

1-1-1944

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Cotton Varieties

in the

Hill Section of Mississippi

1943

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AGRICULTURAL EXPERIMENT STATION

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STATE COLLEGE

MISSISSIPPI

COTTON VARIETIES IN THE HILL SECTION OF MISSISSIPPI

By J. FRED O'KELLY

Credit for the collection of field data in the variety trials at the hill branch stations must be given Superintendents E. B. Ferris, H. A. York, and T. E. Ashley, in charge at Holly Springs, Raymond, and Poplarville, respectively.

The cotton variety results presented here agree rather closely with results obtained in other years and if given proper consideration along with other related factors, should help the cotton grower choose a satisfactory variety.

The prices used in computing values were, as usual, based on 10 weeks of the Memphis, Tenn., marketing season beginning late in August. For the cur-

rent season, values were computed for strict low middling and low middling grades in addition to the values for middling grade. The value used for seed in the hill tests was \$54.00 per ton.

The outstanding feature of the growing season was the subnormal moisture supply. At State College rainfall for the months of May, June, and July was 1.25, 3.17 and 2.48 inches, respectively, below the long-time averages for those months. This would give a total for those months of a little less than 7 inches compared with a long-time average of over 13 inches. Abnormally high temperatures prevailed much of the time during those

Table 1. Cotton varieties: average results, State College, 1939-1943.

Variety	Pounds lint per acre					Av. acre value (1)	Lint percentage	Staple length, inches	Bolls per pound lint	
	1939	1940	1941	1942	1943					Average
Hi-Bred	428.9	291.2	251.3	574.6	612.3	431.7	75.59	42.4	7/8	159
Deltapine 14 (2).....	344.8	244.3	220.7	621.0	585.9	403.3	82.35	40.1	1 1/16	207
Cleveland 54	385.0	277.0	221.9	599.8	494.2	395.6	74.29	36.3	15/16	211
Stoneville 2B	368.7	301.1	205.1	571.7	511.1	391.5	83.47	34.8	1 3/32	203
Coker 100-7 (3).....	411.2	302.1	269.8	551.2	423.0	391.5	83.14	37.6	1 1/8	210
Acala 892	373.7	200.0	186.7	625.7	540.9	385.4	75.92	38.2	1	171
Miller	357.3	212.5	210.5	584.4	541.5	381.2	75.12	36.8	1	184
Delfos 531C (4).....	325.5	307.3	173.7	515.3	486.5	361.7	87.18	35.0	1 5/32	238
Delfos 651 (5).....	317.5	265.5	163.9	520.5	481.6	349.8	81.48	33.6	1 5/32	239
Express 11384 (6).....	283.1	236.7	170.0	438.0	316.0	288.8	63.69	32.3	1 1/8	243

(1) Middling grade. (2) Deltapine 12, 1939 and 1940. (3) Coker 100-3, 1939 and 1940; Coker 100-5, 1941 and 1942. (4) Delfos 531-B, 1939. (5) Delfos 6, 1939 and 1940; Delfos 3505, 1941. (6) Express 11383, 1939 and 1940.

Table 2. Cotton varieties: 1943 results, State College.

Variety	Pounds lint per acre	Total acre value—grade			Lint percentage	Staple length, inches	Bolls per pound lint
		Middling	Strict low middling	Low middling			
Hi-Bred	612.3	\$139.10	\$133.29	\$119.20	42.4	7/8	160
Deltapine 14	585.9	152.93	142.39	120.71	41.2	1 3/32	191
Coker 100 Wilt.....	556.5	145.51	135.77	117.68	37.0	1 1/16	199
Miller	541.5	137.27	129.96	113.99	37.5	1 1/32	179
Acala 892	540.9	134.46	126.88	111.47	38.8	1	167
Stoneville 5A	540.9	145.65	135.91	115.90	36.6	1 3/32	218
Stoneville 2B	511.1	150.36	136.82	113.56	35.2	1 1/8	202
Cleveland 54	494.2	118.11	113.17	101.56	37.5	29/32	205
Delfos 531C	486.5	165.56	146.59	116.43	34.7	1 7/32	242
Delfos 651	481.6	159.08	142.22	115.25	34.7	1 3/16	238
Bobshaw 1	480.4	125.34	116.93	101.32	37.3	1 1/16	218
Bobdel	473.3	148.70	133.32	110.13	34.1	1 5/32	233
Boboak	435.6	135.69	121.53	100.19	35.3	1 5/32	237
Coker 100-7	423.0	137.26	122.45	98.77	37.5	1 3/16	208
Express 11384	316.0	106.79	95.73	78.04	31.6	1 3/16	255

