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Cotton fertilizers and varieties - Central Station, 1926

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COTTON

FERTILIZERS AND VARIETIES

CENTRAL STATION
1926

Pounds material applied per acre			Value per acre of increase for varying amounts of nitrogen, other fertilizers being constant
Acid Phos.	Nit. Soda	Sul. Potash	Average of five tests, Choctaw Co. 1925-1926 $10 $20 $30 $40
300	300	50	8-8-4 $ 37.12
300	225	50	8-6-4 $ 41.35
300	150	50	8-4-4 $ 25.45
			Average of seven tests, Oktibbeha Co. 1925-1926
300	300	50	8-8-4 $ 16.52
300	225	50	8-6-4 $ 15.21
300	150	50	8-4-4 $ 13.25

MISSISSIPPI AGRICULTURAL EXPERIMENT STATION
A. & M. College. Mississippi
J. R. RICKS, Director

RECOMMENDATIONS

For east central Mississippi soils the general recommendation is 600 pounds per acre of an 8-6-0 analysis fertilizer. A deviation from this should be made as follows:

This amount should be increased where conditions are favorable and on many worn soils, especially of the clay hill section.

Reduce the amount per acre on soils that are naturally fertile.

Add 4% potash to this mixture where cotton rusts or shows leaf disease, where soil has been cropped for a long period of time, and where more than 600 pounds of the mixture is to be used.

Change analysis to 8-8-0 on prairie soils.

Change analysis to 8-4-0 on soils where legumes have been turned under.

Factory mixed fertilizer of the desired analysis and containing readily soluble source of nitrogen may be used. The equivalent of the applications recommended above may be obtained by mixing and applying the following combinations of materials per acre: For 8% phosphoric acid use 300 pounds, 16% acid phosphate. For 6% nitrogen use 240 pounds nitrate of soda or 180 pounds sulphate of ammonia, or a combination of one-half of either with 275 pounds cottonseed meal. For 8% nitrogen use 320 pounds nitrate of soda or 220 pounds sulphate of ammonia, or a combination of one-half of either with 365 pounds cottonseed meal. For 4% potash use 50 pounds muriate of potash, 48 pounds sulphate of potash, or 200 pounds, 12% kainit.

COTTON FERTILIZERS AND VARIETIES

By

J. F. O'Kelly, C. B. Anders, and W. W. Hull

FERTILIZERS

The same lines of investigation as reported in Bulletin 230 have been continued and expanded. The work in 1926 consisted of sixty series located on fifteen individual farms. Soil types used included the sand clay hills of northeast Mississippi, the flatwoods, and both red and black prairie soils.

These tests have been conducted under actual farm conditions. Such factors as variety of seed, cultural operations, etc. are left entirely with the farmer. The results obtained should thus be applicable to average farm conditions. In each case care was taken to see that grass and weeds were kept under control and that the plots were not otherwise neglected. Similar results could not be expected where, due to over-cropping or shiftlessness, the crop is neglected.

In this work all measurements, weights, applications, and pickings were made either by a member of the Station staff or under his direct observations.

In computing the results for 1926 the unusually low price of five cents per pound for seed cotton was used in reducing the pounds increase from each fertilizer application to dollars per acre. Due to weather conditions and insect injury, yields were even below normal in some instances. With the cost of fertilizer about the same as 1925, the net gain this year is probably below what could be expected.

These variations in the value of seed cotton and the cost of fertilizer introduce a constantly changing factor into the net gain indicated. The expected increase will vary with the total yield and this will depend on climatic conditions, variety, cultural practice, etc. However, the relative increases from various fertilizer applications should be constant. The comparative efficiency of a fertilizer should be measured by these increases. The practical application can be based on this efficiency but influenced by the prevailing cost of fertilizer and market price of the product.

Methods—In this work a test consists of the series of plots as outlined in the tables, repeated three or four times on a single farm. Unfertilized, or check plots, are placed at the beginning of each series and repeated every third or fourth plot.

Calculations are made according to methods adopted by the American Society of Agronomy Vol. 16—No. 1. In all tables the column headed "Plot yield" indicates actual yield obtained. The column headed "Check yield" gives the actual yield of all check plots and for the treated plots a calcu-

lated yield without treatment based on the assumption that the soil varies uniformly between untreated, or check plots. The check yields are thus the normal yield of the soil under given conditions and the increase is obtained by subtracting this check yield of each plot from the actual yield. The increase thus obtained is placed in the column headed "Increase". It is a measure of the gain or loss due to the treatment indicated.

