

OKLAHOMA
AGRICULTURAL AND MECHANICAL COLLEGE
AGRICULTURAL EXPERIMENT STATION
STILLWATER

Varieties of Cotton
for
Oklahoma

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SUMMARY OF RESULTS

1. Acala is a variety which produces lint of good quality, one inch in length, sometimes longer, has a good gin turnout, is medium early and is well adapted especially to light soils.
2. Oklahoma Triumph 44 is an early, high producing cotton, with a lint of good quality, 7-8 to 1 1-16 inch staple. The bolls are medium to small and it has less storm resistance than the big boll varieties. It is generally recommended for Oklahoma especially under boll weevil conditions.
3. Lightning Express is a valuable long staple variety. It gives a fair gin turnout of good quality 1 1-8 inch lint. It has done well during the past five years at Stillwater.
4. Half and Half is a medium early, high yielding variety with a high gin turnout. Its lint is short, 11-16 to 7-8 inch, and of inferior quality. It is not recommended for Oklahoma.
5. Delfos is a long staple cotton giving a good quality 1 1-8 inch lint. It has not been tested widely enough for recommendation.
6. Trice normally produced 7-8 to 1 inch lint. The variety is not recommended for general planting because of its small bolls and lack of storm resistance, but it might be used to advantage in the extreme northern part of the cotton belt.
7. Rowden and Lone Star are late, big boll varieties. They are too late for use under Oklahoma conditions.
8. Mebane and Kasch, a strain of Mebane, are medium maturing, medium productive varieties. They give good yields of 15-16 to 1 inch lint. Their gin turnout is satisfactory. They are recommended under some conditions especially on tight clay soils.
9. Cook's Improved and Petty's Toole are small boll cottons, not recommended for Oklahoma.
10. Dixie-Triumph is a wilt resistant variety and can be grown where cotton wilt materially reduces the yield of other varieties.
11. Triumph 406 and New Boykin are medium early strains of Mebane. They produce consistently and have a high gin turnout of 7-8 to 1 inch lint. New Boykin does exceptionally well in southwestern Oklahoma. Either can be used to advantage to replace Mebane.

VARIETIES OF COTTON FOR OKALHOMA

L. L. LIGON*

This bulletin is a report of the cotton variety tests conducted by the Oklahoma Experiment Station at the Main Station, Stillwater, at the substation at Granite and in Outfield Experimental Stations at Purcell, Rurant, Eufaula, Okmulgee, Sapulpa, and Nowata.

There are three divisions of the report.

The first consists of reports on the variety experiments conducted on the Agronomy Farm at Stillwater, Oklahoma. The results for the years 1925, 1926 and 1927 are reported and discussed in detail. A discussion of the length of lint, linting percent, number of bolls per pound, yield of seed cotton per acre and money value of fifteen varieties continually tested for the years 1923 to 1927 inclusive, in connection with the distribution of rainfall during those years is included. The yield per acre, length of lint, and linting percentage of all varieties tested from 1922 to 1927 are given and discussed in detail.

The second division beginning on page 20 consists of a report of three years' results with cotton varieties at the Substation at Granite, Oklahoma.

The third division, beginning on page 22, consists of a summary of three years' work with eleven varieties at Purcell, Durant, Eufaula, Okmulgee, Sapulpa, Nowata, Stillwater and Granite.

There are numerous varieties of cotton in the South and a rather large number of these are grown to some extent in Oklahoma. Many varieties which are not at present actually grown in the state are widely advertised in farm journals and newspapers. The Station attempts to keep abreast of the rise of new varieties by bringing together a large number of varieties each year for a test of their comparative merits. Data were taken on all characters necessary to determine the value of each variety.

In the extensive tests conducted at Stillwater, single plots were used in 1925 and triplicate plots in 1926 and 1927. In the outfield tests, single four row plots are used in all cases. In the tests at Granite, duplicate four row plots of all varieties were used.

The plots were picked the first time when two-thirds of the bolls of the earliest varieties were open. Just before the first picking fifty boll samples were taken from each plot to be used in determining the length of staple, size of boll, linting per cent and size of seed. The weight of the sample was added to the first picking of the plot from which it was taken. These samples were collected at the Experiment Station, dried thoroughly, weighed on sensitive balances, ginned on a small saw-gin, the seed weighed, and the weight of the seed subtracted from the weight of the seed cotton to obtain the weight of the lint. The per cent of the lint was calculated from these weights.

Before the sample was ginned, the length of lint was determined by averaging a number of determinations made from locks selected at random from the sample.

The number of bolls per pound was calculated from the weight of fifty bolls.

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PRICES USED IN COMPUTING VALUES

Price of lint: In order that all varieties might be properly valued according to the length of lint obtained, prices quoted for Middling Cotton by the New Orleans, Houston, Galveston, Memphis, Atlanta and Charlotte cotton exchanges were used. The final price used was obtained by averaging all prices for that length of staple quoted by these exchanges during the months of September, October, November and December. Values are reported then in terms of an average price for the active marketing season rather than in terms of high or low variations in the market.

Price of seed: The price of seed used was the average paid for seed in Oklahoma during the same months used in determining lint values.

**EXPERIMENTS AT STILLWATER
VARIETIES IN 1925**

This experiment was conducted on the Experiment Station farm on Yahola silty clay loam bottomland. A slight variation in fertility from north to south was offset by planting the rows north and south.

Seed was planted May 5, 1925, in three and one-half foot rows without fertilizer. The soil was in good condition but barely enough moisture was present for germination. A good stand was secured, however, but growth was retarded by the lack of rain during May, less than one-half inch being recorded. All varieties were thinned to one plant every nine to twelve inches.

Twenty-nine varieties and strains were planted. Single row plots were used with every third plot a check. Oklahoma Triumph 44 was used for the check variety.

Picking was delayed due to labor conditions so that the first picking was abnormally large. Little loss from cotton falling on the ground was observed even with the early cottons, which are generally not as storm resistant as the late varieties.

The lack of moisture in the ground at planting time delayed the crop which also suffered from the July and August drought. This experiment conducted on bottomland suffered less than cotton on nearby upland, but maturity was so delayed that much of the crop was caught by the early frost on October 20.

The second picking secured after that date was all snaps and bollies. The yield of seed cotton was calculated from the percentage of burs in the snaps and bollies. A representative lot of snaps was taken, the seed cotton separated from the burs, and both weighed. The percentage of seed cotton was calculated from these weights.

Table I gives the varieties, source of seed, yield per acre of seed cotton, linting per cent, length of lint, number of bolls to the pound, value per acre, rank in value and earliness as evidenced by percentage of first picking to total yield.

In 1925, the five leading varieties in money value per acre, which is generally the most important factor for the farmer, were found to be Lightning Express, Acala No. 5, Half and Half, Oklahoma Triumph 44, and Burdette's Express. Lightning Express has been in test for three years and shows considerable promise. Burdette's Express is a strain of Express similar to Lightning Express and was tested for the first time in 1925. The fourteen Oklahoma Triumph 44 check plots were not considered as individual varieties in reckoning relative rank in value, but were given a place according to their average value, which placed this variety as tenth. The plot of Oklahoma Triumph 44 listed as fourth in value is a new pedigreed strain, which shows great promise in both earliness and yield, placed for the first time in a competitive test.

