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Cotton Variety Summary



1926—1930

By

J. F. O'KELLY AND W. W. HULL

COTTON VARIETY SUMMARY

1926-1930

By J. F. O'KELLY AND W. W. HULL

This publication contains reports of five year results with cotton varieties at A. & M. College, Holly Springs, Raymond, and Poplarville, and certain current results of interest at A. & M. College. It is intended to be a summary of the work at the hill branch stations of Mississippi for the last five years.

Table 1.—Cotton Varieties—A. & M. College—1926-1930.

	Per Acre			Rank in			Bolls	
	Lbs. Lint	Total Value		Value	Percentage	Length	Per lb.	
Cleveland 54	459.6	91.09	4	34.0		31/32	70	
D. & P. L. 6	459.1	102.17	1	33.7		1 1/8	81	
D. & P. L. 4-8	447.8	91.46	3	36.6		1	72	
Piedmont Cleveland	444.2	85.98	7	33.1		29/32	69	
Delfos (1)	423.7	95.33	2	31.2		1 1/8	78	
Half and Half	410.5	73.80	13	40.3		13/16	69	
Wilson Type	403.6	78.26	11	32.8		29/32	73	
Coker Cleveland	396.6	84.41	8	33.5		1 1/32	68	
Lone Star	394.2	84.00	9	33.5		1 1/16	64	
Express	393.2	89.85	5	31.4		1 5/32	77	
Acala	388.6	81.17	10	33.4		1 1/32	68	
Miller	354.7	75.02	12	32.8		1 1/32	59	
Webber	331.6	87.41	6	28.7		1 7/32	69	

(1) Delfos 911 three years; Missdel 2 two years.

Table 2.—Cotton Varieties—Holly Springs—Valley Test—1926-30.

	Per Acre			Rank in			Bolls (1)	
	Lint	Value		Value	Percentage	Length	Per lb.	
D. & P. L. 4-8	686.5	129.03	1	37.3		1	84	
Half and Half	683.1	112.60	10	39.5		27/32	74	
Cleveland 54	664.6	123.79	4	33.6		31/32	78	
Lone Star	644.0	126.35	2	33.3		1 1/16	67	
Miller	615.7	120.22	7	32.9		1 1/32	60	
Wilson Type	610.3	108.53	11	32.1		29/32	78	
Piedmont Cleveland	607.6	107.02	12	32.3		29/32	73	
Acala	607.3	115.88	9	33.7		1 1/32	74	
Delfos	598.7	126.02	3	31.6		1 1/8	88	
D. & P. L. 6	584.9	121.82	5	34.2		1 1/8	89	
Lightning Express	547.6	118.79	8	31.5		1 5/32	90	
Deltatype Webber	508.5	120.86	6	30.4		1 7/32	70	

(1) Sizes for 1930 only.

In the tabulations, the varieties are arranged in order of pounds of lint produced to the acre. The total value is the sum of the values of seed and lint. Seed were valued at approximate oil mill prices, which was \$22.00 a ton in 1930. The values for lint were based on middling cotton of different staple lengths and, in most years, were season averages. For example, in 1930, weekly reports for different lengths of middling cotton for ten weeks of the harvesting season, beginning with the last week in August, were averaged, and the average prices so obtained were used in the 1930 computations.

The tables of averages do not contain more varieties because varieties are being changed constantly, and only a few were in the tests for five years, although each year twenty to twenty-five varieties were included. In fact a few combinations were made. In a few cases, the average for D. & P. L. 4-8 includes two years of D. & P. L. 4, which is very similar in some respects. The Delfos average in some cases includes Delfos 911 and Missdel 2. In some cases, the Express average includes one year of Express 121, the data for the other years being for Lightning Express.

Since there are only a few varieties in these averages, the importance of rank is lessened. A variety which is sixth in a group of ten might be sixteenth in a group of twenty-five. Differences in pounds or dollars should receive more emphasis than relative rank.

Table 3.—Cotton Varieties—Holly Springs—Hill Test—1926-30.