The column headed "Analysis" in Tables 1 to 8 indicates the nearest analysis in whole numbers to the actual analysis of the mixture used. In these tables the materials applied to the last three fertilized plots supply approximately as much plant food to the acre as would be supplied by 1200, 1800 and 2400 pounds respectively of an 8-4-4 mixed fertilizer. All other treatments are based on 600 pounds of mixed fertilizer of the analysis indicated.

TABLE 1—AVERAGE TWO TESTS, CHOCTAW COUNTY—1926

Pounds of material applied per acre			Analysis	Pounds of seed cotton per acre			Dollars per acre		
Acid phos.	Nitrate of soda	Mur. of potash		Plot yield	Check yield	Increase	Increase	Cost of fert.	Net gain
No fertilizer				284.62	284.62	—	—	—	—
300	150	100	8-4-8	1032.15	307.87	724.30	36.21	9.01	27.20
300	150	75	8-4-6	1066.47	331.12	735.35	36.77	8.54	28.22
300	150	50	8-4-4	1114.82	354.35	760.45	38.02	8.07	29.95
No fertilizer				377.60	377.60	—	—	—	—
300	150	25	8-4-2	1239.17	377.31	861.85	43.09	7.60	35.49
300	150	—	8-4-0	1147.07	377.02	770.05	38.50	7.13	31.37
300	300	50	8-8-4	1481.42	376.73	1104.70	55.23	12.49	42.74
No fertilizer				376.45	376.45	—	—	—	—
No fertilizer				354.45	354.45	—	—	—	—
300	225	50	8-6-4	1413.17	343.19	1070.00	53.50	10.28	43.22
225	150	50	6-4-4	1163.85	331.93	831.90	41.59	7.40	34.19
150	150	50	4-4-4	1110.97	320.68	790.30	39.51	6.72	32.79
No fertilizer				309.42	309.42	—	—	—	—
600	300	100	8-4-4	1423.07	302.42	1120.65	56.03	16.13	39.90
900	450	150	8-4-4	1593.65	295.51	1298.15	64.90	24.20	40.70
1200	600	200	8-4-4	1579.95	288.53	1291.42	64.57	32.26	32.30
No fertilizer				281.60	281.60				

A study of these tables will bring out four distinct groups of plots. Group one, consisting of the first five fertilized plots, shows a variation from no potash to 8%, phosphorus and nitrogen being held constant at 8% and 4% respectively. In group two, fertilized plots 3, 6, and 7, nitrogen is varied from 4% to 8%, while phosphorus and potash are constant. Group three, fertilized plots 3, 8, and 9, shows a variation from 4% to 8% of phosphorus, the other elements being constant. In the fourth group, plots 3, 10, 11, and 12, amounts of an 8-4-4 fertilizer are varied from 600 to 2400 pounds per acre.

Results in (1) Choctaw County in 1926 differed very little from those of 1925. These, and the average results for both years, are reported in Tables 1 and 2.

(1) These tests conducted in cooperation with J. B. Ray and Clyde Coleman.

TABLE 2—AVERAGE FIVE TESTS, CHOCTAW COUNTY—1925 AND 1926

Pounds of material applied per acre			Analysis	Pounds of seed cotton per acre			Dollars per acre		
Acid phos.	Nitrate of soda	Mur. of potash		Plot yield	Check yield	Increase	Increase	Cost of fert.	Net gain
No fertilizer				564.11	564.11	—	—	—	—
300	150	100	8-4-8	1183.82	575.73	608.09	35.32	9.14	26.18
300	150	75	8-4-6	1199.88	587.36	612.52	35.52	8.59	26.92
300	150	50	8-4-4	1186.11	598.97	587.12	33.49	8.04	25.45
No fertilizer				610.6	610.6	—	—	—	—
300	150	25	8-4-2	1263.23	610.45	652.78	37.07	7.50	29.57
300	150	—	8-4-0	1210.28	610.31	599.97	34.29	6.85	27.34
300	300	50	8-8-4	1474.26	610.16	864.10	49.44	12.31	37.12
No fertilizer				610.02	610.02	—	—	—	—
No fertilizer				599.02	599.02	—	—	—	—
300	225	50	8-6-4	1482.43	593.39	889.05	51.53	10.18	41.35
225	150	50	6-4-4	1275.02	587.76	687.25	39.78	7.38	32.40
150	150	50	4-4-4	1204.33	582.14	622.2	35.65	6.71	28.94
No fertilizer				576.51	576.51	—	—	—	—
No fertilizer				602.51	602.51	—	—	—	—
600	300	100	8-4-4	1528.53	599.01	929.52	53.86	16.08	37.77
900	450	150	8-4-4	1715.92	595.55	1120.37	65.44	24.13	41.31
1200	600	200	8-4-4	1748.12	592.06	1156.06	68.01	32.17	35.83
No fertilizer				588.60	588.60	—	—	—	—

Table 2 indicates that the addition of potash to 600 pounds of an 8-4-0 mixture, where rust is not present, is not profitable on the sand clay soils of this section. Increased amounts of nitrogen pay well, 6% being somewhat more profitable than 8%, and a great deal more profitable than 4%. The indications are that the ratio of nitrogen to phosphoric acid should be the same.