Table 1. 1925 Results of Cotton Variety Tests at Oklahoma Experiment Station, Stillwater, Oklahoma

VARIETY	SOURCE OF SEED	% Seed Cotton in First Pick	POUNDS PER ACRE				Number Bolls Per Pound	Dollars Per Acre for Seed and Lint	Rank in Value
			Seed Cotton		Lint				
			First Pick	Total	Length of Lint	Percent			
1. Okla. Tri. 44	Experiment Station, Stillwater								
2. Okla. Tri. 44	Experiment Station, Stillwater	71.8	821.5	1033.0	7-8	36.79	95	92.11	
3. Trice	Burdette Plant., Burdette, Ark.	84.8	796.5	1107.8	7-8	36.40	85	97.90	14
4. Okla. Tri. 44			904.8	1222.8	7-8	34.11	101	105.30	7
5. Triumph 406	Ferguson Seed Farm, Sherman, Texas	51.7	469.8	909.1	7-8	44.44	92	117.46	
6. Imp. Memane	A. D. Mebane Sales Agency, Lockhart, Texas	51.4	445.5	866.5	7-8	44.68	70	95.52	19
7. Kasch	Ed Kasch, SanMarcus, Texas.	55.9	543.0	970.0	15-16	39.83	68	88.71	22
8. Lightning Express	Coker's Seed Farms, Hartsville, S. C.	72.8	817.5	1122.5	1 1-8	40.04	92	108.37	6
9. Okla. Tri. 44			665.0	1067.8	15-16	34.85	88	97.66	
10. Acala No. 5	C. N. Nunn, Porter, Okla.	62.0	768.8	1243.8	1	36.42	82	121.98	2
11. Bennett's Lone Star	R. L. Bennet & Sons, Paris, Tex.	33.3	305.0	915.0	1	40.10	58	98.62	13
12. Okla. Tri. 44			65.1	817.5	13-16	43.07	94	117.58	
13. Rowden	Rowden Bros., Wills Point, Tex.	33.9	329.5	970.3	1	40.27	63	104.96	8
14. Mebane	Frederick Seed Farm, Frederick Okla.	37.5	292.8	780.8	1	36.20	70	76.94	25
15. Okla. Tri. 44			720.0	1141.0	15-16	36.23	82	109.38	
16. Half and Half	Crook Bros., Lurray, Tenn.	57.1	591.8	1037.3	7-8	36.85	80	92.61	21
17. Half and Half	(Sommerour) Clark & Keller, Shawnee, Okla.								
18. Okla. Tri. 44		71.8	744.3	1037.1	7-8	48.53	83	117.02	3
			402.8	823.0	7-8	40.60	85	79.70	

19. Cook's Imp.	J. R. Cook, Ellaville, Ga.	66.7	683.3	1025.1	7-8	39.74	75	97.51	16
20. Petty-Toole	H. A. Petty, Dawson, Ga.	62.5	732.3	1171.6	5-8	36.10	85	94.71	20
21. Okla. Tri. 44			823.8	1092.3	15-16	44.14	78	122.15	
22. Dixie-Triumph	L. O. Watson Seed Co., Florence, S. C.	72.1	835.8	1159.1	13-16	37.77	82	97.24	17
23. King	N. C. Exp. Sta., Statesville, N. C.	81.5	750.5	921.3	3-4	37.07	98	76.11	27
24. Okla. Tri. 44			781.0	976.3	15-16	36.60	82	93.19	
25. Burnett	Tex. Exp. Sta., College Sta., Tex.	82.0	1031.0	1256.8	13-16	35.29	83	99.75	11
26. New Boykin	Ferguson Seed Farms, Sherman, Tex.	71.0	653.5	921.0	7-8	38.84	76	85.93	23
27. Okla. Tri. 44			943.3	1170.1	7-8	37.86	81	106.86	
28. Delfos 6102	Stoneville Ped. Seed Co., Stoneville, Miss.	80.4	715.8	890.1	1	35.04	97	85.52	24
29. Watson's Acala	L. O. Watson, Leswego, Tex.	61.9	464.5	750.8	1	36.36	69	74.34	28
30. Okla. Tri. 44			860.5	1054.5	15-16	33.59	89	93.52	
31. Burdette's Acala	Burdette Plant., Burdette, Ark.	76.7	854.0	1112.8	15-16	36.00	76	104.58	9
32. Special Cluster	Lindsay, Okla.	65.9	537.0	815.3	1	32.18	85	72.95	29
33. Okla. Tri. 44			782.8	976.8	7-8	42.42	86	98.20	
34. Plettner's	M. W. Plettner, Holdenville, Ok.	58.4	582.3	996.3	1	35.36	63	96.47	18
35. Acala No. 14	Acala Seed Co., Ardmore, Okla.	69.5	648.5	932.8	1	38.76	74	97.67	15
36. Okla. Tri. 44			811.8	1062.1	7-8	35.77	93	92.52	
37. Cleveland Big Boll	Rocky Mt., Ga.	70.9	636.5	897.5	3-4	26.36	88	56.61	30
38. Burdette's Express	Burdette Plant., Burdette, Ark.	82.0	974.5	1188.8	1 1-16	34.06	82	113.55	5
39. Okla. Tri. 44			769.0	983.3	3-4	36.23	78	86.56	
40. Okla. Tri. 44-11		83.1	855.3	1029.3	7-8	47.54	93	114.08	4
41. Lone Star	U. S. Station, Greenville, Tex.	56.5	530.3	938.6	1	39.08	55	98.96	12
42. Okla. Tri. 44			746.8	1074.8	7-8	43.81	92	111.06	
43. Mebane	Washita Seed Farms, Tishomingo, Okla.	48.6	373.5	768.3	15-16	38.92	60	77.13	26
Ave. of 14 check plots			775.0	1066.7	7-8	39.03	86.7	99.93	10

The varieties are not given a rank in relation to yield as the value basis is of more interest to the farmer.

No recommendation can be made from this year's results in regard to particular varieties to grow. Trice was the earliest with 84.8 per cent of the seed cotton secured in the first picking. This variety also gave the highest yield. Its value was high, being seventh in the test. Burnett and King were both early but their staple was so short as to make them worthless. Delfos was early but its yield and value were low. Express with 1 1-16 inch lint gave a good yield of high grade early cotton. Oklahoma Triumph 44-11, a new strain, proved to be early and ranked high in money value but the length of lint was shorter than is desired.

VARIETIES IN 1926

This experiment was planted on upland soil. The soil type was Kirkland loam shading off to Kirkland silt loam on the south end of the series. The difference in the soil character was not great enough to affect the final results.

The series used for this experiment was divided into three one-hundred foot ranges. The varieties were planted in triplicate, one plot in each range. The plots were staggered to care for soil variations. Plots of three one-hundred foot rows were used.

Seed was planted on May 12th and 13th. Due to the extremely small rainfall in April, the soil was dry to a depth of three inches. Germination was delayed and it was not until the thirteenth day that sufficient germination for a stand was secured. The plots were thinned to one plant every 9 to 12 inches on June 18th and 19th.

The plots were picked as soon as a sufficient number of bolls of the early varieties opened. Two pickings were secured. Before the first picking, fifty boll samples taken at random from each plot were selected for laboratory study. The weights of these samples were added to the yield of the first picking. All data given on this test are the average of three determinations.

