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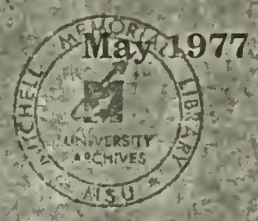
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Mississippi Cotton Variety Tests in 1976

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Mississippi Cotton Variety Tests in 1976

uation of cotton varieties is
inuous process because im-
varieties are released and
d practices are altered. Con-
testing and evaluation of
es and experimental strains
ential in providing a guide
mers interested in the best
d variety that possesses the
t possible yield potential
uality for their respective
f production. A major deter-
t of yield and quality of
is the variety planted.
ore, the most promising
es and strains are tested
ear in several Mississippi
iments and results are
d as a guide to producers in
ng varieties most ap-
te for their areas.

Cotton varieties were tested in four Delta environments and three other Mississippi environments in 1976. Seventeen varieties were evaluated at Stoneville on light-textured soils, 17 at Tunica on light-textured soils, 15 of the 17 at Sumner on a light-textured soil and at Stoneville on a mixed soil type and 12 of the 17 on a light-textured soil at Mississippi State University. Trials planted at Holly Springs and Verona were abandoned because of poor stands.

Three entries, Deltapine 6225-53, Vail 7 and Coker 1104, were evaluated for the first time. Varieties grown at Stoneville and Tunica were included in a Cooperative Regional Variety Testing Program.

Each entry was randomized and replicated six times. Yield data were based on weight of cotton harvested from two-row plots. Determinations of lint percentage, boll size, seed index and fiber property were made from hand-picked samples. Fiber property data were determined in the U. S. Cotton Fiber Laboratory of the Agricultural Research Service, USDA, Knoxville, Tennessee and the Cotton Fiber Laboratory, MAFES Delta Branch, Stoneville, Mississippi.

Stands in all test environments were adequate except at Holly Springs and Verona. A summer drought (July 4 to September 3) apparently reduced yields in most environments.

Results

1976 test on a Bosket very sandy loam soil at Stoneville planted April 16, almost a year earlier than in 1975 but lint yields were about 200 pounds per acre in 1976. Lint yields also lower than normal, ranging from 13 to 716 pounds per acre (Table 1). This test was harvested on October 5 and October 28) and maturity at first harvest little by variety, ranging from 83 to 91 percent.

1976 test at Tunica was planted April 20 on a sandy loam soil. Lint yields ranged from 268 pounds per acre (Table 2). This test was harvested once on October 21.

1976 test at Stoneville on a Dundee silt loam soil at Sumner. Lint yields ranged from 740 to 899 pounds per acre (Table 3). Early maturity of all varieties resulted from the summer drought and this test was harvested once on October 20.

The 1976 test on a mixed soil type at Stoneville was planted on April 20---soil ranged from a silty loam on one side of the test area to clay on the other. This test was harvested twice (October 11 and October 28) and maturity at first harvest differed little by variety, ranging from 85 to 92 percent. Yields ranged from 413 to 631 pounds per acre (Table 4).

Average lint yields of the 15 varieties grown in the four Delta environments in 1976 ranged from 517 to 687 pounds per acre (Table 5).

The 1976 yields in most Delta environments were below normal, fiber of most varieties was shorter than usual and boll size of all varieties was smaller than normal. The lower yields, shorter fiber and smaller bolls were due partially to inadequate moisture from July 4 to September 3.

Average lint yields of ten varieties grown in six Delta environments in 1975 and 1976 ranged from 577 to 724 pounds per acre (Table 6). These below-normal yields reflect poor production in both years.

Average lint yields of six cotton varieties tested in eleven Delta environments in the last three years ranged from 715 to 829 pounds (Table 7).

Several new varieties developed

and released in the past few years have replaced some older varietal types. Therefore, only four cotton varieties have been tested for five consecutive years. The 1972-1976 average lint yield of these varieties ranged from 849 to 891 pounds per acre (Table 8). Maturity at first

harvest and boll size differed little by variety but differences in fiber length were significant.

The 1976 test at Mississippi State University was planted on a Marietta fine sandy loam soil on April 27. Lint yields ranged from 993 to 1158 pounds per acre (Table

9).