	Per Acre		Rank in		Length	Bolls (1) Per lb.
	Lint	Value	Value	Percentage		
Half and Half	507.3	83.01	4	43.8	25/32	84
D. & P. L. 4-8	438.3	80.62	6	39.7	31/32	96
Lone Star	433.4	84.23	2	36.0	1 1/32	79
D. & P. L. 6	425.2	86.32	1	37.4	1 3/32	117
Cleveland 54	424.6	76.70	10	36.9	15/16	92
Acala	415.4	78.75	8	36.4	1	95
Wilson Type	413.2	73.72	11	35.3	7/8	96
Delfos	405.8	83.30	3	34.4	1 3/32	108
Miller	405.8	78.52	9	35.9	1	71
Piedmont Cleveland	404.3	70.47	12	35.5	27/32	86
Lightning Express	396.4	82.95	5	34.4	1 3/32	104
Deltatype	345.7	79.36	7	33.2	1 5/32	88

(1) Sizes for 1930 only.

Table 4.—Cotton Varieties—Raymond—1926-30.

	Per Acre		Rank in		Inches
	Lbs. Lint	Value	Value	Percentage	
Cleveland 54	607.9	110.95	3	36.0	31/32
D. & P. L. 4-8	587.9	107.32	5	38.4	1
Delfos 911	571.5	120.59	1	33.3	1 1/8
Half and Half	560.9	91.63	11	41.6	13/16
D. & P. L. 6	552.7	113.91	2	35.7	1 1/8
Wilson Type	551.1	98.56	10	34.4	29/32
Lone Star 65	536.9	105.11	6	34.7	1 1/16
Acala	532.0	100.52	9	35.3	1
Miller	519.2	100.71	7	34.7	1 1/32
Lightning Express	512.0	108.12	4	32.9	1 1/8
Cleveland, Piedmont	503.9	90.95	12	34.4	7/8
Cleveland, Coker	478.1	89.16	13	35.7	1
Deltatype Webber	419.8	100.58	8	31.7	1 7/32

The weight one should attach to the per acre values will vary with the system of marketing, with soil type, and with labor used in production and harvesting. These values will mean much to one who is prepared to receive through marketing association or other agency the full value of the staple, whatever its length. On thin to comparatively thin soils, dwarf and extremely long varieties will seldom be satisfactory. Vigorous growing medium to short types are best on such soils. Labor is becoming more particular about easy picking varieties and such varieties must sometimes be chosen with some sacrifice in production and value.

By studying the results reported in this bulletin with his particular needs in mind, the grower can eliminate from consideration certain varieties at once. It may happen that he is unable to make a choice between several varieties, any one of which would be satisfactory for his conditions. Under such cir-

cumstances, he should be influenced by the purity and productivity of the seed offered for sale.

Those men who have had charge of the hill branch stations for the last five years are due full credit for the data presented from those stations and their excellent cooperation is hereby acknowledged.

Table 1 is a five-year summary of the main variety test at the Central Station. This test was conducted on soil of moderate fertility and was usually fertilized with 500 to 600 pounds of 6-8-4 fertilizer to the acre. The low yields are due more to cotton flea hopper and weather damage than to boll weevil injury.

Table 5.—Cotton Varieties—Poplarville—1926-30.

	Per Acre					
	Lbs. Lint	Total Value	Rank in Value	Percentage	Length	
Cleveland 54	336.4	62.61	4	35.5	15/16	
D. & P. L. 6	333.7	69.72	1	35.8	1 3/32	
Half and Half	330.3	54.02	11	41.5	13/16	
Wilson Type	324.3	59.65	5	33.4	7/8	
Delfos	315.7	64.87	2	33.6	1 3/32	
D. & P. L. 4-8	314.4	58.34	6	37.6	31/32	
Piedmont Cleveland	310.6	55.79	7	34.2	7/8	
Acala	291.9	55.76	8	34.5	1	
Express	291.6	63.20	3	33.1	1 3/32	
Miller	286.2	55.61	9	34.4	1	
Lone Star	280.3	54.76	10	35.1	1 1/32	
Deltatype Webber	208.1	49.49	12	31.6	1 3/16	

Table 6.—Standard Varieties—1930.

