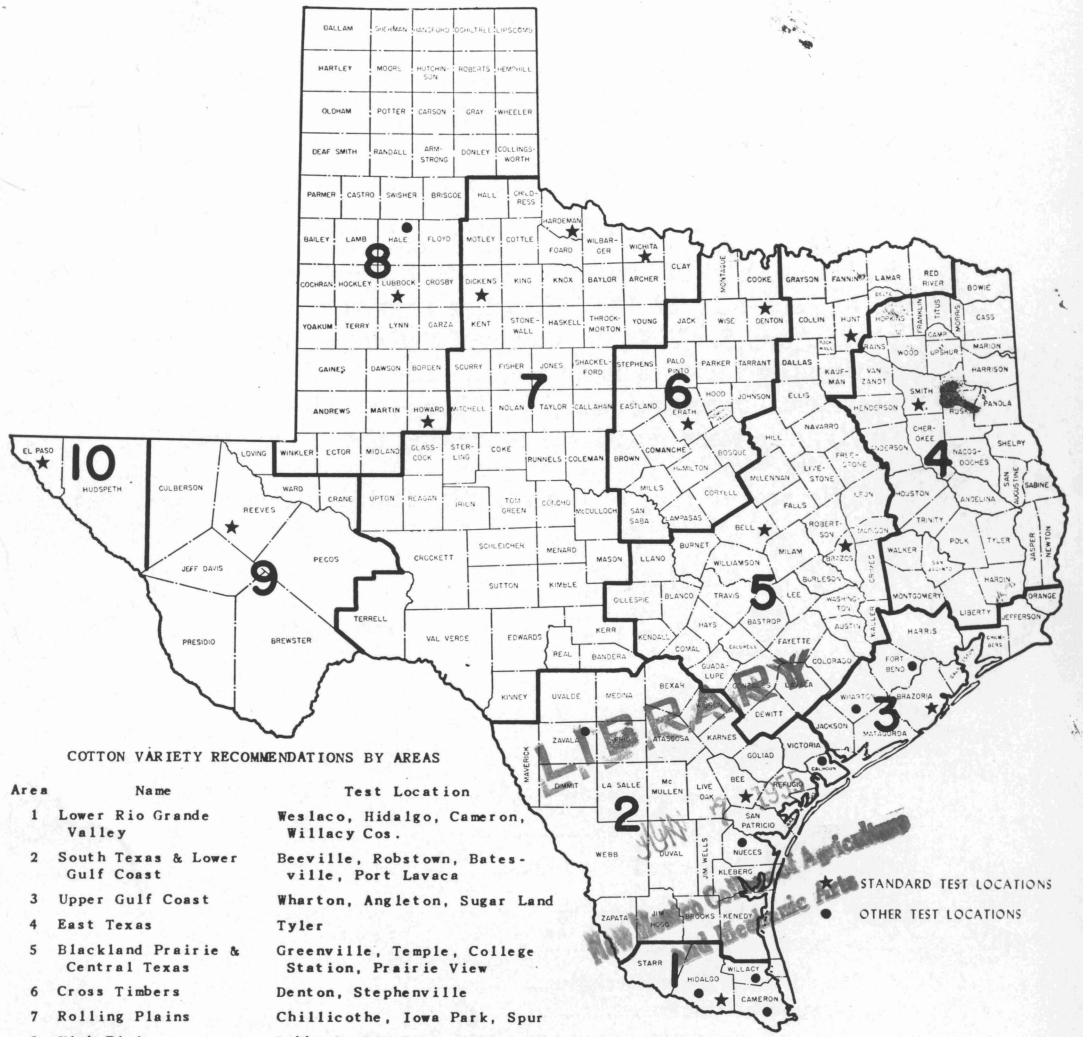
Bulletin 788 November 1954

Performance of Cotton Varieties in Texas, 1951-53



COTTON VARIETY RECOMMENDATIONS BY AREAS

Area	Name	Test Location
1	Lower Rio Grande Valley	Weslaco, Hidalgo, Cameron, Willacy Cos.
2	South Texas & Lower Gulf Coast	Beeville, Robstown, Batesville, Port Lavaca
3	Upper Gulf Coast	Wharton, Angleton, Sugar Land
4	East Texas	Tyler
5	Blackland Prairie & Central Texas	Greenville, Temple, College Station, Prairie View
6	Cross Timbers	Denton, Stephenville
7	Rolling Plains	Chillicothe, Iowa Park, Spur
8	High Plains	Lubbock, Big Spring, Plainview
9	Trans-Pecos	Balmorhea
10	Upper Rio Grande Valley	Ysleta

in cooperation with the
UNITED STATES DEPARTMENT OF AGRICULTURE

TEXAS AGRICULTURAL EXPERIMENT STATION - - - TEXAS AGRICULTURAL EXTENSION SERVICE
College Station, Texas

PREFACE

The cotton variety testing program in Texas is designed to inform growers of the performance of new varieties and strains and to compare such types with standard varieties in general use.

This bulletin gives information on the performance of cotton varieties tested during the second 3-year period 1951-53, of the statewide varietial evaluation program. Bulletin 739 gave varietal performance results for the first 3-year period, 1948-50. Summary bulletins will be issued at the completion of each succeeding 3-year testing period. Progress reports are issued by the individual stations annually on the results of the current year's cotton variety test at a particular location.

Texas is divided into three general testing regions to facilitate the systematic testing of varieties—the Lower Rio Grande Valley and the Trans-Pecos; the High and Rolling Plains; and the central, coastal and eastern portions of the State. Ten production areas are designated to provide a more practical basis for varietial recommendations.

Yield results and other agronomic information on the performance of varieties within each region and at each test location within the regions are given in tabular form, pages 10 to 13. Varieties recommended for each production area are given on pages 7 and 8. Yield in pounds of lint cotton per acre was given highest priority in selecting the varieties to be recommended. Other characteristics, such as adaptation to prevalent harvesting practices, fiber properties, disease resistance and earliness of maturity, also were considered in making the recommendations.

Sources of seed of the varieties tested also are given.

CONTENTS

Preformance of Cotton Varieties in Texas, 1951-53

D. T. KILLOUGH, T. R. RICHMOND AND F. C. ELLIOTT*

THE MAIN PURPOSE of the statewide cotton variety testing program of the Texas Agricultural Experiment Station is to supply farmers with information for use as a basis for selecting the variety, or varieties, best suited to the varied conditions and farming systems in Texas. This information also is useful to plant breeders, spinners and workers in many other segments of the cotton industry.

The establishment of a number of test locations makes it possible to measure the response of varieties to different soil and climatic conditions. To form a reliable basis for predicting the future performance of varieties, it is also necessary to obtain a reasonable estimate of the yearly or seasonal effects. Information from only 1 year of testing will not give reliable estimates of performance. More confidence can be placed on the average performance of varieties over a period of years.

Although a longer period of testing may have been desirable in some cases, the pressure for current information on the performance of varieties led to the adoption of a 3-year test period. Yield information based on 3 years of testing usually furnishes satisfactory statistics on which to predict future performance. The testing plan permits a reorganization at the end of each 3-year test period. Poor performers, revealed by the tests, can be discarded and new varieties added during the next 3-year period.

This bulletin gives information on variety and strain performance for the 3-year test period, 1951-53, at 21 locations over the State. At the conclusion of the next testing period, 1954-56, another bulletin on the performance of cotton varieties will be published.

TYPES OF TESTS

Three types of variety tests were conducted each year. One was a standard, or regional test, that included a given number of varieties which remained constant at each location in the region for the 3-year period. Another was a supplemental test that included entries which varied from year to year and from location to location. The third type consisted of outfield tests carried on in cooperation with county agents of the Texas Agricultural Extension Service.

In setting up the field designs of the variety tests, the regional test of 16 standard varieties was combined with the supplemental test of new varieties and strains in one planting plan. This arrangement facilitated cross comparisons and did not affect the validity of the analysis of the data from the separate tests. This procedure was followed in most cases although certain stations in the different regions did not test all 16 standard varieties, while others included more than that number.