Average lint yields of the ten cotton varieties grown at Mississippi State in 1975 and 1976 ranged from 855 to 954 pounds per acre (Table 10).

1. Results of the 1976 Cotton Variety Test on Bosket very fine sandy loam soil at Stoneville, Mississippi.

	LINT PER ACRE			Lint percent	Seed index	Boll size grams	FIBER PROPERTIES				
	Percent		Boll size grams				Length		Strength g/tex	Elonga- tion	Micro- naire
	First Total	first pick					2.5%	50%			
06-020-24	716	652	91	38.1	10.7	5.46	1.12	.54	22.02	7.3	4.3
2134-056	690	628	91	37.3	9.6	4.75	1.09	.52	20.54	7.1	4.0
Stoneville 6225-53	658	584	89	40.0	9.1	4.90	1.09	.52	19.95	6.8	4.2
	637	574	90	39.4	9.1	4.66	1.06	.49	16.68	5.4	4.4
Stoneville 213	633	561	89	37.9	9.3	4.81	1.10	.52	19.72	7.3	4.4
Stoneville 16	629	525	83	36.8	10.9	5.89	1.13	.53	19.52	8.5	4.3
Stoneville 55	628	563	90	39.5	9.0	4.80	1.10	.51	19.43	6.4	3.9
Stoneville 256	628	566	90	38.3	9.5	4.90	1.09	.52	18.22	5.6	4.3
Stoneville 731N	610	553	91	38.6	9.9	4.75	1.09	.52	19.01	5.0	4.4
Stoneville 61	590	496	84	37.2	9.9	5.20	1.10	.54	20.87	8.2	4.4
Stoneville 304	581	516	89	37.1	10.4	5.44	1.17	.54	20.60	6.1	4.1
Stoneville 310	567	507	89	37.1	10.7	5.00	1.15	.54	21.67	7.1	4.0
Stoneville 4	543	492	91	38.3	9.4	4.78	1.10	.52	18.21	5.5	4.2
Stoneville 1104	527	464	88	36.7	10.7	5.50	1.16	.56	20.59	6.0	4.0
Stoneville 1517-70	520	442	85	35.5	11.7	5.47	1.11	.54	24.97	5.6	4.2
Stoneville 277	517	465	90	36.7	11.3	5.76	1.16	.56	21.61	9.6	3.8
Stoneville Master 909	413	348	84	36.3	12.3	5.74	0.98	.50	21.43	7.1	4.3
S.E.	8.3										
SD .05	62										

Harvested: April 16, 1976

Tested: October 5 and October 28, 1976

2. Results of the 1976 Cotton Variety Test on a sandy loam soil at Tunica, Mississippi.

	LINT PER ACRE		Lint percent	Seed index	Boll size grams	FIBER PROPERTIES				
	Total					Length		Strength g/tex	Elonga- tion	Micro- naire
						2.5%	50%			
apine 6225-53	580		41.4	9.2	4.57	1.06	.52	18.87	6.8	4.6
06-020-24	574		39.0	10.5	5.19	1.11	.53	19.34	7.6	4.5
2134-056	532		39.0	10.3	4.62	1.07	.52	19.26	7.1	4.3
7	528		39.0	10.2	5.23	1.11	.53	18.15	5.5	4.4
apine 55	519		40.9	9.1	5.05	1.07	.50	18.25	7.1	4.3
apine 61	515		38.8	9.5	5.10	1.12	.53	20.26	9.0	4.4
eville 213	513		39.0	9.8	4.94	1.07	.52	19.97	7.4	4.6
er 310	507		39.8	10.8	5.40	1.16	.54	20.38	6.4	4.3
eville 731N	503		40.5	9.1	4.56	1.07	.50	17.54	5.5	4.5
er 304	502		39.7	10.1	4.77	1.15	.54	20.19	6.7	4.2
apine 16	478		38.6	10.3	5.15	1.14	.54	20.05	8.8	4.2
eville 256	423		38.7	9.9	4.86	1.09	.51	17.92	6.6	4.5
ot 277	416		38.4	11.5	5.44	1.14	.55	20.54	8.9	4.0
ot 4	407		37.9	10.0	5.05	1.07	.50	17.61	5.7	4.5
er 1104	387		38.2	11.3	5.50	1.10	.53	20.04	6.4	4.5
a 1517-70	366		36.6	13.0	5.76	1.14	.56	23.90	5.6	4.5
master 909	268		36.7	13.8	5.64	1.00	.51	21.87	6.7	5.1
C.V.	16.4									
LSD .05	93									

