NOVEMBER 1960

Corn Hybrids for Texas

THE AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS
TEXAS AGRICULTURAL EXPERIMENT STATION
R. D. LEWIS, DIRECTOR, COLLEGE STATION, TEXAS

SUMMARY

Corn hybrids were planted on 85 percent of the Texas corn acreage in 1959. Most of this acre was devoted to hybrids developed and released by the Texas Agricultural Experiment Station.

The total corn acreage is declining with approximately 1,600,000 acres planted in 1959. Howe the average yield per acre is increasing. In 1959 the average yield per acre was 28.0 bushels per a which is the highest on record.

Cultural and management practices which supply the high moisture and fertility requirements of are essential for good production. General recommendations for these important practices are summa in Table 1. Adherence to these recommended practices by corn growers throughout the State should re in a considerable increase in the average yield per acre.

Corn performance tests are conducted throughout the corn-growing region of Texas each yea provide growers with information to be used as a basis for selecting the hybrids best suited to the va soil and climatic conditions of Texas. This bulletin contains information on hybrid and variety perform for the 3-year period, 1957-59, at 22 locations over the State. The corn performance tests are reported land resource areas. These areas, with the test locations in each, are shown in Figure 1.

Information on yield and other characteristics of the hybrids and varieties is presented in tabular fo as 3-year averages for each location and each area.

Texas 30 was the highest yielding hybrid for the 3-year testing period.

Considering yield and other desirable characteristics, five yellow hybrids and three white hybrids a recommended for corn production in Texas. A brief description is given of these hybrids with their a of adaptation.

TABLE 1. GENERAL RECOMMENDATIONS BY SOIL AREAS FOR CORN PRODUCTION IN TEXAS

Land resource areas	Planting dates	Plants per acre	Spacing inches in row	Fertilizer at planting time[1]	Side-dressing of nitrogen[2]	Hybrids
East Texas Timberlands	Mar. 5-30	8,000-12,000	12-18			Texas 30, 28, 34, 36
Loams and sandy loams				30-60-30	40	Texas 17W, Asgrow 101W
Sandy soils				30-60-60	40	
Coast Prairie	Mar. 15-	8,000-15,000	9-18			Texas 34, 30
Blackland	Apr. 15			70-40-0		Asgrow 101W, Texas 17W
Loams and sandy loams				80-40-40		
Blackland Prairies	Mar. 1-20	8,000-12,000	12-18			Texas 30, 28, Asgrow 104, Texas 36
Blackland				30-30-0		Texas 17W, Asgrow 101W
Mixed land				30-60-0		
Grand Prairie	Mar. 1-20	6,500[3]	24			Texas 28, 30, 36, Asgrow 104
Blackland				30-30-0		Texas 17W
Mixed land				30-60-0		
West Cross Timbers	Mar. 15-30	6,500[3]	24	30-30-30		Texas 28, 36, 30, Texas 17W, Asgrow 10
Rio Grande Plain	Feb. 15-	6,500[3]	24			Texas 28, 36, 30
Blackland	Mar. 1			30-15-0		
Sands and sandy loams				30-30-0		Texas 17W
Lower Rio Grande Valley						Texas 30, 34, 36, 28, Dixie 82
and Winter Garden Dist.	Feb. 1-	13,000-16,000	9-12			Asgrow 101W, 105W, Texas 17W
(under irrigation)	Mar. 1					
Clays and loams				40-0-0	60	
Sands and sandy loams				60-0-0	60	
Rolling Plains	Mar. 25-	6,500[3]	24			Texas 28, 36, 30
Clay loams	Apr. 10				30	Texas 17W, Asgrow 105W
Sands and sandy loams				20-40-0	30	
High Plains (irrigated)	Apr. 10-	9,000-15,000	9-18			Texas 30, 28, 36
Clay loams	May 1			90-0-0		Asgrow 101W, Texas 17W
Sandy loams				90-30-0		
Sands				30-60-30	60	

[1]Shown as pounds per acre of nitrogen (N), phosphoric acid (P_2O_5) and potash (K_2O), respectively.
[2]Shown as pounds per acre of nitrogen (N).
[3]Sorghum has a better yield potential in most years.