Only the results of the standard or regional tests are reported in this bulletin. Results of the supplemental tests are published in progress reports issued from time to time by the individual substations, and may be obtained from them or from the Agricultural Information Office at College Station, Texas. Results of the outfield tests have been published by the respective county agents.

REGIONS AND TEST LOCATIONS

To form a general, though somewhat arbitrary, basis for systematizing the testing program within those parts of Texas which are broadly similar in climate, soils and production practices, three testing regions have been designated. One is the Lower Rio Grande Valley and the Trans-Pecos. The second covers the High and Rolling Plains. The third includes the central, coastal and eastern portions or all other areas of cotton production.

As the work progressed, it became obvious that smaller and more specifically defined areas were required if varietial recommendations were to have practical meaning. Therefore, the three regions were divided into 10 production areas. The areas, shown on the front cover, have fairly well-defined patterns of soil types, climatic conditions and farming practices.

The irrigated region comprises areas 1, 9 and 10; the High and Rolling Plains region includes areas 7 and 8; and the central, coastal and eastern regions which includes the remainder of the cotton-growing areas of Texas comprises areas 2, 3, 4, 5 and 6. The 21 test locations from which data were obtained for inclusion in this bulletin are designated by stars and dots on the map on the front cover.

*Respectively, associate professor and professor in charge, cotton investigations section, Department of Agronomy; and cotton work specialist, Texas Agricultural Extension Service. T. R. Richmond also is agronomist, Field Crops Research Branch, Agricultural Research Service, U. S. Department of Agriculture.

By region, they are:

LOWER RIO GRANDE VALLEY AND TRANS-PECOS

Substation No. 15, Weslaco, (Irrigated)
Substation No. 19, Winter Haven, (Irrigated)
Substation No. 9, Balmorhea, (Irrigated)
Substation No. 17, Ysleta, (Irrigated)

HIGH AND ROLLING PLAINS

Substation No. 7, Spur, (Dryland)
Substation No. 8, Lubbock, (Dryland)
Substation No. 8, Lubbock, (Irrigated)
Paymaster Farm, Plainview, (Irrigated)
Substation No. 12, Chillicothe, (Dryland)
Substation No. 16, Iowa Park, (Irrigated)
U. S. Field Station, Big Spring, (Dryland)

CENTRAL, COASTAL AND EASTERN REGION

Substation No. 1, Beeville, (Dryland)
Substation No. 2, Tyler, (Dryland)
Substation No. 3, Angleton, (Dryland)
Substation No. 5, Temple, (Dryland)
Substation No. 6, Denton, (Dryland)
Substation No. 18, Prairie View, (Dryland)
Substation No. 20, Stephenville, (Dryland)
Main Station Farm, College Station, (Dryland)
Brazos River Valley Laboratory, College Station, (Dryland)
U. S. Cotton Field Station, Greenville, (Dryland)

Variety tests conducted under the supervision of county agents of the Agricultural Extension Service were not always designed in full conformity with the standard testing plan insofar as number of entries was concerned. Such tests were conducted in Zavala (Batesville), Hale, Hidalgo, Cameron, Willacy, Nueces (Robstown), Fort Bend (Sugar Land) and Calhoun counties.

These cooperative outfield tests permit a more widespread testing of old and new commercial varieties and recently developed strains. Although the results of the outfield tests are not given in the bulletin, they were used in arriving at variety recommendations for the areas concerned.

CLIMATIC CONDITIONS AND SOIL TYPES

Detailed information on the climatic conditions prevailing before and during the 3-year testing period, and on the soil types on which the tests were conducted, is given in Table 1.

FIELD DESIGN OF TESTS

The tests were designed both as 4 x 4 (16 entries), 5 x 5 (25 entries), 6 x 6 (36 entries) and 7 x 7 (49 entries) triple lattices and as simple randomized blocks, each with six replications. Since the triple lattice designs lend themselves to analysis as simple randomized block experiments as well as to triple lattice treatment, both analyses were made. No advantage was found, so the simpler randomized analysis was used.

An analysis of the combined data for each variety for the 3-year test period was made at each station or test location. The average yields of individual entries were used as a basis for calculating standard errors (computed from the interaction of varieties x years) and least significant differences among varieties. Entry averages also were used in the combined regional analyses. In these cases, the within-variety variances were used in computing standard errors.

INTERPRETATION OF RESULTS

Statistical analyses were made to determine the number of pounds of lint cotton per acre required for a real or statistically significant difference between any two varieties in a given test. As a basis for calculating real or significant difference, it is necessary to assume a certain level of probability; that is, odds that the difference observed is statistically significant.

The odds used in calculating the differences required for significance between yields of varieties, shown in the footnotes of Tables 2 to 26, are 19 to 1. This means that a difference as great

Table 1. Average temperature, rainfall, length of growing season and soil types at test locations

Location of test	No. years reported	Temperature, degrees			Rainfall, inches		Length of growing season			No. days temp. 32° or less	Soil types on which tests were grown
		Mean annual	Mean monthly maximum	Mean monthly minimum	Average	Growing season[1]	No. of days	Average date: First killing frost in fall	Average date: Last killing frost in spring		
Region 1											
Winter Haven	36	74.0	84.7	63.2	23.22	12.18	330	Dec. 20	Jan. 25	3.2	Willacy and Hidalgo sandy loams
Balmorhea	30	64.8	80.2	49.4	13.67	9.10	230	Nov. 13	Mar. 29	58.6	Balmorhea clay and clay loam
Weslaco	20	72.0	84.4	59.0	21.67	14.69	294	Dec. 7	Feb. 17	11.2	Orelia fine sandy loam and clay loam
Region 2											
Spur	42	61.9	77.0	46.9	20.83	14.41	215	Nov. 4	Apr. 3	84.2	Abilene clay loam
Lubbock	42	60.0	74.6	45.5	18.66	13.03	211	Nov. 4	Apr. 7	92.9	Amarillo fine sandy loam
Chillicothe	47	63.1	76.0	50.1	24.46	16.10	231	Nov. 11	Mar. 24	69.3	Abilene loam and fine sandy loam
Iowa Park	25	64.7	77.8	51.8	30.03	18.05	221	Nov. 7	Mar. 31	63.1	Miller and Yahola series
Big Spring	32	63.2	78.1	42.7	18.38	12.28	225	Nov. 10	Mar. 31	76.0	Amarillo fine sandy loam
Region 3											
Main Sta. Farm, College Station	50	68.4	79.5	57.2	38.85	19.95	263	Nov. 25	Mar. 6	20.7	Lufkin fine sandy loam
Brazos River Valley Lab., College Sta.	5	68.1	80.2	56.1	40.82	21.76	256	Nov. 15	Mar. 7	13.8	Miller clay
Beeville	47	71.3	82.5	60.1	30.20	17.79	294	Dec. 7	Feb. 15	11.1	Clareville clay loam
Tyler	48	65.9	76.3	55.4	44.69	21.49	250	Nov. 19	Mar. 14	29.2	Northeast Texas sandy loams
Angleton	39	69.1	79.6	58.7	48.09	25.77	281	Dec. 3	Feb. 25	14.2	Lake Charles clay
Temple	40	67.2	79.1	55.3	34.48	18.93	248	Nov. 21	Mar. 15	33.0	Houston Black clay
Denton	40	64.9	76.9	52.9	32.76	18.31	234	Nov. 13	Mar. 15	49.9	Denton and San Saba clays
Stephenville	8	65.2	76.6	53.8	30.60	17.69	248	Nov. 18	Mar. 15	36.8	Windthorst fine sandy loam
Greenville	32	64.2	78.1	50.2	41.24	22.08	235	Nov. 11	Mar. 21	45.3	Hunt clay

[1]April through September, except for Weslaco where the growing season is from March through August.

or greater than the one observed would occur by chance only once in 20 times. Using the calculated value for significant yield differences, it is possible to determine within the limits of the assumed odds whether a given variety differs from any other in the test. On the same basis, groups of varieties which do not differ significantly among themselves can be established. In this bulletin, the "high yield group" contains the variety with the highest average yield and all others which do not differ significantly from it.