nted: April 20, 1976

vested: October 21, 1976

3. Results of the 1976 Cotton Variety Test on Dundee silty loam soil at Sumner, Mississippi.

	LINT PER ACRE		Lint percent	Seed index	Boll size grams	FIBER PROPERTIES				
	Total					Length		Strength g/tex	Elonga- tion	Micro- naire
						2.5%	50%			
eville 731N	899		41.0	9.8	4.50	1.08	.52	16.85	7.2	4.6
06-020-24	875		40.2	9.4	5.11	1.11	.53	19.05	8.6	4.5
2134-056	873		39.9	9.6	4.55	1.10	.54	18.66	7.8	4.6
apine 55	856		41.7	8.9	4.77	1.07	.51	18.02	7.7	4.3
apine 6225-53	850		42.0	9.1	4.62	1.06	.52	17.94	7.8	4.7
apine 61	848		39.9	9.5	5.17	1.08	.53	18.70	9.0	4.6
eville 256	846		39.8	10.2	4.94	1.09	.52	17.60	6.6	4.7
er 310	845		40.2	10.1	4.94	1.14	.54	18.25	7.3	4.4
er 1104	832		39.7	10.7	5.04	1.07	.53	19.54	6.7	4.6
eville 213	819		39.8	9.8	4.75	1.06	.52	16.91	8.1	4.9
er 304	802		39.7	9.6	4.80	1.14	.55	19.42	7.3	4.3
7	798		40.2	10.1	5.01	1.08	.51	17.01	6.7	4.7
ot 277	785		39.0	11.4	6.01	1.12	.55	18.52	9.1	4.2
ot 4	765		39.7	10.7	4.96	1.08	.54	17.12	6.6	5.0
apine 16	740		39.6	9.7	5.41	1.08	.52	19.52	9.2	4.5
C.V.	8.2									
LSD .05	78									

nted: April 21, 1976

vested: October 20, 1976



Table 4. Results of the 1976 Cotton Variety Test on a mixed soil type at Stoneville, Mississippi.

	LINT PER ACRE										
	Total	Percent		Lint percent	Seed index	Boll size grams	FIBER PROPERTIES				
		First pick	first pick				Length 2.5%	Length 50%	Strength g/tex	Elonga- tion	Micro- naire
7	631	567	90	39.0	9.5	4.54	1.11	.52	17.47	5.6	4.9
S 2134-056	619	565	91	37.6	9.8	4.21	1.12	.54	19.91	7.2	4.5
Stoneville 256	589	521	88	38.8	10.1	4.44	1.13	.53	18.81	6.4	4.4
Stoneville 731N	587	529	90	39.3	9.7	4.23	1.10	.53	18.56	5.8	4.5
Apine 6225-53	586	538	92	41.6	9.1	4.48	1.08	.52	20.63	6.8	4.5
S 06-020-24	583	520	89	37.5	11.5	4.96	1.16	.55	21.16	8.7	4.4
Apine 61	574	488	85	38.9	9.4	4.77	1.10	.53	20.60	7.9	4.7
Lot 4	564	516	91	38.4	9.7	4.76	1.11	.54	18.56	6.2	4.6
Apine 55	556	500	90	40.3	8.4	4.37	1.11	.52	19.05	7.7	4.2
er 310	555	494	89	36.0	10.2	4.78	1.19	.55	21.06	7.2	4.1
Apine 16	547	472	86	37.7	9.9	5.02	1.14	.55	19.91	8.6	4.4
Stoneville 213	545	477	87	39.1	9.4	4.63	1.09	.53	19.64	6.6	4.8
er 304	485	443	91	37.0	10.3	4.47	1.17	.54	21.74	6.5	4.2
Lot 277	433	394	91	37.1	11.7	5.18	1.14	.55	21.50	8.8	4.0
er 1104	413	370	90	36.1	11.0	4.86	1.16	.55	21.56	6.5	4.1
C.V.	14.1										
LSD .05	89										

