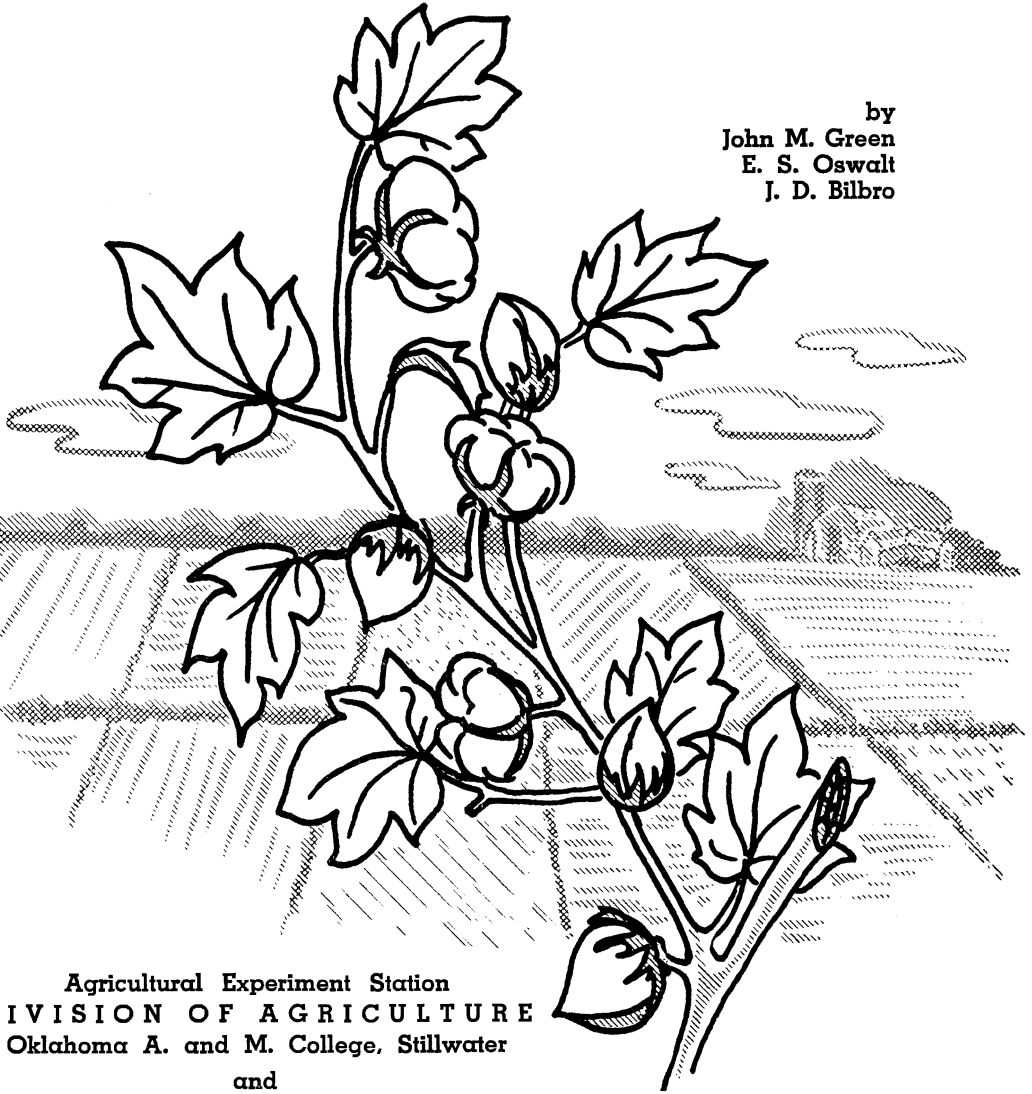


Cotton Variety Tests 1950-1954

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Summary of Findings

1. Differences in pre-harvest losses are important in determining which varieties are adapted to once-over stripper harvest.
2. Harvester efficiency has been influenced more by plant size as affected by stand and environment than by variety.
3. Results of variety tests, experience of growers, and recommendations of agricultural technicians have been considered in recommending varieties for Oklahoma.