Corn Hybrids for Texas

*A. J. Bockholt and J. W. Collier**

RN HYBRIDS are becoming increasingly more important in Texas corn production. Approxiely 85 percent of the 1959 corn acreage was nted to hybrids. Most of this acreage was nted to corn hybrids developed by the Texas ricultural Experiment Station.

Corn hybrid acreages, total corn acreages and rage yields per acre from 1941 through 1959 shown in Table 2. The ability of the hybrids crease corn production in Texas is evidenced the increase in the average yield per acre for period 1957-59. The 1959 statewide average d of 28 bushels per acre is the highest on ord.

There has been a marked decline in total acreage in Texas in the last two decades as sult of the expanded sorghum acreages. This nd, as well as the corn hybrid acreage and rage per-acre yield during 1940-59, is shown Figure 2. During this period, the annual harsted corn acreage dropped from slightly less n 5,000,000 to a low of less than 1,600,000 1959.

Corn grows rapidly and uses a large amount water and plant nutrients from the soil in a rt time. During its period of rapid growth, rn requires more water per acre than any other ld crop. The high requirements for water and nt food elements by corn is because of the rge amount of plant material per acre that corn oduces. For good corn production, cultural d management practices that will supply these gh requirements should be followed. Wider use these practices and the planting of adapted brids should help to increase corn yields in xas.

General recommendations by soil areas for rn production in Texas are given in Table 1. e individual farmer should adjust these recomndations to fit his particular situation.

PERFORMANCE TESTS

Corn performance tests are conducted each ar at a number of locations in the State to termine which hybrids should be recommended a particular area. This testing program also fords an opportunity for comparing new hybrid mbinations with those now grown throughout e State. New hybrids are released after results om the tests have indicated they are superior to esent hybrids.

*Respectively, instructor and associate agronomist, Department of Agronomy.

Yields based on results of 3 or more years' tests are considerably more reliable than those for 1 year, and furnish satisfactory information on which to predict future performance of a hybrid. In addition to yield, information is obtained on such factors as root and stalk lodging, resistance to disease and insects, maturity, prolificacy and shelling percentage.

This bulletin contains information on the performance of hybrids for the 3-year period, 1957-59, at 22 locations throughout the State. Information on the 3-year performance of hybrids before 1957 may be obtained from Bulletin 878.

Description of Tests

The corn performance tests are reported by land resource areas. These areas, with the test locations in each, are shown in Figure 1. A land resource area is a division of the State composed of broad areas of related soils. Climatic and growing conditions within an area are relatively similar. Exceptions are the northern and southern Blackland Prairies and the two test locations in the Rio Grande Plain where considerable differences in seasonal temperatures exist. Data from these areas are reported separately in Tables 7, 8 and 10. The division of the State into these

CONTENTS

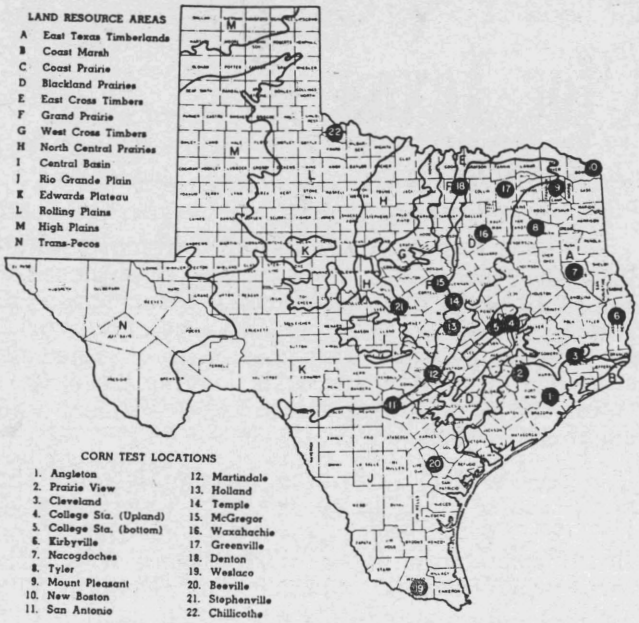

Figure 1. Land resource areas and corn test locations.

areas affords an opportunity to determine if any differences in adaptation to climatic and general soil conditions exist among the hybrids.