	Lbs. lint per acre	Total value	Rank in value	Lint data		Cents per lb.	Bolls per lb.
				Percentage	Length		
D. & P. L. 10	417.5	53.64	1	35.5	1 1/32	10.85	79
Cleveland 54	383.1	45.81	3	34.3	15/16	9.85	78
D. & P. L. 6	346.4	46.41	2	34.4	1 3/32	11.30	87
Piedmont Cleveland	338.1	36.26	12	32.6	27/32	8.45	78
Stoneville 3	317.4	40.54	8	36.4	1 1/32	10.85	87
Acala 37	313.9	41.43	7	31.9	1 1/32	10.85	78
Roldo Rowden 40	310.1	38.37	10	33.6	31/32	10.20	68
Missdel 2	309.4	42.00	5	32.6	1 3/32	11.30	88
Express, Light	307.8	43.19	4	31.6	1 1/8	11.65	90
Wilson Type	307.5	33.07	17	32.3	27/32	8.45	82
Express 17	305.4	41.92	6	31.2	1 3/32	11.30	80
Stoneville 1	294.6	38.96	9	34.1	1 1/16	11.10	70
D. & P. L. 4-8	284.9	34.58	15	36.2	31/32	10.20	82
Cleveland 884	284.7	35.37	14	33.1	31/32	10.20	82
Stoneville 2	283.4	36.99	11	33.3	1 1/32	10.85	80
Miller 3286	266.1	33.06	18	33.1	31/32	10.20	67
Express 41077	260.3	35.52	13	31.9	1 3/32	11.30	77
Miller 5111	255.4	30.42	20	34.8	15/16	9.85	69
Half and Half	245.4	23.57	22	43.9	3/4	8.20	77
Lone Star 566	239.4	31.64	19	34.2	1 1/16	11.10	74
Missdel 1	234.1	33.98	16	32.2	1 5/32	12.20	75
Deltatype Webber	182.6	29.08	21	28.0	1 3/16	13.10	78

The results reported in Tables 2, 3, 4, and 5 were obtained with seed from the same sources as in the Central Station results. Before time for planting, seed of all varieties were assembled at A. & M. College. Whenever possible, seed of each variety was obtained from the originator of the variety. The shipments were divided and the proper amount of each variety was sent to each branch station.

The Holly springs results are given in Tables 2 and 3, the first being conducted on valley land of that section and the other on higher hill or table

land. These soils had been improved with legumes and, as a rule, the cotton crops were well fertilized with approximately a 4-8-4 mixture.

At Raymond, valley and hill tests have been run for only four years. These tests were averaged for each year and this average used as the yield for that particular year. The results reported in Table 4 are, therefore, an average of averages obtained from both the valley and hill tests. The Raymond results were obtained on soil of medium fertility and which was well fertilized. The moisture supply was more nearly adequate at Raymond in 1930 than at many other stations in the state.

The Poplarville results are given in Table 5. They were obtained on typical coastal plains soil and the tests were well fertilized for such soils.

Current Results

Tables 6, 7, 8, and 9 report certain results for 1930. Except where otherwise indicated, the data were obtained at A. & M. College.

Conditions during 1930 were very abnormal. After the very excessive rains during the first half of May, only two light showers were received until the middle of August. On many of the tests, the cotton flea hopper delayed rapid fruiting until late in the summer. For this reason, a high proportion of the crop was set late and was matured in September and early October. After the rains came, the leaf worm appeared in large numbers. Its first attacks were controlled by calcium arsenate. In October, it was allowed to remove all leaves. The boll weevil was not a factor at any time on the college farm during the year.

The main variety test reported in Table 6 contained twenty-two varieties and strains, practically all of which are available in commercial quantity.

