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VARIETIES OF COTTON FOR CENTRAL EAST TEXAS



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†As of September 1, 1928

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**In cooperation with U. S. Department of Agriculture.

***In cooperation with the School of Agriculture.

SYNOPSIS

A large number of varieties and strains of cotton were grown and tested at Substation No. 11, Nacogdoches, Texas, from 1912 to 1927. Some of the results obtained during 1912 to 1918 have been published in Bulletins 237 and 254. The results secured from 1918 to 1927, inclusive, together with those of previous years, are brought together and published in this Bulletin.

The distribution of the rainfall during June, July, and August was found to be one of the determining factors in the yield of cotton.

There was no significant difference in the number of pounds of lint per acre produced by Half and Half, Lightning Express, and Acala, the greatest difference in yield being only 5 pounds. Acala is probably the most suitable variety for the region, considering its yield, length of lint, earliness, and ease of picking. Half and Half, although producing a good yield, is undesirable on account of its short staple, averaging only 25/32 inches, which length is not tenderable on future contracts. Lightning Express on the other hand is hard to pick and for this reason is not as desirable as Acala.

Acala had a staple of $\frac{7}{8}$ to $1\frac{1}{8}$ inches, averaging slightly over 1 inch, and was almost as early in maturing as Half and Half and Lightning Express. It had a ginning percentage of 35.2 and required 84 bolls to the pound or only 77 per cent as many bolls as Lightning Express. Its picking qualities are more desirable than Lightning Express, and its value based on central market prices was \$32.32 or about \$3.00 per acre better than any other variety except Lightning Express.

The gin turn-out of Half and Half averaged 40.7 per cent as against a range of 29.5 to 36.7 per cent for the other leading varieties. The bolls of Half and Half are relatively small, 87 to the pound, as compared with 69 for Lone Star, 75 for Truitt, 76 for Rowden, 84 for Acala, and 109 for Lightning Express. The staple of Half and Half ranged from 22/32 to 30/32 inches, averaging 25/32 inches for the 5-year-period, 1923 to 1927, which, regardless of its fairly good showing in yield and gin turn-out, renders the variety ineligible where it is desired to produce cotton acceptable on future contracts. Based on yield, length of staple, and prices on the central markets, Half and Half had a money value of \$29.10 per acre for the 5-year average, as against \$37.23 for Lightning Express and \$32.32 for Acala, and was only slightly less than Lone Star, Truitt, and Rowden.

Lightning Express had the longest staple, averaging 1-3/16 inches, and was the earliest-maturing variety tested. It had the highest money value per acre, based on central market prices, but had the lowest gin turn-out, 29.05 per cent, and had the smallest bolls, 109 to the pound, resulting in increased picking costs. If differences in picking quality are not considered and basing the selling value on the prevailing prices at central markets from 1923 to 1927, Lightning Express was the most profitable variety tested.

The varieties were compared according to value per acre, based on yield, length of staple, and prices at the central market. On this basis Lightning Express, Acala, Lone Star, Truitt, Rowden, and Half and Half, in the order named, were the most valuable varieties.

CONTENTS

Introduction	5
Method of Conducting the Cotton Variety Test.....	5
Rainfall at Nacogdoches.....	6
Experimental Results by Years:	
Results in 1912.....	9
Results in 1913.....	10
Results in 1914.....	10
Results in 1915.....	10
Results in 1916.....	11
Results in 1917.....	12
Results in 1918.....	12
Results in 1919.....	13
Results in 1920.....	13
Results in 1921.....	14
Results in 1922.....	14
Results in 1923.....	15
Results in 1924.....	15
Results in 1925.....	16
Results in 1926.....	16
Results in 1927.....	17
Summary of Yield of Lint.....	19
Size of Boll.....	19
Percentage of Lint.....	21
Length of Lint.....	21
Earliness of Maturity.....	23
The Yield of Seed Cotton for the First Three Pickings.....	23
Percentage of Total Crop Produced by the First Three Pickings..	23
Comparison of Yield and Other Important Varietal Characteristics.	25
Comparative Value Per Acre of Varieties Based on Yield and Length of Lint	25
List of Varieties Tested, 1912-1927, Inclusive.....	28
Acknowledgments	35
Summary	35

VARIETIES OF COTTON FOR CENTRAL EAST TEXAS

H. F. MORRIS AND G. T. McNESS

Substation No. 11 of the Texas Agricultural Experiment Station is located two and three-fourths miles north of Nacogdoches, Nacogdoches County, on the Nacogdoches-Timpson highway; latitude 32 degrees north and longitude 94 degrees west; elevation 292 feet above sea level.

The variety tests of cotton have been conducted on the Orangeburg and Ruston fine sandy loams, which are very important soil types of the region. The Orangeburg soils in general are more productive than the Ruston soils. Both series of soils, however, respond readily and profitably to the proper application of commercial fertilizers. The topography of the region is rolling to hilly and erosion, or washing, is active in washing and leaching away the plant-food materials of the soil. For this reason it is necessary to terrace to prevent excessive washing of the soils. The results of the variety tests on these soils should be applicable to the same soils and associated soils, such as the Susquehanna, Norfolk, and Nacogdoches series, throughout Eastern Texas.

Variety tests of cotton have been conducted at Substation No. 11, Nacogdoches, since 1912. Some of the results obtained during the first years of the experiment have been published in Bulletins 237 and 254, both of which are now exhausted for distribution. Since the publication of these bulletins many new and valuable facts concerning varieties have been obtained. This Bulletin, therefore, aims to bring together the results of the experiments with varieties of cotton at Nacogdoches from 1912 to 1927 and to present them to the cotton growers of Eastern Texas.

METHOD OF CONDUCTING THE COTTON VARIETY TESTS

A large number of varieties were planted each year from 1912 until 1920. During this time many of the varieties were dropped as the results warranted. Since 1920 from twelve to sixteen varieties each year have been planted. Some varieties have been discarded and others placed in the test during the period from 1920 to 1927, inclusive.

The cotton varieties were grown in rows three feet apart and the plants spaced a uniform distance apart in the rows by measurement and count. The plants were spaced eighteen inches apart in the row during the first thirteen years of the test, ten inches in 1925 and in 1926, and twelve inches in 1927.

The cotton was planted each year on land that was in rotation with other field crops. Fertilizer consisting of 200 pounds of 16 per cent

superphosphate (acid phosphate) and 100 pounds of cotton-seed meal was applied in the row a week before planting time. The land was given proper cultivation during the growing season.

Picking of the cotton was started as soon as a sufficient number of bolls had opened to warrant harvesting them. The crop was usually harvested in four to six pickings, which were made at weekly intervals. The yields of lint and seed were obtained by ginning the seed cotton on a 20-saw, ten-inch, Eagle cotton gin. Samples of lint cotton were obtained at ginning time. These samples were classed by official and licensed classers of the Department of Textile Engineering, A. and M. College of Texas.

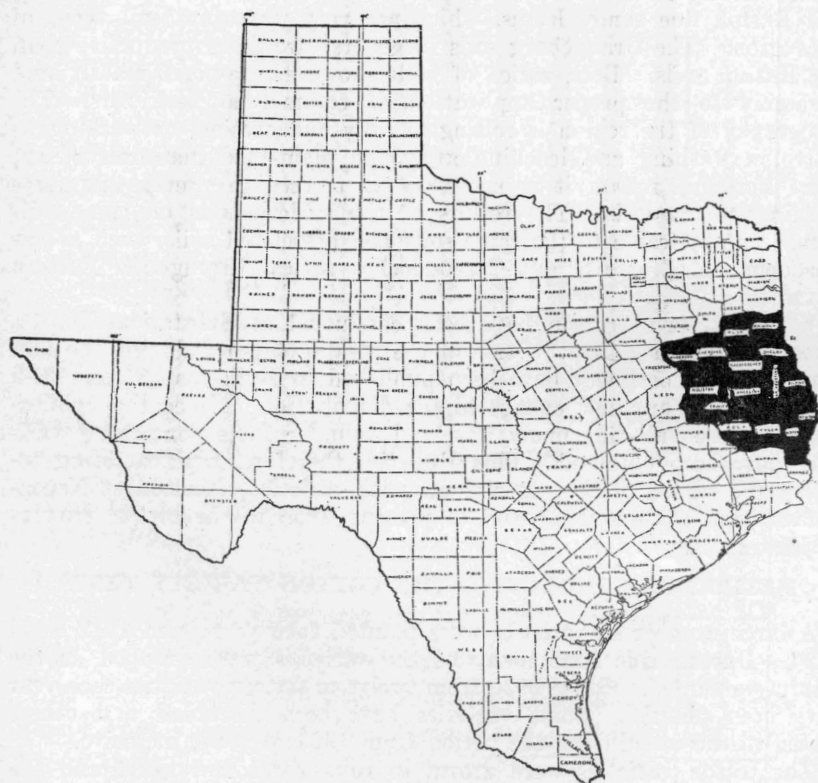


Figure 1.—Central East Texas Region. The results shown in this Bulletin are applicable to this region and to contiguous territory. Some varieties found best here are also best in several other sections of the State.

RAINFALL

In Table 1 are shown the monthly, mean monthly, annual, and mean annual rainfall at Substation No. 11, Nacogdoches for a sixteen-year

VARIETY	LENGTH LINT INCHES	PERCENT -AGE OF LINT	EARLINESS EXPRESSED IN PERCENTAGE	YIELD	YIELD OF LINT IN POUNDS PER ACRE			
					50	100	150	200
HALF & HALF	25/32	40.7	67.3	160				
LIGHTNING EXPRESS	1-3/16	29.5	70.5	156				
ACALA	1	35.2	63.8	155				
TROUTT	31/32	34.4	56.5	149				
NEW BOYKIN	31/32	37.5	56.4	136				
LOME STAR	1-1/16	36.7	53.6	136				
ROWDEN	1-1/32	34.0	44.5	134				
CLISTT SUPERIOR	1	39.2	56.6	125				
MEBANE	1	37.3	30.9	112				
KASCH	31/32	38.7	53.7	92				

Figure 2.—Comparison of yield, length, percentage of lint, and earliness of varieties of cotton for five years, 1923 to 1927, inclusive.

Table 1.—Rainfall at Substation No. 11, Nacogdoches, Texas, 1913 to 1926, inclusive.