Planted: April 20, 1976
 Harvested: October 11 and October 28, 1976

Table 5. Average Performance of 15 cotton varieties grown in four Delta environments in 1976.¹

	LINT PER ACRE										
	Total	Percent		Lint percent	Seed index	Boll size grams	FIBER PROPERTIES				
		first pick ²	first pick				Length 2.5%	Length 50%	Strength g/tex	Elonga- tion	Micro- naire
06-020-24	687	90	38.7	10.5	5.18	1.12	.54	20.39	8.0	4.4	
2134-056	678	91	38.4	9.8	4.53	1.09	.53	19.59	7.3	4.3	
Apine 6225-53	668	90	41.2	9.1	4.64	1.07	.52	19.35	7.0	4.5	
Stoneville 731N	650	90	39.8	9.6	4.60	1.08	.52	17.99	5.9	4.5	
7	648	90	39.4	9.7	4.86	1.09	.51	17.33	5.8	4.6	
Apine 55	640	90	40.6	8.8	4.75	1.09	.51	18.69	7.2	4.2	
Apine 61	632	84	38.7	9.6	5.06	1.10	.53	20.11	8.5	4.5	
Stoneville 213	627	88	38.9	9.6	4.78	1.08	.52	19.06	7.3	4.7	
Stoneville 256	621	89	38.9	9.9	4.78	1.10	.52	18.14	6.3	4.5	
er 310	618	89	38.2	10.4	5.03	1.16	.54	20.34	7.0	4.2	
Apine 16	598	85	38.2	10.2	5.36	1.12	.53	19.75	8.8	4.3	
er 304	592	90	38.4	10.1	4.87	1.16	.54	20.49	6.6	4.2	
Lot 4	570	91	38.6	9.9	4.89	1.09	.52	17.87	6.0	4.6	
er 1104	540	89	37.6	10.9	5.22	1.12	.54	20.43	6.4	4.3	
Lot 277	517	90	37.8	11.5	5.60	1.14	.55	20.54	9.1	4.0	

¹Four environments---Stoneville 2, Sumner 1, Tunica 1
²Percent first pick from two environments

