portageville, Missouri, on a sandy loam, wilt-free, non-irrigated soil in 1978.

Planted: May 15, 1978. Harvested: October 23, 1978.

Variety or Brand	Total Lint (lb/A)	Percent Lint (%)	Population (plants/A)	Days to Flower	Seedling Vigor (1-5)
Stoneville 731N	1161.1	38.3	17868	65	2.17
Vail 7	1023.5	36.6	19800	66	2.00
Stoneville 603	1006.9	36.8	22274	66	1.83
MO 74-944	967.9	37.7	22365	66	1.33
Cascot L-7	928.4	38.8	23874	62	1.67
Stoneville 213	901.6	37.4	20464	66	2.17
Deltapine 55	868.9	39.5	21822	65	2.00
Coker 310	832.8	38.6	22818	65	2.00
Delcot 277J	820.3	37.6	10745	66	1.83
Coker 304	806.7	37.6	24116	64	1.83
Stoneville 256	798.4	38.4	19558	66	2.00
Dixie King	786.3	37.6	22154	67	1.83
McNair 235	782.0	37.5	24930	64	1.33
Auburn M	774.5	36.3	18713	64	1.83
Deltapine 61	762.3	38.8	22003	65	2.33
Deltapine 16	759.8	38.2	23391	66	2.00
Des 24	724.2	39.4	20705	66	2.50
Deltapine 26	708.2	40.8	23572	67	2.00
McNair 220	684.6	37.0	16510	64	2.17
Rex 713	672.2	33.0	20826	65	2.33
Mean	838.5	37.8	20925	65	1.96
L.S.D. .05	178.1	--	3082	2	0.45
CV	18.5	--	12.8	2.2	2.0

The vertical line links all varieties which did not yield significantly less than the highest yielding variety in the trial.

Table 4. Fiber characteristics of cotton varieties evaluated near Portageville, Missouri, on a sandy loam, wilt-free, and non-irrigated soil in 1978.

Planted: May 15, 1978. Harvested: October 23, 1978.

Variety or Brand	Micro- naire	Staple Length		$E^{1/}$ %	$T^{2/}$ g/tex
		50%	2.5%		
Vail 7	4.95	0.57	1.18	5.80	20.70
McNair 235	5.10	0.55	1.15	5.75	22.15
Stoneville 731N	5.05	0.58	1.19	5.80	20.75
Stoneville 213	5.20	0.57	1.17	6.90	20.70
Coker 310	4.90	0.60	1.29	5.75	22.30
Stoneville 256	5.25	0.57	1.17	5.50	20.60
Deltapine 55	4.95	0.57	1.20	6.25	21.55
Coker 304	5.05	0.57	1.22	6.00	21.50
Rex 713	4.70	0.56	1.16	6.75	18.55
Mo74-944	4.40	0.59	1.16	7.65	24.25
Cascot L-7	5.45	0.55	1.11	6.25	19.10
Deltapine 16	5.15	0.58	1.19	7.50	22.05
McNair 220	5.35	0.56	1.13	5.40	21.55
Delcot 277J	4.50	0.59	1.20	7.25	23.40
Auburn M	4.60	0.57	1.15	6.60	19.50
Deltapine 61	5.35	0.58	1.19	6.90	21.05
Deltapine 26	5.25	0.59	1.17	6.35	22.00
Stoneville 603	5.10	0.55	1.15	6.25	21.70
Dixie King	4.90	0.57	1.15	6.10	21.40
Des 24	4.85	0.59	1.21	6.35	22.50
Mean	5.00	0.57	1.17	6.36	21.36
L.S.D. .05	0.27	0.03	0.04	0.69	2.01
C.V.	2.60	2.30	1.70	5.20	4.50

$^{1/}$ Elongation

$^{2/}$ Strength

Table 5. Yield performance of cotton varieties grown near Portageville, Missouri, on sandy loam, with verticillium wilt, non-irrigated soil in 1978.

Planted: May 11, 1978. Harvested: October 23, 1978.