In all Webster and Choctaw County tests excellent net gains have been made from amounts greater than 600 pounds of an 8-4-4 mixture. These results however, have not been materially greater than those from 600 pounds of an 8-8-4 or an 8-6-4 mixture.

TABLE 3—AVERAGE TWO TESTS, WEBSTER COUNTY—1926

Pounds of material applied per acre			Analysis	Pounds of seed cotton per acre			Dollars per acre		
Acid phos.	Nitrate of soda	Mur. of potash		Plot yield	Check yield	Increase	Increase at 5c	Cost of fert.	Net gain
No fertilizer				698.25	698.25	—	—	—	—
300	150	100	8-4-8	1179.50	673.35	506.15	25.31	9.01	16.30
300	150	75	8-4-6	1149.88	648.44	501.44	25.07	8.54	16.53
300	150	50	8-4-4	1116.25	623.54	492.71	24.64	8.07	16.57
No fertilizer				598.63	598.63	—	—	—	—
300	150	25	8-4-2	1078.63	608.38	470.25	23.51	7.60	15.91
300	150	—	8-4-0	1067.38	618.13	449.25	22.46	7.13	15.33
300	300	50	8-8-4	1255.88	627.88	628.00	31.40	12.49	18.91
No fertilizer				637.63	637.63	—	—	—	—
300	225	50	8-6-4	1208.63	632.41	576.22	28.81	10.28	18.53
225	150	50	6-4-4	1115.00	627.19	487.81	24.39	7.40	16.99
150	150	50	4-4-4	1049.50	621.97	427.53	21.38	6.72	14.66
No fertilizer				616.75	616.75	—	—	—	—
600	300	100	8-4-4	1304.50	640.85	663.65	33.18	16.13	17.05
900	450	150	8-4-4	1439.88	664.94	774.94	38.75	24.20	14.55
1200	600	200	8-4-4	1480.13	689.04	791.09	39.55	32.26	7.29
No fertilizer				713.13	713.13	—	—	—	—

Tests in [2] Webster County, Table 3, indicate a small profit from the use of 4% of potash. As in the Choctaw County tests, these soils gave the greatest net gain from equal parts phosphoric acid and nitrogen.

TABLE 4—AVERAGE FIVE TESTS, OKTIBBEHA COUNTY—1926

Pounds of material applied per acre			Analysis	Pounds of seed cotton per acre			Dollars per acre		
Acid phos.	Nitrate of soda	Mur. of potash		Plot yield	Check yield	Increase	Increase	Cost of fert.	Net gain
No fertilizer				406.7	406.7	—	—	—	—
300	150	100	8-4-8	815.9	384.43	431.47	21.57	9.01	12.56
300	150	75	8-4-6	723.70	362.15	361.55	18.08	8.54	9.54
300	150	50	8-4-4	696.90	339.88	357.02	17.85	8.07	9.78
No fertilizer				317.60	317.60	—	—	—	—
300	150	25	8-4-2	668.85	311.41	357.44	17.87	7.60	10.27
300	150	—	8-4-0	624.00	305.23	318.77	15.94	7.13	8.81
300	300	50	8-8-4	786.85	299.04	487.81	24.39	12.49	11.90
No fertilzer				292.85	292.85	—	—	—	—
No fertilizer				305.05	305.05	—	—	—	—
300	225	50	8-6-4	715.00	306.01	408.99	20.45	10.28	10.17
225	150	50	6-4-4	629.80	306.98	322.82	16.14	7.40	8.74
150	150	50	4-4-4	602.80	307.94	294.86	14.74	6.72	8.02
No fertilizer				308.90	308.90	—	—	—	—
600	300	100	8-4-4	851.60	316.43	535.17	26.76	16.13	10.63
900	450	150	8-4-4	865.50	323.95	541.55	27.08	24.20	2.88
1200	600	200	8-4-4	889.75	331.48	558.27	27.91	32.26	—4.35
No fertilizer				339.00	339.00	—	—	—	—

Five tests were conducted in [3] Oktibbeha County on flatwoods soil, flatwoods merging into sandy, and flatwoods merging into Houston clay. These results are reported in Table 4. The average results for 1925 and 1926 in this county are reported in Table 5. In these tests returns from the use of potash have been indicated in spots. The two year average would lead us to expect a profitable return from 2% to 4% potash in the mixture, when used on most of these soils.