Month	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	Average
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
January.....	1.96	3.84	1.22	4.72	8.30	3.12	1.18	5.36	6.77	3.12	7.19	3.89	5.33	5.56	3.82	1.36	4.17
February.....	3.57	3.05	5.03	3.87	0.23	3.87	1.11	4.69	1.20	2.92	6.44	6.85	4.98	1.48	0.85	3.54	3.35
March.....	7.18	4.13	4.24	2.51	0.72	2.38	1.99	3.58	4.18	6.46	9.03	6.36	4.51	1.47	9.58	6.58	4.68
April.....	7.46	3.78	4.86	4.04	5.26	3.75	8.20	0.95	4.33	7.32	12.91	8.88	5.90	1.16	4.81	6.60	5.63
May.....	9.44	5.29	8.96	4.11	11.32	2.73	2.10	7.37	3.66	2.48	5.41	4.30	8.22	3.03	3.13	3.80	5.33
June.....	4.66	2.27	1.25	1.09	2.22	0.48	2.84	16.81	2.86	7.04	3.81	3.10	4.07	0.39	7.01	10.50	4.40
July.....	0.64	1.45	0.26	5.56	4.09	5.92	1.39	2.48	3.88	7.33	3.92	4.19	0.13	3.47	6.97	0.76	3.27
August.....	2.30	1.45	4.10	11.14	1.92	0.41	5.18	4.82	8.36	2.30	3.45	1.71	0.04	1.11	1.22	2.12	3.22
September.....	T	13.39	2.91	2.14	0.77	2.77	2.81	1.75	1.48	2.42	0.93	13.52	2.25	3.29	0.96	1.22	3.28
October.....	0.91	4.46	0.33	1.40	1.27	4.91	10.64	4.80	1.46	1.46	0.64	2.74	0.04	11.26	1.45	3.82	3.19
November.....	0.80	2.29	5.76	4.51	3.73	0.84	7.05	3.52	5.13	0.79	4.38	5.29	1.81	8.18	3.75	1.19	3.68
December.....	6.49	6.12	9.72	3.35	3.23	0.72	2.86	1.87	5.78	3.82	4.10	10.03	3.29	1.51	8.52	4.23	4.71
Total.....	45.41	51.52	48.64	48.01	43.19	28.26	41.62	63.84	52.33	47.46	62.21	70.86	40.57	41.91	52.07	45.72	48.97

period, 1912-1927, inclusive. The average yearly rainfall for this period was 48.97 inches. However, some of the years have a decidedly higher rainfall than the average and other years a lower one. When each month of each year is considered separately we find that the rainfall is rather irregular and excessive amounts occur in some months of one year that are dry months in other years. But when the average for the sixteen-year period is considered, the rainfall is uniform throughout the year.

During the sixteen-year period from 1912-1927, inclusive, the yield of cotton was affected adversely by excessive rainfall during June of 1919, and lack of rainfall during July and August of 1924. Sufficient moisture was also lacking during June and August of 1925. Although the year of 1917 shows the smallest amount of rainfall, plentiful rains during July produced good yields of cotton.

EXPERIMENTAL RESULTS BY YEARS

Tables 2 to 17 present the results of the high-yielding varieties each year for the sixteen-year period, 1912 to 1927, inclusive. The percentage of lint, length and grade of staple, size of bolls, yields, and earliness of maturity are discussed.

In Table 27 are presented the varieties grown at this Station from 1912 to 1927, inclusive, with information on source of seed and yield of lint in pounds per acre. The term variety is used in this Bulletin in the agronomic rather than in the botanical sense, and does not imply that each cotton reported on is a separate and distinct variety.

Results in 1912

There were 25 varieties tested in 1912. The ten highest-yielding varieties are shown in Table 2. The varieties are arranged in order of yield of lint. The yields were low, ranging from a half to one-third of a bale to the acre. These light yields were the result of the unfavorable growing season. Heavy rains followed by a period of drouth reduced the yields of all varieties.

Table 2. Ten highest-yielding varieties in 1912.

* T. S. No.	Variety	Per Cent Lint	Acre Yield in Pounds	
			Seed Cotton	Lint
24	Virgatus.....	35.60	619	220
16	Crowder.....	38.03	577	219
1	Cleveland Big Boll.....	40.55	495	201
15	Rowden.....	29.94	619	185
5	Allens Long Staple.....	36.12	495	179
79	Jackson.....	33.47	495	166
119	Keenan.....	33.33	495	165
121	Allens Long Staple.....	35.56	454	161
128	Mebane.....	32.50	495	161
154	Lone Star.....	34.69	454	157

*Texas Station number.

Results in 1913

Forty-six varieties were planted in the test this year. Table 3 shows the ten highest-yielding varieties. The yield of these varieties averaged about two-thirds of a bale to the acre. Owing to heavy rains at planting time the original stand of plants was destroyed, and the varieties were replanted on May 14.

Table 3. Ten highest-yielding varieties in 1913.

T. S. No.	Variety	Per Cent Lint	Acre Yield in Pounds	
			Seed Cotton	Lint
480	Culpeppers Improved Big Boll.....	37.87	1031	390
128	Mebane.....	38.85	962	373
443	Half and Half.....	41.53	848	362
472	Peterkin.....	40.90	862	354
16	Crowder.....	38.28	880	336
475	Texas Wood.....	33.34	1003	334
474	Truitt.....	39.09	852	332
412	Foster.....	34.84	935	325
481	Cooks Improved Big Boll.....	37.02	848	313
479	Willets Sp. Toole.....	36.13	866	312

Results in 1914

The variety test this year was planted in duplicate on May 13. Planting was delayed on account of the continued rains during the latter part of April and the first part of May. Sixty varieties were planted in duplicate, using Mebane Triumph T. S. No. 6 as the check, which was planted in every tenth row. The average acre-yield of seed cotton of the sixty varieties was 643 pounds, while that of the Mebane Triumph checks were 554 pounds. In table 4 are shown the acre-yields of lint of the ten highest-yielding varieties.

Table 4. Ten highest-yielding varieties in 1914.

T. S. No.	Variety	Per Cent Lint	Acre Yield in Pounds	
			Seed Cotton	Lint
1153	Cook Alabama.....	41.99	838	352
479	Toole.....	39.27	880	345
482	Bohlers Triple Joint.....	38.88	866	337
129	Edgeworth.....	38.06	838	319
499	Hawkins.....	34.80	899	312
107	Hartsville.....	32.21	935	310
494	Cannons World Skinner.....	36.37	852	310
485	Cleveland Big Boll.....	36.96	824	304
951	Cleveland Big Boll.....	37.89	795	301
481	Cooks Big Boll.....	37.11	771	286

Results in 1915

Twenty-three varieties were planted in duplicate, using Mebane Triumph T. S. No. 804 as the check, on every tenth row. The climatic conditions from the time of planting up to the last of July were favorable

for plant growth, but heavy rains in August caused the cotton to shed, which caused a considerable reduction in the yield. The ginning per cent of all the varieties planted was above the average. Lone Star T. S. No. 942 was the highest with 43.5 per cent while Webber T. S. No. 1262, a long-staple cotton, was the lowest with a ginning per cent of 31.4. The ten high-yielders of lint cotton are shown in Table 5, arranged in order of lint yield.

Table 5. Ten highest-yielding varieties in 1915.

T. S. No.	Variety	Per Cent Lint	Acre Yield in Pounds	
			Seed Cotton	Lint
1378	Ferguson Lone Star.....	41.94	540	265
1153	Cook.....	38.87	677	263
942	Lone Star.....	43.54	598	260
1539	Rowden.....	39.48	661	260
469	Hawkins.....	36.08	662	239
494	Cannons World Skinner.....	35.12	670	235
1379	Ferguson Mebane.....	42.64	535	228
1377	Cook No. 729.....	39.84	565	225
804	Mebane.....	34.16	659	225
783	King.....	34.86	612	213

Results in 1916

Forty varieties were planted in duplicate this year. Due to the unfavorable climatic conditions in April and the first three weeks of May, the varieties of cotton were not planted until May 26, which was late in the year to obtain normal results from the test. Yield was further reduced by boll weevil. Two of the varieties planted, Yuma and Sea Island, both long-staple varieties, failed to mature bolls. Yields of varieties ranged from 59 pounds of lint to the acre for Hartsville, to 231 pounds for Simpkins' Prolific. The percentage of lint or ginning per cent ranged from 25.4 to 43.7 and the length of lint from $\frac{7}{8}$ to 1-5/16 inches. Table 6 shows the ten highest-yielders in the test together with the length of staple and number of bolls to the pound.

Table 6. Ten highest-yielding varieties in 1916.

T. S. No.	Variety	Lint		No. of Bolls to the Pound	Acre Yield in Pounds	
		Per-centage	Length in Inches		Seed Cotton	Lint
1834	Simpkins Prolific.....	43.7	7/8	106	529	231
1835	Webber No. 82.....	35.7	1 3/16	88	488	174
1830	Wannamaker Big Boll.....	39.3	13/16	84	402	158
1848	Matchless Big Boll.....	34.5	7/8	88	457	157
1823	Early King.....	33.0	7/8	144	453	149
1639	Rowden (Av. Check).....	41.5	15/16	77	350	145
1846	Surecrop.....	36.5	7/8	76	391	143
1815	Allens Express.....	36.5	1 5/16	100	391	143
2414	Cook.....	35.5	7/8	80	398	141
1818	Rowden.....	32.5	1	66	433	141

Results in 1917

During the year of 1917, forty-four varieties were planted in duplicate in the cotton variety test, but only the results of the high-yielding varieties are shown in Table 7. The yields as a whole were slightly above the average for the period, due possibly to the five inches of rainfall during July. Ferguson Roundnose made the highest yield of lint cotton. This variety had a good percentage of lint or gin turn-out, a medium-size boll, and a short staple. Wannamaker-Cleveland was second in yield with a higher percentage of lint and a longer staple than Ferguson Roundnose. Mebane Triumph, Matchless Big Boll, and Lone Star followed in the order named in yield of lint per acre. It is noticeable that all ten of the highest-yielding varieties in 1917 had lint of less than one inch in length with an exception of Mebane Triumph, which had lint of one inch.

Table 7. Ten highest-yielding varieties in 1917.