Entries in cotton variety tests often do not maintain the same order of ranking from year to year; that is, the varieties behave differently in different years. Individual varieties show different patterns of behavior in this regard. Certain varieties tend to rank near the top of the tests nearly every year, others rank near the bottom and still others fluctuate widely in ranking. This interaction of varieties with years is apparent in the data for the 3-year period reported here. In the combined analyses of the data from single locations or stations there were several instances of nonsignificant (N/S) differences in yield; i.e., the L.S.D.'s were so large that all of the entries were included in the range of differences required for significance. In other words, the variation in the variety x year interaction was as great or greater than the variation among the average yields of the varieties. Therefore, it was impossible to discriminate between varieties solely on the basis of the combined data for the 3-year period at those locations where statistically significant differences could not be demonstrated. In such instances, the ranking of the varieties in the separate years was used as the primary basis for separation or choice. Factors other than yield served as a secondary basis for recommendation.

YIELD AND OTHER CHARACTERISTICS

Information on the yield and other characteristics of the varieties tested is complete for each of the 3 years at 15 of the 21 stations covered by this report. Only 2 years' results are available at 4 stations (1951 and 1952 at Stephenville; 1951 and 1953 at Big Spring; 1951 and 1952 at Lubbock—dryland test; 1951 and 1953 at Weslaco,) and only 1 year's results are available at 2 stations (1951 at Spur and 1953 at Winter Haven — Batesville) because unfavorable climatic conditions and poor stands rendered the tests invalid in certain years during 1951-53.

Statewide Results

To obtain information on the statewide reaction to varietal adaptation, 9 well-known and widely-grown varieties were included in the tests at 15 locations during the entire 3-year period. These were Hi-Bred, Deltapine TPSA, Stormproof No. 1, Empire Watson, Lockett 140, Texacala 5455 Rogers, Northern Star, Lankart 611 and Rowden 41B TPSA. The yield results are reported in Table 2.

While only 9 named varieties appeared at each of 15 test locations, it is presumed that other strains of these same 9 varieties would have performed in a similar way if they had been grown at all locations. For example, where both Deltapine 15 (Miss.) and Deltapine TPSA were grown at the same test location, they made almost identical yields, 501 and 517 pounds of lint per acre, respectively, Table 17. Similar results were obtained at another location when Empire WR (Ga.) was compared with Empire Watson, the yields being 320 and 291 pounds, respectively, Table 20. This same relationship in yield might also be expected to apply where the better strains of Acala, Mebane and Rowden are compared.

Many major types or strains of cotton are represented by several commercial varieties. In such cases, it has been impossible to test all of them under a standardized system. However, all of the known agricultural varieties offered for

Table 2. Statewide average yield, pounds of lint per acre, 1951-53

Variety	BRVL[1]	MSF[2]	Beeville	Tyler	Angleton	Temple	Denton	Spur	Lubbock dryland	Plainview irrigated
Hi-Bred	473(5)[3]	221(1)	239(6)	341(1)	456(2)	322(4)	331(7)	387(1)	144(6)	600(1)
Deltapine TPSA	517(1)	204(4)	252(4)	248(7)	499(1)	348(3)	366(3)	308(8)	168(2)	537(3)
Stormproof 1	512(2)	207(3)	274(2)	223(8)	456(2)	355(1)	385(1)	378(2)	152(4)	453(5)
Empire, Watson	454(8)	203(5)	284(1)	291(2)	391(5)	351(2)	354(5)	252(9)	175(1)	547(2)
Lockett 140	481(3)	209(2)	236(7)	262(6)	421(4)	304(7)	385(1)	345(6)	150(5)	415(7)
Texacala 5455, Rogers	474(4)	179(9)	225(8)	264(4)	426(3)	321(5)	367(2)	349(5)	143(7)	511(4)
Northern Star	455(7)	194(8)	256(3)	263(5)	355(6)	319(6)	355(4)	328(7)	150(5)	450(6)
Lankart 611	466(6)	198(6)	244(5)	272(3)	268(8)	299(8)	338(6)	377(3)	157(3)	450(6)
Rowden 41B TPSA	393(9)	195(7)	202(9)	208(9)	317(7)	282(9)	302(8)	371(4)	133(8)	381(8)

Right hand continuation:

Variety	Chillicothe	Prairie View	Stephenville	Big Spring	Greenville	Average yield[4]
Hi-Bred	187(6)	503(2)	177(1)	106(2)	446(1)	329
Deltapine TPSA	221(4)	475(5)	172(2)	120(1)	395(5)	322
Stormproof 1	249(1)	481(3)	126(7)	102(3)	392(6)	316
Empire, Watson	180(7)	515(1)	142(6)	93(5)	382(7)	308
Lockett 140	245(2)	479(4)	149(4)	98(4)	417(3)	306
Texacala 5455, Rogers	207(5)	448(7)	152(3)	89(7)	398(4)	304
Northern Star	225(3)	448(7)	149(4)	92(6)	420(2)	297
Lankart 611	174(8)	462(6)	144(5)	76(8)	373(8)	287
Rowden 41B TPSA	172(9)	345(8)	96(8)	60(9)	340(9)	253

[1] Brazos River Valley Laboratory, College Station.
[2] Main Station Farm, College Station.
[3] Rank shown in parentheses.
[4] The difference in average yield between any two varieties grown at the 15 locations must equal or exceed the L.S.D. value of 21 pounds to give odds of 19 to 1 that such a difference is real and not due to chance.

Table 3. Regional cotton variety test, region 1, main irrigated areas, average yield, pounds of lint per acre, 1951-53

Variety	Balmorhea		Weslaco[1]		Ysleta		Average yield
	Yield	Rank	Yield	Rank	Yield	Rank	
Acala 1517C (N.M.)	966	3	866	4	1161	1	998
Deltapine TPSA	988	2	908	1	1049	2	982
Acala 4-42 (Calif.)	930	5	823	6	985	3	913
Stoneville TPSA	933	4	825	5	932	6	897
Texacala 5455, Rogers	814	7	868	2	946	5	876
Mesilla Valley Acala	858	6	756	7	968	4	861
Hi-Bred	997	1	867	3	706	8	857
Rowden 41B TPSA	746	8	741	8	797	7	761
L.S.D. value[2]	164		N/S		177		107

[1] Two years results, 1951 and 1953.
[2] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.

sale in Texas have been tested at one or more locations at some time.

Lower Rio Grande Valley and Trans-Pecos Region

Yields of the better varieties grown in the main irrigated areas of Texas averaged almost 2 bales per acre at Weslaco and Balmorhea, and slightly more than 2 bales per acre at Ysleta, Table 3.

The higher yielding varieties as an average for all three stations in the order named, were Acala 1517C (N.M.), Deltapine TPSA, Acala 4-42 (Calif.), Stoneville TPSA, Texacala 5455 Rogers, Mesilla Valley Acala, Hi-Bred and Rowden 41B TPSA.

Results of the irrigated tests at Weslaco, Balmorhea, Ysleta and Winter Haven (Batesville) are given in Tables 6, 7, 8 and 9, respectively.

High and Rolling Plains Region

Cotton is grown under both dryland and irrigated conditions on the High and Rolling Plains. Both a dryland and an irrigated test were conducted at Lubbock but data obtained under irrigation were incomplete. Data only from the dryland test are shown in the regional summary, Table 4. Results from the irrigated test at Lubbock are given in Table 11. The tests at Iowa Park and Plainview were irrigated. At all other locations the tests were grown under dryland conditions.

Paymaster 54, Hi-Bred, Deltapine TPSA, Stormproof No. 1, C A 119, Stormmaster, Western Stormproof, Lockett 140 and Northern Star were among the better yielding varieties at most of the testing points during the 3 years, Table 4. As an average of all stations in region 2, the yields of the varieties ranged from 316 pounds for Paymaster 54 to 223 pounds for Rowden 41B TPSA. Separate results of the tests at each station in region 2 are given in Tables 10 to 16. The varieties recommended for dryland planting also are satisfactory for growing under irrigation.

The varieties tested on the High and Rolling Plains under dryland conditions, for the most part, produced shorter lint than did similar varieties in the main irrigated areas of Texas. However, fiber and spinning tests have shown that, in spite of their somewhat shorter length, a number of the varieties commonly grown in West Texas had acceptable fiber strength and other desirable textile properties.