Table 7.—Standard and New Varieties—1930

		Per acre						
		Lbs. lint	Total value	Rank in value	Percentage	Length	Cents per lb.	Bolls per lb.
Cleveland 54	.....	357.6	41.93	7	35.2	29/32	9.70	82
Stoneville 4	.....	355.8	43.50	5	35.2	31/32	10.20	69
Foster 6	.....	347.0	47.55	1	34.9	1 1/8	11.65	91
Super Seven	.....	346.2	45.89	3	33.8	1 1/16	11.10	80
Miller 3286	.....	339.3	40.44	9	34.7	15/16	9.85	65
Delfos 719	.....	328.5	42.23	6	35.4	1 1/32	10.85	76
Acala, A. & M.	.....	321.2	41.54	8	37.5	1 1/16	11.10	71
Delfos 6112	.....	317.9	44.65	4	31.5	1 1/8	11.65	85
Stoneville 3	.....	315.8	39.16	10	37.3	1	10.55	93
Wilds	.....	304.0	46.70	2	32.7	1 3/16	13.10	77
D. & P. L. 5242	.....	294.2	34.57	12	41.5	31/32	10.20	82
Cleveland 5	.....	289.8	33.85	15	35.7	29/32	9.70	89
Wilson Type	.....	287.3	30.04	19	33.8	13/16	8.30	81
Lone Star P-4-1	.....	284.5	33.24	16	37.5	15/16	9.85	63
Cleveland 884	.....	275.7	33.85	14	34.6	31/32	10.20	89
Coker's 234	.....	274.8	35.80	11	36.3	1 1/16	11.10	80
Lone Star D-2-1	.....	262.1	31.53	17	37.5	31/32	10.20	76
Wilson 26 WC-5-M	.....	255.2	31.19	18	31.7	15/16	9.85	105
Missdel 2	.....	251.9	33.96	13	33.5	1 3/32	11.30	94
Lone Star 566	.....	232.9	23.37	21	35.7	31/32	10.20	80
Deltatype Webber	.....	202.7	29.93	20	30.0	1 5/32	12.20	83

The test of new and standard varieties, Table 7, and miscellaneous test, Table 8, contain much comparatively new material. These two tests were planned to study the merits of new strains about to be offered to cotton growers.

For several years, Red Leaf cotton has been increasing in popularity in certain sections of the state. Various and conflicting reports of its merits

have been circulated. This cotton was tried in 1930 with the results reported in Table 9.

The test at the Central Station had ten replications and, shortly before the plants began to set squares, plant counts were made and all rows of each replication were thinned to the same number of plants to the row. Since this test contained only four varieties with ten replications on soil of reasonable uniformity and since each variety was represented by the same number of plants, it is believed this test is as accurate as any one test can be made.

Table 8.—Miscellaneous Varieties—1930.

		Per acre						
		Lbs. lint	Total value	Rank in value	Percentage	Length	Cents per lb.	Bolls per lb.
Cleveland	54	612.3	75.29	1	34.4	31/32	10.20	64
Stoneville	3	586.8	75.14	2	36.0	1 1/32	10.85	74
Half and Half, M		558.7	55.82	12	39.4	13/16	8.30	63
Addison's Pro.		526.1	60.51	7	37.9	29/32	9.70	65
Lone Star	561	525.6	68.06	3	34.4	1 1/32	10.85	61
Stoneville	2	479.9	64.18	4	32.6	1 1/16	11.10	66
Miller	3286	469.2	61.43	5	32.9	1 1/32	10.85	53
Acala	37	462.6	61.21	6	31.6	1 1/32	10.85	63
Lone Star	562	452.0	59.12	8	35.7	1 1/16	11.10	57
Gosa		450.9	55.84	11	33.5	31/32	10.20	60
Lone Star	566	438.7	58.15	10	33.8	1 1/16	11.10	58
Acala, A. & M.		431.5	58.75	9	35.9	1 1/8	11.65	55
Miller	589	422.4	54.38	13	35.2	1 1/32	10.85	51
Miller	5111	399.5	50.60	14	34.2	1	10.55	52
Half and Half, S		364.6	35.37	18	42.3	25/32	8.20	58
Miller	5115	361.4	44.61	15	33.9	31/32	10.20	52
Miller, Barrett		312.6	40.06	16	32.7	1	10.55	53
Miller, Smith		304.9	40.04	17	32.5	1 1/32	10.85	51

The test in Neshoba County was supervised closely enough by a member of the department that it is known to be dependable.