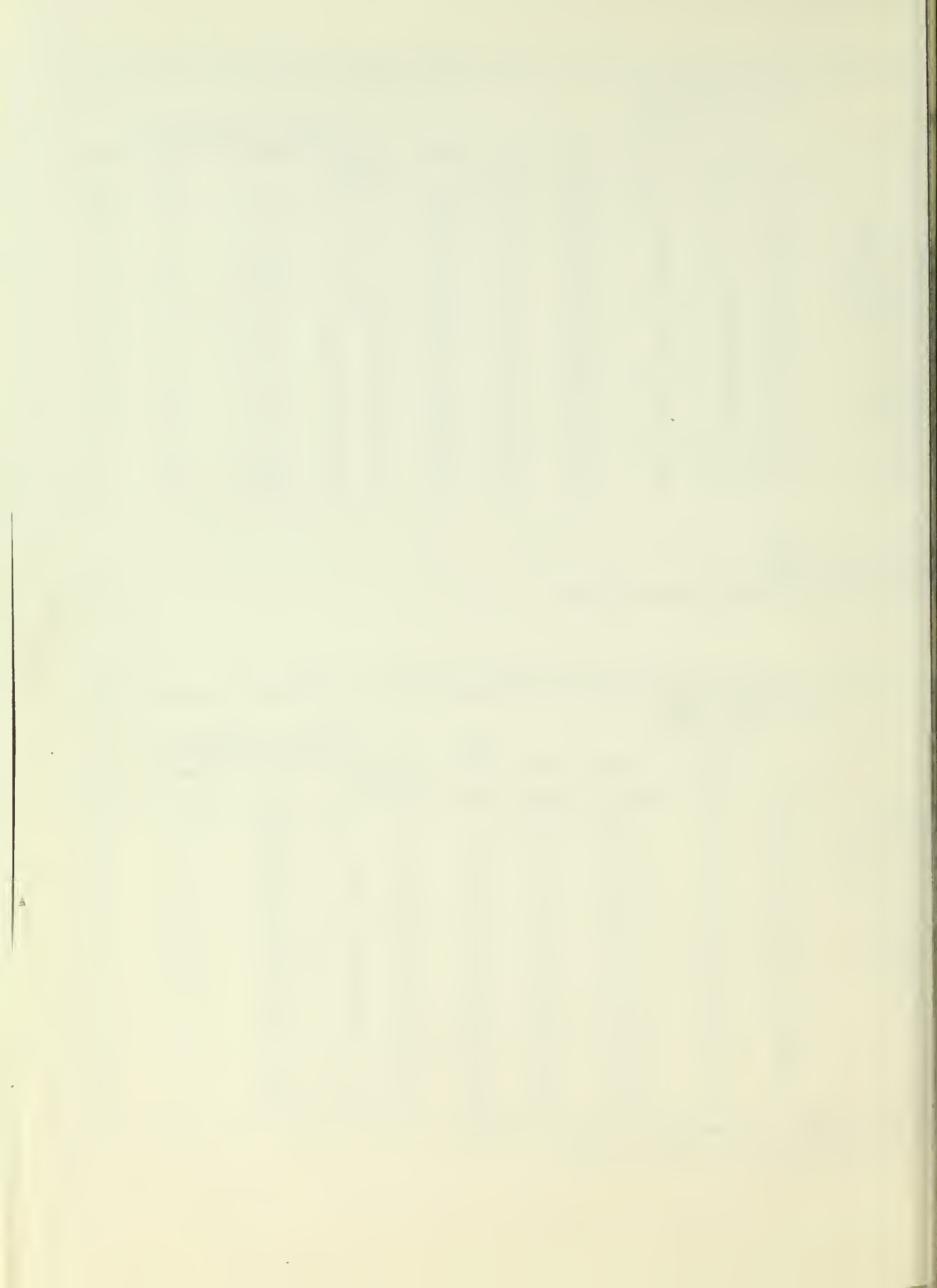


Table 6. Performance of ten cotton varieties grown in six Delta environments, 1975-76 average.¹

	LINT PER ACRE									
	Percent				Boll size	FIBER PROPERTIES				
	Total	first	Lint percent	Seed index		Length	Strength	Elonga- tion	Micro- naire	
		pick ²			grams					2.5%
ES 06-020-24	724	85	39.1	11.0	5.48	1.15	.55	20.25	8.1	4.5
Stoneville 731N	691	85	39.9	10.3	4.89	1.11	.53	17.82	6.0	4.6
ES 2134-056	687	86	38.4	10.3	4.75	1.12	.55	19.55	7.3	4.4
Deltapine 55	681	83	40.8	9.4	5.04	1.12	.53	18.75	7.2	4.2
Deltapine 16	629	79	38.5	10.7	5.58	1.14	.55	19.54	8.8	4.4
Stoneville 256	620	80	38.7	10.5	5.06	1.12	.53	18.26	6.3	4.5
Stoneville 213	619	81	38.8	10.3	5.05	1.10	.53	18.97	7.6	4.7
Deltapine 61	606	77	38.9	10.2	5.31	1.13	.55	19.80	8.6	4.6
Coker 310	586	83	38.8	10.9	5.29	1.18	.56	20.37	7.0	4.3
Coker 304	577	84	39.3	10.5	5.08	1.18	.55	20.22	6.7	4.3

¹Six environments---Stoneville 3, Tunica 2, Sumner 1

²Percent first pick from four environments

Table 7. Performance of six cotton varieties grown in eleven Delta environments, 1974-76 average.¹