T. S. No.	Variety	Lint			Number of Bolls to the Pound	Acre Yields in Pounds	
		Percentage	Length in Ins.	Grade		Seed Cotton	Lint
2469	Ferguson Roundnose.....	34.02	7/8	S G M	79	548	183
2474	Wannamaker-Cleveland.....	36.50	15/16	S M	100	503	180
2470	Mebane Triumph.....	36.27	1	G M	74	478	173
2482	Matchless Big Boll.....	34.79	15/16	S G M	118	498	168
2472	Lone Star.....	36.66	31/32	S G M	72	465	165
2478	Surecrop.....	33.57	11/16	G M	88	471	158
2483	Union Big Boll.....	33.20	13/16	G M	96	481	154
2486	Cleveland Big Boll.....	34.69	7/8	G M	114	451	152
2457	Webb.....	33.93	7/8	S G M	86	462	151
2468	Texas Progress.....	33.46	11/16	G M	76	453	151

Results in 1918

Forty-four varieties were planted in 1918. Mebane, Mebane Triumph 184, Mortgage Lifter, Moneymaker, and Mebane Triumph 186 were the five high-yielding varieties of cotton, as shown in Table 8. The yields of lint were somewhat above the average for the sixteen years, 1912-1927, inclusive, but all ten of the highest-yielding varieties had less than one-inch staple. Moneymaker had the highest percentage of lint with a $\frac{3}{4}$ -inch staple.

Table 8. Ten highest-yielding varieties in 1918.

T. S. No.	Variety	Lint			Number of Bolls to the Pound	Acre Yield in Pounds	
		Percentage	Length in Ins.	Grade		Seed Cotton	Lint
3002	Mebane.....	33.33	15/16	S G M	86	629	195
3037	Mebane Triumph 184.....	35.20	15/16	G M	66	577	192
3021	Mortgage Lifter.....	31.70	5/8	G M	71	587	188
3077	Moneymaker.....	37.00	3/4	G M	96	513	182
3035	Mebane Triumph 186.....	36.32	3/4	S G M	69	537	182
3079	Hites Prolific.....	34.14	5/8	S G M	114	546	175
3056	Improved Champion.....	36.23	15/16	G M	82	510	175
3028	Cook.....	33.85	3/4	G M	78	525	161
3003	Rowden.....	32.32	5/8	G M	69	539	158
3048	Kasch.....	33.48	7/8	G M	72	474	154

Results in 1919

As shown in Table 9, Acala No. 5, Willis, Ferguson Roundnose, Acala Special, and Truitt were the five highest-yielding varieties, Willis having the highest percentage of lint of the group. Heavy rainfall during June, July, and August, along with a heavy infestation of boll weevil and leaf worm, reduced the yield of cotton much below the average for the sixteen-year period. In contrast to the years of 1917 and 1918 in which the short-stapled varieties made the highest yields the year of 1919 had nine of the ten highest-yielding varieties of the forty-four varieties planted, of one-inch staple or longer.

Table 9. Ten highest-yielding varieties in 1919.

T. S. No.	Variety	Lint			Number of Bolls to the Pound	Acre Yields in Pounds	
		Per-centage	Length in Ins.	Grade		Seed Cotton	Lint
3659	Acala No. 5.....	32.54	1 1/32	G M	82	240	75
3654	Willis.....	34.85	1 1/32	S M	78	222	73
3655	Ferguson Roundnose.....	31.69	1	S M	84	210	66
3657	Acala Special.....	32.12	1 1/16	S M	84	206	65
3660	Truitt.....	31.97	1	S M	77	206	63
3674	Union Big Boll.....	29.52	3/4	M	110	204	61
3653	Belton.....	28.44	1 3/16	G M	82	219	60
3656	Acala.....	29.52	1 1/8	S M	79	183	54
3651	Rowden.....	29.76	1 1/16	S M	73	195	53
3637	Kasch.....	34.56	1 1/32	S M	82	155	52

Results in 1920

Only twelve varieties were planted in the variety test in 1920, the results of which are shown in Table 10. Acala (F. D. Watson), with a medium-size boll, an average gin turn-out and a lint of 1-5/32 inches in length made the largest yield. Kasch, Rowden, Bennett's Lone Star, and Belton followed in the order named. These five varieties had a good length of lint. The yield for the year was considerably above the average, due to favorable climatic conditions that prevailed throughout the growing season.

Table 10. Varieties tested in 1920.

T. S. No.	Variety	Lint			Number of Bolls to the Pound	Acre Yield in Pounds	
		Per-centage	Length in Ins.	Grade		Seed Cotton	Lint
4131	Acala.....	34.11	1 5/32	G M	68	875	279
4117	Kasch.....	40.27	29/32	G M	53	672	259
4116	Rowden.....	34.42	1 1/8	G M	54	794	255
4115	Bennett's Lone Star.....	36.66	1 3/32	G M	45	743	248
793	Belton.....	34.27	1 3/32	G M	57	785	242
4114	Durango.....	32.88	1 5/32	G M	76	759	239
4120	Mebane.....	38.61	7/8	G M	56	645	232
4119	Lone Star.....	37.23	1 3/32	G M	55	675	231
3150	Lone Star.....	36.72	1 3/32	G M	59	629	215
804	Mebane*.....	35.41	7/8	G M	66	622	200
5852	Dixie.....	36.03	7/8	G M	74	511	158
4118	Snowflake.....	29.37	1 1/8	S M	72	594	155

*Average of Soil Checks.

Results in 1921

In Table 11 are shown the results of the eleven varieties planted during 1921. The yield of lint for the year was considerably lower than the average for the sixteen-year period due possibly to a heavy infestation of boll weevil and excessive rainfall during June and July, which caused a large vegetative growth and also a small per cent of fruit to set. The five highest-yielding varieties of lint cotton were: Truitt, Lone Star, Rowden, Belton, and Acala. Kasch had the highest percentage of lint, Bennett's Lone Star the longest staple, and Lone Star the largest bolls.

Table 11. Varieties tested in 1921.

T. S. No.	Variety	Lint			Number of Bolls to the Pound	Acre Yields in Pounds	
		Per-centage	Length in Ins.	Grade		Seed Cotton	Lint
5990	Truitt.....	32.64	15/16	S M	82	320	99
5995	Lone Star.....	34.24	1 3/32	S M	62	271	90
5993	Rowden.....	34.51	1 1/32	G M	63	293	90
5984	Belton.....	33.11	15/16	G M	73	262	86
5988	Acala.....	33.12	1 1/32	G M	91	276	85
5989	Mebane.....	32.18	1 1/16	G M	78	211	66
5952	Kasch.....	34.89	7/8	S M	76	190	63
5994	Bennett's Lone Star.....	34.48	1 1/8	G M	68	161	54
5987	Durango.....	28.12	1 3/32	S M	90	171	47
5991	Snowflake.....	26.16	1 3/32	S M	90	159	39
804	Mebane*.....	30.07	29/32	S M	94	138	37

*Average of Soil Checks.

Results in 1922

The yield of lint cotton during 1922, as shown in Table 12, was slightly above the average of the sixteen-year period, 1912 to 1927, inclusive. Heavy rains throughout the winter months and a normal rainfall during the growing season afforded favorable climatic conditions for the production of cotton. Under these conditions, and with

Table 12. Varieties tested in 1922.

T. S. No.	Variety	Lint			Number of Bolls to the Pound	Acre Yield in Pounds	
		Per-centage	Length in Ins.	Grade		Seed Cotton	Lint
6571	Acala.....	35.08	1 1/32	S M	67	550	192
804	Mebane.....	35.17	1 1/32	G M	95	528	188
6570	Lone Star.....	38.53	1 1/16	G M	64	464	178
6563	Mebane*.....	37.86	1 1/32	G M	58	467	176
6572	Bennett's Lone Star.....	37.94	1 1/16	G M	58	461	174
6566	Truitt.....	34.85	15/16	G M	58	485	170
6567	Lightning Express.....	30.16	1 3/8	G M	95	530	160
6565	Lone Star.....	36.91	1 1/16	G M	62	428	157
6574	Rowden.....	33.05	1 1/16	G M	62	474	155
6573	Kasch.....	35.33	1 1/8	S M	71	405	147
6564	Durango.....	32.36	1 5/32	S M	96	435	136
5984	Belton.....	38.46	1 1/16	S M	61	398	135
6575	Snowflake.....	27.84	1 9/32	S M	92	331	92

*Average of Soil Checks.

a light infestation of the boll weevil, the later-maturing varieties were afforded an opportunity to set and mature a good crop of bolls. Acala which is one of the earliest-maturing varieties, made the highest yield of lint, followed by Mebane 804, Lone Star, Mebane (A. D. Mebane, Sales Agency), and Bennett's Lone Star. Lightning Express produced the longest staple; Lone Star the highest percentage of lint; while Mebane, Bennett's Lone Star, and Truitt produced the largest bolls.

Results in 1923

Table 13 shows that Rowden, Lone Star, Lightning Express, Truitt, and Acala were the five highest-yielding varieties of the twelve varieties included in the test in 1923. Snowflake produced the longest lint, Half and Half the highest percentage of lint, and Bennett's Lone Star the largest bolls.

Table 13. Varieties tested in 1923.

T. S. No.	Variety	Lint			Number of Bolls to the Pound	Acre Yields in Pounds	
		Per-centage	Length in Ins.	Grade		Seed Cotton	Lint
6797	Rowden.....	35.28	1 1/16	S L M	72	457	159
6783	Lone Star.....	37.77	1 1/8	G M	65	394	147
6996	Lightning Express.....	29.72	1 3/32	G M	85	463	134
6803	Truitt.....	35.04	1	M	66	382	134
6781	Acala.....	34.65	1 1/8	M	71	385	131
6784	Bennett's Lone Star.....	38.62	1 3/32	S M	57	258	99
6799	Half and Half.....	41.17	27/32	GM Y T	93	243	98
6786	New Boykin.....	37.98	1	L M	79	296	92
6787	Snowflake.....	27.80	1 9/32	S M	92	330	91
6780	Mebane.....	37.54	1 15/16	M	66	248	89
6807	Clietts Superior.....	38.54	1	S L M	60	233	88
6810	Kasch.....	36.62	1	M	59	226	81
6802	Hallmark.....	28.45	1 7/32	G M	97	298	70

Results in 1924

The yields during 1924, as shown in Table 14, were decidedly below the average of the sixteen-year period, 1912 to 1927, inclusive. The plants were stunted by excessive rains and cold weather during May and the early part of June. The climatic conditions then changed to the other extreme during the latter part of June, July, and August. No rainfall occurred from the 21st of June to July 5, when .05 of an inch fell, followed by .08 of an inch on July 26, and then .04 of an inch on August 22. High temperatures prevailed throughout this entire period. The length of lint was reduced in all varieties; however, each variety had a good grade of lint due to favorable climatic conditions during the harvesting period. Acala, Half and Half, New Boykin, Snowflake, and Lone Star were the highest-yielding varieties. Kasch had the highest percentage of lint, Snowflake the longest staple, and Lone Star the largest bolls. One noticeable feature caused by the drouth was the small bolls of all varieties.