The soil type and meterological data for each location are shown in Table 3. Most of the tests were conducted at substations, but some were grown with cooperating farmers. During this 3-year period, results were obtained from a total of 55 tests.

Each performance test was composed of entries. The entries were selected from the hybrids developed by the Texas Agricultural periment Station, commercial hybrids deve by commercial seed companies, experimental brids developed by the Texas Station and o pollinated varieties.

Data are presented for all 25 entries, e experimental hybrids, which were tested a locations in an area for the entire 3-year pe The remaining entries varied with areas and and are not included. Each test was designe a 5 x 5-triple lattice with six replications. S tical analyses of yield were made to deter the significance of differences among ave yields. These least significant differences, c lated on the basis of odds of 19 to 1, are s for each location and land resource area. least significant difference value is that am by which average yields must differ before di ences between any two averages can be assu to be real and not due to chance.

Discussion of Results

Weather conditions were highly favorable corn production during the 3 years covered this report. The average yield for all corn g in Texas during each of these years equaled exceeded that of any year during the total pe Table 2.

Table 4 emphasizes the difference in ch acteristics other than yield among the hyb and other varieties tested. Data are include

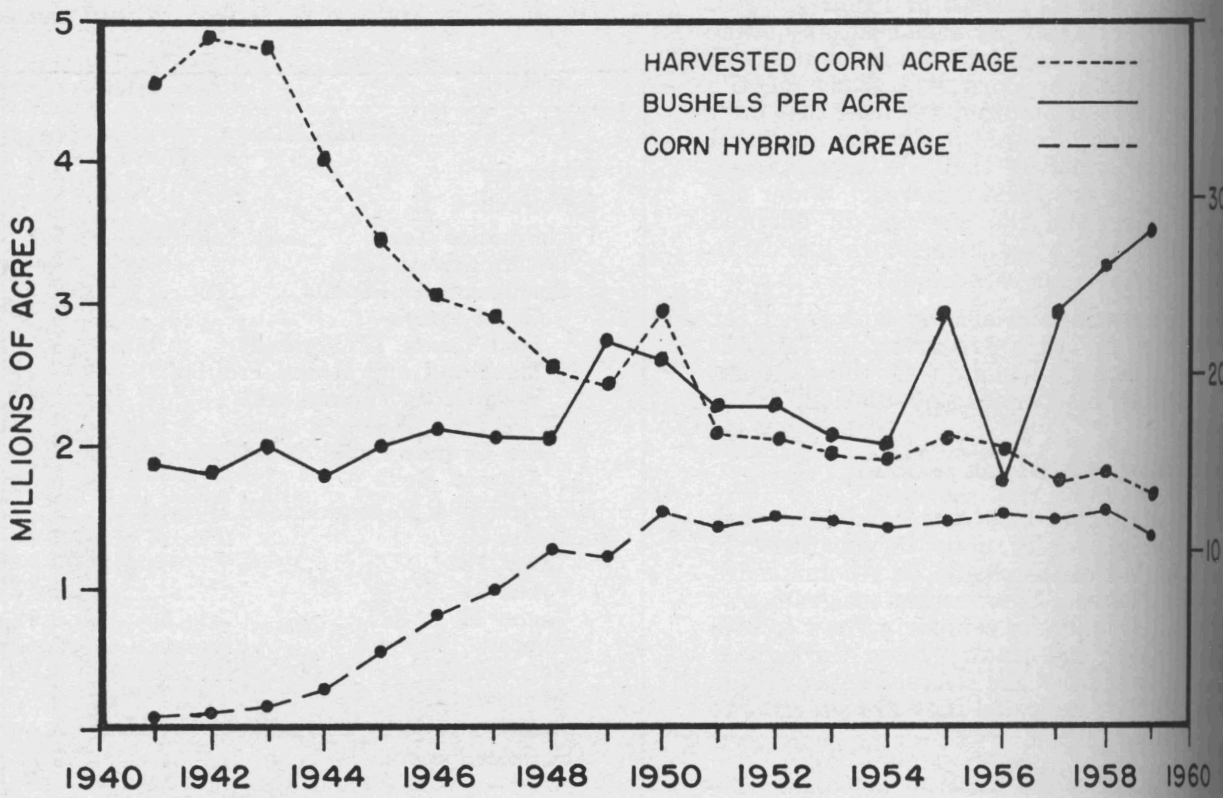

Figure 2. Harvested corn acreage, corn hybrid acreage and average yield per acre in Texas, 1940-59.