TABLE 5—AVERAGE SEVEN TESTS, OKTIBBEHA COUNTY—1925 AND 1926

Pounds of material applied per acre			Analysis	Pounds of seed cotton per acre			Dollars per acre		
Acid phos.	Nitrate of soda	Mur. of potash		Plot yield	Check yield	Increase	Increase	Cost of fert.	Net gain
No fertilizer				470.35	470.35	—	—	—	—
300	150	100	8-4-8	846.60	459.21	387.39	22.80	9.14	13.66
300	150	75	8-4-6	850.85	448.08	402.77	24.58	8.60	15.98
300	150	50	8-4-4	792.15	436.94	355.21	21.30	8.05	13.25
No fertilizer				425.80	425.80	—	—	—	—
300	150	25	8-4-2	741.98	422.71	319.27	18.78	7.50	11.28
300	150	—	8-4-0	623.15	419.62	203.53	11.06	6.95	4.11
300	300	50	8-8-4	898.23	416.52	481.71	28.84	12.32	16.52
No fertilizer				413.43	413.43	—	—	—	—
No fertilizer				419.53	419.53	—	—	—	—
300	225	50	8-6-4	841.15	420.01	421.14	25.39	10.18	15.21
225	150	50	6-4-4	750.30	420.49	329.81	19.86	7.38	12.48
150	150	50	4-4-4	696.90	420.97	275.93	16.37	6.71	9.66
No fertilizer				421.45	421.45	—	—	—	—
600	300	100	8-4-4	1085.40	425.21	660.19	40.86	16.09	24.77
900	450	150	8-4-4	1091.80	428.98	662.82	40.99	24.13	16.86
1200	600	200	8-4-4	1075.98	432.74	643.24	39.44	32.17	7.27
No fertilizer				436.50	436.50	—	—	—	—

(2) These tests conducted in cooperation with J. B. Hardee and C. F. Ferguson.
(3) These tests were located on Station farm and in cooperation with Jim Cummins, Thos. Wofford, W. C. Butler, and Grafton Yeates.

A ratio of phosphoric acid to nitrogen of 8% to 8%, or at least 8% to 6% is clearly indicated in these tests.

In 1925 applications heavier than 600 pounds per acre gave the most profitable returns. Because of unfavorable weather conditions and insect injury, yields were relatively low in this section in 1926 and applications greater than 1200 pounds per acre resulted in a net loss in many instances. Twelve hundred pounds per acre, however, yielded a large net gain and with normal yields and higher prices for seed cotton, amounts greater than 600 pounds should be very profitable.

TABLE 6—AVERAGE TWO TESTS, PRAIRIE SOIL—1926

Pounds of material applied per acre			Analysis	Pounds of seed cotton per acre			Dollars per acre		
Acid phos.	Nitrate of soda	Sul. of potash		Plot yield	Check yield	Increase	Increase at 5c	Cost of fert.	Net gain
No fertilizer				649.12	649.12	—	—	—	—
300	150	100	8-4-8	995.62	642.40	353.22	17.66	9.81	7.85
300	150	75	8-4-6	964.12	635.67	328.45	16.42	9.14	7.28
300	150	50	8-4-4	954.37	627.22	327.15	16.35	8.47	7.88
No fertilizer				621.37	621.37	—	—	—	—
300	150	25	8-4-2	999.75	619.65	380.1	19.00	7.80	11.20
300	150	—	8-4-0	958.87	616.70	342.17	17.10	7.13	9.97
300	300	50	8-8-4	1192.75	613.61	579.13	28.96	12.89	16.07
No fertilizer				610.50	610.50	—	—	—	—
300	225	50	8-6-4	1088.62	599.90	488.72	24.43	10.68	13.75
225	150	50	6-4-4	1001.25	589.31	411.94	20.60	7.80	12.80
150	150	50	4-4-4	971.62	578.71	392.91	19.64	7.12	12.52
No fertilizer				568.12	568.12	—	—	—	—
600	300	100	8-4-4	1203.37	583.31	620.06	31.00	16.93	14.07
900	450	150	8-4-4	1370.25	598.49	771.76	38.58	25.40	13.18
1200	600	200	8-4-4	1464.37	613.68	850.69	42.53	33.86	8.67
No fertilizer				628.87	628.87	—	—	—	—

The large net profit obtained from the use of complete fertilizer on prairie soils in 1925 led to the placing of two of the more detailed tests in that section this year. The results of these tests are reported in (4) Table 6. The results of the original tests started in 1925 and continued in 1926 on prairie soils of both the red and black types are reported in (5)