RECOMMENDED VARIETIES

Western Oklahoma

Lankart 57*
Lankart 611*
Lockett No. 1 (Stormproof No. 1)*
Lockett 140
Marv-L-S-Cluster
Northern Star*
Parrott*

Eastern Oklahoma

Deltapine 15
D & PL Fox
Empire
Stoneville 62

Varieties for central Oklahoma can be selected from either list above, depending on local conditions and type of harvest anticipated.

Varieties recommended for eastern Oklahoma can be expected to perform well in western Oklahoma when grown under irrigation.

* Varieties adapted to stripper harvest.

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Cotton Variety Tests 1950-1954

By John M. Green, E. S. Oswald, and J. D. Bilbro¹

A major factor in the yield and quality of the harvested cotton crop is the variety of cotton planted. Therefore, the Oklahoma Agricultural Experiment Station each year tests promising varieties in different parts of the state. These tests provide a guide for farmers interested in the best possible yields and quality. Annual results of all tests are available in mimeographed circulars. Results obtained from 1950 through 1954 are summarized in this bulletin for locations where at least three years' data are available.

Tests are conducted on experiment stations and private farms. Standard farming practices are followed in order to give usable information on the comparative performance of varieties. Results reported here are all from dry land tests. Variety tests have been grown under irrigation, but three years' data are not yet available.

PRE-HARVEST LOSS TESTS

With the increase in harvesting by mechanical strippers, it is important that cotton growers know which varieties will retain the seed cotton in the boll after opening. Special plantings have been made at Chickasha, Tipton, and Elk City, where the percentage loss of seed cotton in a number of varieties and strains has been determined. Average results for the three locations are presented by years in Table 1. During this three year period there have been no severe storms during the fall, but drought and high winds have resulted in high losses in the non-stormproof varieties.

Varieties currently popular for stripping have averaged below 10 percent loss in the nine tests conducted. Varieties with the highest storm losses should not be considered for once-over stripper harvest but should be planted only where labor is available for at least the first harvest. Among the varieties with below 10 percent loss, it is important to consider also total yield in choosing one to plant for stripper harvest.

¹ Agronomist; Superintendent, Oklahoma Cotton Research Station; and Assistant in Agronomy, respectively. Thanks are due G. A. Niles, J. W. Simmons, and N. M. Gober of the Cotton Breeding Staff; and Galen Briggs, Dale McClain, Bryan Gentry, Austin Livesay, and J. H. Joines, cooperating farmers.

STRIPPER-HARVESTED TESTS

Varieties adapted to stripper harvest have been compared in tests at several locations in western Oklahoma in recent years. Three year average results are available on seven varieties at three locations. Yield of lint per acre harvested by the stripper, lint percent of stripped cotton, pre-harvest losses of seed cotton, and losses occurring during the harvesting operation are presented. The reader is referred to data on hand-harvested tests in this bulletin for information on staple length, boll size, and earliness. All varieties in each test were harvested on the same date and, for this reason, early varieties might be in poorer condition for stripping than the later varieties. In spite of this possibility these tests are considered valuable.

Results at Davidson (Table 2) show Parrott to be highest in yield and lint percent. The only two varieties included which are not currently recommended are Stormmaster and Macha. These two were lowest in yield and lint percent. Pre-harvest losses were low at this location. Harvest losses were high as a result of large plant size in 1952 and 1953. Harvest losses were highest for Macha, which is susceptible to lodging and which also has a tendency to lose entire bolls during harvesting.

Varieties were ranked similarly for yield at Davidson and Elk City (Table 3). Lankart 57 had a slightly higher lint percent than Parrott, while Macha again was low. Pre-harvest losses were higher at Elk City than at either Hobart or Davidson. Northern Star had very high losses in 1953, which resulted in its high average loss for the three year period. Harvest losses were lowest at Elk City.

The three year average results at Hobart (Table 4) show Parrott to be highest in yield and Lankart 57 highest in lint percent. Macha was lowest in yield and lint percent and appears to be poorly adapted to the western Oklahoma area.