TABLE 2. TOTAL CORN ACREAGE, CORN HYBRID ACREAGE, PERCENTAGE OF ACREAGE PLANTED TO CORN HYBRIDS AND AVERAGE YIELD OF CORN IN TEXAS, 1941-59[1]

Harvested acreage	Hybrid acreage	Percentage planted to hybrids	Average yield bushels per acre
4,546,000	31,820	0.7	15.0
4,910,000	58,920	1.2	14.5
4,714,000	70,710	1.5	16.0
3,960,000	118,800	3.0	14.4
3,394,000	509,000	15.0	16.0
3,156,000	726,000	23.0	17.0
2,809,000	997,000	35.5	16.5
2,584,000	1,305,000	50.5	16.5
2,426,000	1,237,000	51.0	22.5
2,959,000	1,687,000	57.0	21.0
2,249,000	1,451,000	64.5	18.5
2,174,000	1,554,000	71.5	18.5
1,942,000	1,447,000	74.5	16.5
1,967,000	1,426,000	72.5	16.0
2,083,000	1,521,000	73.0	23.5
1,958,000	1,586,000	81.0	13.5
1,743,000	1,482,000	85.0	23.5
1,778,000	1,511,000	85.0	26.0
1,600,000	1,352,000	84.5	28.0

[1] from Agricultural Marketing Service, U. S. Department Agriculture.

hybrids and varieties tested at all locations. as 17W and Texas 38 were the hybrids most stant to root and stalk lodging. Lodging tly reduces the desirability of a hybrid for hanical harvesting. Stalk lodging consists of al breaking of stalks between the ground and ear node. Root lodging results from the roots pulling loose when the ground is soft, and usually occurs during a rain and windstorm. Most root lodging occurs before the corn is mature, whereas, most stalk lodging begins after the corn is mature and continues until harvest time. When mechanical pickers are used more losses occur from stalk lodging than root lodging, since ears on broken stalks are missed frequently.

Texas 34, 30 and 17W were the hybrids most resistant to earworms and ear-rot organisms. Texas 28 and 30 had the highest shelling percentages of the hybrids studied, and TRF 9 had the lowest. Using number of days from planting to silking as an index of maturity, Texas 38 and 17W were the earliest hybrids while Texas 34 was the latest. Texas 28 and Asgrow 104 were the most prolific. Yields of the performance tests at the various locations are presented by land resource areas in Tables 5 through 11. Detailed annual results for each location are not included. The 3-year average for each location is shown, except at locations where only 1 or 2 years' data are available. Only those hybrids and varieties for which data are available for the entire 3-year period are included in this publication. Texas 30, with a 3-year average yield of over 60 bushels per acre, was the highest yielding hybrid. Texas 17W was the highest yielding white hybrid.

Coast Prairie

This area comprises a nearly flat strip of country 20 to 80 miles wide that borders the Gulf of Mexico and extends from the Sabine to the