Since cotton in this region often is left in the field until nearly all of the bolls have matured and is then harvested by hand snapping or machine stripping, increasing farmer preference is given to those varieties which are to some degree storm resistant. Stormproof No. 1, Stormmaster, C A 119, Western Stormproof and Macha Early are storm resistant varieties which have given acceptable yields in the region.

Central, Coastal and Eastern Region

This region lies to the east of a line drawn roughly from Wichita Falls in North Texas to Brownwood in Central Texas and on to Corpus Christi on the Gulf Coast. Practically all of the cotton in this region is grown under rainfall conditions.

Varieties which performed well on the average at the 10 testing locations in region 3, the central, coastal and eastern portions of the State,

Table 4. Regional cotton variety test, region 2, High and Rolling Plains, average yield, pounds lint per acre, 1951-53

Variety	Spur[1]		Lubbock[2]		Plainview[3]		Chillicothe		Big Spring[4]		Average yield
	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	
Paymaster 54	421	1	148	8	693	1	190	9	126	1	316
Hi-Bred	387	2	144	9	600	2	187	10	106	3	285
Deltapine TPSA	308	14	168	2	537	4	221	4	120	2	271
Stormproof No. 1	378	3	152	6	453	12	249	1	102	4	267
Texacala 5455, Rogers	349	8	143	10	511	5	207	7	89	10	260
C A 119	372	5	154	4	481	10	184	12	100	6	258
Western Stormproof	325	13	143	10	487	9	225	3	101	5	256
Stormmaster	354	7	140	11	490	8	197	8	93	8	255
Macha No. 1	347	9	148	8	507	6	185	11	74	13	252
C A 122	343	11	153	5	467	11	211	6	86	11	252
Lockett 140	345	10	150	7	415	14	245	2	98	7	251
Northern Star	328	12	150	7	450	13	225	3	92	9	249
Empire, Watson	252	16	175	1	547	3	180	13	93	8	249
Lankart 611	377	4	157	3	450	13	174	14	76	12	247
C A 89A	267	15	133	12	493	7	216	5	98	7	241
Rowden 41B TPSA	371	6	133	12	381	15	172	15	60	14	223
L.S.D. value[5]	N/S		N/S		118		32		N/S		43

[1] One year's results only (1951).
[2] Two years' results only (1951 and 1952) on dryland test.
[3] Plainview test grown under irrigation.
[4] Two years' results only (1951 and 1953).
[5] The difference in yield between any two varieties must equal or exceed the amount of the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.

included D & P L Fox, Hi-Bred, Deltapine TPSA, Stormproof No. 1, Deltapine 15 (Miss.), Empire Watson, Lockett 140 and Stoneville 2B-B7 (Miss.). Average yields for each variety at all stations in region 3 ranged from 370 pounds of lint per acre for D & P L Fox to 268 pounds for Rowden 41B TPSA, Table 5. Performance of the varieties at the individual stations in region 3 is given in Tables 17 to 26.

VARIETIES RECOMMENDED

While high yield has been given the greatest weight in determining the varieties of cotton to be recommended, fiber properties, boll and plant characters, adaptation to local methods of harvesting, foundation seed supply and preference by farmers also were considered. For this reason, varieties recommended for a given region or area often will not include all of the varieties in the highest yield group.

Neither the experimental data nor the observations and interpretations of experienced cotton workers provide a clear-cut, foolproof method of determining the one best variety for an area or region over a period of years. Since the climate and other environmental conditions for any given future year cannot be predicted reliably, the most practical approach for recommending cotton varieties for an agricultural area is to select those which consistently fall in the "high yield" group and regularly show other desired characteristics. It was believed better to select a reasonably steady performer over a period of years than a variety which was extremely high in performance one year and average or low in others.

Each farm presents a special problem and individual growers should consider all of the factors of production and farm management involved in arriving at a final decision on the variety or varieties to be grown. The detailed data in the tables will be useful in this connection.

The following varieties are recommended for the 10 production areas shown on the cover:

AREA 1

Deltapine-15, TPSA and similar types
Empire WR (Ga.) and Watson
Delfos 9169
D & P L Fox
Stoneville-2B (Miss.) and 62 Watson
Texacala

For dryland and limited irrigation conditions: Northern Star, Texacala, Lankart and Mebane.

AREA 2

Empire WR-Watson and similar types
Deltapine-TPSA and similar types
D & P L Fox
Lankart
Stoneville-2B and similar types
Northern Star

AREA 3

Deltapine-15, TPSA and similar types
Texacala
D & P L Fox
Delfos 9169

AREA 4

D & P L Fox
Empire WR (Ga.) and Watson
Stoneville-2B (Miss.) and 62 Watson
Plains

AREA 5

Deltapine-15, TPSA and similar types
D & P L Fox
Empire WR-Watson and similar types
Mebane-8G Floyd and similar types
Stoneville-2B (Miss.), 62 Watson and similar types
Northern Star
Lankart
Rowden

If harvesting is to be done with mechanical stripper: Western Stormproof, Stormproof No. 1, C A 119 and Stormmaster.

AREA 6

Deltapine-15, TPSA and similar types
D & P L Fox
Empire WR-Watson and similar types
Mebane-8G Floyd and similar types
Stoneville 2B (Miss.) and similar types
Northern Star

If harvesting is to be done with mechanical stripper: Stormproof No. 1, Lankart and Stormmaster.

Table 5. Regional cotton variety test, region 3, central, coastal and eastern portions of the State, average yield, pounds of lint per acre, 1951-53

Variety	BRVL[1]		MSF[2]		Beeville		Tyler		Angleton		Temple		Denton		Prairie View		Greenville		Stephenville[3]		Av. yield
	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	
D&PL Fox	468	8	202	8	279	2	337	2	431	4	360	1	370	4	635	1	443	2	171	4	370
Hi-Bred	473	7	221	2	239	9	341	1	456	2	322	8	331	13	503	4	446	1	177	2	351
Deltapine TPSA	517	1	204	6	252	6	248	11	499	1	348	5	366	7	475	9	395	7	172	3	348
Stormproof No. 1	512	2	207	5	274	3	223	14	456	2	355	2	385	1	481	7	392	8	126	12	341
Deltapine 15 (Miss.)	501	3	201	9	234	11	252	10	401	7	338	6	383	3	498	6	431	3	149	6	339
Empire, Watson	454	12	203	7	284	1	291	3	391	8	351	4	354	11	515	2	382	9	142	9	337
Lockett 140	481	5	209	3	236	10	262	9	421	6	304	13	385	1	479	8	417	5	149	6	334
Stoneville 2B-B7(Miss.)	488	4	208	4	256	5	271	6	376	9	354	3	384	2	508	3	363	13	133	11	334
Delfos 9169 — 3292	417	13	222	1	246	7	220	15	455	3	320	10	369	5	481	7	382	9	143	8	326
Texacala 5455, Rogers	474	6	179	14	225	12	264	7	426	5	321	9	367	6	448	12	398	6	152	5	325
Arkot 2-1	460	10	202	8	267	4	280	4	334	12	312	12	357	9	454	11	377	11	180	1	322
Northern Star	455	11	194	12	256	5	263	8	355	11	319	11	355	10	448	12	420	4	149	6	321
Mebane 8G, Floyd	468	8	204	6	217	13	245	13	313	14	323	7	362	8	410	13	380	10	144	7	307
Lankart 611	466	9	198	10	244	8	272	5	268	15	299	14	338	12	462	10	373	12	144	7	306
Coker 100 Wilt	380	15	192	13	212	14	247	12	361	10	323	7	318	14	500	5	337	15	136	10	301
Rowden 41B TPSA	393	14	195	11	202	15	208	16	317	13	282	15	302	15	345	14	340	14	96	13	268
L.S.D. value,[4]	N/S		N/S		27		66		108		N/S		N/S		71		N/S		N/S		33

[1] Brazos River Valley Laboratory, College Station.
[2] Main Station Farm, College Station.
[3] Two years' results only, 1951 and 1952.
[4] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.

AREA 7

*Stormproof No. 1
Lockett 140
Paymaster 54
*Western Stormproof
Northern Star
Deltapine types

*Stormmaster also recommended for stripper harvesting.