Variety or Brand	Total Lint (lb/A)	Percent Lint (%)	Population (plants/A)	Days to Flower	Seedling Vigor (1-5)
Stoneville 731N	1018.8	37.9	20886	64	2.00
Stoneville 603	1010.2	37.0	20132	64	2.00
Stoneville 256	1009.9	38.7	22516	64	2.00
Stoneville 213	1002.9	38.7	19467	64	2.00
Vail 7	965.3	38.5	20705	64	2.00
Deltapine 55	902.4	40.8	23150	64	2.00
MO 74-944	897.2	37.5	20644	65	2.50
Delcot 277J	891.2	36.6	14759	65	1.83
Deltapine 26	866.8	40.4	22214	65	2.00
Dixie King	791.4	37.2	20826	65	2.00
Deltapine 61	764.3	38.9	18260	64	2.00
Deltapine 16	749.2	37.9	23874	65	2.00
Des 24	743.6	37.5	20524	65	2.00
Auburn M	739.6	35.7	21671	63	2.33
Coker 310	737.1	37.4	25081	63	2.00
Coker 304	721.1	36.7	23512	63	2.00
Rex 713	712.2	35.3	20886	64	2.17
McNair 235	693.0	37.7	21128	64	1.83
Cascot L-7	693.0	37.7	22425	63	2.00
McNair 220	660.1	37.0	16721	63	2.00
Mean	828.5	37.8	20969	64	2.03
L.S.D. .05	111.0	.6	3441	1.3	.27
CV	11.7	3.7	14.3	1.8	11.5

The vertical line links all varieties which did not yield significantly less than the highest yielding variety in the trial.

Table 6. Fiber characteristics of cotton varieties evaluated near Portageville, Missouri, on a sandy loam, non-irrigated, and infested with verticillium wilt soil in 1978. Planted: May 11, 1978. Harvested: October 23, 1978.

Variety or Brand	Micro- naire	Staple Length		$E^{1/}$	$T^{2/}$
		50%	2.5%	%	g/tex
Vail 7	4.90	0.57	1.19	6.25	21.40
McNair 235	5.20	0.57	1.16	5.80	22.15
Stoneville 731N	4.95	0.57	1.17	6.00	19.75
Stoneville 213	5.25	0.55	1.15	7.00	21.05
Coker 310	4.85	0.59	1.21	6.10	22.75
Stoneville 256	5.05	0.55	1.16	6.15	19.80
Deltapine 55	4.90	0.57	1.16	6.50	21.30
Coker 304	5.10	0.58	1.22	6.00	22.60
Rex 713	4.45	0.56	1.16	6.75	18.30
Mo74-944	4.70	0.57	1.14	7.40	23.05
Cascot L-7	5.20	0.54	1.10	6.50	20.10
Deltapine 16	5.10	0.56	1.17	8.15	20.65
McNair 220	5.10	0.57	1.17	5.75	22.75
Delcot 277J	4.20	0.59	1.21	7.60	23.55
Auburn M	4.45	0.54	1.14	7.25	20.60
Deltapine 61	5.25	0.57	1.18	7.75	21.50
Deltapine 26	5.05	0.56	1.16	6.65	21.85
Stoneville 603	5.00	0.56	1.13	6.65	21.30
Dixie King	4.80	0.56	1.16	6.65	22.50
Des 24	4.85	0.58	1.19	7.10	23.30
Mean	4.92	0.56	1.17	6.70	21.51
L.S.D. .05	0.26	0.03	0.30	0.91	1.73
CV	2.50	2.20	1.30	6.50	3.80

$E^{1/}$ Elongation

$T^{2/}$ Strength

Table 7. Yield performance of cotton varieties grown on a clay loam near Frailey, Missouri, wilt-free, and non-irrigated soil in 1978.

Planted: May 15, 1978. Harvested: October 20, 1978.

Variety or Brand	Total Lint (lb/A)	Percent Lint (%)	Population (plants/A)	Days to Flower	Seedling Vigor (1-5)
Stoneville 731N	883.9	38.8	26847	66	2.00
MO 74-944	878.7	37.1	35630	65	3.00
Cascot L-7	851.8	36.1	29428	65	2.00
Des 24	799.6	36.4	31103	66	2.00
Vail 7	775.4	36.5	27707	68	2.00
Stoneville 213	764.9	35.4	30559	68	2.00
Rex 713	761.0	32.5	29880	65	2.00
Coker 304	739.3	35.4	37577	64	2.00
McNair 235	731.7	37.3	34136	66	1.50
Delcot 277J	726.5	35.4	27345	65	2.75
Stoneville 603	689.6	36.5	26213	68	2.00
Deltapine 26	687.4	38.6	30876	69	2.00
Deltapine 55	655.9	38.8	30786	68	2.00
Stoneville 256	640.7	37.5	28794	68	2.00
Coker 310	623.7	36.7	29971	63	2.00
Deltapine 16	608.6	36.0	30242	67	2.00
Auburn M	575.1	34.2	28975	64	2.00
McNair 220	517.1	36.9	33230	67	2.25
Dixie King	505.3	35.6	28839	68	2.00
Deltapine 61	478.0	37.5	33683	66	2.00
Mean	694.7	36.5	30591	66	2.08
L.S.D. .05	238.1	--	4951	3.0	.29
CV	24.2	--	11.4	3.2	10.0