TABLE 3. SOIL TYPES AND METEOROLOGICAL DATA OF LOCATIONS AT WHICH TESTS WERE CONDUCTED

a and location	Soil type	Rainfall			Length of growing season			
			Inches				Average dates	
		Years of record	Average annual	Average for growing season[1]	Years of record	Average days	Last killing frost in spring	First killing frost in fall
ston	Lake Charles clay	43	48.14	18.69	39	276	Feb. 26	Nov. 29
eland	Hockley fine sandy loam	42	51.15	22.26	39	261	Mar. 7	Nov. 23
ie View	Hockley fine sandy loam	42	40.45	17.79				
lege Station	Miller clay	56	38.94	17.15	53	259	Mar. 9	Nov. 23
erville	Bowie fine sandy loam	27	53.84	23.64	27	242	Mar. 16	Nov. 13
gdoches	Nacogdoches and Bowie fine sandy loam	47	47.02	21.48	44	234	Mar. 23	Nov. 12
	Kirvin and Bowie fine sandy loam	36	41.68	19.07	34	245	Mar. 18	Nov. 18
t Pleasant	Kirvin fine sandy loam	29	43.87	20.18	26	228	Mar. 25	Nov. 8
e County	Norwood clay loam	62	47.92	23.34	53	241	Mar. 19	Nov. 15
ndale	Houston Black clay	60	31.95	14.69	60	268	Mar. 3	Nov. 26
nd	Bell clay	60	34.43	16.35	53	251	Mar. 15	Nov. 22
ple	Austin clay and Houston Black clay	60	34.43	16.35	53	251	Mar. 16	Nov. 22
regor	Crawford clay	54	32.95	16.19	54	244	Mar. 11	Nov. 10
boro	Houston Black clay	52	36.91	18.15	40	230	Mar. 20	Nov. 5
nachie	Houston Black clay	49	35.05	17.44	46	232	Mar. 25	Nov. 12
n	Denton and San Saba clays	33	33.34	16.10	33	228	Mar. 27	Nov. 10
erville	Hunt clay	42	40.18	19.81	55	234	Mar. 23	Nov. 12
ville	Clareville clay loam	52	30.55	14.26	51	287	Feb. 19	Dec. 3
Antonio	Frio clay loam	68	27.93	13.77	68	279	Feb. 24	Nov. 30
henville	Windthorst and Stephenville fine sandy loam	49	30.80	15.28	42	236	Mar. 23	Nov. 14
thoe	Abilene loam	51	25.12	12.76	50	230	Mar. 22	Nov. 7
sco	Willacy fine sandy loam	32	24.39	10.81	30	329	Jan. 24	Dec. 19

[1] rch through July.

TABLE 4. PERFORMANCE DATA ON YIELD AND OTHER CHARACTERISTICS, 1957-59

Entries	Acre yield, bushels	Root lodging, percent	Stalk lodging, percent	Unsound ears, percent	Worm damage score[1]	Shelling, percent	Days to silk
Texas 30	60.3	13.2	10.8	8.7	2.4	82.6	80.9
Texas 28	58.1	17.1	11.3	11.6	2.8	82.9	80.4
Asgrow 104	56.0	11.5	11.7	10.0	2.9	82.2	80.8
Texas 32	56.0	11.9	9.8	14.5	3.4	81.5	80.8
Texas 36	53.7	12.0	11.4	10.4	2.8	82.2	79.5
Texas 34	51.6	11.8	10.2	7.4	2.3	80.4	83.9
Watson 111	51.5	11.3	8.9	10.6	2.9	80.4	78.6
Dekalb 1023	51.5	10.7	11.4	12.5	3.1	81.0	79.9
Texas 17W	50.7	7.9	6.1	7.1	2.7	80.0	77.1
Funk G711B	47.1	10.3	11.3	12.1	3.0	79.8	82.3
TRF 9	46.4	12.0	8.9	11.2	3.0	76.8	78.5
Texas 38	44.1	8.3	5.9	11.0	2.9	80.4	75.8
Surcropper	41.2	14.5	10.7	13.2	3.0	79.8	80.8
Yellow Dent	36.7	18.4	12.8	18.8	3.1	77.6	81.4
Number of tests included	55	49	46	51	51	26	23

[1]Refers to the relative degree of damage to the ears; 1 indicates practically no damage, 2, 3, 4 and 5 represent succes greater degrees of damage.

Guadalupe River. Rainfall is sufficiently high during most of the season for the proper growth of crop plants, although drouth conditions may occur during the latter part of the summer. Excessive moisture is a serious hazard during the winter and early spring, and planting of spring crops is delayed frequently. The use of fertilizers is essential in obtaining maximum corn yields in this area. Because of relatively high rainfall and humidity, diseases and insects frequently cause serious damage to corn.

Texas 30, 36 and 34 had the highest average yields for this area, Table 5. Asgrow 101W was the highest yielding white hybrid. The test at Cleveland was lost in 1957 and 1959 because of insects and unfavorable weather conditions.