AREA 8

Storm-resistant types

Stormproof No. 1
Western Stormproof
C A 119
Stormmaster
Macha No. 1

Normal-boll types

Paymaster 54
Deltapine types
Dunn No. 7
Empire types
Northern Star
Lankart

AREA 9

Acala 1517C
Texacala
Deltapine types
Delfos 9169
Empire types
Stoneville types
Pima S-1
Pima 32

AREA 10

Acala 1517C
Mesilla Valley Acala
Pima S-1
Pima 32

IMPORTANCE OF QUALITY

During the past 10 years, fiber and spinning tests were made on several of the leading varieties at a number of the test locations. The results appear in various publications of the Cotton Branch, Agricultural Marketing Service, U. S. Department of Agriculture; Texas Agricultural Experiment Station Bulletin 624; and reports from the Cotton Research Committee of Texas. A publication by the Field Crops Research Branch, Agricultural Research Service, U. S. Department of Agriculture, entitled, "Better Cottons" gives an excellent discussion on the fiber and spinning properties of cotton varieties when grown at different locations and in different years.

The following statement quoted from the foreword to "Better Cottons" summarizes the values of variety (genetic constitution) in the determination of fiber quality: "There is evidence to show that the variety which makes the strongest yarn when grown in one soil and climate will also make the strongest yarn when grown at other locations. The studies indicate further that, although environment modifies varietal characteristics, it usually compensates the impairment of one property in a fiber by the enhancement of another. In other words, variety is the most important single factor in determining fiber properties and spinning qualities of a cotton."

In view of the increasing competition American cotton is experiencing from foreign-grown cotton and man-made fibers, careful consideration should be given to the development and production of varieties with fiber and spinning properties desired by the textile industry. A truly competitive variety not only must yield well but it must produce a type of fiber adaptable to high-speed processing and spinning and give superior performance in finished consumer products. The proper choice of varieties reduces the surpluses of certain fiber types. This is true particularly of fiber length. It is a common practice to obtain complete fiber and spinning tests on promising new cotton strains. Checking of the established varieties in commercial production also is important.

Cotton may be compared with a three-legged milk stool; two of the legs representing grade and staple, the third representing additional qualities that also are involved in spinning value. Areas that have developed a reputation for quality cottons to the extent that purchasers go regularly to that area to meet their needs, should be alert constantly to their favorable position in the market, and should not introduce varieties incapable of meeting such specifications. Every producer in such an area has a vital stake in the market.

ACKNOWLEDGMENTS

Acknowledgment is hereby made of the cooperation of the following superintendents of the substations of the Texas Agricultural Experiment Station and their co-workers, and the superintendents of the U. S. field stations and their co-workers for their participation in the statewide cotton variety testing program and for conducting the tests reported in this bulletin at their respective stations:

J. E. Roberts, Main Station Farm and Brazos River Valley Laboratory, College Station; R. A. Hall and Lucas Reyes, Substation No. 1, Beeville; P. R. Johnson, Substation No. 2, Tyler; J. C. Smith and E. R. Cozart, Substation No. 3, Angleton; R. M. Smith and E. D. Cook, Substation No. 5, Temple; D. I. Dudley and A. A. Baltensperger, Substation No. 6, Denton; C. E. Fisher and Earl Burnett, Substation No. 7, Spur; D. L. Jones and L. L. Ray, Substation No. 8, Lubbock; J. J. Bayles, Substation No. 9, Balmorhea; J. R. Quinby, Substation No. 12, Chillicothe; W. R. Cowley and J. L. Hubbard, Substation No. 15, Weslaco; L. E. Brooks, Substation No. 16, Iowa Park; P. J. Lyerly and L. S. Stith, Substation No. 17, Ysleta; J. C. Williams and O. E. Smith, Substation No. 18, Prairie View; B. A. Perry and C. S. Hoveland, Substation No. 19, Winter Haven; B. C. Langley and W. E. McCullough, Substation No. 20, Steph-

enville; F. E. Keating, Big Spring Field Station, Big Spring and D. D. Porter, U. S. Cotton Field Station, Greenville.

Outfield cooperative tests also were conducted in Fort Bend, Nueces, Zavala, Calhoun, Willacy, Hidalgo, Cameron and Hale counties in cooperation with the county agricultural agents, the Farm Bureau, and with participating farmers on whose farms the tests were grown. Grateful acknowledgment is hereby made to County Agents R. I. Worthington, Richmond; R. E. Nolan, Robstown; J. L. Adams, Crystal City; C. L. Cook, Port Lavaca; L. E. Franks, Jr., Raymondville; J. A. Oswalt, Edinburg; F. C. Brunnemann, San Benito, and O. F. Liner, Plainview, for their valued assistance in supervising the tests in their respective counties.

We also are indebted to R. L. Smith, Jr., statistical supervisor, Texas Agricultural Experiment Station, for making the statistical analyses, and to J. M. Ward, licensed cotton classer, Department of Agricultural Economics and Sociology, for classifying the samples of cotton from the variety tests.

APPENDIX

Table 6. Weslaco—summary of regional cotton variety test, 1951-53[1]

Variety	Acre yield lint, lbs.[2]			Lint	Lint	Boll
	1951	1953	Av.	%[3]	length[4]	size[5]
Deltapine 15 (Miss.)	1550	360	955	36	34	97
Empire, Watson	1591	307	949	35	33	68
Deltapine TPSA	1494	321	908	37	33	97
Delfos 9169-3292	1419	351	885	34	34	81
Northern Star	1396	355	876	36	33	73
D & P L Fox	1414	333	874	35	34	103
Stoneville 62, Watson	1394	352	873	35	33	86
Texacala 5455, Rogers	1376	360	868	36	34	86
Empire WR (Ga.)	1386	337	862	35	34	72
Lankart 57	1337	385	861	38	32	64
Coker 100 Staple	1393	309	851	34	34	86
Stoneville 2B-5235	1382	319	851	34	33	81
Coker 100 Wilt	1410	270	840	33	34	84
Mebane, Watson	1338	314	826	36	30	64
Stoneville TPSA	1387	263	825	32	34	88
Delfos 9169-3316	1298	334	816	33	34	81
Mesilla Valley Acala	1230	281	756	34	37	79
Rowden 41B TPSA	1227	254	741	34	32	73
L.S.D. value	220	62	N/S			

[1] Dry weather conditions in 1953 reduced yields below normal and also reduced the length of lint and size of boll.
[2] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[3] Expressed as percent of seed cotton that is lint.
[4] Expressed in thirty-seconds of an inch.
[5] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 7. Balmorhea—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint	Lint
	1951	1952	1953	Av.	%[2]	length[3]
DES Delfos 8274	1446	1095	667	1069	37	33
Hi-Bred	1195	1033	762	997	40	29
Acala 504, Ysleta	1396	957	622	922	35	34
Deltapine TPSA	1415	929	620	988	37	33
Delfos 9169-3292	1239	1003	714	985	35	33
Acala 1517C (N.M.)	1256	1017	624	966	35	35
Empire, Watson	1131	1103	655	963	36	32
Stormproof No. 1	1232	988	642	954	37	29
Stoneville TPSA	1289	920	590	933	35	32
Acala 4-42 (Calif.)	1159	955	677	930	35	33
Stoneville 62, Watson	1117	988	479	861	36	32
Mesilla Valley Acala	1100	837	638	858	33	37
Northern Star	1007	974	511	831	36	31
Texacala 5455, Rogers	954	834	653	814	37	32
Rowden 41B TPSA	956	798	483	746	34	32
Pima 32	596	498	344	479	29	41
Pima 3-79	515	532	201	416	30	40
L.S.D. value	330	174	102	164		

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.