The vertical line links all varieties which did not yield significantly less than the highest yielding variety in the trial.

Table 8. Fiber characteristics of cotton evaluated on a clay near Frailey, Missouri, wilt free, and non-irrigated soil in 1978.

Planted: May 15, 1978. Harvested: October 20, 1978.

Variety or Brand	Micro- naire	Staple length		$E^{1/}$ %	$T^{2/}$ g/tex
		50%	2.5%		
Vail 7	5.35	0.55	1.18	5.35	18.40
McNair 235	5.40	0.55	1.13	6.10	23.10
Stoneville 731N	5.50	0.55	1.17	5.35	23.10
Stoneville 213	5.55	0.55	1.16	5.85	21.90
Coker 310	5.10	0.57	1.21	5.65	22.80
Stoneville 256	5.50	0.56	1.17	5.80	21.40
Deltapine 55	5.25	0.56	1.17	6.25	21.70
Coker 304	5.20	0.58	1.24	5.60	22.85
Rex 713	5.00	0.55	1.16	6.80	18.05
Mo74-944	5.00	0.55	1.13	7.90	25.10
Cascot L-7	5.60	0.53	1.11	6.50	21.25
Deltapine 16	5.35	0.57	1.21	7.35	22.35
McNair 220	5.40	0.57	1.14	5.50	24.75
Delcot 277J	4.90	0.57	1.21	7.10	22.90
Auburn M	4.85	0.55	1.13	6.65	21.00
Deltapine 61	5.60	0.57	1.19	6.60	22.75
Deltapine 26	5.40	0.56	1.17	6.60	21.50
Stoneville 603	5.30	0.55	1.13	6.40	21.30
Dixie King	5.25	0.55	1.13	5.85	22.80
Des 24	5.25	0.57	1.19	6.75	24.55
Mean	5.29	0.56	1.17	6.30	22.18
L.S.D. .05	0.27	0.02	0.04	0.78	2.23
CV	2.40	2.10	1.50	5.90	4.80

$E^{1/}$ Elongation

$T^{2/}$ Strength

Table 9. Yield performance of cotton varieties grown on a sandy soil near Clarkton, Missouri, non-irrigated, fusarium wilt infested in 1978.

Planted: May 9, 1978. Harvested: October 5, 1978.

Variety or Brand	Total Lint (lb/A)	Percent Lint (%)	Population (plants/A)	Days to Flower	Height (in)	Lodging (1-5)	Fusarium Wilt (1-5)	Storm Resistance (1-5)
MO 74-944	809.7	36.8	19166	62	39	1.0	1.0	1.0
McNair 235	754.6	36.5	23270	63	26	1.2	1.0	2.0
Auburn M	749.2	33.5	19618	60	28	1.0	1.0	2.0
Dixie King	726.2	35.7	18139	62	32	1.2	1.2	3.3
Deltapine 61	704.7	38.4	18713	62	32	1.3	1.3	2.0
Coker 310	689.1	35.9	20404	62	32	1.0	2.8	2.7
Coker 304	685.6	36.0	27254	61	24	1.0	3.3	2.8
Des 24	683.3	36.4	17415	62	31	1.5	1.2	2.0
McNair 220	679.3	35.5	16691	62	28	1.0	1.0	2.0
Cascot L-7	651.3	36.7	22818	61	24	1.3	1.5	1.5
Delcot 277J	644.3	35.7	11016	63	32	1.5	1.0	2.0
Deltapine 26	633.3	38.5	21128	62	36	1.0	1.0	2.0
Rex 713	623.9	32.0	17928	62	26	1.0	1.2	3.3
Deltapine 55	607.4	37.9	21701	62	28	1.5	1.0	2.0
Vail 7	561.8	38.7	18260	63	22	1.2	3.7	2.0
Stoneville 213	552.3	35.6	17958	62	27	1.2	2.3	3.0
Stoneville 603	550.1	35.6	19800	63	25	1.3	2.8	2.0
Stoneville 731N	538.0	38.5	19286	62	24	1.2	3.5	3.0
Deltapine 16	488.3	35.4	19407	63	22	1.8	2.0	2.0
Stoneville 256	379.9	36.8	18803	63	28	1.2	4.0	2.0
Mean	635.6	36.3	19442	62	28	1.2	1.9	2.3
L.S.D. .05	110.6	--	3355.0	1.2	3.4	.43	.90	.45
CV	15.2	--	15.0	1.6	10.4	31.2	41.7	17.4