TABLE 7—AVERAGE FOUR TESTS, RED PRAIRIE SOIL—1925 AND 1926

Pounds of material applied per acre			Pounds of seed cotton per acre			Dollars per acre		
Acid phos.	Nitrate of soda	Sul. of potash	Plot yield	Check yield	Increase	Increase	Cost of fert.	Net gain
No fertilizer			574.85	574.85	—	—	—	—
	300		795.34	565.67	229.68	13.42	8.55	4.87
600	300	75	1048.28	556.48	491.80	28.19	15.84	12.35
No fertilizer			547.29	547.29	—	—	—	—
600	300		1009.14	553.35	455.79	26.37	13.39	12.48
	300	75	837.13	559.42	277.77	16.64	10.50	6.14
No fertilizer			565.48	565.48	—	—	—	—

(4) These tests were conducted in Lowndes and Noxubee Counties in cooperation with Bailey Hardy and Dale Bell.

(5) These tests were conducted in Lowndes County in cooperation with J. H. Hardy and Carey Cocke.

Tables 7 and 8. These results clearly indicate that red soils are more responsive to fertilizers than the black; that where rust is not present very little, if any, returns can be expected from the use of potash on these soils; that both nitrogen and phosphorus are needed and that the use of a proper combination of these two elements is profitable on both the red and the black soils; that the ratio of nitrogen to phosphoric acid should be about the same; and, that when the proper mixture is used profitable returns may be expected from the use of 600 to 100 pounds per acre.

TABLE 8—AVERAGE TWO TESTS, BLACK PRAIRIE SOILS—1925 AND 1926

Pounds of material applied per acre			Pounds of seed cotton per acre			Dollars per acre		
Acid phos.	Nitrate of soda	Sul. of potash	Plot yield	Check yield	Increase	Increase	Cost of fert.	Net gain
No fertilizer			1127.30	1127.30	—	—	—	—
	300		1192.85	1119.05	73.80	4.19	8.55	—4.36
600	300	75	1558.15	1110.80	447.35	27.84	15.84	12.00
No fertilizer			1102.55	1102.55	—	—	—	—
600	300		1389.00	1107.8	282.20	16.58	13.89	2.69
	300	75	1279.70	1113.05	166.65	10.53	10.50	.03
No fertilizer			1118.30	1118.30	—	—	—	—

Tests comparing nitrate of soda, sulphate of ammonia, and calcium cyanamid have been conducted for six years with an average increase in seed cotton from nitrate of soda 174.9 pounds; from sulphate of ammonia 170.0 pounds; from calcium cyanamid 137.0 pounds.

In 1925 other forms of nitrogen added to this test were Leunasaltpeter, calcium nitrate, and Urea. Sufficient data have not been obtained on these to justify conclusions.

Conclusions—The use of fertilizer of the correct analysis will pay well on all worn and unimproved soils tested in east central Mississippi.

Six hundred pounds and more to the acre is an efficient application.

Phosphoric acid and nitrogen are essential elements in fertilizers for these soil types. The ratio of these elements should be equal or nearly equal; that is, eight parts phosphoric acid to eight parts nitrogen, or eight parts phosphoric acid to six parts nitrogen.

Potash is not an essential element in fertilizers for many soils. In the prairie section it has not given profitable returns. In the clay hills and flatwoods section profitable returns have been obtained in many instances. On soils where cotton rusts potash pays. Where large quantities of fertilizer above 600 pounds are used potash should be included.

VARIETIES

The variety tests conducted in 1926 included fifty-two standard and new varieties and new strains of varieties. The sources from which all seed were obtained are listed at the end of this publication.

The low yields reported in these tests were caused by hopper damage and climatic conditions. The cotton flea hopper was present practically all of the growing season and retarded fruiting very materially in the case of the standard variety test and the one for wilt resistance. During August the plants had matured sufficiently to fruit in spite of the hopper

when a period of excessive rainfall began. These rains were so great that very few late bolls were set. The leaf worm was present but was controlled by the use of calcium arsenate. Weevil infestation was spotted. Neither the worm nor the weevil contributed materially to the low yields reported here.

The total per acre money value of each variety is based on $24.00 a ton for cotton seed and average lint prices for middling grade of the indicated length. These average lint prices were obtained by averaging quotations as of November 1 received from the Mississippi Farm Bureau Cotton Marketing Association, Jackson, The Staple Cotton Cooperative Association, Greenwood, Randolph Scott Co., Memphis, and F. P. Phillips, Columbus.