Results of the stripper-harvested tests indicate that highest harvested yield per acre is not necessarily associated with the degree of storm resistance of the variety, and that harvest losses are influenced more by stand and environmental influence on plant size than by variety. Other varieties included in these tests were Western Stormproof, Wacona, and experimental entries. Since these were included for fewer than three years, results are not presented in this bulletin; nor have conclusions been drawn concerning their relative merit.

HAND-HARVESTED TESTS AT SIX LOCATIONS

Tipton (Table 5): Tests at this location were on very fine sandy loam. No fertilizer has been used. Nine varieties have been tested at Tipton for three or more years. Results have been adjusted to give comparable averages in this and all other tests where varieties were not all tested all years. Hi-Bred and Parrott were approximately equal in yield but Parrott has an advantage in staple length. Lockett 140 was third in yield and has been consistently good at Tipton for a number of years. Stormmaster and Paymaster 54 along with Hi-Bred, are the only varieties included in Table 5 which are not currently recommended for western Oklahoma. Hi-Bred has never been recommended because of its extremely short staple, and the other two varieties appear to have no advantage over recommended varieties.

Elk City (Table 6): Tests at Elk City have been conducted on a fine sandy loam soil representative of the better soil of the area. No fertilizer has been used. Parrott and Hi-Bred have been highest in yield. Lankart 611 yielded more than Lankart 57 at this location. These two varieties are very similar in staple length, lint percent, and boll size, but Lankart 611 is the earlier of the two.

Chickasha (Table 7): Tests at Chickasha have been conducted on the Washita River terrace. The soil is a silty clay loam high in fertility, and no fertilizer has been used. Results should be applicable to most bottom lands of central Oklahoma. Stoneville 62 has yielded very slightly more than Hi-Bred and Parrott at this location. Varieties which have been found in the past to compete best only on tight upland soils, e. g. Lankart 57 and Northern Star, were relatively low in yield at Chickasha. This agrees with experience in testing these varieties in the past.

Perkins (Table 8): This test has been conducted on a sandy loam soil which is sufficiently fertile, making the addition of fertilizer unnecessary. Varieties recommended for eastern Oklahoma were high in yield, with Lankart 611 and Hi-Bred also in the high yielding group. Stoneville 62 appears to be best adapted at this location.

Broken Arrow (Table 9): Average results for Broken Arrow include the years 1951 through 1953. The test planted in 1954 did not contain enough of the same varieties to warrant including those results. The soil at this location appears to be a sandy loam alluvium overlaying upland prairie. Fertilizer has been applied each year and insect control measures have been thorough. Average yields in the test have been well above average yields produced in the surrounding area. D & PL

Fox has the highest average yield, largely as a result of outstanding performance in 1953. Of the varieties recommended for the area, Deltapine 15 has the poorest record.

Caddo (Table 10): Results of tests from 1951 through 1953 are available from this location also. This test location is on the blackland, where Deltapine 15 appears to be the most widely grown variety. In the average results presented, Paymaster 54 exceeded Deltapine 15 only six pounds of lint per acre and Deltapine 15 had an advantage of $3/32''$ in staple length. Other varieties recommended for the area—Stoneville 62, D & PL Fox, and Empire—were in the highest yielding group at this location.

DESCRIPTION OF RECOMMENDED VARIETIES

The arrangement of the recommended varieties in alphabetical order, both here and on page 3, is to avoid giving the impression that one variety is preferred over another. In the descriptions that follow, comments indicating particular valuable attributes of each variety will be included. All recommended varieties have produced lint with satisfactory coarseness (micronaire) on the average. For detailed information concerning lint coarseness the reader is referred to Bulletin B-442, "Cotton Quality as Influenced by Lint Coarseness."

Deltapine 15 is well adapted to central and eastern Oklahoma, particularly on highly productive soils. It has a relatively large plant, small bolls, high gin turnout and usually staples 1 to $1-1/16''$.