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Table 10. Fiber characteristics of cotton varieties evaluated near Clarkton, Missouri on sandy, irrigated, infested with fusarium wilt soil in 1978.

Planted: May 9, 1978. Harvested: October 5, 1978.

Variety or Brand	Micro- naire	Staple Length		$E^{1/}$	$T^{2/}$
		50%	2.5%	%	g/tex
Vail 7	4.40	0.52	1.13	6.10	19.35
McNair 235	4.60	0.55	1.14	5.75	23.50
Stoneville 731N	4.75	0.54	1.14	5.80	19.85
Stoneville 213	4.80	0.55	1.12	7.10	21.10
Coker 310	4.00	0.55	1.18	6.65	23.15
Stoneville 256	4.60	0.53	1.13	5.80	22.25
Deltapine 55	4.45	0.56	1.17	7.00	20.20
Coker 304	4.00	0.57	1.20	6.25	23.20
Rex 713	4.00	0.53	1.13	7.15	18.50
Mo74-944	4.10	0.58	1.18	7.40	25.20
Cascot L-7	4.70	0.53	1.09	6.60	21.40
Deltapine 16	4.30	0.56	1.18	7.00	20.80
McNair 220	4.80	0.56	1.15	5.65	23.20
Delcot 277J	3.80	0.58	1.23	7.85	24.30
Auburn M	3.70	0.54	1.15	6.60	21.05
Deltapine 61	4.80	0.56	1.16	7.65	23.65
Deltapine 26	4.85	0.56	1.16	7.00	23.05
Stoneville 603	4.50	0.55	1.13	6.00	22.20
Dixie King	4.40	0.55	1.13	6.25	21.45
Des 24	4.65	0.57	1.17	6.90	23.95
Mean	4.41	0.55	1.15	6.62	22.07
L.S.D. .05	0.35	0.02	0.03	0.94	1.97
CV	3.80	1.70	1.20	6.70	4.30

$E^{1/}$ Elongation

$T^{2/}$ Strength

Table 11. Yield performance of cotton varieties grown near Portageville, Missouri on a sandy loam, wilt-free, non-irrigated soil in 1978.

Planted: May 19, 1978. Harvested: October 23, 1978.

Variety or Brand	Total Lint (lb/A)	Percent Lint (%)	Days to Flower	Seedling Vigor (1-5)
Stoneville 603	1031.0	37.4	62	2.00
Stoneville 731N	1017.9	38.5	60	2.00
MO 74-944	950.7	37.0	58	1.00
Vail 7	895.6	37.0	63	2.00
Stoneville 250	830.1	38.2	62	2.00
Deltapine 55	822.9	38.4	60	2.00
Stoneville 213	776.6	37.4	60	2.00
Calcot L-7	760.5	37.0	54	2.00
McNair 235	740.4	37.0	58	1.00
Deltapine 26	726.0	39.5	62	2.00
Delcot 277J	719.7	36.8	59	2.00
Coker 304	686.0	36.9	57	2.00
Dixie King	684.8	35.9	60	2.00
Auburn M	681.9	35.3	56	2.00
Des 24	638.9	37.6	61	2.17
Deltapine 16	625.6	36.3	60	2.00
McNair 220	610.5	35.8	59	2.00
Coker 310	540.7	35.9	57	2.00
Des 713	523.8	32.5	59	2.00
Deltapine 61	482.2	35.9	59	2.00
Mean	737.3	36.8	59	1.91
L.S.D. .05	142.0	.19	1.9	.10
CV	16.8	.4	2.9	4.8

The vertical line links all varieties which did not yield significantly less than the highest yielding variety in the trial.