TABLE 9—NINE VARIETIES OF COTTON AT THE CENTRAL STATION

Year	Pounds of lint cotton per acre								
	Half & Half	Cook	Cleve. 54	Cleve. Wan.	Cleve. Pied	Lone Star	Trice	Miller	Delfos
1922	299.1	334.2	315.6	249.8	302.7	308.8	279.0	320.3	262.8
1923	321.3	303.5	344.4	251.6	348.3	299.2	396.5	323.8	368.9
1924	369.9	397.6	397.6	379.5	394.6	352.1	337.6	377.9	306.9
1925	629.5	613.2	615.4	553.3	557.0	492.9	461.3	597.3	460.6
1926	299.1	297.3	262.2	207.0	264.8	266.2	326.2	151.7	329.5
Av. lb.	383.8	389.2	387.0	328.2	373.4	343.8	360.1	354.2	345.7
Av. value	$ 89.89	$94.39	$100.65	$ 81.83	$ 96.73	$ 95.59	$100.48	$ 99.26	$101.23
Av. Length	3-4f	7-8	15-16	13-16f	7-8f	1 1-16f	1 1-16	1 1-16	1 1-8f
Av. per-centage	41.6	38.8	34.9	37.2	34.4	34.0	31.5	34.0	32.2

Choosing a variety well adapted to a given set of conditions is often a difficult task. The table reporting five year average results from nine varieties should be of some value in this connection. The seasonal conditions covered by this table include two very wet seasons (1923 and 1926), two very dry seasons (1924 and 1925), and one nearly normal season (1922). These averages should be dependable so far as yields, lengths, and percentages are concerned.

Readers are sometimes prone to overemphasize certain features of a variety test report. This is often the case when money values are compared and it should be pointed out here that the values used assume that all cotton is to be marketed through an ideal system. That is, it assumes that the grower will be able to obtain whatever premium a given staple may command. While such marketing service may be within the reach of practically all cotton producers, and while many producers are availing themselves of this service by joining cooperative associations or selling through capable and honest factors, the fact remains that the majority of the cotton produced is still sold to agencies which either cannot or will not discriminate between different staple lengths. These things should be borne in mind when money values are studied.

TABLE 10—STANDARD VARIETIES, 1926

Variety	Pounds per acre		Lint data			Total dollars per acre	Rank in value	Bolls per lb.
	Seed cotton	Lint	Percentage	Length	Cents per lb.			
Trice, Miss. Sta.	1087.4	326.2	30.0	1 f	12.95	51.37	7	76
Trice, Burdette	938.0	287.8	31.7	15-16f	12.37	43.04	12	68
Cleve., Wan.	586.5	207.0	35.3	7-8f	11.67	28.71	20	66
Cleve., Coker	550.6	186.7	33.9	7-8f	11.67	26.16	22	65
Cleve., 54	792.1	262.2	33.1	15-16f	12.37	38.79	16	67
Cleve., Wilson	819.7	261.5	31.9	15-16	12.03	38.16	17	69
Cleve., Pied.	822.5	264.8	32.2	7-8f	11.67	37.59	18	62
Half & Half, Mahon	772.8	299.1	38.7	7-8	11.48	40.02	13	65
Cook 1010	760.4	297.3	39.1	7-8	11.48	39.69	14	74
Willis	968.8	311.0	32.1	15-16	12.03	45.30	10	61
Miller	458.2	151.7	33.1	1 1-16	13.37	23.96	23	59
Acala	517.5	189.1	34.8	1 f	12.95	27.37	21	64
Mex. Big Boll	411 2	137.8	33.5	1 1-16	13.37	21.70	24	64
D. & P. L. No. 4	654.1	232.2	35.5	1 1-16	13.37	36.11	19	66
D. & P. L. No. 8	671.8	252.4	37.4	1 1-16	13.37	38.82	15	68
Deltatype Webber	873.5	256.8	29.4	1 1-4f	22.37	64.85	2	63
D. & P. L. No. 5	698.3	226.2	32.4	1 3-16f	17.53	45.32	9	65
Delfos 631	917.7	284.5	31.0	1 3-16	16.53	54.63	6	69
Delfos 910	833.0	273.4	31.5	1 3-16f	17.53	55.07	5	64
Delfos 911	1006.0	311.9	31.0	1 1-8f	15.37	56.27	4	73
Delfos 6102	1046.0	329.5	31.5	1 1-8f	15.37	59.24	3	73
D. & P. L. No. 6	1079.9	373.7	34.9	1 3-16	16.53	70.14	1	76
Express, Lightning	815.6	246.3	30.2	1 3-16	16.53	47.54	8	74
Lone Star 65	814.2	266.2	32.7	1 1-16f	13.78	43.26	11	58