Table 2 gives the results of the 1926 variety test. As the real value of a cotton is determined by its yield, length of lint, linting percent, size of boll and total money value, all these are given in the table.

The number of bolls required to make a pound of seed cotton is important as a small boll cotton is hard to pick and lacks storm resistance. No matter what the money value per acre, cotton that is picked with difficulty will not be extensively planted.

The length of lint is of vital importance as cottons of less than 7-8 inch in length should not be planted under any circumstances. Such cottons have a very inferior quality of lint and are not deliverable on spot markets.

In spite of the increase rainfall during the growing season, May to September, in 1926 over the same season in 1925, the average yield per acre was less in 1926. The rainfall in 1925 from May to September was 9.97 inches, and in 1926 was 18.92 inches. The decrease in average yield was due to the difference in fertility between bottomland and upland soils and to cotton flea and boll weevil damage. The cotton flea was observed throughout the season but the boll weevil did not arrive until late, damaging only the top crop.

Thirty-one varieties were included in the 1926 test. The earliest varieties were Trice, Oklahoma Triumph 44-11, Lightning Express, Dixie-Triumph, Express, Lone Star 65, and Acala.

The leading varieties in money value in this test are, Half and Half, Acala 14, Acala 537, Lone Star, Kasch, Delfos, Lone Star 65, and Triumph 406. Half and Half though ranking high has only a 3-4 inch staple which places it as a most undesirable cotton for Oklahoma.

Acala 537 is an excellent cotton for most purposes and is to be generally recommended. Any of the Acalas produced in Oklahoma are to be recommended. Lone Star and Kasch are late cottons, unsuited for most of the

state. Delfos 6102 is an early long staple cotton. It has done well in the few tests made with it. Its small boll and lack of storm resistance are detrimental to its wide production in the state. Lone Star 65 is a new variety just entered in the tests. Triumph 406 is an old variety standing high in some sections. It is a medium early strain of Mebane's Triumph.

Table 2. Results of 1926 Cotton Variety Tests at the Oklahoma Experiment Station, Stillwater, Oklahoma

VARIETY	% Total in First Pick	LBS. SEED COTTON PER ACRE		LINT		Number Bolls Per Pound	Dollars Per Acre Lint and Seed	Rank in Value
		First Pick	Total	Length	Per Cent			
Okla. Triumph 44	39.5	269.4	676.5	15-16	36.28	86.2	35.25	15
Acala 537	33.2	231.7	698.4	1	39.57	80.5	41.89	3
Acala 14	29.6	227.7	768.3	15-16	37.49	82.3	42.93	2
Imp. Mebane	15.1	87.3	578.9	1	38.64	60.7	34.01	18
Mebane	30.5	196.5	644.4	15-16	35.92	66.9	34.70	16
New Boykin	24.8	152.9	616.8	15-16	38.62	62.2	35.38	13
Triumph 406	19.6	138.3	704.1	15-16	37.12	59.4	39.02	8
Lone Star	14.8	94.6	638.0	1 1-16	40.88	53.5	41.24	4
Rowden	21.0	131.0	624.9	1	36.95	52.9	35.29	14
Half and Half (Crook)	30.3	229.7	759.1	3-4	47.96	80.0	43.91	1
Trice (Burdette)	52.0	317.2	609.9	7-8	36.99	91.3	30.21	25
Delfos 6102	41.3	261.3	632.0	1 1-8	35.25	101.7	40.10	6
D P L 4	24.3	160.1	657.5	1	37.72	77.0	37.81	9
D P L 8	35.4	214.7	628.0	1	39.00	76.4	37.19	11
Lightning Express	41.3	250.7	606.3	1 1-16	34.72	104.4	33.92	19
Okla. Tri. 44-7	36.2	241.5	667.7	7-8	37.26	87.6	33.28	20
Okla. Tri. 44-11	45.5	306.6	673.3	7-8	37.03	94.2	32.68	21
Super-Seven	26.6	167.4	627.1	1	35.73	85.7	34.40	17
Dixie Triumph	40.1	171.2	598.0	15-16	40.05	80.6	35.42	12
Cleveland Big Boll	26.2	163.8	625.5	13-16	32.70	82.1	26.06	29
Cook's Improved	28.8	211.5	734.1	7-8	38.32	91.7	37.49	10
Petty-Doole	23.4	141.1	603.7	15-16	35.71	96.9	32.34	22
Express	43.6	257.8	590.9	1 1-16	29.92	98.2	28.37	27
Plettners	24.5	141.9	579.6	1 1-16	34.42	58.0	32.19	23
Acala	44.1	237.6	564.1	15-16	30.40	94.0	26.31	28
Trice	39.0	209.9	538.2	15-16	31.10	103.1	25.60	30
Half and Half (Somm)	34.9	207.9	596.0	15-16	34.84	80.5	31.22	24
Kasch	17.3	123.8	716.4	15-16	38.68	63.0	41.15	5
Cleveland Big Boll (Wann)	36.2	181.9	503.0	7-8	35.51	77.9	24.06	31
Lone Star 65	41.9	314.7	751.6	1	34.08	76.2	39.55	7
Parkers Early Wonder	21.0	103.3	491.7	15-16	39.07	85.6	28.49	25

VARIETIES IN 1927

The 1927 test was planted on Vernon very fine sandy loam shading into Kirkland very fine sandy loam. The slight variation in these types was taken care of by the method used in planting. The series were divided in the same manner as for the 1926 experiment. The method of zigzagging the plots placed each variety once on the Vernon and twice on the Kirkland soil. No single plot was split between the two types.

Seed was planted on May 13th and 14th when there was sufficient moisture to insure quick germination. A good stand was secured on all plots except those planted to Acala Indio, P 12-13-5-1-6 and 8-1-1-1-3-4. These strains were secured from the U. S. Department of Agriculture and were known to be old seed with a poor germination. The plots were thinned to one plant every 9 to 12 inches when the cotton was about 4 inches high.

The dry weather during May so retarded growth that the few early squares formed were easily destroyed by the boll weevil. These two agents so retarded the formation of squares that blooming did not begin until late in July even on the earliest varieties.

The abundant rainfall in June stimulated growth during June and July so that a plentiful supply of bolls were set before the reappearance of the boll weevil in August. The yield of all the late maturing, slow growing varieties suffered the most from boll weevil damage during August and September. Some of the late varieties produced only a very small crop in consequence.

With the exception of the shortage of rain in May, the amount and distribution of rainfall in the other growing months was almost ideal for cotton production. Normal growth was observed in the bolls resulting in high quality natural length lint in all varieties. Forty-seven varieties and strains were included in the test. Many of these were new strains to Oklahoma.

One of the needs in Oklahoma cotton is an early, high yielding, long staple variety. In attempting to meet this need Delfos, Lightning Express, Hartsville 21, Delta Type Webber 5, Express and Kekchi were tried. Delfos, Lightning Express and Express have been tested for several years but the others are new. Hartsville 21, Delta Type Webber 5, and Kekchi proved to be such late maturing varieties that they will probably never be suited to Oklahoma. Delfos and Lightning Express are early varieties but have some serious drawbacks. They, however, offer the most hope at this time.