The Poplarville results were obtained in the usual way by those in charge of the Poplarville Branch Station.

As a rule, the Red Leaf cotton, when pure, is medium early to late; has long internodes; has big bolls which pick easily; has a medium to short staple and a fairly high lint percentage; and its vigor gives it some degree of wilt resistance.

Table 9.—Red Leaf Tests—1930.

		Per Acre					
		Lbs. Lint	Value	Rank in Value	Lint data Percentage	Inches	Bolls Per lb.
A. & M. College							
Cleveland	54	333.5	39.85	1	34.4	15/16	73
Red Leaf	1	231.2	26.97	3	37.7	15/16	63
Miller	589	309.3	38.76	2	35.7	1	61
Red Leaf	2	209.9	24.89	4	35.4	15/16	65
Neshoba County							
Cleveland	54	453.2	46.90	1	36.7	27/32	85
Red Leaf		431.2	43.47	2	40.3	27/32	70
Poplarville, Miscellaneous Test							
Cleveland	54	253.7	29.98	1	34.2	29/32	
Red Leaf		188.1	18.93	2	38.4	13/16	
Poplarville, Wilt Test							
Cleveland	54	198.8	20.97	1	34.4	27/32	
Red Leaf		66.0	6.75	2	38.4	27/32	

Red Leaf cotton has existed for more than one hundred years and, although it has several desirable characteristics, it does not have qualities which cannot be had in other varieties, and it is impossible to produce pure seed in a

community where it and green leaf types are being grown. A few plants of either color in the other will make no material difference as far as production is concerned, but it is impossible to sell either as pure seed. Any community producing pure seed for sale as such should outlaw Red Leaf cotton.

Keep Seed Pure and Productive

Since the average farmer has little or no time for doing cotton breeding work, even if he were inclined that way, it is necessary that he adopt some method whereby he may keep his cotton variety pure and productive. The simplest way is for him to purchase, occasionally, several bushels seed of a good variety from a reputable breeder. This should be planted a few hundred yards from other cotton to avoid mixing. It should be picked separately and ginned when time will permit cleaning the gins thoroughly. The seed so obtained will be excellent for planting the general crop the following year. By repeating this procedure each year or two, the main crop can always be planted with pure productive seed at a nominal cost.

If a grower's acreage is sufficiently great and he has the inclination and training, he may find it profitable to improve his variety by mass selection. In mass or field selection, the field should be gone over after many of the bolls have opened. The plants should be studied for production, disease resistance, boll size, lint percentage, uniformity of staple and any other characters which may be a part of the idea in mind. The time required for this work can be decreased and its efficiency increased if the plants where the work is being done are spaced one to a hill and well fertilized. The selected plants should be tagged or otherwise marked and picked as soon as nearly all the bolls are open.

The cotton obtained as indicated can be ginned in one lot on a gin varying in size from ten saws to a standard gin. The size of the gin should be governed in part by what is available and in part by the quantity of cotton to be ginned. The seed obtained in this way can be planted in an increase field and the process of selection can be repeated the following fall. The seed left after the selected plants have been removed will be good for general crop planting.

More intensive cotton breeding should be undertaken only by those having the proper training and material equipment.

Mass selection has just been stressed because only in this way or by more intensive breeding methods can the productivity of a variety be maintained. Seed can be kept pure if properly isolated in the field and ginned on scrupulously cleaned gins. But maintaining productivity is another problem, since any variety will begin to deteriorate after a few years unless subjected to some system of improvement. Where whole communities are organized to grow only one variety, arrangements should be made for a regular supply of improved seed. The advantages of such one-variety communities will be lessened if unimproved seed be used.

The cleaning of gins requires more care than is realized by most growers and ginners. The seed roll should be dumped and all seed removed from the roll box. Doffing rolls, cleaning feeders, belt distributors, and pneumatic distributors will all have more or less seed cotton which should be removed. It is very difficult to clean seed conveyors and, ordinarily, the seed should be caught in tin boxes in front of the gin and sacked from these boxes. Seed should not be sold as pure unless the cleaning is thorough.