Table 3. Cotton varieties: average results, hill soil, Holly Springs, 1939-1943.

Variety	Pounds lint per acre					Average	Av. acre value (1)	Lint percentage	Staple length, inches	Bolls per pound lint
	1939	1940	1941	1942	1943					
Hi-Bred	643.7	586.9	568.2	735.2	368.6	580.5	94.09	42.4	7/8	172
Stoneville 2B	541.9	609.0	548.3	737.5	320.1	551.4	103.46	35.4	1 3/32	202
Acala 892	527.0	450.5	621.8	659.4	378.5	527.4	95.34	38.1	31/32	170
Deltapine 14 (2)	521.6	448.5	647.6	669.6	348.6	527.2	96.08	39.9	1 1/32	216
Miller	545.7	461.2	580.2	652.9	373.2	522.6	94.18	37.1	31/32	180
Delfos 531C (3)	526.8	509.9	525.2	615.0	293.5	494.1	103.81	34.9	1 5/32	239
Delfos 651 (4)	454.1	520.8	526.3	665.1	298.4	492.9	99.74	35.2	1 1/8	235
Coker 100-7 (5)	520.6	499.0	495.4	621.2	311.7	489.6	93.82	38.1	1 3/32	212
Cleveland 54	435.2	471.2	564.2	621.6	313.0	481.0	85.66	36.2	15/16	220
Express 11384 (6)	407.3	422.4	404.9	513.8	248.1	399.3	81.50	32.8	1 1/8	255

(1) Middling grade. (2) Deltapine 12, 1939 and 1940. (3) Delfos 531B, 1939. (4) Delfos 6, 1939 and 1940; 3506, 1941. (5) Coker 100-3, 1939 and 1940; 100-5, 1941 and 1942. (6) Express 11383, 1939 and 1940.

Table 4. Cotton varieties: 1943 results, hill soil, Holly Springs.

Variety	Pounds lint per acre	Total acre value—grade			Lint percentage	Staple length, inches	Bolls per pound lint
		Middling	Strict low middling	Low middling			
Acala 892	378.5	\$91.49	\$86.57	\$76.35	41.1	31/32	185
Miller	373.2	90.87	86.02	75.94	40.0	31/32	192
Coker 100 Wilt	371.3	93.23	88.21	77.26	38.8	1 1/32	214
Hi-Bred	368.6	81.13	77.63	69.15	44.2	13/16	175
Deltapine 14	348.6	88.01	81.91	70.58	42.2	1 1/16	229
Stoneville 5A	341.6	88.66	82.69	71.58	38.0	1 1/16	233
Bobshaw 1	327.8	82.85	78.42	68.75	37.9	1 1/32	242
Stoneville 2B	320.1	86.07	80.31	68.47	36.8	1 3/32	216
Cleveland 54	313.0	76.73	72.50	64.52	38.5	15/16	228
Coker 100-7	311.7	89.04	80.78	66.60	39.6	1 1/8	227
Delfos 651	298.4	86.50	78.59	65.01	37.3	1 1/8	242
Delfos 531C	293.5	90.68	81.14	66.76	36.5	1 5/32	261
Bobdel	272.7	74.00	69.09	59.00	35.6	1 3/32	255
Boboak	251.0	68.16	63.64	54.35	35.5	1 3/32	260
Express 11384	248.1	78.07	70.01	57.85	33.9	1 5/32	277

Table 5. Cotton varieties: 1943 results, valley soil, Holly Springs.