D & PL Fox is similar to Deltapine 15 in staple length and boll size but is somewhat lower in gin turnout. It matures rapidly under Oklahoma conditions. Its high pre-harvest losses limit its usefulness to areas where sufficient labor is available for timely hand harvest.

Empire is similar in staple length to Deltapine 15. Empire's large bolls make it attractive to hand pickers.

Lankart 57 is a large balled, slowly maturing variety that competes best in yield on tight upland soils of central and western Oklahoma. It has excellent storm resistance and is well adapted to both hand pulling and machine stripping. Its staple length is usually $31/32''$.

Lankart 611 is similar to Lankart 57 except in maturity. Lankart 611 is earlier and this may extend its adaptation to a wider range of soil types.

Lockett No. 1 (Stormproof No. 1) is a storm resistant variety adapted to stripper harvest in western Oklahoma. The bolls are medium

in size and have the type of storm resistance common to Macha, Stormmaster and Western Stormproof. Plant type is suitable for stripping except on highly fertile soils or with thin spacing.

Lockett 140 is a close fruiting variety with medium size bolls. It has coarse lint which usually staples 29/32". Good cleaning qualities make it well adapted to hand pulling but it is not sufficiently storm resistant for once-over stripper harvest.

Marv-L-S-Cluster is similar in most respects to Lockett 140. This variety was tested in 1954 after being omitted from tests for about five years. For this reason no data on its performance appear in this bulletin.

Northern Star has fair storm resistance. Its adaptation is similar to Lankart 57 in that it competes better with other varieties on a tight soil. It has a medium size boll, and its staple length is similar to Lankart 57 and 611.

Parrott is earlier than most varieties recommended for western Oklahoma. It has moderate storm resistance and is well adapted to either stripper harvest or hand snapping. Staple length is intermediate between Lockett No. 1 and Lankart 57 and it has coarser fiber than either of these.

Stoneville 62 is well adapted to central and eastern Oklahoma because of its earliness and consistently high yields. It usually staple 31/32" to 1" and has medium size bolls. It is well adapted to hand pulling or picking.

TABLE 1.—Average pre-harvest losses of seed cotton in varieties compared at Chickasha, Tipton, and Elk City.

Variety	Percentage Losses of Seed Cotton			Adjusted Average
	1952	1953	1954	
Lankart 57	1.8	1.4	0.3	1.2
Lankart 611	2.7	2.2	0.6	1.8
Stormmaster	10.9	1.0	1.7	4.5
Macha	9.8	1.6	--	5.2
Lockett No. 1	12.3	2.1	7.0	7.1
Parrott	11.3	4.9	9.0	8.4
Northern Star	11.7	11.4	5.3	9.5
Lockett 140	16.7	9.6	13.7	13.3
Stoneville 62	19.0	13.7	17.6	16.8
Paymaster 54	21.5	25.3	10.7	19.2
Empire	27.2	9.4	22.2	19.6
Deltapine 15	32.8	15.1	18.8	22.2
Hi-Bred	28.9	21.9	---	24.9
D & PL Fox	24.0	22.8	29.1	25.3

TABLE 2.—Comparative performance of 7 varieties tested in stripper-harvested tests at Davidson from 1952 through 1954.

Variety	Yield of lint per acre	Lint Percent	Percent Loss	
			Pre-harvest	Harvest
Parrott	302	27.7	2.0	9.6
Northern Star	283	25.8	1.9	10.9
Lockett No. 1	279	26.1	2.2	10.0
Lankart 611	278	25.0	1.2	9.7
Lankart 57	256	25.1	0.9	12.4
Stormmaster	208	23.0	1.4	16.8
Macha	163	20.0	2.3	22.1

TABLE 3.—Comparative performance of 7 varieties tested in stripper-harvested tests at Elk City from 1952 through 1954.