Table 14. Varieties tested in 1924.

T. S. No.	Variety	Lint			Number of Bolls to the Pound	Acre Yield in Pounds	
		Per-centage	Length in Ins.	Grade		Seed Cotton	Lint
7381	Acala.....	40.87	7/8	G M	120	173	69
7468	Half and Half.....	33.61	15/16	S M	106	200	65
7388	New Boykin.....	39.04	15/16	S M	103	105	40
7389	Snowflake.....	26.05	1 3/16	M	132	135	34
7386	Lone Star.....	37.25	1	S M	85	96	34
7459	Cliett's Superior.....	39.81	1	S M	92	76	28
7390	Durango.....	34.64	1 1/8	S M	141	75	23
7409	Truitt.....	36.29	15/16	S M	92	65	22
7385	Kasch.....	42.42	15/16	S M	101	53	21
7408	Mebane*.....	36.13	1	M	102	58	20
7394	Lightning Express.....	28.40	1 3/16	M	154	63	17
7391	Rowden.....	34.66	1	S M	103	38	12
7411	Belton.....	34.31	1	G M	101	21	6

*Average of Soil Checks.

Results in 1925

Of the thirteen varieties planted in 1925, Half and Half, Mebane, Truitt, Lone Star, and New Boykin were the best-yielding varieties. Half and Half was decidedly the outstanding variety this year as far as yield and percentage of lint were concerned, but its value was lowered by its short lint measuring 11/16 inch. Lightning Express produced the longest lint, as shown in Table 15, and Mebane the largest boll. The yield for the year was about the average for the sixteen-year period 1912 to 1927, inclusive. Favorable climatic conditions prevailed throughout the growing season.

Table 15. Varieties tested in 1925.

T. S. No.	Variety	Lint			Number of Bolls to the Pound	Acre Yields in Pounds	
		Per-centage	Length in Ins.	Grade		Seed Cotton	Lint
7468	Half and Half.....	40.53	11/16	S M	77	372	171
7859	Mebane*.....	39.15	1	S M	59	336	146
7853	Truitt.....	36.47	29/32	G M	73	397	142
7851	Lone Star.....	36.30	1 1/32	G M	61	383	137
7852	New Boykin.....	37.78	29/32	S M	69	372	137
7854	Acala.....	33.13	27/32	S M	80	408	131
7411	Belton.....	35.03	1 1/32	S G M	69	365	122
7855	Rowden.....	33.06	15/16	S G M	76	374	120
7847	Lightning Express.....	27.71	1 1/8	G M	94	443	120
7848	Cliett's Superior.....	39.49	1	G M	61	293	112
7858	Kasch.....	40.15	7/8	S M	62	263	105
7849	Snowflake.....	28.54	1 1/32	S M	81	378	104
7856	Durango.....	29.14	1 3/32	G M	102	361	100

*Average of Soil Checks.

Results in 1926

As shown in Table 16, the yields for 1926 were much larger than the average for the sixteen-year period. Heavy pre-season rains afforded splendid conditions for planting the crop, followed by favorable climatic conditions during the growing season. A light infestation

of the cotton flea hopper occurred during the earlier part of the growing season but caused little damage. The injury caused by the cotton leaf worm and boll weevil was small as the infestation of these insects was controlled by the applications of calcium arsenate. The five highest-yielding varieties during 1926 were Acala, Lightning Express, Half and Half, Durango, and Truitt. These varieties were the earliest-maturing over a period of five years, 1923-1927, inclusive, as shown in Table 25. Snowflake and Lightning Express produced the longest lint; Half and Half the highest percentage of lint; and Mebane the largest bolls.

Table 16. Varieties tested in 1926.

T. S. No.	Variety	Lint			Number of Bolls to the Pound	Acre Yield in Pounds	
		Per-centage	Length in Ins.	Grade		Seed Cotton	Lint
8609	Acala	35.92	1 1/32	S M	81	798	305
8605	Lightning Express	30.05	1 1/4	G M	114	994	301
8604	Half and Half	44.42	3/4	G M	85	641	274
9138	Durango	34.22	1	G M	92	758	271
8610	Truitt	30.54	1	G M	72	762	266
8613	Rowden	34.07	1 3/32	G M	63	710	237
8599	New Boykin	36.65	1	S M	73	618	223
8590	Lone Star	35.48	1 3/32	S M	68	626	219
8584	Clietts Superior	39.86	1 1/32	S M	63	523	206
9137	Belton	35.24	1 1/8	G M	61	596	203
8588	Mebane*	37.27	1 1/16	G M	54	403	167
8595	Snowflake	27.60	1 1/4	G M	85	524	141
8585	Kasch	30.64	1 1/32	S M	64	352	120

*Average of Soil Checks.

Results in 1927

Sixteen varieties were planted in duplicate during 1927. Owing to heavy rains in June, followed by a drouth in July and August, the yield of all varieties was reduced. There was a heavy infestation of boll weevil, as well as leaf worm, but these insects were kept under

Table 17. Varieties tested in 1927.

T. S. No.	Variety	Lint			Number of Bolls to the Pound	Acre Yields in Pounds	
		Per-centage	Length in Ins.	Grade		Seed Cotton	Lint
9586	Bennett's Lone Star	37.08	1 3/32	M	60	605	217
9609	Lightning Express	32.09	1 9/32	M	100	678	211
9584	Belton 91	34.45	1 1/16	S M	65	614	211
9594	Half and Half	43.78	3/4	M	76	458	194
9607	Clietts Superior	38.63	1 1/16	S M	60	506	191
9608	New Boykin	36.48	1	M	68	529	188
9600	Delfos 6102	31.39	1 1/4	S L M	99	597	182
9615	Truitt	34.18	1	M	72	540	181
9605	Lankart	38.44	1 1/8	S M	60	475	178
9612	Sunshine	33.01	1	M	64	502	160
9617	Rowden	33.29	1 1/16	S M	68	449	145
9618	Lone Star	36.90	1 1/16	M	67	394	143
9616	Acala	31.82	1 1/8	S M	69	451	140
9611	Mebane	37.19	1 1/16	M	62	376	139
9614	Kasch	38.73	1 1/16	M	63	368	136
9604	Harper	33.77	1 1/16	M	62	353	133

Table 18. Yield in pounds of lint per acre for each year and periods of years.

Variety	Source of Seed	Pounds Lint Per Acre										9 Years 1919-1927, inclusive.	5 Years 1923-1927, inclusive.	4 Years 1919-1922, inclusive.	
		1917	1918	1919	1920	1921	1922	1923	1924	1925	1926				1927
1 Mebane....	A. D. Mebane Sales Agency, Lockhart, Texas.....			27	232	66	176	89	20	146	167	139	118.0	112.2	125.2
2 Lone Star..	D. A. Saunders, Greenville, Texas.....			27	231	90	157	147	34	137	219	143	131.2	136.6	126.5
3 Kasch.....	Ed. Kasch, San Marcos, Texas.....		154	52	259	63	147	81	21	105	120	136	109.4	92.1	130.1
4 Snowflake..	Jno. C. McLernon, Clarksville, Tex.	84	134	13	155	39	92	91	34	104	141	....	*85.5	....	74.8
5 Rowden....	Rowden Bros., Wills Point, Texas..			20	255	90	155	159	12	120	237	145	132.1	134.7	130.2
6 Belton....	Texas Expt Station, Temple, Texas			51	242	86	135	....	6	122	203	211	....	....	128.3
7 Bennett's Lone Star	R. L. Bennett, Paris, Texas.....			39	248	54	174	99	....	....	....	217	....	....	128.4
8 Mebane No. 804	Texas Experiment Station, Angleton, Texas.....		153	51	200	37	188	....	....	....	....	....	....	....	119.7
9 Truitt.....	Truitt Seed Co., Ennis, Texas.....			63	....	99	170	134	22	142	266	181	....	149.4	....
10 Acala.....	Jno. D. Rogers, Allenfarm, Texas..			....	....	....	192	131	69	131	305	140	....	155.3	....
11 Lightning Express..	Pedigreed Seed Co., Hartsville, S. C.			....	....	....	....	160	134	17	120	301	211	....	156.2
12 New Boykin	Ferguson's Seed Farms, Sherman, Texas.....			35	....	....	....	....	92	40	137	223	188	....	136.5
13 Half & Half.	Fred Gee, Troup, Texas.....			....	....	....	....	....	98	65	171	274	194	....	160.4
14 Cliett Superior	San Marcos Valley Seed Farms, San Marcos, Texas.....			....	....	....	....	....	88	28	112	206	191	....	125.8

*8-year average.

control by the use of calcium arsenate. With the exception of Acala, the yields of the varieties were higher than the average for the period of years, 1923-1927, inclusive. Bennett's Lone Star made the highest yield of lint, with a staple of 1-3/32 inches. This variety was followed by Lightning Express, which had a staple of 1-9/32 inches, and which produced the highest yield of seed cotton, as well as being the earliest variety to mature. Table 17 shows the varieties arranged in order of yields of lint to the acre.

SUMMARY OF YIELD OF LINT

Table 18 gives the source of seed and the yield of lint of those varieties of cotton which were included in the test two years or more during the sixteen-year period, 1912-1927, inclusive. All of the varieties were not grown each year of the sixteen years of the test, and as a consequence, all of them cannot be compared for the full time of the test.

Rowden, Lone Star, and Mebane in the order named were the highest-yielding varieties for the nine years, 1919 to 1927, inclusive.

For the eight-year period, 1919, 1920, 1921, 1922, 1924, 1925, 1926, and 1927, in which comparisons may be made on five varieties, Belton produced the highest yields of lint, and was followed in order by Rowden, Lone Star, Mebane, and Kasch.