Considering both yield and other characteristics, Texas 30 and 34 are the recommended yellow hybrids for this area. Asgrow 101W Texas 17W are the recommended white hybr

TABLE 5. CORN PERFORMANCE TEST, COAST PRAIRIE, 1957-59

Entries	Bushels of shelled corn per acre			
	Angleton	Cleveland[1]	Prairie View	Average
Texas 30	59.1	39.6	53.2	53.8
Texas 36	55.7	33.7	53.8	51.8
Texas 34	59.2	46.2	44.3	51.0
Texas 28	54.5	34.0	51.5	50.3
Texas 32	56.3	26.3	51.8	50.1
Asgrow 101W	56.4	38.5	46.3	49.5
Asgrow 104	51.4	50.2	38.4	49.0
Watson 111	48.7	33.8	53.5	48.6
Funk G740	51.7	30.4	50.0	47.9
Dekalb 1023	47.5	26.2	54.3	47.4
Texas 17W	50.0	20.0	51.7	46.5
Texas 38	43.3	31.0	52.9	45.7
TRF 9	44.9	25.0	45.4	42.3
Funk G711B	45.2	31.6	43.0	42.3
Surcropper	42.4	28.9	40.9	39.8
Yellow Dent	32.4	19.4	36.4	32.3
Average Yield	50.0	31.4	48.7	46.8
Least significant difference, 19 to 1	9.1	14.4	7.3	6.0

[1]1958 only.

East Texas Timberlands

This area consists primarily of soil ser ranging from loamy fine sands to fine sa loams, although a large number of different ser ranging from fine sands to clay loams are cluded. Most of the corn acreage is on the be drained bottomland and the moderately sa uplands. These soils respond well to comme fertilizers. This area usually has a favora climate for corn production and approxima

TABLE 6. CORN PERFORMANCE TEST, EAST TEXAS TIMBERLANDS, 1957-59

Entries	Bushels of shelled corn per acre					
	Kirbyville	Nacogdoches	Tyler	Mount Pleasant	Bowie[1] county	Ave
Texas 30	65.3	68.6	48.6	42.5	139.9	
Texas 32	55.9	70.2	50.0	45.1	138.6	
Texas 28	53.1	66.1	46.1	40.0	146.1	
Texas 36	60.4	68.0	41.2	41.1	125.2	
Texas 34	60.0	61.9	36.8	37.2	142.1	
Asgrow 104	55.4	64.5	40.3	37.2	131.6	
Dekalb 1023	54.4	62.7	44.2	35.9	131.8	
Watson 111	56.5	59.5	36.6	39.4	118.2	
Texas 17W	56.9	57.3	38.8	39.2	112.4	
Funk G711B	56.8	54.6	31.7	31.0	115.4	
TRF 9	46.6	52.3	33.0	34.2	99.1	
Texas 38	44.1	52.2	32.8	37.1	82.0	
Yellow Dent	44.9	47.2	27.2	28.1	100.5	
Surcropper	42.7	46.7	25.8	26.5	94.0	
Average yield	53.8	59.5	38.1	36.7	119.8	
Least significant difference, 19 to 1	10.9	8.8	9.1	8.5	9.8	

[1]1958 only.

7. CORN PERFORMANCE TEST, SOUTHERN BLACKLAND PRAIRIE, 1957-59

	Bushels of shelled corn per acre				
	San Antonio	Martindale[1]	Holland	Temple	Average
30	70.8	80.2	59.2	74.1	70.3
28	73.7	78.1	59.1	72.2	70.2
w 104	71.5	76.1	60.1	68.3	68.4
32	71.3	74.2	55.5	65.2	65.9
36	65.8	70.4	59.1	63.1	64.1
n 111	64.5	71.2	55.3	60.4	62.1
17W	58.5	64.0	56.4	61.1	59.7
1023	66.0	63.5	51.3	58.7	59.6
34	60.4	61.8	48.2	66.0	58.9
G711B	59.5	65.7	52.1	57.3	58.0
	55.0	58.3	51.0	57.8	55.3
38	54.6	53.4	49.2	51.0	52.0
pper	50.8	46.0	42.6	52.7	48.3
w Dent	39.8	38.2	34.0	39.2	40.5
ge yield	62.4	64.4	52.4	60.6	59.5
signifi- difference, 1	10.5	12.7	5.7	8.2	6.3

nd 1959.

fourth of the State's corn crop is produced

Texas 30 and 32 were the highest yielding w hybrids in this area, Table 6. Texas 17W the highest yielding white hybrid. The test owie county was not planted in 1957 and in the results were so variable that no reliable were obtained. In 1958 the average yield e Bowie county test was 119.8 bushels which e highest average yield ever recorded for a irrigated corn performance test in Texas.