SEED SOURCES

- Acala 37.—Cotton Branch Station, Marianna, Arkansas.
Acala, A. & M.—Mississippi Experiment Station, A. & M. College, Miss.
Addison's Pro.—W. P. Addison, Blackwells, Georgia.
Cleveland, Pied.—J. O. M. Smith, Commerce, Georgia.
Cleveland 884.—Coker Ped. Seed Co., Hartsville, South Carolina.
Cleveland 5.—Coker Ped. Seed Co., Hartsville, South Carolina.
Cleveland 54.—Mississippi Experiment Station, A. & M. College, Miss.
Coker 234.—Coker Ped. Seed Co., Hartsville, South Carolina.
Delfos 6112.—Stoneville Ped. Seed Co., Stoneville, Mississippi.
Delfos 719.—Stoneville Ped. Seed Co., Stoneville, Mississippi.
D. & P. 4-8.—Delta and Pine Land Co., Scott, Mississippi.
D. & P. L. 6.—Delta and Pine Land Co., Scott, Mississippi.
D. & P. L. 10.—Delta and Pine Land Co., Scott, Mississippi.
D. & P. L. 5242.—Delta and Pine Land Co., Scott, Mississippi.
Deltatype Webber.—Coker Ped. Seed Co., Hartsville, South Carolina.
Express, Light.—Coker Ped. Seed Co., Hartsville, South Carolina.
Express 17.—Cotton Branch Station, Marianna, Arkansas.
Express 41077.—Delta Pure Seed Association, Clarksdale, Mississippi.
Foster 6. Coker Ped. Seed Co., Hartsville, South Carolina.
Gosa.—M. A. Gosa, Pheba, Mississippi.
Half and Half, M.—H. K. Mahon, Holly Springs, Mississippi.
Half and Half, S.—B. F. Summerour, Norcross, Georgia.
Lone Star D-2-1.—U. S. Cotton Breeding Field Station, Greenville, Texas.
Lone Star P-4-1.—U. S. Cotton Breeding Field Station, Greenville, Texas.
Lone Star 561.—Mississippi Experiment Station, A. & M. College, Miss.
Lone Star 562.—Mississippi Experiment Station, A. & M. College, Miss.
Lone Star 566.—Mississippi Experiment Station, A. & M. College, Miss.
Miller, Barrett.—J. C. Barrett, Saltito, Mississippi.
Miller, Smith.—Joe Smith, Guntown, Mississippi.
Miller 3286.—Mississippi Experiment Station, A. & M. College, Miss.
Miller 589.—Mississippi Experiment Station, A. & M. College, Miss.
Miller 5111.—Mississippi Experiment Station, A. & M. College, Miss.
Miller 5115.—Mississippi Experiment Station, A. & M. College, Miss.
Missdel 1.—Delta Pure Seed Association, Clarksdale, Mississippi.
Missdel 2.—Delta Pure Seed Association, Clarksdale, Mississippi.
Red Leaf No. 1.—A. H. Alford, Lake, Mississippi.
Red Leaf No. 2.—Scott County High School, Harpersville, Mississippi.
Roldo Rowden 40.—R. L. Dortch, Scott, Arkansas.
Stoneville 1.—Stoneville Ped. Seed Co., Stoneville, Mississippi.
Stoneville 2.—Stoneville Ped. Seed Co., Stoneville, Mississippi.
Stoneville 3.—Stoneville Ped. Seed Co., Stoneville, Mississippi.
Stoneville 4. Stoneville Ped. Seed Co., Stoneville, Mississippi.
Super Seven.—Coker Pedigreed Seed Co., Hartsville, South Carolina.
Wilds.—Coker Ped. Seed Co., Hartsville, South Carolina.
Wilson Type.—Lee Wilson Co., Wilson Arkansas.
Wilson 26-WC-5-M.—Lee Wilson Co., Wilson, Arkansas.