Variety	Pounds lint per acre	Total acre value—grade			Lint percentage	Staple length, inches	Bolls per pound lint
		Middling	Strict low middling	Low middling			
Deltapine 14	652.5	\$172.17	\$160.43	\$136.28	39.5	1 3/32	217
Stoneville 2B	641.2	186.76	169.77	140.60	36.6	1 1/8	191
Hi-Bred	635.5	147.28	140.92	125.99	41.7	29/32	169
Acala 892	614.9	153.65	145.04	127.52	38.1	1	176
Stoneville 5A	589.7	159.51	148.89	127.07	36.0	1 3/32	229
Miller	589.4	150.08	141.82	125.03	35.7	1	195
Cleveland 54	579.8	145.41	137.87	122.22	36.1	31/32	222
Coker 100 Wilt	578.9	156.00	145.58	124.16	36.5	1 3/32	228
Coker 100-7	570.4	190.80	168.56	133.19	37.5	1 7/32	210
Bobshaw 1	561.0	151.98	141.88	121.13	35.8	1 3/32	218
Delfos 531C	536.9	183.57	162.63	129.35	34.0	1 7/32	262
Delfos 651	527.9	174.85	156.37	126.81	34.3	1 3/16	246
Boboak	473.8	149.77	134.37	111.15	33.3	1 5/32	238
Bobdel	473.5	150.02	134.63	111.43	33.0	1 5/32	238
Express 11384	421.7	153.22	134.66	104.72	31.1	1 1/4	269

months. The moisture deficiency in August was very slight, thus making it possible for much of the fiber to develop well.

At Holly Springs the rainfall deficiency was greater than at the other stations. The total rainfall for May, June, and July was 6.64 inches distributed in numerous showers. A shower of 1.44 inches on May 10 was the only one which made the soil too wet for cultivation. Because of dry and hot weather, yields on the valley soil test were reduced somewhat and those on the hill test were reduced greatly.

A 5-year average table could not be prepared for the valley test because in

several recent years poor stands and late germination made the yield figures questionable.

Weather conditions at Raymond handicapped operations somewhat, but final yields in the cotton tests were satisfactory.

Moisture deficiencies at Poplarville handicapped the crop in its early stages and again when fruiting was well under way. The result was slightly lower-than-average yields.

It is probable that the hot and dry growing season helped materially in controlling the boll weevil. The cotton in the tests reported here was grown with-

Table 6. Cotton varieties: average results, valley soil, Raymond, 1939-1943.

Variety	Pounds lint per acre						Av. acre value (£1)	Lint percentage	Staple length, inches	Bolls per pound lint
	1939	1940	1941	1942	1943	Average				
Deltapine 14 (2).....	777.1	527.2	396.1	731.1	921.1	670.5	142.37	38.1	1 1/8	210
Hi-Bred	797.1	490.1	350.6	561.0	923.4	624.4	105.79	38.8	7/8	170
Stoneville 2B	702.9	529.6	345.9	651.2	786.4	603.2	134.08	33.3	1 1/8	200
Miller	775.8	485.7	369.1	650.5	727.3	601.7	112.01	34.7	1	186
Coker 100-7 (3).....	637.4	559.3	371.1	632.4	782.3	596.5	142.96	34.8	1 5/32	205
Cleveland 54	687.4	463.5	385.3	679.3	747.4	592.6	112.47	33.5	31/32	218
Acala 892	684.6	433.8	284.1	621.4	727.6	550.3	102.29	35.9	1	172
Delfos 531C (4).....	653.0	475.6	321.0	626.8	671.0	549.5	135.34	32.3	1 3/16	226
Delfos 651 (5).....	580.7	434.9	274.8	658.2	658.8	521.5	128.43	31.9	1 5/32	237
Express 11384 (6)....	579.1	391.9	242.2	546.4	595.6	471.0	115.47	30.5	1 5/32	251

(1) Middling grade. (2) Deltapine 12, 1939 and 1940. (3) Coker 100-3, 1939 and 1940; 100-5, 1941 and 1942. (4) Delfos 531B, 1939. (5) Delfos 6, 1939 and 1940; 3506, 1941. (6) Express 11383, 1939 and 1940.