Seven varieties occurred each of the six years, 1922 to 1927, inclusive. Acala ranked first in yield of lint, and was followed by Lightning Express, Truitt, Lone Star, and Rowden in the order named.

For the four years, 1919 to 1922, inclusive, Kasch and Rowden tied for first place with respect to yield. Belton and Bennett's Lone Star, which had the same yields of lint, Lone Star, Mebane, and Mebane T. S. No. 804 followed next in order of yield.

The same ten varieties occurred each of the five years, 1923 to 1927, inclusive, in which Half and Half, Lightning Express, Acala, and Truitt ranked in the order named in yield of lint. The difference in yield between the first three varieties named is not considered significant.

A summary of Table 18 shows that the early-maturing varieties, such as Acala, Half and Half, Lightning Express, Lone Star, Truitt, and New Boykin, are the higher-yielding varieties for this section of the state.

SIZE OF BOLL

Considerable variation in size of boll existed in any given variety from year to year, and also between varieties in any one year. It is probable that this variation in size of bolls resulted from variation in rainfall and other environmental conditions. For instance, in 1920, 1923, and 1926, which were years of abundant rainfall, comparatively large bolls were produced, while in 1924, which had less than normal

Table 19.—Size of boll of different varieties of cotton, 1919 to 1927, inclusive.

Variety	Number of Bolls in One Pound									Averages for		
	1919	1920	1921	1922	1923	1924	1925	1926	1927	9 Years 1919-1927	5 Years 1923-1927	4 Years 1919-1922
Mebane.....	79	56	78	58	66	102	59	54	62	68	68	67
Lone Star.....	71	55	62	62	65	85	61	68	67	66	69	62
Kasch.....	82	53	76	71	59	101	62	64	63	70	69	70
Snowflake.....	101	72	90	92	92	132	81	85	.....	93*	.....	88
Rowden.....	81	54	63	62	72	103	76	63	68	71	76	65
Belton.....	82	57	73	61	.....	101	69	61	65	.....	.....	68
Bennett's Lone Star.....	81	45	68	58	57	.....	.....	.....	60	.....	.....	63
Durango.....	.....	76	90	96	.....	141	102	92	.....	.....	.....	.....
Mebane 804.....	84	66	94	95	.....	.....	.....	.....	.....	.....	.....	84
Truitt.....	77	.....	82	58	66	92	73	72	72	.....	75	.....
Acala.....	.....	.....	.....	67	71	120	80	81	69	.....	84	.....
Lightning Express.....	.....	.....	.....	95	85	154	94	114	100	.....	109	.....
New Boykin.....	76	.....	.....	.....	79	103	69	73	68	.....	78	.....
Half and Half.....	.....	.....	.....	.....	93	106	77	85	76	.....	87	.....
Cliett Superior.....	.....	.....	.....	.....	60	92	61	63	60	.....	67	.....

* 8-year average.

Table 20.—Percentage of lint of the different varieties of cotton, 1919-1927, inclusive.

Variety	Years									Average for Certain Period of Yrs.		
	1919	1920	1921	1922	1923	1924	1925	1926	1927	9 Years 1919-1927, inclusive	5 Years 1923-1927, inclusive	4 Years 1919-1922, inclusive
Mebane.....	29.6	38.6	32.1	37.8	37.5	36.1	39.1	37.2	37.2	36.1	37.3	34.5
Lone Star.....	31.0	37.2	34.2	36.9	37.7	37.2	36.3	35.4	36.9	35.8	36.7	34.8
Kasch.....	34.5	40.2	34.8	35.3	36.6	42.4	40.1	36.0	38.7	37.5	38.7	36.2
Snowflake.....	23.1	29.3	26.1	27.8	27.8	26.0	28.5	27.6	.....	27.0*	.....	26.5
Rowden.....	25.5	34.4	34.5	33.0	35.2	34.6	33.0	34.0	33.3	33.0	34.0	31.8
Belton.....	36.6	34.2	33.1	38.4	.....	34.3	35.0	35.2	34.4	.....	.....	35.5
Bennett's Lone Star.....	32.5	36.6	34.4	37.9	38.6	.....	.....	.....	37.1	.....	.....	35.3
Durango.....	.....	32.8	28.1	32.3	.....	34.6	29.1	34.2	.....	.....	.....	.....
Mebane 804.....	30.5	35.4	30.0	35.1	.....	.....	.....	.....	.....	.....	.....	32.7
Truitt.....	31.9	.....	32.6	34.8	35.0	36.2	36.4	30.5	34.2	.....	34.4	.....
Acala.....	.....	.....	.....	35.0	34.6	40.8	33.1	35.9	31.8	.....	35.2	.....
Lightning Express.....	.....	.....	.....	30.1	29.7	28.4	27.7	30.0	32.1	.....	29.5	.....
New Boykin.....	30.8	.....	.....	.....	37.9	39.0	37.7	36.6	36.5	.....	37.5	.....
Half and Half.....	.....	.....	.....	.....	41.1	33.6	40.5	44.4	43.8	.....	40.7	.....
Cliett Superior.....	.....	.....	.....	.....	38.5	39.8	39.4	39.8	38.6	.....	39.2	.....

rainfall and which had very little effective rainfall in July and August, the bolls were unusually small.

During the nine years, 1919 to 1927, inclusive, Lone Star and Mebane produced the largest, and Rowden the smallest bolls. For the six years, 1922 to 1927, inclusive, Mebane and Lone Star produced the largest, and Lightning Express the smallest, bolls. Cliett Superior produced the largest bolls for the period of five years, 1923 to 1927, inclusive.

PERCENTAGE OF LINT

Data on the percentage of lint of the varieties tested from 1919 to 1927, inclusive, are given in Table 20. It will be noted that the percentage of lint of a given variety varied from year to year, and also among varieties in any given year.

This variation in the percentage of lint may be due to environmental causes, such as soil and climatic differences; or to heritable differences of the varieties themselves.

The seed used were commercial seed, which were obtained each year from the recognized breeder of the variety.

Half and Half had the highest percentage of lint, 40.7 per cent for the five-year period, 1923 to 1927, inclusive, and ranged from 33.6 in 1924 to 44.4 in 1926; Cliett Superior ranged next in percentage of lint, with an average of 39.2 per cent, for the same period, ranging from 38.5 in 1923 to 39.8 in 1924 and 1926. Kasch ranged third in percentage of lint with an average of 38.7 per cent, ranging from 36.0 in 1926 to 42.4 in 1924. New Boykin and Mebane had percentages of lint which were only slightly lower than those of Cliett Superior and Kasch.

LENGTH OF LINT

The length of lint of all varieties grown during the nine years, 1919 to 1927, inclusive, is given in Table 21. Considerable variation in the length of lint is noted among the varieties from year to year. This variation in the length of lint may be due largely to unfavorable climatic conditions, such as an uneven distribution of rainfall during the growing season. For instance, in 1924, an unusually dry year, the length of lint of most of the varieties tested was shorter than the lint produced by these same varieties during favorable seasons.

Cliett Superior showed less variation in the length of lint from year to year than the other varieties tested. For the five-year period, 1923 to 1927, inclusive, this variety produced lint having an average length slightly longer than one inch, and ranged from 1 inch in 1923, 1924, and 1925, to 1-1/16 inches in 1927. Lone Star produced lint averaging 1-1/16 inches in length for the same five-year period, the lint ranging from 1 inch in 1924 to 1 1/8 inches in 1923. Mebane for the same period had lint averaging 1 inch, ranging from 15/16 inch in 1923 to 1-1/16 inches in 1926 and 1927.

Lightning Express produced the longest lint, 1-3/16 inches, while

Table 21.—Length of lint of different varieties of cotton, 1919 to 1927, inclusive.

Variety	1919	1920	1921	1922	1923	1924	1925	1926	1927	Average for		
										9 Years 1919-27	5 Years 1923-27	4 Years 1919-22
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
Mebane.....	1 3/32	7/8	1 1/16	1 1/32	15/16	1	1	1 1/16	1 1/16	1	1	1
Lone Star.....	1 3/32	1 3/32	1 3/32	1 1/16	1 1/8	1	1 1/32	1 3/32	1 1/16	1 1/16	1 1/16	1 1/16
Kasch.....	1 1/32	29/32	7/8	1	1	1 15/16	1 7/8	1 1/32	1 1/16	1 31/32	1 31/32	1 15/16
Snowflake.....	1 11/32	1 1/8	1 3/32	1 9/32	1 9/32	1 3/16	1 1/32	1 1/4	.....	*1 3/16	.....	1 3/16
Rowden.....	1 1/16	1 1/8	1 1/32	1 1/16	1 1/16	1 1/16	1 15/16	1 3/32	1 1/16	1 1/32	1 3/32	1 1/16
Belton.....	1 3/16	1 3/32	15/16	1 1/16	.....	1	1 1/32	1 1/8	1 1/16	.....	.....	1 1/32
Bennett's Lone Star.....	1 3/16	1 3/32	1 1/8	1 1/16	1 3/32	.....	.....	.....	1 3/32	.....	.....	1 3/32
Durango.....	.....	1 5/32	1 3/32	1 5/32	.....	1 1/8	1 3/32	1	.....	.....	.....	.....
Mebane 804.....	15/16	7/8	29/32	1 1/32	.....	.....	.....	.....	.....	.....	.....	.....
Truitt.....	1	.....	15/16	.....	1	15/16	29/32	1	1	.....	.....	15/16
Acala.....	.....	.....	.....	1 1/32	1 1/8	7/8	27/32	1 1/32	1 1/8	.....	1	31/32
Lightning Express.....	.....	.....	.....	1 3/8	1 3/32	1 3/16	1 1/8	1 1/4	1 9/32	.....	1	.....
New Boykin.....	1	.....	.....	.....	1	15/16	29/32	1	1	.....	1 3/16	.....
Half and Half.....	.....	.....	.....	.....	.....	27/32	15/16	3/4	3/4	.....	31/32	.....
Clett Superior.....	.....	.....	.....	.....	1	1	11/16	1 1/32	1 1/16	.....	25/32	.....

*8-year average.

Half and Half produced the shortest lint, 25/32 inch, of any of the varieties tested during the five-year period, 1923 to 1927, inclusive. Both of these varieties showed marked variation in the length of lint from year to year, and for this reason they are not considered as valuable as the varieties having more uniform lint.