The leading varieties in point of earliness in 1927, earliness as expressed in percentage of total yield in the first pick are:

Lone Star	370	70.9 per cent	Trice Burdette	68.2 per cent
Trice	107	70.9 per cent	Express	65.9 per cent
Delfos	1341	69.7 per cent	Express 125	65.8 per cent
Acala	537	69.1 per cent	Acala Burdette	64.8 per cent
Delfos	970	64.0 per cent	Okla. Triumph 44-11	64.4 per cent
Payroll		63.9 per cent	Lone Star 65	61.4 per cent
Trice	730	63.6 per cent	Trice Stoneville	61.5 per cent
Express	139	63.1 per cent	Okla. Triumph 44	60.6 per cent

The leading varieties in yield in 1927 are:

Lone Star 370	1295.5	Trice Burdette	1083.3
Delfos 1341	1210.2	Lone Star 389	1080.1
Westex	1194.9	Trice 107	1070.4
Okla. Tri. 44-11	1193.5	Lone Star 65	1036.8
Payroll	1180.8	Delfos 6102	989.8
Okla. Tri. 44	1122.8	Trice Stoneville	978.7
Delfos 970	1128.1	Trice 730	958.9
Acala Burdette	1092.6	Express 125	950.6

The leading varieties in money value in 1927 are:

Lone Star 370	Lone Star 389
Okla. Tri. 44-11	Delfos 970
Okla. Tri. 44	Lone Star 65
Delfos 1341	Trice (Burdette)
Payroll	Delfos 6102
Westex	Trice 107
Acala 537	D. P. L. 8
Acala Burdette	Half and Half

Table 3. Results of the 1927 Cotton Variety Tests at the Oklahoma Experiment Station, Stillwater, Oklahoma

VARIETY	LBS. SEED COTTON PER ACRE		Percent of Totals in First Pick	LINT		No. Bolls Per Lb.	Dollars Per Acre, Lint and Seed	
	1st Pick	Total		Length	Percent			
Okla. Tri. 44	659.7	1048.8	62.9	1	38.34	77.8	97.05	*
Acala 537	644.0	932.3	69.1	1 1-16	40.12	69.4	93.70	7
Acala 5	502.7	839.0	59.9	15-16	38.77	76.3	76.20	19
Mebane	125.8	399.8	31.5	31-32	36.84	61.4	35.34	44
New Boykin	232.4	587.8	39.5	7-8	37.05	70.7	50.76	36
Triumph 406	207.6	528.7	39.3	15-16	35.95	66.5	45.20	38
Lone Star U. S.	165.8	433.0	38.3	1	36.39	62.0	38.42	43
Rowden	350.8	725.6	48.3	1	35.45	64.8	63.04	28
Half and Half	467.0	857.1	54.5	13-16	43.97	79.7	83.18	16
Okla. Tri. 44	713.3	1210.1	59.3	1	37.23	78.2	109.34	*
Trice	738.3	1083.3	68.2	15-16	34.97	84.2	90.59	11
D. P. L. 4	439.5	775.8	56.7	1	35.26	88.7	67.10	27
D. P. L. 8	514.3	918.7	56.0	15-16	38.96	87.5	83.58	15
D. P. L. 6	406.9	848.7	47.9	1 1-16	33.97	102.0	74.50	24
Delfos 6102	597.6	989.8	60.4	1 1-16	33.25	92.1	85.81	13
Lightening Express	457.9	786.6	58.2	1 1-8	32.13	96.8	71.50	25
Hartsville 21	121.7	461.9	26.3	1 3-16	28.63	81.7	40.12	41
D. T. Webber 5	111.0	428.3	25.9	1 3-15	31.29	85.4	39.96	42
Okla. Tri. 44	608.3	1027.1	59.2	31-32	37.34	80.0	91.76	40
Super Seven	199.8	508.9	39.3	1 1-16	33.29	102.6	43.95	29
Dixie-Triumph	333.1	765.3	43.5	15-16	33.80	89.1	62.32	20
Cleveland Big Boll	281.2	676.1	41.6	7-8	35.35	83.6	56.24	35
Plettners	259.2	648.2	40.0	1 1-16	35.75	63.7	59.28	32
Kasch	242.4	533.7	43.8	7-8	39.26	59.5	50.09	37
Acala Burdette	708.4	1092.6	64.8	1	34.07	83.1	91.96	9
Express Burdette	594.4	901.8	65.9	1 1-16	31.95	89.3	75.39	21
Trice Stoneville	602.3	978.7	61.5	1	34.01	90.9	82.27	17
Okla. Tri. 44	718.3	1196.8	60.0	15-16	39.88	77.1	111.18	18
Acala 105 Burdette	531.9	351.8	60.2	1	34.76	73.3	75.59	20
Acala 145 Burdette	533.4	368.8	59.1	31-32	36.89	90.7	79.81	47
Acala Indio U. S.	94.5	196.4	32.5	1	33.86	74.8	24.37	47
Acala P 12-13-5-1-6 U.S.	124.0	415.3	29.9	15-16	34.08	63.5	34.02	45
Acala 8-1-1-3-4 U.S.	183.5	489.2	37.5	1 1-16	35.27	61.3	44.25	39
Trice 730 Burdette	609.9	958.9	63.6	15-16	32.22	78.9	75.21	22
Trice 107 Burdette	759.2	1070.4	70.9	7-8	33.31	77.9	84.99	14
Express 125 Burdette	625.1	950.6	65.8	15-16	30.49	92.4	71.43	26
Express 139 Burdette	533.4	845.0	63.1	15-16	29.33	92.2	61.65	31
Lone Star 65	636.2	1036.8	61.4	1	33.60	71.8	86.33	12
Lone Star 370	917.9	1295.5	70.9	15-16	34.16	65.4	106.35	1
Lone Star 380	653.7	1080.1	60.5	15-16	35.86	81.1	92.14	8
Delfos 970	721.5	1128.1	64.0	1	32.34	83.7	91.14	10
Delfos 1341	844.1	1210.2	69.7	1	33.62	93.5	100.81	4
Okla. Tri. 44	707.3	1187.5	59.6	15-16	33.66	84.8	96.37	*
Payroll	754.2	1180.8	63.9	15-16	35.78	82.2	100.57	5
Okla. 44-11	768.9	1193.5	64.4	15-16	35.74	89.3	101.56	2
Arthurs Improved	320.4	718.2	44.6	1	35.19	73.6	61.85	30
Cooks Improved	326.2	687.8	47.4	13-16	37.64	86.8	57.13	34
Petty's Toole	83.0	358.9	23.1	7-8	34.26	91.5	29.13	46
Kekchi	264.6	821.8	32.2	1 1-16	33.69	67.8	75.07	23
Westex	701.0	1194.9	58.7	7-8	33.59	93.4	95.49	6
Crosby	275.2	647.1	42.5	1 1-16	35.24	69.4	58.49	33
Okla. Tri. 44	667.1	1068.6	62.4	15-16	36.05	72.2	91.54	*
Ave. Okla. Tri. 44	679.2	1122.8	60.6	1	37.23	78.5	101.45	3
Okla. Tri. 44-15-2-2	660.1	1133.1	58.3	15-16	40.66	79.0	106.95	
Okla. Tri. 44-12-4-4	645.8	1164.4	55.5	7-8	42.60	75.5	112.54	
Okla. Tri. 44-18-5-5	737.6	1138.2	64.8	7-8	40.51	75.7	105.59	
Okla. Tri. 44-19-6-6	667.5	1140.0	58.6	7-8	40.11	76.9	104.92	
Okla. Tri. 44-29-9-9	793.4	1289.4	61.5	1	41.01	79.1	126.05	
Okla. Tri. 44-34-10-10	701.6	1231.8	57.0	31-32	39.80	79.9	115.89	
Okla. Tri. 44-32-13-13	713.6	1200.4	59.4	15-16	39.95	77.7	111.70	
Okla. Tri. 44-41-14-14	574.4	1029.9	55.8	15-16	38.77	74.7	93.54	
Okla. Tri. 44-3-21-21	703.0	1187.1	59.2	15-16	39.74	75.2	109.99	
Okla. Tri. 44-7-23-22	667.5	1123.0	59.4	15-16	39.90	76.7	104.39	