Table 12. Fiber characteristics of cotton varieties evaluated near Portageville, Missouri, on a sandy loam, wilt free, non-irrigated soil in 1978.
Planted: May 19, 1978. Harvested: October 23, 1978.

Variety or Brand	Micro- naire	Staple Length		$E^{1/}$	$T^{2/}$
		50%	2.5%	%	g/tex
Vail 7	5.10	0.54	1.17	6.00	20.85
McNair 235	5.25	0.56	1.15	6.00	23.20
Stoneville 731N	4.90	0.55	1.17	6.00	22.65
Stoneville 213	5.10	0.56	1.13	7.15	20.90
Coker 310	4.90	0.59	1.23	6.50	22.80
Stoneville 256	5.30	0.55	1.17	5.80	20.80
Deltapine 55	4.95	0.55	1.17	6.75	21.50
Coker 304	4.95	0.58	1.22	5.65	23.75
Rex 713	4.70	0.55	1.15	6.65	18.85
Mo74-944	4.60	0.57	1.14	8.15	23.55
Cascot L-7	5.20	0.55	1.13	6.00	22.10
Deltapine 16	5.25	0.57	1.19	7.75	23.55
McNair 220	5.20	0.55	1.13	6.15	21.90
Delcot 277J	4.35	0.60	1.22	7.60	23.45
Auburn M	4.70	0.56	1.15	7.10	19.40
Deltapine 61	5.35	0.57	1.19	7.60	23.00
Deltapine 26	5.15	0.57	1.17	7.00	23.20
Stoneville 603	4.95	0.55	1.13	6.40	20.60
Dixie King	4.70	0.55	1.13	6.65	22.35
Des 24	5.05	0.57	1.19	7.10	22.85
Mean	4.98	0.56	1.17	6.70	22.06
L.S.D. .05	0.28	0.02	0.05	0.99	2.49
CV	2.70	2.10	1.90	7.10	5.40

$E^{1/}$ Elongation

$T^{2/}$ Strength

Table 13. Yield performance of cotton varieties grown near Sikeston, Missouri, on a sandy loam, wilt-free, irrigated soil in 1978. Planted: May 10, 1978. Harvested: October 18 and November 7, 1978.

Variety or Brand	Total Lint (lb/A)	First Pick Lint (lb/a)	Percent Lint (%)	Population (plants/A)	Seedling Vigor (1-5)
Cascot L-7	874.0	742.1	36.7	24961	1.67
McNair 235	872.3	661.8	37.1	29458	1.33
Stoneville 603	841.7	676.4	35.8	23904	2.00
MO 74-944	825.5	673.2	35.8	25383	1.33
Deltapine 55	815.3	593.4	38.7	23783	2.00
McNair 220	793.0	579.7	35.7	21520	2.17
Delcot 277J	782.0	582.6	36.7	13703	1.83
Coker 304	778.7	602.6	36.7	27465	1.83
Deltapine 16	763.9	572.2	35.7	25202	2.00
Stoneville 213	756.8	587.2	36.5	22123	2.17
Coker 310	752.1	554.9	36.7	22606	2.00
Auburn M	737.1	612.7	33.5	22697	1.83
Stoneville 731N	716.3	537.2	36.4	21671	2.17
Stoneville 256	677.3	526.7	34.9	21550	2.00
Rex 713	670.1	519.5	32.6	23089	2.33
Vail 7	663.3	470.8	35.5	24568	2.00
Deltapine 26	650.2	493.3	37.4	24146	2.00
Des 24	637.5	436.5	36.8	21580	2.17
Dixie King	635.3	430.0	35.8	19558	1.83
Deltapine 61	604.5	426.7	35.7	19981	2.33
Mean	742.4	564.0	36.0	22947	1.95
L.S.D. .05	961	98.7	0.03	3073	0.4
CV	11.3	15.3	.08	11.7	18.9

The vertical line links all varieties which did not yield significantly less than the highest yielding variety in the trial.

Table 14. Fiber characteristics of cotton varieties evaluated near Sikeston, Missouri on a sandy loam, wilt free, and irrigated soil in 1978.

Planted: May 10, 1978. Harvested: October 18, 1978.