Table 7. Cotton varieties: 1943 results, valley soil, Raymond.

Variety	Pounds lint per acre	Total acre value—grade			Lint percentage	Staple length, inches	Bolls per pound lint
		Middling	Strict low middling	Low middling			
Hi-Bred	923.4	\$210.58	\$201.81	\$180.57	39.1	27/32	151
Deltapine 14	921.1	265.28	240.87	198.96	38.3	1 1/8	204
Bobshaw 1	826.3	219.32	204.86	178.00	35.1	1 1/16	193
Coker 100 Wilt	791.8	235.47	214.48	178.46	33.8	1 1/8	198
Stoneville 2B	786.4	234.80	213.97	178.18	33.3	1 1/8	181
Coker 100-7	782.3	265.53	235.02	186.51	35.1	1 7/32	192
Stoneville 5A	765.2	210.19	196.41	168.10	34.1	1 3/32	204
Cleveland 54	747.4	191.24	181.53	161.35	33.8	31/32	198
Bobdel	732.6	246.99	221.35	180.32	31.9	1 3/16	213
Acala 892	727.6	183.63	173.44	152.70	36.8	1	150
Miller	727.3	186.77	176.59	155.86	34.7	1	182
Delfos 531C	671.0	224.49	201.01	163.43	32.9	1 3/16	212
Boboak	666.3	215.56	193.91	161.26	30.5	1 5/32	225
Delfos 651	658.8	220.91	197.86	160.96	32.6	1 3/16	240
Express 11384	595.6	207.89	184.66	147.73	31.2	1 7/32	240

Table 8. Cotton varieties: average results, hill soil, Raymond, 1939-1943.

Variety	Pounds lint per acre						Av. acre value (1)	Lint percentage	Staple length, inches	Bolls per pound lint
	1939	1940	1941	1942	1943	Average				
Hi-Bred	590.6	583.2	479.1	710.4	633.8	599.4	96.94	41.5	13/16	175
Stoneville 2B	483.2	578.0	541.8	758.0	550.7	582.3	114.20	35.8	1 1/16	212
Deltapine 14 (2)	522.2	551.8	494.0	761.9	567.9	579.6	107.53	39.7	1 1/32	226
Coker 100-7 (3)	525.9	512.7	487.7	768.8	563.4	571.7	117.72	38.1	1 3/32	216
Cleveland 54	492.8	535.0	511.1	713.2	590.4	568.5	102.97	35.9	29/32	218
Miller	452.6	448.3	522.5	693.7	550.6	533.5	102.11	36.8	15/16	191
Acala 892	500.2	381.2	461.9	639.5	560.0	508.6	94.56	37.3	15/16	187
Delfos 531C (4)	415.4	474.3	454.6	702.6	483.0	506.0	112.01	35.0	1 1/8	243
Delfos 651 (5)	397.9	484.9	416.2	683.3	498.4	496.1	107.18	34.1	1 3/32	250
Express 11384 (6)	416.0	421.8	408.3	599.4	420.0	453.1	99.00	32.9	1 3/32	242

(1) Middling grade. (2) Deltapine 12, 1939 and 1940. (3) Coker 100-3, 1939 and 1940; 100-5, 1941 and 1942. (4) Delfos 531B, 1939. (5) Delfos 6, 1939 and 1940; 3506, 1941. (6) Express 11383, 1939 and 1940.

Table 9. Cotton varieties: 1943 results, hill soil, Raymond.