Table III Continued

VARIETY	LBS. SEED COTTON PER ACRE		Percent of Totals in First Pick	LINT		No. Bolls Per Lb.	Dollars Per Acre, Lint and Seed
	1st Pick	Total		Length	Percent		
Okla. Tri. 44-2-1	634.3	1129.9	56.1	15-16	40.49	75.1	106.29
Okla. Tri. 44-51-4	548.6	1044.2	52.5	29-32	41.10	83.6	98.70
Okla. Tri. 44-67-5	611.7	1052.9	58.1	31-32	39.29	74.4	98.03
Okla. Tri. 44-72-6	658.3	1136.8	57.9	15-16	37.38	76.3	100.24
Okla. Tri. 44-97-4	640.4	1147.5	55.8	29-32	38.98	85.1	103.90
Acala 44-1-1	600.2	1044.2	57.5	15-16	39.90	74.5	97.05
Acala 41-2-2	449.0	892.9	50.3	31-32	41.26	77.2	86.51
Acala 20-3-3	357.3	726.6	49.2	33-32	39.04	75.8	69.82
Acala 10-4-4	469.3	849.6	55.2	31-32	39.88	82.4	78.94
Acala 11-5-5	365.1	788.7	46.3	1	36.76	82.3	70.54
Acala 14-6-6	750.0	1118.8	67.0	31-32	40.72	74.9	107.24
Acala 119-0	420.4	829.8	50.7	31-32	39.49	67.7	77.57
Acala 116-0	361.9	719.2	50.3	15-16	38.19	69.8	64.51
Acala 97-0	453.9	822.8	55.2	15-16	40.49	73.8	77.41
Okla. Tri. 44	680.6	1120.5	60.7	1	38.12	74.4	103.19
Acala 33-0	387.2	692.9	55.9	1	34.39	83.3	58.77
Trice 7-2-2	573.5	1167.3	49.1	1	33.58	79.9	97.14
Trice 9-3-3	490.0	882.7	55.6	15-16	36.22	84.1	75.90
Trice 5-4-4	476.2	810.4	58.8	7-8	34.08	91.3	65.50
Trice 10-6-6	466.1	869.5	53.6	13-16	34.39	87.8	69.30
Trice 30-3	614.1	1000.4	61.4	15-16	32.63	92.7	78.53
Trice 31-4	519.1	940.0	55.2	7-8	34.67	98.2	77.01
Trice 33-5	362.4	754.7	48.0	7-8	32.48	88.6	58.75
Trice 35-6	608.5	943.2	64.5	15-16	31.71	79.2	73.06

Of the sixteen leading varieties in point of earliness, Acala 537, Trice (Burdette), Express, Acala (Burdette), Trice (Stoneville) and Oklahoma Triumph 44 have been tested more than two years. The remaining varieties are in their first or second tests. Of these varieties, Trice (Burdette), Acala (Burdette, Trice (Stoneville) and Oklahoma Triumph 44 occur in the sixteen leading varieties in point of yield. Oklahoma Triumph 44, Acala 537, Acala (Burdette) and Trice (Burdette) are the only ones taking a high place in money value per acre.

Of the sixteen early varieties, Lone Star 370, Delfos 1341, Acala 537, Delfos 970, Payroll, Oklahoma Triumph 44-11, Oklahoma Triumph 44, Acala (Burdette), Trice (Burdette), Lone Star 65, and Trice 107 are among the leading varieties in money value. The other leading varieties in money value are: Westex, Lone Star 389, Delfos 6102, D. P. L. 8, and Half and Half were also early but yielded less than 60 per cent of their total production in the first pick.

Of the sixteen leading varieties in money value, Oklahoma Triumph 44, Acala 537, Acala (Burdette), Trice (Burdette), Delfos 6102 and Half and Half have been tested for five or more years. With the exception of Half and Half all have 7-8 inch or more staple of good quality lint. Half and Half yields a poor quality lint of around 3-4 inch staple. Oklahoma Triumph 44 and Acala can be recommended for most Oklahoma conditions. Delfos has too small a boll and its value is too uncertain at present.

FIVE YEARS RESULTS AT STILLWATER

Of all the varieties in the test at Stillwater only fifteen have been continuously tested for the last five years. Some of these fifteen have been tested for considerably longer than that but only the last five years results are considered in Table 5.

A study of the rainfall for the years 1923 to 1927 inclusive will give a fair cross-section of Oklahoma conditions. A full interpretation of the five year average of the behavior of the sixteen varieties cannot be had unless the distribution of rainfall during those years is studied. Table 4 gives the rainfall by months for 1923 to 1925, total inches, total May to September, total October to April, the per cent of the total during the growing season of May to September, inclusive, and the average yield of seed cotton of all the varieties considered.

It will be noticed that the smallest average yield is in 1923, the year with the greatest rainfall. The total rainfall for the growing season of this year was 23.98 inches but 13.98 inches of this fell late in September when most of the crop was about matured. The shortage this season was caused by shortage of rain in June, July and August and by damage to open cotton by the heavy rains of September. The leading varieties for this year were Oklahoma Triumph 44 and Lightning Express. Both are early maturing cottons.

The season of 1924 began with plenty of moisture in the soil. The pre-season rainfall amounted to 19.48 inches plus about eleven inches of snow. May was a dry month with only .71 inch. This is the month in which the majority of Oklahoma cotton is planted and there should have been enough moisture present to give the cotton a good start. The June rainfall was somewhat below normal but the fruiting period during July received slightly more than a normal rainfall. The total for the growing season was 11.25. This was 1.25 inches more than in 1923. A better distribution is also observed in 1924, which, with the pre-season moisture was sufficient to produce slightly more than one-half a bale to the acre. The leading varieties in 1924 were Oklahoma Triumph 44, Half and Half, and Lightning Express. The length of lint of these was 13-16 for Half and Half, 15-16 for Oklahoma Triumph 44, and 1 3-16 inches for Lightning Express. An increased length of from one-sixteenth to two-sixteenths of a ninth over the length in 1923 was observed probably due to rainfall conditions.

The pre-season rainfall for 1925 was 9.54 inches mostly falling in April just before planting in May. Little snow fell in the winter of 1924-1925. The pre-season moisture content of the soil was very low and as May was a dry month with only .44 inches of rain, cotton started off very poorly. The growing months were also dry with only 9.97 inches of rain. This caused a considerable reduction in the yield and some reduction in the length of the fibre. The leading varieties in 1925 were Trice, 1257 pounds per acre of 7-8 inch lint; Acala 5, 1244 pounds per acre of one inch lint; and Petty's Toole, 1172 pounds per acre of 10-16 inch lint. The length of lint of these varieties

was reduced from two to three-sixteenths of an inch from the lengths secured in 1924.