Variety or Brand	Micro- naire	Staple Length		$E^{1/}$	$T^{2/}$
		50%	2.5%	%	g/tex
Vail 7	4.55	0.55	1.19	5.75	20.20
McNair 235	4.65	0.55	1.17	6.25	21.95
Stoneville 731N	4.60	0.55	1.18	5.85	20.55
Stoneville 213	4.85	0.53	1.15	7.00	21.20
Coker 310	4.45	0.56	1.23	6.00	23.05
Stoneville 256	4.45	0.55	1.18	5.90	20.70
Deltapine 55	4.60	0.54	1.16	6.60	21.95
Coker 304	4.30	0.55	1.23	5.85	22.65
Rex 713	4.00	0.54	1.16	7.15	19.05
Mo74-944	4.05	0.57	1.18	7.65	22.90
Cascot L-7	4.55	0.53	1.09	6.90	19.20
Deltapine 16	4.50	0.54	1.19	8.15	22.00
McNair 220	4.95	0.54	1.14	6.00	24.10
Delcot 277J	3.95	0.56	1.20	7.80	22.40
Auburn M	4.05	0.53	1.12	6.90	19.35
Deltapine 61	4.55	0.55	1.18	7.65	22.00
Deltapine 26	4.50	0.54	1.17	6.80	21.50
Stoneville 603	4.40	0.54	1.31	6.50	20.80
Dixie King	4.40	0.53	1.13	6.50	20.40
Des 24	4.35	0.55	1.19	7.25	23.10
Mean	4.44	0.54	1.18	6.72	21.45
L.S.D. .05	0.40	0.02	0.11	0.59	1.56
CV	4.30	1.70	4.30	4.20	3.50

$E^{1/}$ Elongation

$T^{2/}$ Strength

Table 15. Average yield performance of cotton varieties grown in 6 locations in Southeast Missouri (Stoddard, New Madrid, and Pemiscot Counties) in 1978.

Variety or Brand	Total Lint (lb/A)	Percent Lint (%)	Population (plants/A)	Days to Flower	Height (in)
Stoneville 731N	889.3	38.2	21312	64	24
MO 74-944	888.5	37.2	24638	63	39
Stoneville 603	855.0	36.7	22464	65	25
Vail 7	814.2	37.3	22208	65	22
Cascot L-7	793.0	37.3	24701	61	24
Stoneville 213	792.7	36.8	22114	64	27
Deltapine 55	778.7	39.2	24248	64	28
Delcot 277J	763.8	36.7	15514	64	32
McNair 235	762.3	37.3	26584	63	26
Coker 304	736.3	36.7	27985	62	24
Stoneville 256	722.7	37.5	22244	65	28
Deltapine 26	711.8	39.3	24387	65	36
Auburn M	709.5	34.8	22335	62	28
Des 24	704.7	37.3	22265	64	31
Coker 310	696.0	37.0	24188	62	32
Dixie King	688.0	36.5	21903	65	32
Deltapine 16	666.0	36.5	24423	64	22
Rex 713	660.5	33.2	22522	63	26
McNair 220	657.3	36.5	20934	63	28
Deltapine 61	632.5	37.7	22528	63	32
Mean	746.0	37.0	22974	63	28
L.S.D. .05	63.5	--	--	--	--

The vertical line links all varieties which did not yield significantly less than the highest yielding variety in the trial.

Table 16. Average fiber characteristics of cotton varieties evaluated in Southeast Missouri (Stoddard, New Madrid, and Pemiscot Counties) in 1978.

Variety or Brand	Micro- naire	Staple Length		$E^{1/}$ %	$T^{2/}$ g/tex
		50%	2.5%		
Vail 7	4.94	0.55	1.17	5.90	20.14
McNair 235	5.11	0.55	1.15	5.88	22.82
Stoneville 731N	5.03	0.56	1.16	5.79	21.22
Stoneville 213	5.18	0.56	1.14	6.80	21.13
Coker 310	4.75	0.58	1.22	6.13	22.76
Stoneville 256	5.14	0.55	1.16	5.81	20.97
Deltapine 55	4.90	0.56	1.18	6.55	21.25
Coker 304	4.86	0.58	1.22	5.90	22.78
Rex 713	4.57	0.55	1.15	6.82	18.45
MO 74-944	4.56	0.57	1.15	7.70	24.23
Cascot L-7	5.23	0.54	1.11	6.37	20.79
Deltapine 16	5.03	0.57	1.19	7.55	21.88
McNair 220	5.17	0.56	1.14	5.69	22.83
Delcot 277J	4.35	0.58	1.21	7.49	23.52
Auburn M	4.46	0.55	1.14	6.84	20.31
Deltapine 61	5.27	0.57	1.18	7.30	22.39
Deltapine 26	5.14	0.57	1.16	6.72	22.32
Stoneville 603	4.97	0.55	1.13	6.34	21.42
Dixie King	4.81	0.55	1.14	6.30	22.10
Des 24	4.93	0.57	1.19	6.84	23.43
Mean	4.92	0.56	1.16	6.54	21.84
L.S.D. .05	0.29	0.22	.05	.78	1.89
CV	3.0	2.0	2.3	6.0	4.4