Table 8. Ysleta—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint	Lint	Boll
	1951	1952	1953	Av.	%[2]	length[3]	size[4]
Acala C-1, Ysleta strain	859	1434	1218	1170	37	34	63
Acala 1517C (N.M.)	846	1434	1202	1161	38	35	60
Acala 504, Ysleta strain	965	1340	1144	1150	38	33	56
Deltapine TPSA	847	1325	976	1049	39	34	70
Mesilla Valley Acala	736	1271	898	968	36	37	60
Texacala 5455, Rogers	857	1041	941	946	39	34	65
Stoneville TPSA	798	1053	944	932	37	33	65
Acala Hopi 50	731	950	806	829	34	34	70
Rowden 41B TPSA	686	944	760	797	36	33	59
Hi-Bred	695	929	494	706	41	30	63
L.S.D. value	281	217	152	177			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 9. Winter Haven—summary of regional cotton variety test, 1953

Variety	Acre yield lint, lbs.[1]	Lint %[2]	Lint length[3]	Boll size[4]
Deltapine TPSA	1268	39	32	63
D & P L Fox	1258	38	32	62
Coker 100 Staple	1170	36	36	64
Half & Half	1170	40	28	57
Stormproof No. 1	1170	38	30	66
Stoneville 2B-B7 (Miss.)	1160	35	31	57
Arkot 2-1	1111	36	34	59
Mesilla Valley Acala	1091	36	35	51
Texacala 5455, Rogers	1091	37	34	56
Northern Star	1081	37	33	50
Delfos 9169-3292	1042	35	34	55
Acala 1517C (N.M.)	1003	36	34	50
Empire, Watson	934	36	34	47
Stoneville 62, Watson	934	37	32	62

[1] The difference in yield between any two varieties shown must equal or exceed 136 pounds to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 10. Spur—summary of regional cotton variety test, 1951[1]

Variety	Acre yield lint, lbs.	Lint %[2]	Lint length[3]
Paymaster 54	421	37	30
Hi-Bred	387	40	30
Stormproof No. 1	378	38	30
Lankart 611	377	35	33
C A 119	372	33	32
Rowden 41B TPSA	371	34	32
Stormmaster	354	33	33
Texacala 5455, Rogers	349	34	33
Macha No. 1	347	33	32
Lockett 140	345	35	31
C A 122	343	33	32
Northern Star	328	33	31
Western Stormproof	325	34	32
Deltapine TPSA	308	36	32
C A 89A	267	34	32
Empire, Watson	252	35	33
LSD value	N/S		

[1] The tests in 1952 and 1953 were failures due to drouth.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.

Table 11. Lubbock—summary of irrigated regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint	Lint	Boll
	1951	1952	1953	Av.	%[2]	length[3]	Size[4]
Dunn No. 7	584	574	619	592	39	30	76
Stormproof No. 1	444	586	466	499	39	28	80
C A 122	420	541	523	495	36	29	72
C A 89A	398	525	537	487	36	29	75
(CR-3)	448	517	474	480	40	29	75
C A 119	391	526	514	477	36	30	76
Western Stormproof	414	466	548	476	38	29	76
Lankart 611	365	508	535	469	38	30	65
Stormmaster	389	463	506	453	36	29	82
Northern Star	371	508	467	449	38	30	72
Macha Early	373	467	458	433	35	29	81
Macha No. 1	364	483	453	433	36	28	81
L.S.D. value	72	N/S	76	65			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 12. Lubbock—summary of dryland regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]			Lint %[2]	Lint length[3]	Boll Size[4]
	1951	1952	Av.			
Native Mebane 48	228	151	190	41	28	89
Empire, Watson	160	190	175	40	31	71
D & P L Fox	165	174	170	38	31	89
Deltapine TPSA	177	158	168	40	32	88
Dunn No. 7	171	151	161	41	29	80
Lankart 611	170	143	157	39	29	69
C A 119	156	152	154	37	29	88
C A 122	180	126	153	39	31	82
Stormproof No. 1	160	143	152	39	29	89
Northern Star	143	157	150	38	31	90
Lockett 140	187	112	150	39	29	83
Macha No. 1	175	121	148	38	29	84
Paymaster 54	152	144	148	40	29	90
Stoneville 62-84	133	160	147	39	30	87
Hi-Bred	144	143	144	41	28	83
Texacala 5455, Rogers	160	125	143	37	31	84
Western Stormproof	156	129	143	39	31	83
Stormmaster	125	154	140	37	30	92
Rowden 41B TPSA	112	153	133	36	31	75
C A 89A	139	127	133	37	29	91
Macha Early	130	128	129	37	29	89
L.S.D. value	31	34	N/S			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 13. Lubbock - Plainview test — summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint %[2]	Lint length[3]	Boll Size[4]
	1951	1952	1953	Av.			
Paymaster 54	818	582	680	693	39	30	66
Hi-Bred	589	546	666	600	41	29	69
Empire, Watson	548	528	566	547	36	32	59
Deltapine TPSA	617	391	603	537	36	33	85
Texacala 5455, Rogers	539	465	528	511	37	32	70
Macha No. 1	462	453	605	507	37	30	74
C A 89A	467	476	535	493	36	31	74
Stormmaster	510	519	441	490	37	31	72
Western Stormproof	499	428	534	487	38	31	72
C A 119	415	473	555	481	37	32	74
C A 122	377	446	577	467	36	31	75
Stormproof No. 1	459	434	466	453	37	31	75
Northern Star	509	388	452	450	37	32	64
Lankart 611	358	376	615	450	36	32	54
Lockett 140	431	256	559	415	38	30	70
Rowden 41B TPSA	467	246	429	381	35	32	67
L.S.D. value	*68*	*79*	*56*	*118*			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 14. Iowa Park—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint %[2]	Lint length[3]	Boll Size[4]
	1951	1952	1953	Av.			
Paymaster 54	381	516	408	435	38	31	78
Hi-Bred	361	461	417	413	40	29	81
Deltapine TPSA	312	396	466	391	37	31	92
Stormproof No. 1	278	341	476	365	37	29	84
Texacala 5455, Rogers	336	356	401	364	37	32	78
Empire, Watson	321	314	441	359	36	31	76
Northern Star	273	370	361	335	36	31	76
Lockett 140	276	290	427	331	38	29	81
C A 89A	245	300	416	320	36	31	80
C A 122	203	280	358	280	36	31	79
Rowden 41B TPSA	215	279	324	273	35	31	78
L.S.D. value	34	46	90	75			