Variety	Pounds lint per acre	Total acre value—grade			Lint percentage	Staple length, inches	Bolls per pound lint
		Middling	Strict low middling	Low middling			
Hi-Bred	633.8	\$141.72	\$135.70	\$121.12	41.8	13/16	172
Bobshaw 1	607.1	152.97	144.47	127.17	37.0	1	217
Coker 100 Wilt	603.5	151.13	142.68	125.48	37.8	1	198
Cleveland 54	590.4	142.27	136.36	122.49	36.5	29/32	222
Miller	550.6	136.23	129.07	114.21	37.8	31/32	184
Deltapine 14	567.9	144.54	134.60	116.15	40.9	1 1/16	215
Coker 100-7	563.4	161.64	146.71	121.08	38.9	1 1/8	204
Acala 892	560.0	137.48	129.92	115.64	38.3	15/16	184
Stoneville 2B	550.7	144.88	135.25	117.35	36.2	1 1/16	185
Stoneville 5A	543.8	136.49	128.88	113.38	37.5	1	211
Delfos 651	498.4	155.47	139.27	114.85	35.1	1 5/32	238
Boboak	484.8	144.06	131.22	109.16	33.9	1 1/8	231
Delfos 531C	483.0	150.67	134.97	111.30	35.1	1 5/32	236
Bobdel	464.4	138.22	125.91	104.78	33.7	1 1/8	240
Express 11384	420.0	133.71	120.06	99.48	32.4	1 5/32	250

out the use of calcium arsenate. In seasons with normal to heavy rainfall the judicious use of calcium arsenate will often improve yields materially, especially if enough nicotine is used to control plant lice. Instructions concerning the use of calcium arsenate in boll weevil control can be supplied by the Department of Entomology, State College, Mississippi.

The reader is urged to depend most on average results where this is possible but the results of the current year will be of interest especially in regard to new strains which have not been in the trials long enough to be included in the averages.

Computing values on the basis of the three grades, middling, strict low middling, and low middling has been done primarily to show how the selling price of various staple lengths may vary as the grade is reduced. These values emphasize the need for the prompt harvesting of cotton, especially staple cotton, if premium prices for such cotton are to be obtained. Varieties vary somewhat in their resistance to weather damage, but unfortunately a method for showing this as a part of a variety test has not been developed.

Seed supplies for planting the tests were obtained from the originators in all cases.

Table 10. Cotton varieties average results, Poplarville, 1940-1943.

Variety	Pounds lint per acre					Av. acre value (1)	Lint per cent-age	Staple length, inches	Bolls per pound lint
	1940	1941	1942	1943	Average				
Hi-Bred	524.2	511.6	278.0	345.3	414.8	71.01	43.2	27/32	189
Cleveland 54	498.9	489.7	290.0	363.8	410.6	75.37	37.9	7/8	232
Stoneville 2B	533.9	469.2	270.3	261.3	383.7	74.93	36.2	1 1/16	210
Bobshaw 1	406.7	457.5	349.7	280.8	373.7	72.30	37.9	1	245
Miller	444.1	437.6	341.2	229.1	363.0	67.65	38.6	15/16	200
Coker 100-7 (2)	398.9	486.8	274.6	204.1	341.1	70.43	37.9	1 3/32	218
Deltapine 14 (3)	414.2	431.5	259.7	252.0	339.3	64.06	41.6	1 1/32	228
Acala 892	394.7	379.7	264.7	202.4	310.4	57.07	38.3	15/16	200
Delfos 651 (4)	367.0	369.1	154.7	268.7	289.9	62.91	35.1	1 1/8	256
Delfos 531C	363.3	382.8	178.5	165.1	272.4	60.17	35.8	1 5/32	271
Express 11384 (5)	313.2	360.5	155.0	200.6	257.3	55.16	33.8	1 3/32	265

(1) Middling grade. (2) Coker 100-3, 1940; Coker 100-5, 1941 and 1942. (3) Deltapine 12, 1940. (4) Delfos 6, 1940; 3506, 1941. (5) Express 11383, 1940.

Table 11. Cotton varieties: 1943 results, Poplarville.