$E^{1/}$ Elongation

$T^{2/}$ Strength

Table 17. Two- and three-year yield performance summaries for cotton varieties evaluated on three sites at the Delta Research Center near Portageville, Missouri on sandy loam, non-irrigated soils during the two-year period 1977-78 and the three-year period 1976-78.

Variety or Brand	Wilt-Free, Early Planted		Verticillium Wilt Infested		Wilt-Free, Late Planted	
	Two-Year	Three Year	Two-Year	Three-Year	Two-Year	Three-Year
	<u>Total Lint</u>	<u>Total Lint</u>	<u>Total Lint</u>	<u>Total Lint</u>	<u>Total Lint</u>	<u>Total Lint</u>
	(lb/A)	(lb/A)	(lb/A)	(lb/A)	(lb/A)	(lb/A)
Stoneville 731N	1066	1058	891	758	924	915
Stoneville 603	924	954	858	794	806	891
Stoneville 213	928	969	859	768	716	775
Deltapine 55	926	968	822	739	726	827
Coker 304	864	916	746	752	676	786
Stoneville 256	849	925	888	823	757	843
Deltapine 26	846	*	867	*	696	*
Auburn M	772	861	704	705	674	799
Coker 310	904	965	716	724	590	710
Dixie King	768	875	680	654	617	842
Deltapine 16	812	827	700	634	556	665
McNair 220	830	911	713	707	743	847
Deltapine 61	842	861	742	686	518	610
Mean	872	924	784	729	692	792

* Data not available.

Table 18. Two- and three-year average performance summaries for cotton varieties evaluated at 3 Southeast Missouri locations; near Frailey on a clay loam soil, Clarkton on a sandy soil, and Sikeston on a sandy loam soil during the two-year period 1977-78 and the three-year period 1976-78.

Variety or Brand	Frailey		Clarkton		Sikeston	
	Wilt-Free		Fusarium Wilt Infested		Wilt-Free	
	Two-year (lb/A)	Three-year (lb/A)	Two-Year (lb/A)	Three-Year (lb/A)	Two-Year (lb/A)	Three-Year (lb/A)
Stoneville 731N	674	605	594	555	718	653
Stoneville 603	554	513	668	625	797	741
Stoneville 213	669	592	680	587	760	664
Deltapine 55	558	511	754	658	780	697
Coker 304	578	587	828	778	817	770
Stoneville 256	570	540	592	561	670	648
Deltapine 26	580	*	712	*	730	*
Auburn M	519	526	796	707	792	786
Coker 310	575	584	842	772	815	761
Dixie King	458	476	658	634	614	591
Deltapine 16	580	526	658	617	732	670
McNair 220	467	483	820	738	893	828
Deltapine 61	500	499	800	720	664	657
Mean	560	537	723	663	753	706

* Data not available.

Table 19. Name of cotton entries and seed source evaluated in 1978.

Brand	Variety	Seed Source
Coker	304, 310	Coker Pedigreed Seed Co., Hartsville, SC 29550
Deltapine	55, 26, 61, 16	Deltapine Land Co., Scott, MS 38772
McNair	235, 220	McNair Seed Co., P.O. Box 706, Laurinburg, NC 28352
Stoneville	603, 213, 256, 731N, Dixie King	Stoneville Pedigreed Seed Co., Stoneville, MS 38776
Public	Auburn M, Cascot L-7, Delcot 277J, MO 74-944, Des 24, Rex 713	Entered by various state research stations and centers
Bryco	Vail 7	Bryco, P.O. Box C, Leach- ville, AR 72438

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