In this area Texas 30, 28, 34 and 36 are the mended yellow hybrids; Texas 17W and w 101W are the recommended white ids.

land and Grand Prairies

These areas lie in a belt that extends from vicinity of San Antonio northward to the River. The soils are mainly fine textured, reous clays which are inherently productive. fall often is inadequate for optimum corn duction, and summer drouths may curtail to some extent practically every year. Proion practices which conserve and store moisare highly important. Commercial fertilizers eeded for some soils in the area to produce corn yields. For testing purposes, this region been divided into northern and southern areas n arbitrary line running east and west at le.

In the southern area, excellent yields were ned at all locations, Table 7. Texas 30, 28 Asgrow 104 were the highest yielding hybrids is area. These yellow hybrids and Texas 36 recommended to growers in this area. Among white hybrids, Texas 17W produced the highyields. Asgrow 101W and Texas 17W are recommended white hybrids for this area. w 101W is not shown in Table 7 as it was not included in all 1959 tests for this area. However, in the previous 5 years, Asgrow 101W equaled or exceeded the other white hybrids in yield.

In the northern area, the yields were lower than those in the southern area. Texas 28, 30 and Asgrow 104 produced the highest yields, Table 8. These hybrids plus Texas 36 are recommended for this area. Texas 17W was the highest yielding white hybrid and is also recommended.

West Cross Timbers and Rolling Plains

These areas are in North and Northwest Texas, west and northwest of the Blackland and Grand Prairies. Lack of rainfall and high temperatures severely limit corn production throughout these areas in most years. Corn is of minor importance, but some corn is grown on the eastern edges of the West Cross Timbers and the Rolling Plains.

The tests at Chillicothe in 1957 and at Stephenville in 1957 and 1959 were lost because of unfavorable weather conditions. Texas 30, 17W and 28 were the highest yielding hybrids in this area, Table 9. Texas 28, 36 and 30 are the recommended yellow hybrids for this area. Among the white hybrids, Texas 17W and Asgrow 105W are recommended.

Rio Grande Plain

This is a broad, undulating to rolling area in South Texas. The climate is relatively mild and the rainfall varies from approximately 30

TABLE 8. CORN PERFORMANCE TEST, NORTHERN BLACKLAND AND GRAND PRAIRIES, 1957-59

Entries	Bushels of shelled corn per acre					
	Mc-Gregor	Hillsboro[1]	Waxahachie	Greenville[1]	Denton	Average
Texas 28	54.4	43.8	48.3	45.6	47.6	49.2
Texas 30	54.8	42.5	50.0	48.8	42.4	48.5
Asgrow 104	51.0	45.8	50.0	48.0	42.1	47.6
Texas 32	51.0	38.4	40.2	40.0	44.5	44.2
Texas 17W	45.9	38.2	40.6	42.9	42.1	42.5
Texas 36	45.9	39.7	41.0	43.9	40.0	42.3
Watson 111	45.7	38.8	44.3	28.7	40.9	41.9
Texas 34	45.7	34.8	41.8	34.4	33.0	39.2
TRF 9	40.8	35.0	37.0	37.9	40.8	39.0
Dekalb 1023	45.5	36.6	29.7	35.2	40.4	38.1
Texas 38	40.3	29.6	32.8	36.4	33.6	35.1
Funk G711B	37.0	28.3	35.4	34.8	35.0	35.0
Sur-cropper	34.9	34.2	31.7	35.6	29.0	32.5
Yellow Dent	31.1	28.1	26.9	28.9	29.1	29.0
Average yield	44.6	36.7	39.3	38.7	38.6	40.3
Least significant difference, 19 to 1	8.2	5.1	9.7	7.7	8.2	4.1

[1]1957 only.