The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
Expressed as percent of seed cotton that is lint.
Expressed in thirty-seconds of an inch.
Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 15. Chillicothe—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint %[2]	Lint length[3]	Boll Size[4]
	1951	1952	1953	Av.			
Stormproof No. 1	222	109	415	249	36	29	96
Lockett 140	221	137	377	245	37	29	94
Northern Star	214	118	344	225	35	31	91
Western Stormproof	221	106	347	225	37	30	84
Deltapine TPSA	221	127	316	221	38	32	98
C A 89A	181	127	339	216	35	31	89
C A 122	205	114	314	211	35	30	93
Texacala 5455, Rogers	168	122	330	207	36	32	95
Stormmaster	168	100	323	197	34	29	100
Paymaster 54	168	105	297	190	35	29	88
Hi-Bred	152	96	313	187	38	26	96
Macha No. 1	155	77	324	185	33	29	102
C A 119	170	77	306	184	35	31	97
Empire, Watson	176	81	282	180	33	32	79
Lankart 611	147	98	276	174	36	31	83
Rowden 41B TPSA	157	89	271	172	33	30	88
L.S.D. value	26	23	56	32			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 16. Big Spring—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]			Lint %[2]	Lint length[3]	Boll Size[4]
	1951	1952	Av.			
Paymaster 54	102	149	126	37	29	95
Deltapine TPSA	99	141	120	36	31	107
Hi-Bred	111	100	106	39	28	102
Stormproof No. 1	99	104	102	37	28	94
Western Stormproof	113	88	101	38	30	103
C A 119	103	96	100	34	31	98
Lockett 140	87	108	98	36	29	90
C A 89A	91	105	98	34	31	103
Empire, Watson	86	99	93	34	31	87
Stormmaster	107	78	93	36	31	98
Northern Star	100	83	92	35	32	92
Texacala 5455, Rogers	91	86	89	35	33	102
C A 122	98	74	86	35	30	94
Lankart 611	82	70	76	35	31	80
Macha No. 1	90	58	74	33	30	109
Rowden 41B TPSA	73	46	60	32	30	98
L.S.D. value	18	39	N/S			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] *Expressed as percent of seed cotton that is lint.*
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 17. Brazos River Valley Laboratory, College Station—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint %[2]	Lint length[3]	Boll Size[4]
	1951	1952	1953	Av.			
Deltapine TPSA	135	406	1011	517	38	31	96
Stormproof No. 1	140	421	976	512	37	29	93
Deltapine 15 (Miss.)	133	356	1014	501	38	31	102
Stoneville 2B-B7 (Miss.)	165	381	919	488	34	31	93
Lockett 140	164	324	954	481	38	29	94
Texacala 5455, Rogers	124	352	946	474	37	31	94
Hi-Bred	134	349	937	473	39	28	87
D & P L Fox	132	460	811	468	38	32	107
Mebane 8G, Floyd	137	252	1016	468	37	30	81
Lankart 611	124	242	1033	466	38	31	69
Arkot 2-1	118	339	924	460	34	30	95
Northern Star	122	359	885	455	36	30	81
Empire, Watson	146	386	829	454	36	32	76
Delfos 9169-3292	153	369	730	417	34	33	84
Rowden 41B TPSA	136	214	830	393	34	29	85
Coker 100 Wilt	94	308	739	380	35	31	99
L.S.D. value	32	77	144	N/S			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 18. Main Station Farm, College Station—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint % [2]	Lint length [3]	Boll Size [4]
	1951	1952	1953	Av.			
Delfos 9169-3292	146	188	333	222	34	30	95
Hi-Bred	160	146	358	221	39	26	102
Lockett 140	144	162	320	209	37	28	93
Stoneville 2B-B7 (Miss.)	148	183	292	208	35	30	104
Stormproof No. 1	125	146	350	207	36	28	104
Mebane 8G, Floyd	130	101	382	204	36	29	83
Deltapine TPSA	140	139	332	204	37	30	119
Empire, Watson	151	156	302	203	35	30	85
Arkot 2-1	128	161	317	202	34	29	101
D & P L Fox	130	163	312	202	38	30	114
Deltapine 15 (Miss.)	126	137	339	201	38	31	121
Lankart 611	104	147	342	198	37	30	75
Rowden 41B TPSA	115	120	350	195	34	30	88
Northern Star	120	143	320	194	36	30	90
Coker 100 Wilt	129	136	312	192	35	30	106
Texacala 5455, Rogers	122	121	294	179	36	31	105
L.S.D. value	29	37	47	N/S			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 19. Beeville—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint % [2]	Lint length [3]	Boll Size [4]
	1951	1952	1953	Av.			
Empire, Watson	312	322	217	284	38	32	88
D & P L Fox	287	304	245	279	38	32	104
Stormproof No. 1	299	306	216	274	38	29	100
Arkot 2-1	300	305	196	267	35	32	88
Stoneville 2B-B7 (Miss.)	283	283	203	256	36	31	95
Northern Star	277	289	203	256	38	31	86
Deltapine TPSA	292	247	216	252	38	31	105
Delfos 9169-3292	279	267	192	246	35	32	93
Lankart 611	280	263	188	244	38	31	76
Hi-Bred	285	253	178	239	40	27	92
Lockett 140	281	219	207	236	38	29	96
Deltapine 15 (Miss.)	268	265	169	234	39	32	94
Texacala 5455, Rogers	252	263	159	225	39	32	98
Mebane 8G, Floyd	251	227	173	217	37	30	82
Coker 100 Wilt	242	225	170	212	35	32	100
Rowden 41B TPSA	222	222	161	202	35	30	92
L.S.D. value	48	41	23	27			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 20. Tyler—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint % [2]	Lint length [3]	Boll Size [4]
	1951	1952	1953	Av.			
Hi-Bred	224	363	436	341	39	28	64
D & P L Fox	199	336	475	337	35	32	81
Stoneville 62, Watson	205	296	461	321	35	32	71
Empire WR (Ga.)	187	345	429	320	35	34	62
C S S 9 (Plains)	207	339	339	295	35	32	69
Empire, Watson	197	296	380	291	35	32	63
Arkot 2-1	172	287	381	280	32	32	71
Hybrid 56 (Auburn)	192	302	335	276	33	32	69
Lankart 611	174	272	370	272	36	31	59
Stoneville 2B-B7 (Miss.)	208	328	276	271	34	32	68
Texacala 5455, Rogers	192	348	251	264	36	32	67
Northern Star	190	272	327	263	35	32	63
Lockett 140	197	325	265	262	38	29	65
Stoneville TPSA	161	314	294	256	34	32	78
Deltapine 15 (Miss.)	172	258	326	252	38	32	80
Deltapine TPSA	197	283	264	248	36	32	81
Coker 100 Wilt	190	264	286	247	34	33	68
Mebane 8G, Floyd	178	283	274	245	35	32	53
Stormproof No. 1	173	255	240	223	36	30	75
Delfos 9169-3292	146	247	267	220	34	34	70
Rowden 41B TPSA	139	245	240	208	34	31	57
L.S.D. value	51	46	79	66			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 21. Angleton—summary of regional cotton variety test, 1951-53[1]

Variety	Acre yield lint, lbs.[2]				Lint % [3]	Lint length [4]	Boll size [5]
	1951	1952	1953	Av.			
Deltapine TPSA	466	324	708	499	37	33	85
Hi-Bred	345	359	664	456	40	27	71
Stormproof No. 1	286	299	782	456	41	30	91
Delfos 9169-3292	384	329	651	455	35	34	72
D & P L Fox	355	263	674	431	36	32	87
Texacala 5455, Rogers	392	266	620	426	38	33	77
Lockett 140	360	215	688	421	38	30	76
Deltapine 15 (Miss.)	287	237	678	401	39	32	84
Empire, Watson	371	340	462	391	36	33	68
Stoneville 2B-B7 (Miss.)	232	304	592	376	36	33	75
Coker 100 Wilt	225	295	564	361	33	34	80
Northern Star	313	243	509	355	36	32	67
Arkot 2-1	235	272	494	334	33	33	73
Rowden 41B TPSA	234	210	506	317	35	32	67
Mebane 8G, Floyd	210	190	538	313	36	32	60
Lankart 611	226	258	320	268	36	33	65
L.S.D. value	111	86	89	108			