Variety	Yield of lint per acre	Lint Percent	Percent Loss	
			Pre-harvest	Harvest
Parrott	270	28.1	7.1	5.2
Lockett No. 1	249	27.2	5.7	4.9
Lankart 611	244	25.0	5.7	3.0
Northern Star	224	26.8	11.8	5.6
Lankart 57	221	29.6	6.8	4.8
Stormmaster	220	26.0	5.6	5.0
Macha	178	22.6	8.1	6.1

TABLE 4.—Comparative performance of 7 varieties tested in stripper-harvested tests at Hobart from 1952 through 1954.

Variety	Yield of lint per acre	Lint Percent	Percent Loss	
			Pre-harvest	Harvest
Parrott	234	25.2	4.6	8.9
Lankart 57	220	26.3	1.2	2.9
Lockett No. 1	219	23.7	3.4	6.0
Northern Star	199	22.5	4.0	7.3
Stormmaster	194	22.2	2.6	9.1
Lankart 611	179	23.4	1.2	6.0
Macha	150	18.6	3.6	8.4

TABLE 5.—Comparative performance of 9 varieties tested at Tipton during the period 1950-1954.

Variety	No. Years Tested	Yield of lint per acre	Staple in 32's	Lint Percent		Grams per boll	Percent harvested 1st harvest
				Picked	Pulled		
Hi-Bred	4	285	27	40.0	30.3	5.7	82.3
Parrott	3	283	30	39.9	28.7	5.9	75.1
Lockett 140	5	270	29	37.1	28.4	5.2	72.4
Lankart 611	3	259	31	38.2	26.9	6.2	78.4
Stormmaster	3	250	30	35.7	26.6	5.3	74.3
Paymaster 54	5	243	29	37.4	26.6	5.7	85.5
Lockett No. 1	5	237	29	36.4	26.7	5.0	75.2
Lankart 57	5	236	30	38.2	27.1	6.2	74.0
Northern Star	5	233	31	35.4	26.4	5.9	79.8

TABLE 6.—Comparative performance of 10 varieties tested at Elk City during the period 1950-1954.

Variety	No. Years Tested	Yield of lint per acre	Staple in 32's	Lint Percent		Grams per boll	Percent harvested 1st harvest
				Picked	Pulled		
Parrott	3	298	30	39.9	29.4	5.6	51.5
Hi-Bred	4	282	29	40.1	30.6	5.6	54.7
Lankart 611	3	275	32	38.4	28.2	6.7	51.8
Stormmaster	3	267	31	36.5	27.0	5.2	52.5
Lockett 140	5	263	29	38.9	28.0	5.4	47.2
Lankart 57	5	262	32	37.9	27.3	6.6	42.2
Paymaster 54	5	254	30	37.9	26.1	5.8	55.9
Lockett No. 1	5	254	30	37.1	26.2	5.2	46.2
Northern Star	5	236	32	35.4	27.0	5.8	47.6
Macha	3	218	31	35.5	23.7	4.9	54.8

TABLE 7.—Comparative performance of 14 varieties tested at Chickasha during the period 1950-1954.

Variety	No. Years Tested	Yield of lint per acre	Staple in 32's	Lint Percent		Grams per boll	Percent harvested 1st harvest
				Picked	Pulled		
Stoneville 62	5	340	30	36.7	25.8	5.7	71.8
Hi-Bred	4	338	28	39.8	29.3	6.3	76.1
Parrott	3	338	30	40.0	28.3	6.1	73.7
Paymaster 54	5	330	30	37.4	26.2	6.5	73.0
Lockett 140	5	325	28	38.8	28.1	5.9	69.5
Deltapine 15	5	324	32	38.9	26.8	5.4	62.6
D & PL Fox	5	323	32	36.6	25.8	5.2	68.7
Lockett No. 1	5	297	29	35.6	25.9	5.7	64.4
Empire	5	294	31	34.6	23.9	6.7	63.9
Stormmaster	3	294	29	34.5	24.7	5.6	68.0
Lankart 611	3	268	31	36.9	25.6	6.9	69.2
Lankart 57	5	259	31	37.0	24.6	6.9	57.0
Northern Star	5	257	31	35.2	24.9	6.2	64.7
Macha	3	251	29	32.8	22.5	5.5	72.6

TABLE 8.—Comparative performance of 13 varieties tested at Perkins during the period 1950-1954.