TABLE 11—STANDARD AND NEW VARIETIES, 1926

Variety	Pounds per acre		Lint data			Total dollars per acre	Rank in value	Bolls per lb.
	Seed cotton	Lint	Percentage	Length	Cents per lb.			
Cleve. 54	1135.2	388.6	34.2	1	12.70	58.32	10	64
Cleve., Coker 6A	997.2	362.9	36.7	1 f	12.95	50.00	14	78
Cleve., Coker 6B	897.3	311.4	34.7	1 1-16f	13.78	49.94	15	72
Cleve., Coker Sr. 5	947.1	323.0	34.1	1 1-8	14.53	54.42	11	63
Super Seven	1222.9	407.2	33.3	1 1-8	14.53	68.96	4	75
Cleve., Humco 20	769.3	273.9	35.6	7-8f	11.67	37.90	22	66
Addison Prolific	783.5	303.2	38.7	7-8	11.48	40.57	20	67
Lewis Prolific	937.0	349.4	35.2	7-8f	11.67	47.24	16	79
Half & Half, Cleve.	881.6	361.5	41.0	13-16f	11.15	46.55	17	63
Bank Account	795.0	254.7	34.6	7-8f	11.48	36.39	23	80
Kelly Big Boll	796.3	288.3	36.2	1 f	12.95	43.43	19	63
Miller	635.6	215.5	33.9	1 1-16	13.37	33.85	24	58
Haaga 86 1	851.8	323.7	38.0	7-8	11.48	43.50	18	74
Lone Star 65 A 2	895.9	299.2	33.4	1 1-8	14.53	50.63	13	60
Lone Star 168	1015.3	352.3	34.7	1 1-8	14.53	59.15	9	57
Delfos 1341	1100.6	374.2	34.0	1 1-8	14.53	63.09	6	79
Delfos 6102	1157.5	364.6	31.5	1 1-8f	15.37	65.55	5	76
Foster Strain 2	1153.2	373.6	32.4	1 3-16	16.53	71.12	1	72
Carolina Foster	1107.7	342.3	30.9	1 3-16f	17.53	69.19	3	71
Delfos 245	1099.2	350.6	31.9	1 1-8f	15.37	62.87	7	71
Delfos 1374	1013.9	311.3	30.7	1 3-16	16.53	59.89	8	58
Humco Delta 36	1045.2	301.0	28.8	1 1-4	20.37	70.24	2	66
Haaga Long Staple	853.2	247.4	29.0	1 3-16f	17.53	50.64	12	68
Haaga 68	789.2	261.2	33.1	1 f	12.95	40.17	21	62

The picking quality of varieties is another feature which the results of a variety test do not present. The ease with which a variety may be picked is becoming so important that growers are often willing to sacrifice something in yield in order to hasten the harvesting process.

All variety tests reported here were planted between April 20 and 25. All were fertilized uniformly with about 600 pounds of 8-6-4 fertilizer to the acre. Stands were sufficiently uniform to make results comparable.

The test of standard varieties was replicated six times, that of standard and new varieties five times, and the test for wilt resistance four times.

Wilt infection in the test for wilt resistance was greatest with the most susceptible varieties but damage was not as severe as is sometimes the case. This fact was attributed to the liberal use of a complete fertilizer and to the excessive rainfall in August.

The most promising wilt resistant cottons now appear to be lightning Express, Super Seven, Rhyne's Cook, Dixie Triumph, Solomon and Oates Big Boll, and Watson. It will be observed that Trice ranked fifth in money value in the test. It fruits early and rapidly. Late in the season its bolls shriveled until picking was very difficult. This often happens with very early and susceptible varieties.

TABLE 12—TEST FOR WILT RESISTANCE, 1926

Variety	Pounds per acre		Lint data			Total dollars per acre	Rank in value	Bolls per lb.
	Seed cotton	Lint	Percentage	Length	Cents per lb.			
Trice, Miss. Sta.	891	272.6	30.6	1 1-16	13.37	43.87	5	77
Half & Half, Mahon	534	205.6	38.5	7-8	11.48	27.54	19	72
Cook, Rhyne	762	278.1	36.5	15-16	12.03	39.27	9	62
Cook, 307-6	654	228.9	35.0	7-8f	11.67	31.81	16	78
Toole, Mathis	741	263.1	35.5	15-16f	12.37	38.28	11	82
Toole, Perry	753	255.3	33.9	15-16	12.03	36.68	13	70
Cleve., Pied	903	293.5	32.5	15-16f	12.37	43.62	6	61
Cleve., Humco 20	657	231.9	35.3	15-16	12.03	33.00	15	64
Cleve., 54	828	278.2	33.6	1	12.70	41.93	7	66
Super Seven	888	291.3	32.8	1 1-8	14.53	49.49	2	74
Dixie Triumph	888	293.9	33.1	1	12.70	44.46	4	66
Kelly Big Boll	660	236.3	35.8	1 f	12.95	35.68	14	61
Sol. & Oates Big Boll	531	188.0	35.4	1 1-16f	13.78	30.03	17	56
Miller	528	178.5	33.8	1 1-16	13.37	28.06	18	60
D. & P. L. No. 4	669	244.9	36.6	1 1-16	13.37	37.83	12	69
D. & P. L. No. 5	600	192.0	32.0	1 3-16f	17.53	38.56	10	67
Watson	822	259.8	31.6	1 3-16	16.53	49.69	1	66
Lightning Express	846	256.3	30.3	1 3-16	16.53	49.45	3	74
Delfos 6102	771	241.3	31.3	1 1-8	14.53	41.42	8	80