The spring of 1926 was again dry, only 10.10 inches of pre-season rainfall being recorded and 6.97 inches of snow. Planting time in May found the soil dry to a depth of from three to four inches. Germination was delayed for a week or more but enough rain fell in the latter part of May to connect up with the moisture deep in the soil and to bring up the crop. Good rains fell in June, July and August. Delayed germination in the spring, poor soil and some slight boll weevil, web-worm and flea hopper damage reduced the yield below that of 1925. The leading varieties were Half and Half, 759 pounds of seed cotton with 3-4 inch lint; Cook's Improved, 734 pounds with 7-8 inch lint; and Kasch, 716 pounds with 15-16 inch lint. The staple length was about the same as that of 1925 except with Half and Half which was shorter.

Season of 1927 was generally the best for amount and distribution of rainfall of any of the five considered. A total of 15.34 inches of pre-season rainfall and 9 inches of snow is recorded. Twenty-two and thirty-four hundredths of an inch fell during the growing season, May to September, inclusive. Six inches of this fell in September after the first picking was done and too late to be of material benefit to the crop. The boll weevil so damaged the late crop that all immature late bolls were lost. The month of June, when the most vegetative growth occurs received 7.46 inches of rain. July and August, the boll maturing period, received 2.33 and 4.41 inches, respectively, an ample amount to induce proper growth. The boll weevil, however, served in a large measure to offset the effects of the well distributed rainfall and to materially reduce the yield of all varieties. The leading varieties for 1927 were Oklahoma Triumph 44, 1123 pounds of seed cotton of one inch staple; Trice, 1083 pounds, with 15-16 inch staple; and Delfos 6102, 990 pounds with 1 1-16 inch staple.

The five years, 1923 to 1927, produced two years of poor rainfall, one year of fair rainfall and two years of well distributed rain, one of which, however, began as a dry year. Early killing frosts in 1923, 1924, and 1925 served to reduce the quality of the fiber and caused a high percentage of low grade cotton.

The long growing season of 1926 with its late killing frost in the fall did not serve to completely overcome the effects of the dry spring and the damage caused by flea hoppers and boll weevil.

The good effects of the well distributed rainfall of 1927 was largely offset by the enormous damage caused by the boll weevil. A late frost and the loss of the late crop through the boll weevil kept the quality high, resulting in little low grade cotton in this year.

The general average for the five year period shows that on the whole it is best to plant early maturing varieties through this means accepting a smaller boll and somewhat shorter lint.

No variety with less than 7-8 inch lint is recommended as none of this cotton is used in the United States and generally brings a much lower price per pound. Such varieties then as Half and Half, Cook's Improved and Petty's Toole are not recommended for Oklahoma.

Table 4. Rainfall by Months for 1923 to 1927 at Stillwater, Oklahoma

	1923	1924	1925	1926	1927
Rain January	1.00	.48	.34	1.76	1.16
Snow January	—	.25	2.10	2.50	3.50
Rain February .....	.18	1.03	.30	.04	.68
Snow February	1.50	1.50	—	.12	4.50
Rain March	1.43	3.15	.40	1.23	1.74
Snow March	—	9.20	—	4.35	—
Rain April	4.23	4.51	4.95	1.73	2.75
Rain May	8.68	.71	.44	2.63	1.57
Rain June .....	.94	2.52	4.30	4.74	7.46
Rain July	T	3.03	1.86	3.04	2.33
Rain August .....	.38	2.34	.92	1.44	4.41
Rain September	13.98	2.63	2.45	7.07	6.57
Rain October	7.62	.41	2.74	4.41	2.72
Rain November .....	.84	2.30	2.58	1.76	2.84
Rain December	1.86	.84	.02	2.84	1.63
Snow December	—	1.55	—	—	1.00
Total rain	41.14	23.97	21.30	32.69	35.86
Snow	1.50	12.50	2.10	6.97	9.00
Total, May to Sept.	23.98	11.25	9.97	18.92	22.34
Total preseason	2.61	19.48	9.54	10.10	15.34
Av. yield per acre seed cotton	207.6	733.9	1027.9	655.5	717.5
Percent total in growing season	58	47	47	58	62
Date of first killing frost in fall	10—31	10—24	10—10	—	11—12

Table 5. Five-Year Average Results With Fifteen Varieties of Cotton at the Oklahoma Experiment Station, Stillwater, Oklahoma

VARIETY	LINT		No. Bolls Per Lb.	YIELD PER ACRE		Money Value, Seed and Lint	Rank in Value	Years in Test
	Length	Percent		1st Pick	Total Yie			
Acala 537	1	39.64	74.7	416.5	783.8	\$76.16	1	5
Okla. Tri. 44	15-16	36.52	82.4	468.2	832.9	70.76	2	
Lightning Express	1 1-8	33.18	93.3	458.1	715.6	67.33	3	
Half and Half	13-16	40.81	82.3	392.3	761.8	65.21	4	
Delfos 6102	1 1-16	32.97	92.6	424.9	711.0	63.90	5	
Trice (Burdette)	7-8	35.25	89.8	563.6	801.2	61.74	6	
Rowden	31-32	34.32	61.0	246.3	652.5	58.96	7	
Kasch	15-16	39.26	61.3	254.3	636.1	58.89	8	
Cook's Improved	13-16	37.29	84.3	366.7	703.7	56.88	9	
Dixie-Triumph	7-8	36.05	82.7	356.4	690.1	56.23	10	
Triumph 406	15-16	38.45	65.1	231.4	609.4	53.84	11	
New Boykin	7-8	37.53	69.5	295.9	617.6	53.35	12	
Lone Star U. S.	1 1-32	38.28	58.7	208.2	560.6	53.09	13	
Mebane	31-32	36.51	66.5	222.0	556.4	48.81	14	
Petty's Toole	13-16	35.25	90.7	259.0	606.0	46.40	15	

**YIELD, LENGTH OF LINT, AND LINTING PERCENTAGE,
SIX-YEAR PERIOD, 1922-1927**

YIELDS

The yields of seed cotton of the varieties tested during the six-year period, 1922 to 1927, inclusive, with the average yields for selected periods during this time are given in Table 6. Only seven of the varieties listed were included for all of the six years, but it was thought best to include varieties tested for varying periods during this time. Several varieties which were found to be included only at intervals were omitted as well as those included for only one year.

There was considerable variation in yield noted in the varieties during this period. In 1923, an unfavorable year for cotton, the highest yield was 256.4 pounds, Oklahoma Triumph 44; and the lowest was 162.2 pounds, Lone Star. In 1927, a more favorable year, the yield of these same varieties was 1122.8 and 433 pounds of seed cotton per acre. In 1923 the average was about 200 pounds per acre while in 1925 and 1927 the better varieties averaged about 3-4 of a bale per acre.

The average yield for all the varieties for the six year period 1922 to 1927, inclusive, was approximately 665 pounds of seed cotton per acre. During this period, Oklahoma Triumph 44, Trice and Acala 537 made the highest yields in the order named. Trice is a small boll, high yielding, very early variety but is not recommended except possibly to the extreme northern limits of cotton production.