EARLINESS OF MATURITY

Two methods are used in determining the relative earliness of maturity: (a) the yield of seed cotton produced by the first three pickings made at weekly intervals, and also the percentage of the first three pickings to the entire crop; (b) the number of days occurring from emergence of seedling plants to first bloom and to first open boll.

The Yield of Seed Cotton for the First Three Pickings

As shown in Table 22, an effort is made to determine the earliness of maturity by using the yield of seed cotton for the first three pickings made at weekly intervals. In general those varieties which made the highest yield at the first three pickings also made the highest total yield. Lightning Express was the earliest-maturing variety, followed by Acala, Truitt, Half and Half, Lone Star, and Rowden. The later-maturing varieties were Mebane, Kasch, and Cliett Superior. The earlier-maturing varieties also made high yields, with a slight variation occurring in the ranking of the varieties compared.

Table 22.—Early maturity as measured by the yield of seed cotton produced by the first three pickings. Averages for certain periods of years in pounds of seed cotton per acre.

Variety	6 Years, 1922-27, Incl.			5 Years, 1923-27, Incl.			4 Years, 1924-27, Incl.		
	Total Yield, Lbs.	First Three Pickings, Lbs.	Rank	Total Yield, Lbs.	First Three Pickings, Lbs.	Rank	Total Yield, Lbs.	First Three Pickings, Lbs.	Rank
Mebane.....	314	89	7	284	81	10	293	65	11
Lone Star.....	386	201	4	378	200	5	375	196	6
Kasch.....	277	134	6	252	120	9	259	119	10
Rowden.....	416	186	5	404	175	6	393	173	7
Belton.....							399	160	8
Acala.....	460	294	2	443	279	2	457	286	2
Truitt.....	435	226	3	429	226	3	441	230	4
Lightning Express.....	528	357	1	528	345	1	545	332	1
New Boykin.....				383	164	7	406	217	5
Half and Half.....				334	203	4	418	264	3
Cliett Superior.....				326	133	8	375	141	9

Percentage of Total Crop Produced by First Three Pickings

The percentage of the total crop produced by the first three pickings is shown in Table 23. Lightning Express produced the highest percentage of the total crop at the first three pickings, while Half and Half, Acala, Clietts Superior, and New Boykin in this respect followed

in the order named for the five years, 1923 to 1927, inclusive. Mebane, Rowden and Lone Star were the later-maturing varieties for this period.

Table 23.—Early maturity as measured by the percentage of the total crop produced by the first three pickings.

Variety	6 Years, 1922-1927, Inclusive		5 Years, 1923-1927, Inclusive		4 Years, 1924-1927, Inclusive	
	Per Cent	Rank	Per Cent	Rank	Per Cent	Rank
Mebane.....	29.4	7	30.9	10	24.0	11
Lone Star.....	52.5	4	53.6	8	53.3	7
Kasch.....	51.7	5	53.7	7	53.5	6
Rowden.....	45.4	6	44.5	9	46.2	10
Belton.....					49.2	8
Acala.....	64.0	2	63.8	3	63.0	3
Truitt.....	54.3	3	56.5	5	56.6	5
Lightning Express.....	71.9	1	70.5	1	66.6	1
New Boykin.....			56.4	6	59.5	4
Half and Half.....			67.3	2	65.8	2
Cliett Superior.....			56.6	4	47.1	9

EARLINESS OF MATURITY AS INDICATED BY NUMBER OF DAYS FROM EMERGENCE TO THE FIRST BLOOM AND FIRST OPEN BOLL

Data on earliness as indicated by the time in days from emergence to first bloom and to first open boll are shown in Table 24. There was an average difference of nearly four days between the appearance of the first bloom on the earliest and on the latest-maturing variety for the five-year period, 1923 to 1927, inclusive. The days from emergence to first bloom, however, ranged from three days in 1926 and 1927 to eleven days in 1924. There was an average difference of six days from emergence to first open boll between the earliest- and the latest-maturing variety for the five years, 1923 to 1927. The range in days, however, was one in 1925 to eleven in 1927.

Table 24.—Early maturity as measured by the number of days occurring from emergence of seedlings to first bloom and to first open boll.

Variety	1923		1924		1925		1926		1927		Average	
	1st Bloom	1st Open Boll	1st Bloom	1st Open Boll	1st Bloom	1st Open Boll	1st Bloom	1st Open Boll	1st Bloom	1st Open Boll	1st Bloom	1st Open Boll
Mebane.....	48	94	54	87	61	73	51	97	61	100	55.0	90.2
Lone Star.....	49	90	49	90	58	76	49	93	61	98	53.2	89.4
Kasch.....	52	92	46	86	62	73	50	92	59	89	53.8	86.4
*Snowflake.....	52	94	57	90	61	74	51	96			55.2	88.5
Rowden.....	49	93	47	86	60	75	50	97	58	99	52.8	90.0
*Belton.....			46	86	60	76	50	94	58	103	53.5	89.7
Bennett's Lone Star.....	49	94										
Acala.....	48	81	47	81	59	72	49	89	57	98	52.0	84.2
Durango.....			50	84	59	74	50	90				
Truitt.....	51	90	48	89	58	73	50	92	60	103	53.4	89.4
Lightning Express.....	45	88	47	79	58	72	50	89	58	103	51.6	86.2
New Boykin.....	50	95	46	82	61	73	50	94	59	103	53.2	89.4
Half and Half.....	50	88	45	79	59	72	51	92	58	89	52.6	84.0
Cliett Superior.....	52	92	49	84	62	73	53	94	61	106	55.4	89.8

*4 years.

These data on this phase of earliness indicated that Lightning Express, Acala, and Half and Half were the earliest-maturing varieties. These phases of earliness, however, do not indicate as accurately the relative earliness of the varieties studied as does the percentage of the total crop produced by the first three pickings.

COMPARISON OF YIELD AND OTHER IMPORTANT VARIETAL CHARACTERISTICS

The fourteen varieties of cotton included in the variety test during each of the five years, 1923, 1924, 1925, 1926, and 1927, are compared with each other regarding yield and other characters in Table 25. Since Snowflake, Belton, Bennett's Lone Star, and Mebane 804, were not grown all five of the years, it was necessary to make a four-year average, 1919, 1920, 1921, and 1922, in order to include these four varieties in the comparison.

For the five-year period, 1923 to 1927, inclusive, as shown in Table 25, Half and Half made the highest yield of lint although it was not significantly higher than Lightning Express and Acala; it had medium-sized bolls, a percentage of lint of 40.7, lint 25/32 of an inch in length, and was an early-maturing variety. Lightning Express was second in yield; it had small bolls, a percentage of lint of 29.5, lint 1-3/16 inches, and was the earliest-maturing variety. Acala was third in yield; it had a percentage of lint of 35.2, lint of 1-inch length, medium-sized bolls, and was an early-maturing variety. Truitt, New Boykin, and Lone Star were also high-yielding varieties with large- to medium-size bolls, a percentage of lint ranging from 34.4 to 37.5, and lint ranging from 31/32 to 1-1/16 inches in length, and were early-maturing varieties. Kasch, Mebane, and Cliefts Superior made low yields, had large bolls, high percentages of lint ranging from 37.3 to 39.2, and with the exception of Mebane, were fairly early-maturing. Rowden made good yields, had medium-sized bolls, lint 1-1/32 inches in length, and was late-maturing compared to the other varieties.

COMPARATIVE VALUE PER ACRE OF VARIETIES BASED ON YIELD AND LENGTH OF LINT

Cotton on the ordinary local market in Texas is generally bought on the basis of the average type of cotton produced in the community. This means that if the bulk of the cotton is short or of poor grade, or both, the average for the community will be relatively low and prices on the market will therefore be depressed accordingly. This system operates to place a penalty on high-quality cottons, particularly those having long lint. The minimum length of lint for tenderable cotton is $\frac{7}{8}$ inch; while lint longer than this generally commands a premium when sold on the central markets. The local markets do not afford a dependable index for comparison of varieties as to profitableness based upon their yield, grade, and length of staple.

Table 25.—Comparison of yield with other characteristics of varieties of cotton which were best suited to Central East Texas.

Variety	Yield of Lint in Pounds Per Acre				Percentage of Lint		Length of Lint in Inches		Size of Boll No. to the Lb.		Earliness, Percentage of Crop Produced by First Three Pickings	
	5 Years 1923-27		4 Years 1919-22		5 Years 1923-27	4 Years 1919-22	5 Years 1923-27	4 Years 1919-22	5 Years 1923-27	4 Years 1919-22	5 Years 1923-27	4 Years 1924-27
	Lbs.	Rank	Lbs.	Rank	Per cent	Per cent	Ins.	Ins.	No.	No.	Per cent	Per cent
Mebane.....	112	9	125	6	37.3	34.5	1	1	68	67	30.9	24.0
Lone Star.....	136	6	126	5	36.7	34.8	1 1/16	1 1/16	69	62	53.6	53.3
Kasch.....	92	10	130	1	38.7	36.2	31/32	15/16	69	70	53.7	53.5
Snowflake.....			74	8		26.5		1 3/16			88	
Rowden.....	134	7	130	2	34.0	31.8	1 1/32	1 1/16	76	65	44.5	46.2
Belton.....			128	3		35.5		1 1/32			68	49.2
Bennett's Lone Star.....			128	4		35.3		1 3/32			63	
Mebane 804.....			119	7		32.7		15/16			84	
Truitt.....	149	4			34.4		31/32		75		56.5	56.6
Acala.....	155	3			35.2		1		84		63.8	63.0
Lightning Express.....	156	2			29.5		1 3/16		109		70.5	66.6
New Boykin.....	136	5			37.5		31/32		78		56.4	59.5
Half and Half.....	160	1			40.7		25/32		87		67.3	65.8
Cliett Superior.....	125	8			39.2		1		67		56.6	47.1

The better adapted varieties of cotton which have been tested at Substation No. 11 located at Nacogdoches, Texas, since 1922 are compared in Table 26, taking into consideration their yield and length of lint.

Table 26.—Comparative value of lint per acre.

