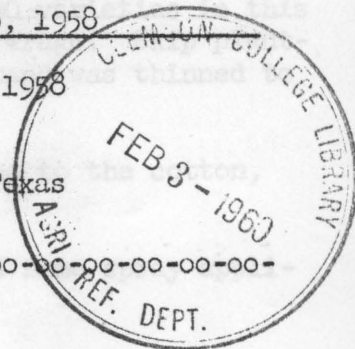


COTTON VARIETY TRIALS IN THE LOWER RIO GRANDE VALLEY, 1958

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SUMMARY

Irrigated cotton variety tests were planted in 1958 on the Lower Rio Grande Valley Experiment Station, at Rio Grande City and south of La Feria. The Rio Grande City test was not harvested because of cotton root rot. Deltapine 33 and Rex, two new varieties, were the highest yielding entries in the station test, but were not significantly better than five other varieties.

Stardel produced 1,173 pounds of lint per acre in the La Feria test, and has been the top yielding variety in this test for 2 years.

East of Lyford, in a dryland test, Deltapine Smooth Leaf, Stoneville 7 and Stardel produced more than 600 pounds of lint per acre.

Introduction

Irrigated cotton variety tests were planted in 1958 on the Lower Rio Grande Valley Experiment Station near Weslaco, the Carl Bauer farm south of La Feria and the Boone La Grange farm at Rio Grande City. A dryland test was planted on the Bridwell farm east of Lyford. The Rio Grande City test was abandoned because of heavy cotton root rot damage. Results of the other tests are given in this report.

Deltapine 33 and Rex were included in the main regional test on the station for the first time and in yield ranked first and second, respectively. Both of these varieties originated in Arkansas. Deltapine 33 was bred and produced by Hale Seed Farm and Rex was bred by the U. S. Department of Agriculture in cooperation with the Arkansas Agricultural Experiment Station.

Rex also was included in the dryland test east of Lyford and ranked fifth in yield at that location.

Main Regional Variety Test

Since 1955, half of the main regional test has been planted on February 15 and half on March 15. Unfavorable weather conditions during the spring of 1958 did not permit planting on these dates. It was necessary to replant the February part of the test on March 19. Another planting was made on March 29, but could not be harvested for experimental data because of poor stands.

A good growth of fall oats was shredded and plowed under with 40 pounds of nitrogen per acre on the experimental site in early January. The land was bedded in late January and a 60-80-0 fertilizer application was placed in a vertical band 4 to 12 inches below the middle before the land was rebedded. No preplanting irrigation was necessary because of spring rains.

Conventional planting equipment was used to plant the 20 varieties in this test. Emergence was slow because soil temperatures were below average. Skip planting was necessary in all plots to obtain a uniform stand. The stand was thinned to a 6-inch spacing.

At squaring time, 50 pounds of nitrogen were sidedressed to the cotton, bringing the total seasonal fertilizer application to 110-80-0.

Insect infestations were systematically determined and nine spray applications of insecticides were necessary for effective control.

The January-through-June effective rainfall, in inches, was: January - 5.52; February - 2.97; March - .68; May - .56; and June - 4.09. Effective rainfall after the cotton was planted amounted to 4.65 inches with most of it falling on June 27. The cotton was irrigated on May 16 and June 12.

La Feria Test

The 1958 season completed the second year a variety test had been conducted on the Carl Bauer farm south of La Feria. This test site was deep chiseled, fertilized with 90 pounds of phosphoric acid, bedded and irrigated prior to planting the test on March 28. Since no thinning was done, the stand count was approximately 70,000 plants to the acre. The cotton in this test was sidedressed with 60 pounds of nitrogen at squaring time. Insects were controlled effectively with nine insecticide applications. After a pre-planting irrigation in February, the test received two additional irrigations during the growing season.

Lyford Test

Twenty varieties were planted on March 21 on the Bridwell dryland farm east of Lyford. The cotton in this test was not thinned, resulting in a stand of approximately one plant every 3 inches. This gave a plant population of approximately 52,000 plants per acre. Cotton fleahoppers and cabbage loopers were the main insect pests during the season, and were controlled with two spray and three dust insecticide applications.

Results

The main regional cotton variety test is summarized in Table 1. Varieties are listed in order of yield. The highest yielding variety, Deltapine 33, produced 1,242 pounds of lint per acre, but was not significantly better than six other varieties. Rex, another new variety in this test, was second in total yield with 1,166 pounds of lint per acre.

Table 2 gives the yield of main regional varieties for a 3-year period. Only varieties that have been tested more than 1 year are included in this table.

Fifteen varieties were tested on the Carl Bauer farm south of La Feria. Results are summarized in Table 3. Stardel has yielded highest in this test for 2 years. In 1958, it produced 1,173 pounds of lint per acre, but was not significantly better than Deltapine Smooth Leaf and Deltapine STPSA.