Variety	Pounds lint per acre	Total acre value—grade			Lint per cent-age	Staple length, inches	Bolls per pound lint
		Middling	Strict low middling	Low middling			
Cleveland 54	363.8	\$85.13	\$81.68	\$73.31	38.3	7/8	197
Hi-Bred	345.3	76.64	73.36	65.41	42.9	13/16	176
Coker 100 Wilt	290.3	73.48	69.56	60.99	37.7	1 1/32	215
Bobshaw 1	280.8	70.10	66.17	58.17	38.2	1	240
Delfos 651	268.7	83.94	75.21	62.04	34.9	1 5/32	238
Stoneville 2B	261.3	68.42	63.85	55.36	36.8	1 1/16	208
Stoneville 5A	258.7	65.59	62.10	54.46	37.5	1 1/32	231
Boboak	253.7	69.18	64.61	55.22	35.0	1 3/32	241
Deltapine 14	252.0	63.71	59.30	51.11	42.0	1 1/16	205
Miller	229.1	55.98	53.00	46.81	39.5	31/32	173
Coker 100-7	204.1	62.54	55.91	45.91	37.8	1 5/32	211
Acala 892	202.4	47.71	45.68	40.93	39.3	29/32	185
Express 11384	200.6	63.07	56.55	46.72	34.0	1 5/32	247
Delfos 531C	165.1	54.25	48.47	39.22	35.5	1 3/16	302
Bobdel	107.1	31.53	28.69	23.81	35.1	1 1/8	316

Table 12. Cotton varieties, six locations, 1943.

Variety	Pounds lint per acre						Averages		
	Holly Springs		State College	Raymond		Poplarville	Lint per cent-age	Staple inches	Bolls per lb. lint
	Hill	Valley		Hill	Valley				
Hi-Bred	368.6	635.5	612.3	633.8	923.4	345.3	42.0	27/32	167
Deltapine 14	348.6	652.5	585.9	567.9	921.1	252.0	40.7	1 3/32	210
Coker 100 Wilt	311.7	578.9	556.5	603.5	791.8	290.3	37.1	1 1/16	211
Cleveland 54	313.0	579.8	494.2	590.4	747.4	363.8	36.8	15/16	212
Bobshaw 1	327.8	561.0	480.4	607.1	826.3	280.8	36.9	1 1/32	221
Stoneville 2B	320.1	641.2	511.1	550.7	786.4	261.3	35.8	1 3/32	197
Stoneville 5A	341.6	589.7	540.9	543.8	765.2	258.7	36.6	1 1/16	221
Acala 892	378.5	614.9	540.9	560.0	727.6	202.4	38.7	31/32	174
Miller	373.2	589.4	541.5	550.6	727.3	229.1	37.5	1	184
Coker 100-7	311.7	570.4	423.0	563.4	782.3	204.1	37.7	1 5/32	209
Delfos 651	251.0	527.9	481.6	498.4	658.8	268.7	34.5	1 5/32	243
Delfos 531C	293.5	536.9	486.5	483.0	671.0	165.1	34.8	1 3/16	252
Boboak	251.0	473.8	435.6	484.8	666.3	253.7	33.9	1 1/8	239
Bobdel	272.7	473.5	473.3	464.4	732.6	107.1	33.9	1 1/8	249
Express 11384	248.1	421.7	316.0	420.0	595.6	200.6	32.4	1 3/16	256

Seed Sources, 1943

Acala 892—Cotton Branch Station, Marianna, Arkansas.

Bobdel (Bobshaw 16)—Bobshaw Seed Company, Heathman, Mississippi.

Boboak (Bobshaw 12)—Bobshaw Seed Company, Heathman, Mississippi.

Bobshaw 1—Bobshaw Seed Company, Heathman, Mississippi.

Cleveland 54—Mississippi Experiment Station, State College, Mississippi.

Coker 100-7 and 100 Wilt—Coker Pedigreed Seed Company, Hartsville, S. C.

Delfos 531C—Stoneville Pedigreed Seed Company, Stoneville, Mississippi.

Delfos 651—Delta Experiment Station, Stoneville, Mississippi.

Deltapine 14—Delta and Pine Land Company, Scott, Mississippi.

Express 11384—Delta Experiment Station, Stoneville, Mississippi.

Hi-Bred—B. F. Summerour, Norcross, Georgia.

Miller—Mississippi Experiment Station, State College, Mississippi.

Stoneville 2B and 5A—Stoneville Pedigreed Seed Company, Stoneville, Mississippi.

The list of seed sources is given for the interest of those who may not be familiar with the originators of the leading varieties and strains of cotton. In many cases the supplies of the originator are already exhausted and late purchasers will be obliged to fill their needs from producers of certified seed or from other dependable sources.