Variety	1922	1923	1924	1925	1926	1927	6 Years	5 Years	4 Years	3 Years
	25.48*	34.88*	23.66*	19.27*	12.22*	19.28*	1922-27, Incl.	1923-27, incl.	1924-27, incl.	1922-23- 27
Mebane.....	\$ 44.84	\$ 31.04	\$ 4.73	\$ 29.59	\$ 22.91	\$ 31.86	\$ 27.49	\$ 24.02	\$ 22.27	\$ 35.91
Lone Star.....	42.35	52.74	8.04	26.39	32.23	27.57	31.55	29.39	23.55	40.88
Kasch.....	37.45	28.25	4.96	20.23	14.66	26.22	21.96	18.86	16.51	30.64
Rowden.....	41.81	57.04	2.83	23.12	34.88	27.95	31.27	29.16	22.19	42.26
Belton.....	36.42	.....	1.41	26.55	29.88	44.90	.....	.....	25.68	.....
Bennett's Lone Star.....	46.94	36.26	.....	.....	.....	48.34	.....	.....	.....	43.84
Mebane 804.....	47.90	.....	.....	.....	.....	.....	.....	.....	.....	.....
Truitt.....	43.31	46.73	5.20	27.36	32.50	34.89	31.66	29.33	24.98	41.64
Acala.....	51.80	47.98	16.67	28.51	37.27	31.19	35.57	32.32	28.41	43.65
Lightning Express	45.56	49.08	4.44	27.92	50.32	54.39	38.61	37.23	44.25	49.67
New Boykin.....	.....	32.08	9.46	26.39	27.25	36.24	.....	26.28	24.88	.....
Half and Half.....	.....	33.20	14.72	31.24	30.74	35.64	.....	29.10	28.08	.....
Cliett Superior.....	.....	30.69	6.62	21.58	25.17	40.64	.....	24.94	23.50	.....

*Cents per pound.

These varieties have been compared on the basis of middling grade. In determining the comparative values shown in Table 26, the monthly average price or premiums paid for staple cotton, middling basis on the New Orleans market during December of each year have been used. The price data used in arriving at these values were furnished by Dr. B. Youngblood, senior agricultural economist, Bureau of Agricultural Economics, Washington, D. C.

The premium paid for staple cotton during the six years, 1922, 1923, 1924, 1925, 1926, and 1927, has been fairly constant for lint measuring 15/16 to 1 inch, and has ranged from \$2.50 to \$5.00 a bale. There has been considerable variation, however, in the premium paid for lint of the longer lengths, 1-1/16- to 1¼-inch staple, particularly in the case of the latter.

In December of 1923 1-1/16-inch staple sold for a premium of \$5.00 a bale, based on middling grade on the New Orleans market, while in 1925 the premium paid for such cotton was \$12.50 a bale.

The premium paid for 1¼-inch staple, middling basis, on the same market during the six-year period, 1922 to 1927, inclusive, varied from \$20.00 per bale in 1923 to \$40.00 a bale in 1922. This latter premium is considerably above the average for the period, which amounted to \$28.00.

A premium for staple cotton can be secured by farmers in several ways. Such organizations as the Farm Bureau and other cooperative marketing agencies, offer a means of marketing cotton whereby the farmer receives more nearly the full value for his product.

Table 26 shows the comparative value per acre of the lint cotton produced by the thirteen better varieties tested at Substation No. 11 during the six-year period, 1922 to 1927, inclusive. Several averages

were necessary to compare all varieties tested for four or more years. The yield and length of lint of the varieties are given in Tables 18 and 21, respectively.

During the six years, 1922, 1923, 1924, 1925, 1926, and 1927, Lightning Express produced lint which had the highest value per acre, based on its yield and length of lint. It was followed by Acala, Truitt, and Lone Star, in order named.

For the five-year period, 1923, 1924, 1925, 1926 and 1927, Lightning Express was again the most profitable variety, followed by Acala, Lone Star, Truitt, Rowden, and Half and Half, in the order named.

For the four-year period, 1924, 1925, 1926 and 1927, Lightning Express was the most profitable, followed by Acala, Half and Half, and Belton in the order named.

For the three years, 1922, 1923, and 1927, Lightning Express was again the most profitable variety, followed by Bennetts Lone Star, Acala, Rowden, and Truitt.

The results in general, however, show that those varieties which have the highest yield, and with lint from 15/16 to 1-1/16 inches in length were the more profitable ones for Central East Texas.

VARIETIES OF COTTON TESTED AT SUBSTATION NO. 11, NACOGDOCHES, TEXAS, 1912 TO 1927, INCLUSIVE

The more important varieties of cotton have been discussed previously in this Bulletin, but a list of all varieties tested since 1912 is given in Table 27 for information of anyone desiring a complete record of the variety test at this Station. This list gives the yield of lint and source of seed.

Table 27.—Varieties of cotton tested at Nacogdoches from 1912 to 1927, inclusive. Pounds of lint cotton per acre.

Variety	Source of Seed	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Acala.....	Barrow Bros., Quinlan, Texas.....						96	134									
Acala.....	A. B. Fowler, Clarksville, Texas.....								22								
Acala.....	John D. Rogers, Allenfarm, Texas.....											192	131	69	131	305	140
Acala No. 5.....	C. N. Nunn, Porter, Okla.....									75							
Acala (Special).....	F. D. Watson, Italy, Texas.....									65							
Acala.....	F. D. Watson, Weslaco, Texas.....									54	279	85					
Allens Express.....	Chris. Reuter, New Orleans, La.....					143	130	72									
Allens Long Staple.....	Peter Henderson Seed Co., N. Y.....		161														
Allens Long Staple.....	Amzi Godden Seed Co., Birmingham, Ala.....		110														
Allens Long Staple.....	Amzi Godden Seed Co., Birmingham, Ala.....		179														
Allens Improved Long Staple.....	N. L. Willets Seed Co., Augusta Ga.....		153	200													
A-711.....	Ferguson Seed Farms, Sherman, Texas.....					132											
Bank Account.....	H. G. Hastings, Atlanta, Ga.....		176				144	120									
Belton.....	Texas Agri. Exp. Station, Temple, Texas.....								51	242	86	135		6	122	203	211
Belton.....	H. Stubblefield, Belton, Texas.....								60								
Bennett's Lone Star.....	R. L. Bennett, Paris, Texas.....								39	248	54	174	99				217
Black Rattler.....	Nichols & Hooks, Clarksville, Texas.....		147														
Bohler's Triple Jointed.....	N. L. Willet Seed Co., Augusta, Ga.....		309	337													
Boliviar Long Staple.....	J. R. Wooten, Columbus, Texas.....		127	182													
Boykin.....	Ferguson Seed Farms, Sherman, Texas.....							127	44								
Brabham, T. S. No. 8.....	H. E. Fant, Seneca, S. C.....		116														
Brabham, T. S. No. 9.....	H. E. Fant, Seneca, S. C.....		130														
Broadwell's Double Jointed.....	N. L. Willet Seed Co., Augusta, Ga.....						63	110									
Bucklew Big Boll.....	Bucklew Bros., Oenaville, Texas.....									5							
Burns Long Staple.....	H. E. Fant, Seneca, S. C.....		133	190	195												
Burns Long Staple.....	H. E. Fant, Seneca, S. C.....		127														
Broadwell's Double Jointed.....	W. P. Broadwell, Alpharetta, Ga.....		224		189												
Cannons World Skinner.....	Townsend, Oldham & Co., Gorman, Texas.....		295	310	235												
Chisholm.....	Ferguson Seed Breeding Farms, Sherman, Texas.....						148	151	51								
Chisholm.....	W. H. Chisholm, Sherman, Texas.....			266	161												
Cleveland Big Boll.....	Chris. Reuter, New Orleans, La.....						85	152									
Cleveland Big Boll.....	Alabama Exp. Station, Auburn, Ala.....						99										

VARIETIES OF COTTON FOR CENTRAL EAST TEXAS

Table 27.—Varieties of cotton tested at Nacogdoches from 1912 to 1927, inclusive. Pounds of lint cotton per acre—Continued.

Variety	Source of Seed	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Cleveland Big Boll	N. L. Willet Seed Co., Augusta, Ga.		256		168												
Cleveland Big Boll	Wannamaker & Sons, St. Matthews, S. C.			301													
Cleveland A-323	Alabama Exp. Station, Auburn, Ala.			304													
Cleveland No. 433	Alabama Exp. Station, Auburn, Ala.				185												
Cleveland No. 433	Chris. Reuter, New Orleans, La.								45								
Cleveland Big Boll No. 323	Alabama Exp. Station, Auburn, Ala.					65											
Cliett Superior	San Marcos Valley Seed Farms, San Marcos, Texas.												88	28	112	206	191
Columbia Long Staple	J. R. Wooten, Columbus, Texas.		135														
Columbia Long Staple	L. A. Stone, Allendale, S. C.		87														
Cook No. 588	Alabama Exp. Station, Auburn, Ala.							161									
Cook A-675	Alabama Exp. Station, Auburn, Ala.			352	263												
Cooks Improved Big Boll	N. L. Willet Seed Co., Augusta, Ga.			313													
Cooks Long Staple	Peter Henderson Co., N. Y.		127														
Cook No. 729	Alabama Exp. Station, Auburn, Ala.				225	98											
Cook No. 931	Alabama Exp. Station, Auburn, Ala.							137									
Cooks Silk	Peter Henderson Co., N. Y.						132	141									
Crowder	E. A. Crowder, Marquez, Texas.	219	336														
Culpeppers Imp. Big Boll	N. L. Willet Seed Co., Augusta, Ga.		390														
Delfos 6102	Stoneville Ped. Seed Co., Stoneville, Miss.																182
Dillon	N. L. Willet Seed Co., Augusta, Ga.		135														
Dixie	Pedigreed Seed Co., Hartsville, S. C.									158							
Dongola Big Boll	N. L. Willet Seed Co., Augusta, Ga.		309	237													
Durango	O. F. Cook, Washington, D. C.			135													
Durango	Texas Exp. Station, Lubbock, Texas.									239	47	136		23	100	271	
Durango No. 504	S. M. Tracey, Carlsbad, N. M.								46								
Durango	N. L. Willet Seed Co., Augusta, Ga.						75	106									
Durango Long Staple	M. M. Falkner & Son, Waco, Texas.		253	213													
Early King	Chris. Reuter, New Orleans, La.					149	86	103									
Edgeworth	J. C. Little, Lewsville, Ga.		241														
Express	N. L. Willet Seed Co., Augusta, Ga.						103		27								
Ferguson Round- nose	Ferguson Seed Farms, Sherman, Texas.					125	183	115	66								
Floradora	L. A. Stone, Allendale, S. C.	69															

Table 27.—Varieties of cotton tested at Nacogdoches from 1912 to 1927, inclusive. Pounds of lint cotton per acre—Continued.