Fourteen varieties were tested continuously during the five-year period, 1923 to 1927. The yields per acre of seed cotton are shown in Table 6. Oklahoma Triumph 44, Trice and Acala 537 led in yield per acre in this period.

Oklahoma Triumph 44, Acala, Trice and Half and Half, (Sommerour's), led during the four years of 1922 to 1925.

Two new varieties were added to the test in 1924, Acala from the Burdette Plantations in Arkansas and a strain of Half and Half produced in Tennessee. No great difference between this Half and Half and the one already being tested was noted in yielding ability, length of lint or linting percentage. The Acala proved its worth by taking fourth place in yield for the four years, 1924 to 1927. The four leading varieties, Oklahoma Triumph 44, Trice, Acala 537, and Acala all yielded better than 900 pounds of seed cotton per acre.

In 1925, Oklahoma Triumph 44-11, Plettner's and Cleveland Big Boll were added to the variety test. With the exception of Oklahoma Triumph 44-11, none of these varieties showed anything exceptional. Oklahoma Triumph 44-11 took third place in yield for the 1925 to 1927 period with approximately the same yield as its parent variety, Oklahoma Triumph 44. The five leading varieties during this period were Trice, Oklahoma Triumph 44, Oklahoma Triumph 44-11, Acala 537, and Acala (Burdette) all of which gave yields close to 3-4 bale to the acre.

A two year average does not show much of value and is only included here to give the results to date with D. P. L. 4, D. P. L. 8, Superseven, Trice and Lone Star 65. D. P. L. 4 and D. P. L. 8 are new selections from Mississippi. Trice is a new strain from Stoneville, Mississippi as is Lone Star 65, which is an early variety resulting from natural cross between Trice and Lone Star. Superseven is a wilt-resistant variety which is of importance due to the spread of cotton-wilt in Oklahoma.

Table 8. Linting Percentage

VARIETY	1922	1923	1924	1925	1926	1927	Six Years, 1922-1927	Four Years, 1922, 1925-1927	Five Years, 1922-1926	Four Years, 1922-1925	Five Years, 1923-1927	Four Years, 1924-1927	Three Years, 1925-1927	Two Years, 1926-1927
Okla. Tri. 44	32.9	35.6	34.5	36.4	36.3	37.2	35.5	35.7	35.1	34.9	36.0	36.1	36.6	36.8
Acala 5-37	32.3	40.6	41.5	36.4	39.6	38.3	38.1	36.7	38.5	38.2	39.3	38.9	38.1	38.9
Lone Star	33.4	36.4	38.7	39.1	40.9	36.4	37.5	37.4	36.9	37.7	38.3	38.8	38.8	38.6
Rowden	32.3	23.5	35.4	40.3	37.0	35.5	36.0	39.2	36.1	35.8	36.7	37.1	37.6	36.3
Trice	29.9	39.1	31.0	34.1	37.0	35.0	34.3	34.0	34.2	33.5	35.2	34.3	35.4	36.0
Mebane	33.5	33.3	36.6	39.8	38.6	36.8	36.4	37.2	36.3	35.8	37.0	37.9	38.4	37.7
Cook's Improved	28.0	34.1	36.7	39.7	38.3	37.6	35.7	35.9	35.4	34.6	37.3	38.1	38.5	37.9
Express	26.6	..	..	34.1	29.9	32.0	..	30.7	..	..	..	..	32.0	30.9
Half and Half	33.7	35.4	35.9	48.5	48.0	..	..	..	40.3	38.4	..	..	..	..
Bennett's	32.3	35.3	37.8	40.1	..	..	..	..	..	36.4	..	..	..	..
King	31.5	35.3	36.5	37.1	..	..	..	..	..	35.1	..	..	..	..
New Boykin	..	34.9	40.3	38.8	38.6	37.1	..	..	..	..	37.9	38.7	38.2	37.8
Triumph 406	..	37.9	36.6	44.7	37.1	36.0	..	..	..	..	38.5	38.6	39.3	36.5
Delfos 6102	..	28.3	33.1	35.0	35.3	33.3	..	..	..	..	33.0	34.2	34.5	34.3
Lightning Express	..	29.6	29.4	40.0	34.7	32.1	..	..	..	..	33.1	34.1	35.6	33.4
Dixie Triumph	..	33.3	35.3	37.8	40.1	33.8	..	..	..	..	36.1	36.7	37.2	36.9
Kasch	..	36.3	38.0	44.1	38.7	39.3	..	..	..	..	39.3	40.0	40.7	39.0
Petty's Toole	..	35.7	34.5	36.1	35.7	34.3	..	..	..	..	35.3	35.1	35.4	35.0
Half and Half	..	..	39.9	36.9	34.8	44.0	..	..	..	..	..	38.9	35.2	39.4
Acala	..	..	34.4	36.0	30.4	34.1	..	..	..	..	..	33.7	40.1	36.3
Okla. Tri. 44-11	..	..	..	47.5	37.0	35.7	..	..	..	..	..	..	35.2	35.1
Plettner's	..	..	..	35.4	34.4	35.8	..	..	..	..	..	..	35.8	34.0
Cleveland Big Boll	..	..	..	26.4	32.7	35.4	..	..	..	..	..	..	35.2	35.1
D. P. L. 4	..	..	..	..	37.7	35.3	..	..	..	..	..	..	40.1	36.3
D. P. L. 8	..	..	..	..	39.0	39.0	..	..	..	..	..	..	35.2	35.0
Super Seven	..	..	..	..	35.7	33.3	..	..	..	..	..	..	34.5	34.5
Trice	..	..	..	..	31.1	34.0	..	..	..	..	..	..	32.5	32.5
Lone Star 65	..	..	..	..	34.1	33.6	..	..	..	..	..	..	33.8	33.8

PERCENTAGE OF LINT

Data on the percentage of lint is given in Table 8. This data cannot be neglected as the value of a variety depends in a large degree on this measure of the amount of lint. A variety with a low lint percentage would have to have a higher yield and bring a premium for length of lint in order to compete with those varieties giving good yields with a high percentage of 7-8 inch lint. Eight different averages are given in the Table so that all the varieties could be compared for the periods in which they occur together.

Rowden which had the most uniform length of lint also had the least variable percentage of lint. No consistent relation between length of lint and percentage of lint was observed; however, the lower percentages of lint generally are of varieties having a staple length of more than one inch.

RESULTS AT THE GRANITE SUBSTATION

The work at the Granite Substation is carried on by R. W. Ellithorp, Assistant Agronomist and Superintendent. The seed is sent out from the main station at Stillwater and planted by Mr. Ellithorp. The substation not being equipped with a small hand gin, laboratory data is compiled at the main station from fifty boll samples sent in from Granite.

The experiments at Granite have only been running for three years and the varieties have not been constant. The number of varieties has changed each year so that only twelve have been constantly tested for the three years.

Table 9 gives the yield and value per acre by years for 1925 to 1927. The varieties in this test are those commonly grown in the state and a few additional promising varieties. With the hope of finding some long staple varieties suited to southwestern Oklahoma, a number of such varieties have been added which are Lightning Express, Delfos, Hartsville 21, and Delta Type Webber. These varieties all have a lint averaging 1 1-8 inches or more in length. Lightning Express has been tested for three years, standing tenth in yield and seventh in value. Delfos has only been in two years and the others one year each. Delfos shows considerable promise ranking second in value for 1927. 1927 was an exceptionally good year for cotton in southwestern Oklahoma where the yields were high and the prices satisfactory.