	LINT PER ACRE									
	Percent				Boll size	FIBER PROPERTIES				
	Total	first	Lint percent	Seed index		Length	Strength	Elonga- tion	Micro- naire	
		pick ²			grams					2.5%
ES 06-020-24	829	86	39.4	11.2	5.72	1.16	.56	20.29	8.0	4.6
Deltapine 55	755	82	40.9	9.7	5.23	1.13	.54	18.58	7.3	4.4
Stoneville 213	751	82	39.1	10.6	5.36	1.13	.54	18.67	7.3	4.8
Stoneville 256	746	82	39.2	10.6	5.30	1.14	.54	18.17	6.3	4.6
Deltapine 16	723	78	38.7	10.8	5.76	1.16	.56	19.36	8.9	4.6
Coker 310	715	82	39.3	10.9	5.46	1.20	.57	19.95	7.0	4.4

¹Eleven environments---Stoneville 5, Tunica 3, Sumner 2, Yazoo City 1

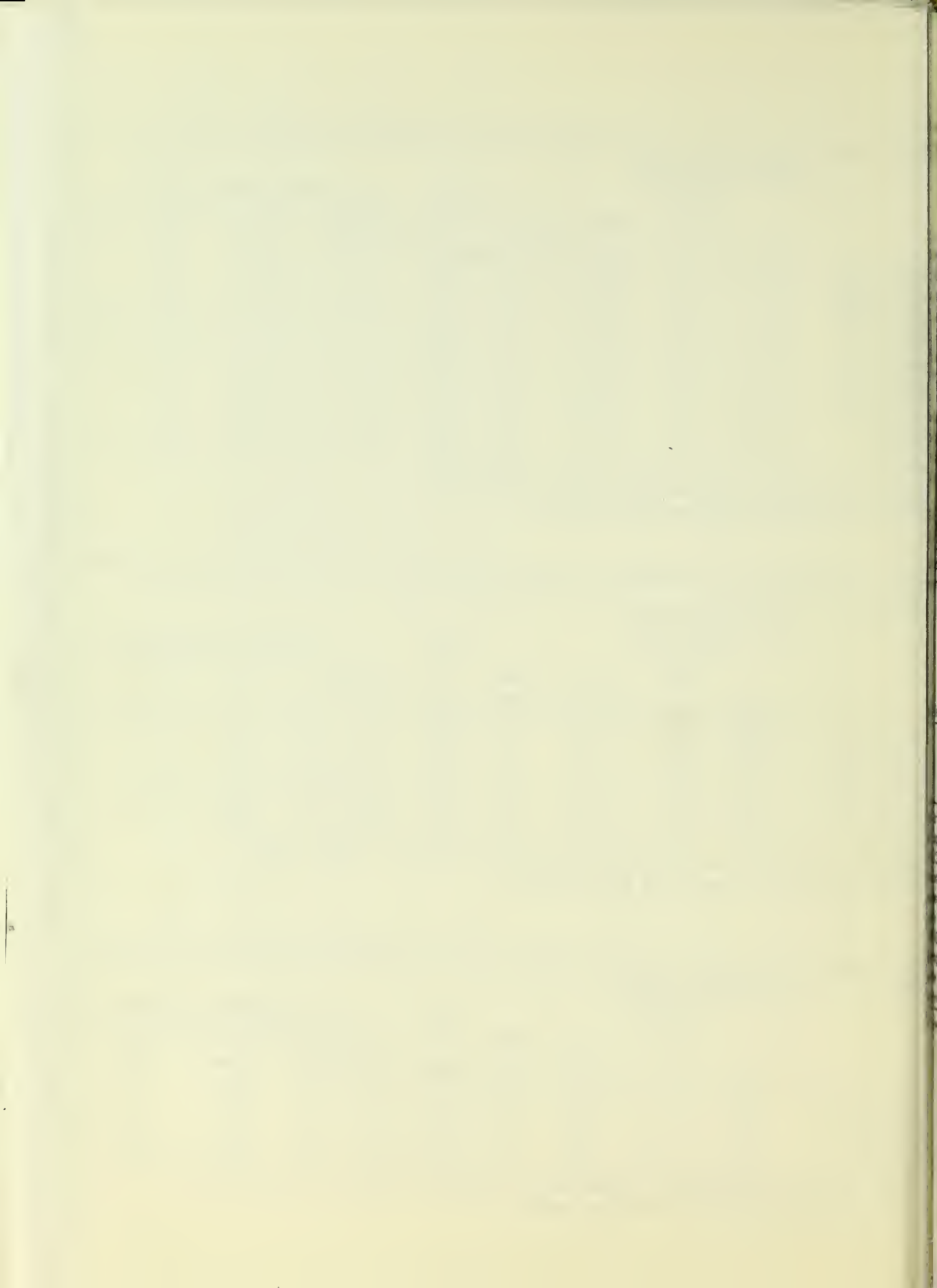
²Percent first pick from seven environments