SEED SOURCES, 1926

Acala—L. E. Gleeck, Box 334, Memphis, Tenn.
Addison's Pro.—W. P. Addison, Blackwells, Ga.
Bank Account—H. G. Hastings Co., Atlanta, Ga.
Carolina Foster—Humphrey-Coker Seed Co., Hartsville, S. C.
Cleveland, Coker—Coker Pedigreed Seed Co., Hartsville, S. C.
Cleveland, Coker Strain 5—Coker Pedigreed Seed Co., Hartsville, S. C.
Cleveland, Coker 6A—Coker Pedigreed Seed Co., Hartsville, S. C.

Cleveland, Coker 6B—Coker Pedigreed Seed Co., Hartsville, S. C.
Cleveland, Humco 20—Humphrey-Coker Seed Co., Hartsville, S. C.
Cleveland, Pied.—Piedmont Pedigreed Seed Farms, Commerce Ga.
Cleveland, Wan.—Wannamaker Cleveland Seed Farms, St. Matthews, S. C.
Cleveland, Wilson—Lee Wilson & Co., Wilson, Ark.
Cleveland, 54—Miss. Experiment Station, A. & M. College, Miss.
Cook, Rhyne—Rhyne Bros., Benton, Ala.
Cook 307-6—Alabama Experiment Station, Auburn, Ala.
Cook 1010—D. N. Williamson Estate, Cedar Bluff, Ala.
D. & P. L. No. 4—Delta and Pine Land Co.. Scott, Miss.
D. & P. L. No. 5—Delta and Pine Land Co., Scott, Miss.
D. & P. L. No. 6—Delta and Pine Land Co., Scott, Miss.
D. & P. L. No. 8—Delta and Pine Land Co., Scott, Miss.
Delfos 245—Stoneville Pedigreed Seed Co., Stoneville, Miss.
Delfos 6102—Stoneville Pedigreed Seed Co., Stoneville, Miss.
Delfos 631—C. D. Walcott & Son, Greenville, Miss.
Delfos 910—C. D. Walcott & Son, Greenville, Miss.
Delfos 911—E. J. Ganier, Percy, Miss.
Delfos 1341—Delta Branch Exp. Sta., Stoneville, Miss.
Delfos 1374—Delta Branch Exp. Sta., Stoneville, Miss.
Deltatype Webber—Coker Pedigreed Seed Co., Hartsville, S. C.
Dixie Triumph—L. O. Watson, Florence, S. C.
Express, Lightning—Coker Pedigreed Seed Co., Hartsville, S. C.
Foster Str. 2—Humphrey-Coker Seed Co., Hartsville, S. C.
Haaga 68—Oscar J. Haaga, Memphis, Tenn.
Haaga 86-1—Oscar J. Haaga, Memphis, Tenn.
Haaga Long Staple—Oscar J. Haaga, Memphis, Tenn.
Half & Half, Mahon—H. K. Mahon, Holly Springs, Miss.
Half & Half, Clev.—N. E. Cleveland, Stratton, Miss.
Humco Delta 36—Humphrey-Coker Seed Co., Hartsville, S. C.
Kelly Big Boll—S. O. Kelly, Headland, Ala.
Lewis Prize—W. B. F. Lewis, Liberty, Miss.
Lone Star 65-A2—Stoneville Pedigreed Seed Co., Stoneville, Miss.
Lone Star 65—Miss. Experiment Station, A. & M. College, Miss.
Lone Star 168—Miss. Experiment Station, A. & M. College, Miss.
Mex. Big Boll—Edgecombe Seed Breeders Association, Tarboro, N. C.
Miller—Miss. Experiment Station, A. & M. College, Miss.
Sol. & Oates B. B.—Solomon and Oates, Headland, Ala.
Super Seven—Coker Pedigreed Seed Co., Hartsville, S. C.
Toole, Mathis—W. J. Mathis, Dawson, Ga.
Toole, Perry—J. P. Perry, Dawson, Ga.
Trice, Burdette—Burdette Plantation, Burdette, Ark.
Trice, Miss. Sta.—Miss. Exp. Sta., A. & M. College, Miss.
Watson—L. O. Watson, Florence, S. C.
Willis—Mrs. Stark Willis, Graysport, Miss.