Variety	No. Years Tested	Yield of lint per acre	Staple in 32's	Lint Percent		Grams per boll	Percent harvested 1st harvest
				Picked	Pulled		
Stoneville 62	5	434	31	37.6	28.7	6.0	78.8
Lankart 611	3	384	31	38.0	28.0	7.9	78.4
Empire	5	379	32	35.9	26.8	7.0	71.1
D & PL Fox	5	378	32	36.8	26.4	5.3	82.4
Hi-Bred	4	374	29	39.4	30.5	6.4	79.3
Deltapine 15	5	373	32	39.1	27.7	5.3	73.7
Parrott	3	366	30	39.1	29.0	6.5	71.6
Stormmaster	3	363	30	35.5	25.9	6.3	74.8
Lockett 140	5	358	28	37.8	28.7	6.2	76.6
Paymaster 54	5	355	31	37.0	26.6	6.7	77.3
Lockett No. 1	5	350	30	36.2	27.1	5.9	75.5
Northern Star	5	340	32	35.7	25.5	6.6	72.4
Lankart 57	5	319	31	38.3	27.1	7.6	72.6

TABLE 9.—Comparative performance of 10 varieties tested at Broken Arrow from 1951 through 1953.

Variety	Yield of lint per acre	Staple in '32's	Lint percent		Grams per boll	Percent harvested 1st harvest
			Picked	Pulled		
D & PL Fox	766	34	37.6	28.0	5.9	86.3
Empire	736	34	37.0	27.1	7.7	79.6
Hi-Bred	726	29	41.7	30.3	7.2	81.8
Stoneville 62	714	32	37.8	28.3	6.5	85.1
Lockett 140	693	30	38.8	28.8	6.8	78.1
Lockett No. 1	691	31	37.8	28.2	6.0	75.4
Paymaster 54	686	32	37.9	27.4	7.2	85.3
Northern Star	676	33	37.5	27.5	7.2	80.3
Lankart 57	669	33	38.3	27.0	8.0	68.6
Deltapine 15	664	34	40.4	28.8	5.6	77.0

TABLE 10.—Comparative performance of 10 varieties tested at Caddo from 1951 through 1953.

Variety	Yield of lint per acre	Staple in '32's	Lint percent		Grams per boll	Percent harvested 1st harvest
			Picked	Pulled		
Paymaster 54	295	30	38.1	27.2	5.5	72.8
Stoneville 62	293	31	37.6	27.2	5.1	72.1
D & PL Fox	290	33	36.8	27.2	4.5	66.2
Deltapine 15	289	33	40.3	28.6	4.9	61.4
Empire	280	32	36.9	25.8	6.0	74.9
Northern Star	262	32	37.5	27.6	5.8	64.7
Lockett No. 1	258	30	37.9	28.3	5.6	66.0
Hi-Bred	256	28	41.0	30.7	5.3	73.2
Lockett 140	251	29	38.6	29.3	5.7	67.6
Lankart 57	243	31	39.3	27.7	6.7	59.0

A D D E N D A**SOURCES OF SEED OF VARIETIES
REPORTED IN THIS BULLETIN**

Variety	Company	Location
Deltapine 15 and Fox	Delta and Pine Land Co.	Scott, Mississippi
Empire	Empire Pedigreed Seed Co.	Haralson, Georgia
Hi-Bred	B. T. Summerour Seed Co.	Norcrosse, Georgia
Lankart 57 and 611	Lankart Seed Farms	Waco, Texas
Lockett No. 1 and 140	Lockett Seed Co.	Vernon, Texas
Macha	H. A. Macha	Tahoka, Texas
Marv-L-S-Cluster	Marvin L. Sharp Co.	Vernon, Texas
Northern Star	Northern Star Seed Farms	O'Brien, Texas
Parrott and Stoneville 62	Oklahoma Cotton Research Station	Chickasha, Oklahoma
Paymaster 54	Paymaster Seed Farms	Plainview, Texas

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