Table 8. Performance of four cotton varieties grown in 21 Delta environments, 1972-76 average.¹

	LINT PER ACRE									
	Percent				Boll size	FIBER PROPERTIES				
	Total	first	Lint percent	Seed index		Length	Strength	Elonga- tion	Micro- naire	
		pick ²			grams					2.5%
Stoneville 213	891	85	38.8	10.9	5.50	1.13	.54	18.86	7.1	4.8
Deltapine 55	887	85	40.8	10.0	5.32	1.14	.54	18.87	7.2	4.5
Deltapine 16	859	82	38.7	11.1	5.84	1.16	.56	19.59	8.7	4.7
Coker 310	849	85	39.5	11.2	5.53	1.20	.57	19.97	6.8	4.6

¹Twenty-one environments---Stoneville 9, Tunica 5, Sumner 4, Yazoo City 3

²Percent first pick from 13 environments



9. Results of the 1976 Cotton Variety Test on Marietta fine sandy loam soil at Mississippi Mississippi.

	<u>LINT PER ACRE</u> Total	Lint percent	Boll size grams	FIBER PROPERTIES				
				Length		Strength g/tex	Elonga- tion	Micro- naire
				2.5%	50%			
Line 61	1158	40.2	5.74	1.17	.56	18.78	10.5	4.7
304	1157	41.5	5.41	1.20	.56	20.16	8.0	4.3
Line 16	1151	39.7	5.78	1.17	.54	19.31	10.9	4.1
310	1100	40.7	5.06	1.20	.56	20.55	8.6	4.1
134-056	1078	39.8	5.07	1.15	.54	18.87	8.7	4.4
ville 213	1074	40.0	5.40	1.12	.53	18.40	9.5	4.7
1104	1047	40.0	5.81	1.16	.56	20.02	8.0	4.2
6-020-24	1029	39.9	5.62	1.18	.55	19.30	9.4	4.4
ville 731N	1020	40.9	4.91	1.13	.52	18.59	7.4	4.2
Line 55	1000	40.7	4.81	1.13	.51	19.26	9.6	3.9
ville 256	993	39.4	5.33	1.14	.53	18.50	7.7	4.2
277	993	38.8	6.03	1.21	.58	20.16	10.3	3.9
V.	6.8							
SD .05	88							

Tested: April 27, 1976
 Harvested: November 17, 1976

10. Performance of ten cotton varieties at Mississippi State University, 1975-76 average.¹

	<u>LINT PER ACRE</u> Total	Lint percent	Boll size grams	FIBER PROPERTIES				
				Length		Strength g/tex	Elonga- tion	Micro- naire
				2.5%	50%			
304	954	41.1	5.39	1.18	.54	19.94	8.0	4.4
Line 16	940	40.0	5.70	1.17	.54	19.15	10.7	4.2
134-056	931	40.2	5.05	1.15	.53	19.33	8.8	4.3
277	929	39.5	5.96	1.18	.57	20.23	10.0	4.0
ville 213	924	39.1	5.67	1.13	.54	19.26	9.3	4.4
310	905	41.4	5.22	1.20	.57	20.46	8.7	4.3
6-020-24	900	40.6	5.58	1.17	.56	19.96	9.8	4.6
Line 55	897	41.4	5.14	1.14	.53	19.60	9.5	4.3
731N	875	40.5	5.20	1.14	.53	18.90	8.5	4.4
ville 256	855	40.3	5.46	1.14	.54	18.75	8.2	4.5

in two environments---Leeper fine sandy loam soil in 1975, Marietta fine sandy loam soil in 1976.