Table 1. Summary of the irrigated main regional cotton variety test on the Lower Rio Grande Valley Experiment Station, 1958, Willacy loam soil

Variety	Acre yield lint, pounds	Staple length in 32nd inch	Lint percent	Percent first picking	Boll size ^{1/}
Deltapine 33	1242	35	38.4	57	77
Rex	1166	34	36.7	61	72
Stoneville 3202	1153	34	35.6	66	76
Delfos 9169 (1958)	1130	36	33.6	57	67
Stardel	1121	34	35.4	52	80
Plains	1106	35	34.6	54	70
Deltapine Smooth Leaf	1087	34	38.1	53	74
Stoneville 7	1070	34	36.5	57	85
Tideland, TPFA No. 1	1068	33	35.5	49	81
Dixie King	1049	34	34.1	59	67
Deltapine 15	1045	34	37.8	53	75
Coker 124	1039	34	34.4	49	75
Deltapine TPFA	1023	35	35.3	47	85
Deltapine STPFA	1013	33	35.6	48	74
Texacala 5455	987	34	35.4	59	68
Coker 100A	979	35	34.1	44	75
Brazos	964	34	35.7	54	75
Deltapine Staple	957	35	38.0	46	83
Empire WR	929	34	33.3	55	61
Watson Empire	917	33	33.1	54	62
L.S.D. .05	156				
L.S.D. .01	207				

^{1/} Number of bolls of seed cotton required to weigh 1 pound.

Table 2. Yield of irrigated cotton varieties on the Lower Rio Grande Valley Experiment Station, 1956-58, Willacy loam soil

Variety	Pounds of lint per acre			Comparable yield ^{1/}
	1956	1957	1958	
Stoneville 7	1407	1022	1070	1166
Stardel		891	1121	1148
Stoneville 3202	1394	873	1153	1140
Deltapine Smooth Leaf		834	1087	1102
Plains	1393	806	1106	1101
Delfos 9169 (1958)	1357	807	1130	1098
Deltapine TPFA	1379	863	1023	1088
Dixie King	1324	834	1049	1069
Coker 100A	1443	782	975	1068
Coker 124	1327	826	1039	1064
Tideland, TPFA No. 1		776	1068	1064
Deltapine STPFA	1357	802	1013	1057
Deltapine 15	1360	767	1045	1057
Empire WR		808	929	1010

^{1/} Comparable yields are calculated to eliminate differences due to seasonal effects.

^{1/} Number of bolls of seed cotton required to weigh 1 pound.

Table 3. Summary of the irrigated cotton variety test at La Feria, Carl Bauer farm, 1958, Harlingen clay soil

Variety	Acre yield		Lint percent	Boll size ^{1/}
	lint, pounds	Staple length in 32nd inch		
Stardel	1173	34	38.8	69
Deltapine Smooth Leaf	1147	34	40.3	85
Deltapine STPSA	1107	34	39.7	80
Stoneville 3202	1089	34	38.5	83
Stoneville 7	1071	33	38.2	90
Coker 124	1051	33	37.5	77
Deltapine TPSA	1049	33	37.7	84
Deltapine 15	1033	35	39.5	93
Coker 100A	1028	34	36.1	90
Delfos 9169 (1958)	1020	36	36.6	78
Tideland, TPSA No. 1	1013	33	39.4	92
Brazos	984	35	38.6	82
Empire WR	975	32	38.5	68
Watson Empire	974	33	36.8	68
Texacala 5455	899	35	37.9	74
L.S.D. .05	78			
L.S.D. .01	104			

^{1/} Number of bolls of seed cotton required to weigh 1 pound.

Table 4. Summary of the dryland cotton variety test, Bridwell farm, east of Lyford, 1958

Variety	Acre yield		Lint percent	Percent first picking	Boll size ^{1/}
	lint, pounds	Staple length in 32nd inch			
Deltapine Smooth Leaf	622	34	37.0	46	85
Stoneville 7	615	33	36.5	40	95
Stardel	613	34	35.1	51	96
Coker 100A	599	34	35.7	42	90
Rex	596	35	34.6	52	80
Deltapine TPSA	584	34	35.6	41	86
Dixie King	578	34	33.9	53	69
Coker 124	570	34	35.1	40	86
Delfos 9169 (1958)	561	35	32.9	44	81
Blightmaster	555	34	36.7	43	87
Northern Star	554	33	35.0	52	75
CALL9	552	32	34.6	41	89
Deltapine STPSA	551	34	34.9	40	90
Lankart Selection 611	550	33	36.1	52	73
Stormking, TPSA No. 1	539	32	39.0	48	65
Paymaster 54B	506	31	34.9	56	75
Lankart Sel. 57-83	502	33	38.2	49	59
Texacala, Rogers	501	36	34.0	43	78
Empire WR	458	34	33.9	56	71
Watson Mebane	384	32	35.3	33	68
L.S.D. .05	84				
L.S.D. .01	110				

^{1/} Number of bolls of seed cotton required to weigh 1 pound.

In the dryland test on the Bridwell farm east of Lyford, three varieties produced more than 600 pounds of lint per acre and all but two produced more than 1 bale to the acre. Deltapine Smooth Leaf, Stoneville 7 and Stardel produced 622, 615 and 613 pounds of lint per acre, respectively.

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