[1] The test was grown in Wharton county in 1951, on the Angleton station in 1952, and in Fort Bend county in 1953.
[2] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[3] Expressed as percent of seed cotton that is lint.
[4] Expressed in thirty-seconds of an inch.
[5] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 22. Temple—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint % [2]	Lint length [3]	Boll Size [4]
	1951	1952	1953	Av.			
D & P L Fox	272	357	452	360	37	31	118
Stormproof No. 1	247	344	475	355	37	29	115
Stoneville 2B-B7 (Miss.)	289	355	417	354	35	31	103
Empire, Watson	335	343	376	351	36	31	88
Deltapine TPSA	238	352	454	348	38	31	115
Deltapine 15 (Miss.)	249	341	424	338	39	32	122
Coker 100 Wilt	250	311	408	323	34	32	112
Mebane 8G, Floyd	261	286	422	323	38	29	86
Hi-Bred	209	334	423	322	39	28	114
Texacala 5455, Rogers	249	289	426	321	38	31	110
Delfos 9169-3292	305	243	411	320	35	31	103
Northern Star	238	327	392	319	37	31	93
Arkot 2-1	208	355	374	312	34	31	104
Lockett 140	249	248	416	304	38	29	97
Lankart 611	228	303	366	299	38	30	80
Rowden 41B TPSA	199	275	373	282	35	31	89
L.S.D. value	39	34	46	N/S			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 23. Denton—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint % [2]	Lint length [3]	Boll Size [4]
	1951	1952	1953	Av.			
Stormproof No. 1	236	282	638	385	37	28	100
Lockett 140	267	201	687	385	38	28	90
Stoneville 2B-B7 (Miss.)	244	310	599	384	35	30	90
Deltapine 15 (Miss.)	240	283	627	383	39	30	111
D & P L Fox	249	302	560	370	35	32	110
Delfos 9169-3292	233	297	576	369	34	31	93
Texacala 5455, Rogers	240	260	601	367	38	30	95
Deltapine TPSA	232	286	581	366	37	30	110
Mebane 8G, Floyd	251	260	576	362	36	30	76
Arkot 2-1	257	254	559	357	33	29	91
Northern Star	229	292	545	355	37	30	86
Empire, Watson	236	281	544	354	35	30	82
Lankart 611	206	267	542	338	37	30	75
Hi-Bred	192	268	534	331	38	27	89
Coker 100 Wilt	177	249	527	318	32	31	100
Rowden 41B TPSA	191	249	465	302	34	29	80
L.S.D. value	35	44	54	N/S			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 24. Prairie View—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint %[2]	Lint length[3]	Boll Size[4]
	1951	1952	1953	Av.			
D & P L Fox	433	648	825	635	40	31	92
Empire, Watson	359	522	664	515	37	31	72
Stoneville 2B-B7 (Miss.)	382	495	646	508	36	30	79
Hi-Bred	300	541	668	503	41	28	68
Coker 100 Wilt	316	504	679	500	35	31	86
Deltapine 15 (Miss.)	380	467	646	498	40	31	89
Delfos 9169-3292	300	540	604	481	35	32	77
Stormproof No. 1	336	463	644	481	38	29	78
Lockett 140	285	553	600	479	39	29	76
Deltapine TPSA	321	470	633	475	39	31	82
Lankart 611	339	497	549	462	37	33	62
Arkot 2-1	310	448	604	454	34	32	80
Texacala 5455, Rogers	306	509	529	448	38	31	79
Northern Star	317	445	582	448	37	30	71
Mebane 8G, Floyd	277	410	542	410	38	31	62
Rowden 41B TPSA	269	258	507	345	35	30	69
L.S.D. value	50	69	80	71			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 25. Stephenville—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]			Lint %[2]	Lint length[3]	Boll Size[4]
	1951	1952	Av.			
Arkot 2-1	101	258	180	35	30	115
Hi-Bred	124	230	177	40	28	122
Deltapine TPSA	123	221	172	38	30	131
D & P L Fox	126	216	171	38	31	121
Texacala 5455, Rogers	111	192	152	37	30	116
Deltapine 15 (Miss.)	105	192	149	39	30	133
Lockett 140	123	174	149	37	28	119
Northern Star	98	200	149	36	32	97
Lankart 611	106	181	144	38	30	92
Mebane 8G, Floyd	108	180	144	38	28	85
Delfos 9169-3292	118	167	143	36	32	109
Empire, Watson	97	187	142	36	29	102
Coker 100 Wilt	101	171	136	35	32	117
Stoneville 2B-B7 (Miss.)	96	169	133	35	30	107
Stormproof No. 1	100	151	126	37	28	121
Rowden 41B TPSA	81	110	96	34	31	97
L.S.D. value	32	41	N/S			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 26. Greenville—summary of regional cotton variety test, 1951-53

Variety	Acre yield lint, lbs.[1]				Lint %[2]	Lint length[3]	Boll Size[4]
	1951	1952	1953	Av.			
Hi-Bred	256	398	685	446	40	28	90
D & P L Fox	338	316	675	443	37	32	102
Deltapine 15 (Miss.)	272	327	693	431	39	32	101
Northern Star	290	317	654	420	37	32	79
Lockett 140	280	325	646	417	39	28	88
Texacala 5455, Rogers	213	378	603	398	38	32	90
Deltapine TPSA	232	300	654	395	38	33	100
Stormproof No. 1	226	375	575	392	37	29	95
Empire, Watson	286	298	563	382	35	32	76
Delfos 9169-3292	300	334	513	382	35	33	87
Mebane 8G, Floyd	212	361	566	380	36	31	74
Arkot 2-1	240	395	496	377	34	33	90
Lankart 611	203	336	579	373	38	32	72
Stoneville 2B-B7 (Miss.)	232	314	543	363	35	31	86
Rowden 41B TPSA	213	354	453	340	35	31	79
Coker 100 Wilt	187	320	505	337	34	33	92
L.S.D. value	48	47	126	N/S			

[1] The difference in yield between any two varieties must equal or exceed the L.S.D. value shown to give odds of 19 to 1 that such a difference is real and not due to chance.
[2] Expressed as percent of seed cotton that is lint.
[3] Expressed in thirty-seconds of an inch.
[4] Expressed as the number of bolls required to produce 1 pound of seed cotton.

Table 27. Sources of seed of cotton varieties tested, 1951-53

Variety	Source of Seed
Acala 1517C (N.M.)	New Mexico Crop Imp. Assn., State Col., N.M.
Acala 4-42 (Calif.)	U. S. Cotton Field Station, Shafter, Calif.
Acala 504, Ysleta strain	El Paso Valley Expt. Station, Ysleta, Texas
Acala Hopi 50	U. S. Cotton Field Station, Shafter, Calif.
Acala C-1, Ysleta strain	El Paso Valley Expt. Station, Ysleta, Texas
Arkot 2-1	Cotton Branch Expt. Station, Marianna, Ark.
C A 89A	Texas Substation No. 8, Lubbock, Texas
C A 119	Texas Substation No. 8, Lubbock, Texas
C A 122	Texas Substation No. 8, Lubbock, Texas
Coker 100 Wilt	Coker's Pedigreed Seed Co., Hartsville, S. C.
Coker 100 Staple	Coker's Pedigreed Seed Co., Hartsville, S. C.
CR-3	Agri. Expt. Station, Stillwater, Okla.
CSS 9 (Plains)	Agri. Expt. Station, Auburn, Ala.
Deltapine TPSA	Texas Planting Seed Assn., Bryan, Texas
Deltapine 15 (Miss.)	Delta & Pine Land Co., Scott, Miss.
D & P L Fox	Delta & Pine Land Co., Scott, Miss.
Delfos 9169-3292 & 3316	Stoneville Pedigreed Seed Co., Stoneville, Miss.
DES Delfos 8274	Delta Branch Expt. Station, Stoneville, Miss.
Dunn No. 7	James T. Dunn, Lamesa, Texas
Empire, Watson	Ferris Watson Seed Co., Garland, Texas
Empire WR (Ga.)	Empire Pedigreed Seed Co., Haralson, Ga.
Half & Half	Sawnee Valley Farms, Cummings, Ga.
Hi-Bred	B. F. Summerour Seed Co., Norcross, Ga.
Hybrid 56 (Auburn)	Agri. Expt. Station, Auburn, Ala.
Lankart 57	Lankart Seed Farm, Waco, Texas
Lankart 611	Lankart Seed Farm, Waco, Texas
Lockett 140	Lockett Seed Co., Vernon, Texas
Macha No. 1	H. A. Macha, Tahoka, Texas
Macha Early	H. A. Macha, Tahoka, Texas
Mebane, Watson	Ferris Watson Seed Co., Garland, Texas
Mebane 8G, Floyd	Harper Seed Farms, Martindale, Texas
Mesilla Valley Acala	Dean L. Stahmann, Las Cruces, N. M.
Native Mebane 48	Sam Little & Son, Knott, Texas
Northern Star	Northern Star Seed Farms, O'Brien, Texas
Paymaster 54	Paymaster Farm, Plainview, Texas
Pima 32	U. S. Cotton Field Station, Sacaton, Ariz.
Pima 3-79	U. S. Cotton Field Station, Sacaton, Ariz.
Rowden 41B TPSA	Texas Planting Seed Assn., Bryan, Texas
Stoneville TPSA	Texas Planting Seed Assn., Bryan, Texas
Stoneville 2B-B7 (Miss.)	Stoneville Pedigreed Seed Co., Stoneville, Miss.
Stoneville 2B-5235	Stoneville Pedigreed Seed Co., Stoneville, Miss.
Stoneville 62-84	Agri. Expt. Station, Stillwater, Okla.
Stoneville 62, Watson	Ferris Watson Seed Co., Garland, Texas
Stormmaster	Texas Substation No. 8, Lubbock, Texas
Stormproof No. 1	Lockett Seed Co., Vernon, Texas
Texacala 5455, Rogers	John D. Rogers Seed Co., Ltd., Navasota, Tex.
Western Stormproof	Von Roeder Seed Farms, Snyder, Texas