The highest yielding varieties in this test, New Boykin, Oklahoma Triumph 44, Half and Half, Acala 5-37, and Trice are all medium to small boll cottons. Oklahoma Triumph 44 and Trice are very early. New Boykin, Acala and Half and Half are medium to early varieties. With the exception of Half and Half, all these varieties give a staple of 7-8 inch and up. The staple of Half and Half has always been short, being 11-16 in 1925, 3-4 inch in 1926, and 13-16 inch in 1927. This length of staple makes this cotton untenderable on the market and in fact is not used by the spinning mills of the United States.

The results to date indicate that New Boykin, Oklahoma Triumph 44 and Acala are the best varieties for growing in southwestern Oklahoma.

Table 9. Results 1925 to 1927 at Granite Substation, Granite, Oklahoma

	1925		1926		1927		Ave. 2 Years, 1926-1927		Ave. 3 Years, 1925-1927		Rank	
	Yield	Value	Yield	Value	Yield	Value	Yield	Value	Yield	Value	Yield	Value
Okla. Tri. 44	820	73.79	663	29.52	1522	117.07	1093	73.29	1002	76.79	4	5
Acala 537	875	84.22	757	44.35	1290	119.95	1024	82.15	974	82.84	5	1
Acala 5					1357	111.99						
Mehane	780	72.18	755	37.23	1042	88.14	899	62.89	859	65.85	12	10
Delfos 6102 .....	..	..	567	30.97	1665	139.37	1116	85.17				
New Boykin	880	81.14	873	41.71	1342	118.17	1108	79.94	1032	80.34	1	2
Okla. Tri. 44	810	69.08	657	30.28	1395	109.81	1026	70.05	954	69.72	6	8
Triumph 406	845	77.60	723	34.59	1177	96.59	950	65.59	915	69.59	9	9
Lone Star	770	69.61	863	41.69	1155	105.67	1009	73.68	929	72.32	8	6
Rowden	775	71.00	693	31.15	1117	85.45	905	58.30	862	62.53	11	12
Half and Half	880	69.81	760	40.38	1425	120.54	1093	80.46	1022	76.91	3	4
Trice Burdette	880	65.19	593	26.58	1372	98.89	983	62.74	948	63.55	7	11
Okla. Tri. 44	920	80.45	607	27.81	1552	127.88	1079	77.85	1026	78.71	2	3
D. P. L. 4 .....	..	..	645	34.89	1312	108.81	979	71.85				
D. P. L. 6					1365	135.74						
D. P. L. 8			582	29.63	1500	140.61	1041	85.12				
Lightning Express	830	65.53	547	26.16	1350	119.72	949	72.94	909	70.47	10	7
Hartsville 21					1335	118.20						
Okla. Tri. 44					1537	129.94						
D. T. Webber 5					1230	136.17						
Okla. Tri. 44-11			677	30.64	1627	136.37	1152	83.50				
Acala 5—Donart					1425	123.32						
Acala 5—Ref.					1530	118.22						
Okla. Tri. 44					1537	122.68						

SUMMARY OF OUTFIELD VARIETY TESTS

For the past three years a number of cotton varieties have been tested at various selected points over the state. This work is under the supervision of H. C. Potts, Assistant Agronomist in charge of outfield experiments. The yield per acre and money value for each variety in this test is summarized in Table 10. For convenience and to cover the state better, the results obtained at Granite and Stillwater for the same varieties are included in the table. The figures given except where noted are the averages of the three years results. No attempt has been made to give a general average as such figures would have no application to Oklahoma conditions. The different sections of the state should use the results from the nearest station applicable to their conditions.

The soil on which these tests were conducted was selected so as to secure about average conditions. All the tests are on upland soil. No attempt was made to secure the best nor the poorest soil in the district but a type was selected which would give average results.

The varieties used are as far as possible those most widely grown or thought to be specifically adapted to Oklahoma. Delfos was included in 1927 because its production was spreading in the state and in the hopes of finding a long staple variety suited to Oklahoma. The varieties can be divided roughly into early, medium and late maturing. The results show that on the whole the early maturing varieties give the best results. They have the drawback of having medium to small bolls and being less storm resistant than the medium and late varieties. With the exception of Half and Half, the length and quality of the lint is satisfactory ranging from 7-8 to 1 1-16 inches. Half and Half not only does not give the yield claimed for it but has a fiber of inferior quality and poor length, 11-16 inch to 7-8 inch.

Table 10. Three Years Results in Outfield Cotton Variety Tests, 1925-1927

VARIETY	PURCELL		DURANT		EUFAULA		OKMULGEE	
	Yield	Value	Yield**	Value**	Yield	Value	Yield**	Value**
Okla. Tri. 44	1117	70.15	327	18.49	553	40.14	718	41.40
Acala 5-37	874	57.66	241	14.10	293	20.55	525	36.66
Acala 5	1020*	86.71*	675*	5.50*	225*	17.70*	760*	59.43*
Mebane	662	39.17	136	8.15	200	14.93	438	27.29
Delfos 6102	1215**	72.61**	368	22.81	330*	22.63*	980*	84.38*
New Boykin	1001	66.21	146	10.90	370	26.48	675	41.83
Okla. Tri. 44	1155	78.64	396	23.38	620	44.59	763	50.53
Tri. 406	730	48.43	179	10.62	300	22.69	688	45.89
Lone Star	624	43.82	146	8.79	365	29.10	558	37.05
Rowden	577	37.53	260	17.06	283	20.48	495	28.63
Half and Half	964	66.50	295	15.05	525	37.52	715	47.24
Trice	1282**	72.28**	379	19.15	413**	24.80**	790	48.30
Okla. Tri. 44	1108	75.32	389	22.31	537	40.22	768	49.28
	SAPULPA		NOWATA		STILLWATER		GRANITE	
	Yield	Value	Yield	Value	Yield	Value	Yield	Value
Okla. Tri. 44	698	44.82	786	56.59	955.3	78.88	1002	76.79
Acala 5-37	564	39.23	555	43.17	958.2	85.86	974	82.84
Acala 5	110*	9.25*	570*	44.39*	839.0*	76.20*	1357*	111.99*
Mebane	391	27.17	325	27.54	636.9	52.92	859	65.85
Delfos 6102	120*	10.80*	390*	29.89*	837.3	70.34	1116**	85.17**
New Boykin	455	29.92	320	23.48	708.5	57.36	1032	80.34
Okla. Tri. 44	793	46.06	705	51.49	955.3	78.88	954	69.72
Tri. 406	406	30.63	510	37.95	713.9	59.91	915	69.59
Lone Star	392	23.72	295	22.96	669.9	59.54	929	72.32
Rowden	423	26.53	380	28.61	773.6	67.76	862	62.53
Half and Half	533	35.98	510	39.63	884.5	73.23	1026	76.91
Trice	560	22.66**	600	39.66**	983.4	75.37	948	63.55
Okla. Tri. 44	696	42.44	780	57.69	955.3	78.88	1026	78.71

*One year average.

**Two year average.