Variety	Source of Seed	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Lone Star	Texas Seed and Floral Co., Dallas, Texas.					101	105	144	46								
Lone Star	Pittman & Harrison, Sherman, Texas.								19								
Lone Star	D. A. Saunders, Greenville, Texas.								27	231	90	157	147	34	137	219	
Lone Star	Ferguson Seed Farms, Sherman, Texas.				265	100	165	106	39								
Lone Star	J. A. Moore, Grand Prairie, Texas.								29								
Lone Star	Texas Agri. Experiment Station, College Station, Texas.								41	215		178					
Lone Star	J. A. Moore, Grand Prairie, Texas.								36								
Lone Star	O'Conner Hasselfield, Tivoli, Texas.																143
Long Staple Cotton	Texas Seed and Floral Co., Dallas, Texas.		228			65											
Matchless Big Boll	H. G. Hastings, Atlanta, Ga.					157	168										
Mebane	A. D. Mebane Sales Agency, Lockhart, Tex								27	232	66	176	89	20	146	167	139
Mebane T. S.																	
No. 804	Texas Agri. Exp. Station, Angleton, Texas.				225	85		153	51	200	37	188					
Mebane	Texas Seed Breeding Farms, Sherman, Tex.				228		143	195									
Mebane	Texas Seed and Floral Co., Dallas, Texas.						86	148									
Mebane	R. F. Palmer, Troup, Texas.								38								
Mebane Triumph	Ervin Astin, Bryan, Texas.				251												
Mebane Triumph	J. F. Fentress, San Saba, Texas.					196											
Mebane Triumph																	
No. 186	Ferguson Seed Farms, Sherman, Texas.							182									
Mebane Triumph																	
No. 184	Ferguson Seed Farms, Sherman, Texas.							192									
Mebane Triumph																	
No. 183	Ferguson Seed Farms, Sherman, Texas.							137									
Mebane Triumph	Ferguson Seed Farms, Sherman, Texas.					120	173	144	43								
Mebane Triumph A	Ferguson Seed Farms, Sherman, Texas.								22								
Mebane Triumph	F. K. McGinnis, Terrell, Texas.	161	373														
Mebane Triumph	A. D. Mebane Sales Agency, Lockhart, Tex			213													
Mebane																	
Christopher	G. T. McNess, Nacogdoches, Texas.			258													
Mexican Big Boll	N. L. Willet Seed Co., Augusta, Ga.						91	113									
Moneymaker	N. L. Willet Seed Co., Augusta, Ga.						82	182									
Mortgage Lifter	H. G. Hastings, Atlanta, Ga.		259	269		118	144	188									
New Boykin	Ferguson Seed Farms, Sherman, Texas.								35				92	40	137	223	188
Pemiscot	H. T. Byars, Carruthersville, Mo.			185													
Peterkin	N. L. Willet Seed Co., Augusta, Ga.		354														
Roberts Big Boll	N. L. Willet Seed Co., Augusta, Ga.		238	285	205												
Rowden	Texas Seed Breeding Farms, Sherman, Tex.					100	118	158									

Rowden	R. M. Womack, Wills Point, Texas	185			141			53	205	90	155	159	12	120	237	145
Rowden	Rowden Bros., Wills Point, Texas															
Rowden	Texas Seed and Floral Co., Dallas, Texas					144										
Rowden	N. Burrows, Nacogdoches, Texas		249	260	145	140										
Rowden Ladd	Ferguson Seed Farms, Sherman, Texas				111											
Rowden	R. H. Norwood, Wills Point, Texas	124	291	243												
Rowden Choice																
Prolific	Texas Seed and Floral Co., Dallas, Texas					96										
Rowden Big Boll	Texas Seed and Floral Co., Dallas, Texas				132											
Sea Island	Peter Henderson, N. Y.	12		98												
Simpkins Ideal	Wake County Cotton Seed Co., Raleigh, N. C.															
Simpkins Prolific	Chris. Reuter, New Orleans, La.				231	108	93									
Snowflake	Jno. C. McLernon, Clarksville, Texas					84	134	13	155	39	92	91	34	104	141	
Sunbeam	H. G. Hastings, Atlanta, Ga.				113											
Sunshine	J. W. Davidson & Co., McKinney, Texas															160
Sunflower Long																
Staple	N. L. Willet Seed Co., Augusta, Ga.	198	128													
Surecrop	H. G. Hastings, Atlanta, Ga.					158	117									
Snowflake Long																
Staple	Nichols & Hooks, Clarksville, Texas	200			143											
Simpkins Prolific	N. C. Test Farms, Raleigh, N. C.	280	205													
Texas Oak	N. L. Willet Seed Co., Augusta, Ga.	294	262	193												
Texas Progress	Progress Seed Imp. Co., Carlton, Texas					151	113									
Texas Wood	N. L. Willet Seed Co., Augusta, Ga.	334	264													
Toole	N. L. Willet Seed Co., Augusta, Ga.					103	127									
Trice	N. L. Willet Seed Co., Augusta, Ga.					77	103									
Triumph No. 406	Ferguson Seed Farms, Sherman, Texas															
Triumph X King	Alabama Exp. Station, Auburn, Ala.				108					97						
Truitt	Truitt Seed Co., Ennis, Texas							63		99	170	134	22	142	266	181
Truitt	N. L. Willet Seed Co., Augusta, Ga.	332														
Unknown Long																
Staple	W. B. Lawrence, Columbia, S. C.	109	182	183												
Unknown Long																
Staple	Texas Seed and Floral Co., Dallas, Texas	157		188												
Union Big Boll	H. G. Hastings, Atlanta, Ga.		238	223	132	154	89	61								
Vandivers Heavy																
Fruiter	Vandivers Seed Co., Lavonia, Ga.					127	96									
Virgatus	Ferguson Seed Farms, Sherman, Texas	220														
Wannamaker	W. W. Wannamaker & Sons, St. Matthews, S. C.				158		96									
Wannamaker																
Cleveland	T. W. Woods & Sons, Richmond, Va.					180	151									
Webb	Texas Seed Farms, Sherman, Texas					151	131									
Webb	Pittman & Harrison, Sherman, Texas							33								
Webber	D. R. Coker, Hartsville, S. C.	184	229													

Table 27.—Varieties of cotton tested at Nacogdoches from 1912 to 1927, inclusive. Pounds of lint cotton per acre—Continued.

Variety	Source of Seed	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Webber	Oscar Haaga, Memphis, Tenn.		147														
Webber No. 82	Pedigreed Seed Co., Hartsville, S. C.				137	174											
Webber No. 49	Pedigreed Seed Co., Hartsville, Texas				141												
Webber No. 169	J. L. Coker, Hartsville, S. C.		189														
Willets Special Toole	N. L. Willet Seed Co., Augusta, Ga.		312	345													
Willets Special Columbia	N. L. Willet Seed Co., Augusta, Ga.		114	216													
Willets Improved Webber	N. L. Willet Seed Co., Augusta, Ga.		39	83													
Willets Red Leaf	N. L. Willet Seed Co., Augusta, Ga.		171	131													
Willets Special Keenan	N. L. Willet Seed Co., Augusta, Ga.		237														
Willis	W. E. Willis, Oenanville, Texas								73								
Wootens Columbia Big Boll	Reichardt & Schulte, Houston, Texas					97											
Yuma	Argyle McLochlan, Bard, Calif.	20	57	148													

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SUMMARY

The three highest-yielding of the ten varieties tested during each year of the five-year period, 1923-27, produced practically the same amounts of lint cotton per acre.

Acala produced high yields averaging 155 pounds per acre of good-quality lint an inch or more in length and ginned out an average of 35.2 per cent of lint. It has medium-sized bolls, matures early, and is easy to pick. These characters make Acala one of the best varieties for this part of Eastern Texas. Truitt, New Boykin, Lone Star, and Rowden are good-yielding varieties which have desirable qualities in regard to length of lint, gin turn-out, size of bolls, and storm resistance. They are recommended for general planting in this part of Texas.

On account of its short staple, averaging less than $\frac{3}{8}$ -inch in length, Half and Half was not as profitable as Acala when compared on the basis of yield and staple. Half and Half ginned out an average of 40.7 per cent of lint, has small bolls, and is early in maturity. While Half and Half produced high yields of lint averaging 160 pounds of lint per acre, it is not recommended where other good yielding varieties having an inch staple may be grown and the lint sold on its merits.

Lightning Express ranked first in money value per acre and averaged 156 pounds of lint per acre. It is a long-staple variety, the lint averaging 1-3/16 inches in length; it has small bolls and is hard to pick, a characteristic making it unpopular with most farmers. This variety is not recommended for general planting in Eastern Texas, although where suitable gin service for long-staple cotton is available and where there is no objection to the hard picking, the variety may be profitable to grow.

While some of the other varieties have desirable characteristics, yet on account of their low yield, they were not as profitable as Lightning Express, Acala, Lone Star, Truitt, New Boykin, or Rowden, and as a consequence are not recommended for general planting in this region.

Considerable variation in length of lint was observed in certain varieties from year to year, and between varieties in any one year. Cliett's Superior, Lone Star, and Bennett's Lone Star showed less variation in length of lint from year to year than the other varieties.

Half and Half had the highest percentage of lint. It was followed closely by Cliett's Superior, Kasch, New Boykin, and Mebane. The percentage of lint varied in each variety from year to year and between varieties in the same year. Those varieties which had a percentage of lint of 34 and above made the highest yields of lint, with the exception of Lightning Express, and Kasch. Cliett's Superior and Mebane

produced the largest, and Snowflake and Lightning Express the smallest, bolls. Varieties having medium- to large-sized bolls generally made the largest yields of lint.

The percentage of the total crop produced at the first three pickings made at weekly intervals was found to be an accurate indicator of earliness. Acala, Half and Half, Truitt, Lone Star, and New Boykin were relatively early in maturing and produced good yields of lint. Lightning Express was the earliest-maturing variety tested.

The money value per acre of the better varieties was computed, based on the yield, length of staple, and the average price of spot cotton for the period of six years, 1922 to 1927, inclusive, on the New Orleans market. No comparison was made of the demand of the local market for the different lengths of staple.

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