TABLE 9. CORN PERFORMANCE TEST, WEST CROSS TIMBERS AND ROLLING PLAINS, 1957-59

Entries	Bushels of shelled corn per acre		
	Chillicothe[1]	Stephenville[2]	Average
Texas 30	36.6	28.4	33.9
Texas 17W	38.3	24.2	33.6
Texas 28	37.0	25.9	33.3
Asgrow 105W	36.9	24.9	32.9
Watson 111	37.2	23.0	32.5
TRF 9	35.2	22.3	30.9
Texas 36	34.5	21.9	30.3
Texas 32	32.8	25.1	30.2
Asgrow 104	33.0	23.4	29.8
Dekalb 1023	32.8	21.9	29.2
Texas 38	31.8	23.6	29.0
Conrad 7	31.0	21.2	27.8
Asgrow 107W	30.1	20.2	26.8
Funk G711B	28.0	22.1	26.0
Texas 34	23.8	20.0	22.5
Surcropper	21.0	15.9	19.3
Yellow Dent	16.2	14.9	15.8
Average Yield	31.5	22.3	28.5
Least significant difference, 19 to 1	7.6	3.7	5.6

[1]1958 and 1959.
[2]1958 only.

inches annually on the eastern edge to 20 inches on the western side. Corn is relatively unimportant in this region with the exception of a small strip on the eastern side and to a limited extent in the Lower Rio Grande Valley.

Dixie 82, Texas 30, 28 and 34 produced yields over 100 bushels per acre in the irrigated tests at Weslaco, Table 10. Under dryland at Beeville, Texas 30 and 28 were the highest yielding hybrids.

TABLE 10. CORN PERFORMANCE TEST, RIO GRANDE PLAIN, 1957-59

Entries	Bushels of shelled corn per acre			
	Weslaco	Rank	Beeville	Rank
Dixie 82	113.0	1		
Texas 30	103.5	2	43.4	1
Texas 28	102.6	3	41.9	2
Texas 34	100.8	4	36.0	9
Asgrow 102	98.0	5		
Asgrow 101W	94.5	6		
Texas 36	93.3	7	39.6	4
Asgrow 107W	93.1	8		
Asgrow 104	92.2	9	39.4	5
Asgrow 105W	88.1	10	35.7	10
Texas 17W	81.0	11	36.3	7
Surcropper	76.3	12	32.0	13
Texas 38	70.7	13	35.1	11
Yellow Dent	60.4	14	26.1	15
Texas 32			40.6	3
Dekalb 1023			37.4	6
Watson 111			36.1	8
TRF 9			33.3	12
Funk G711B			31.9	14
Average yield	93.7		36.4	
Least significant difference, 19 to 1	12.8		3.5	

Under irrigation Dixie 82, Texas 30, 34, 36 [illegible] 28 are the recommended yellow hybrids [illegible]. Asgrow 101W, 105W and Texas 17W are recommended white hybrids.

Under dryland, Texas 28, 36 and 30 are recommended yellow hybrids while Texas [illegible] is the recommended white hybrid.

Alluvial Soils

Alluvial soils are present along streams throughout the corn growing area. The most important of these border the Trinity, Brazos, Colorado Rivers. These soils, in general, are highly productive, but the use of fertilizer is sometimes necessary for maximum production. Excellent yields of corn may be obtained under irrigation.

Texas 30 produced the highest yields in both the irrigated and dryland tests at College Station, Table 11. Texas 17W was the highest yielding white hybrid.

Texas 30 and 34 are the recommended yellow hybrids for these soils. Among the white hybrids, Texas 17W and Asgrow 101W are recommended.

DESCRIPTION OF RECOMMENDED HYBRIDS

Considering yield and other desirable characteristics, 5 yellow hybrids and 3 white hybrids are recommended for corn production in Texas. Recommendations are based on previous results as well as those obtained during this test period. A brief description of these hybrids, with their areas of recommendation, follows:

Texas 28

A yellow hybrid usually produced by combining Tx127C X Tx132A as the seed parent, with Tx325 X Tx303 as the pollinator parent. However, the reciprocal of this cross is used sometimes since it can be produced by the male-sterile method when Tx325 X Tx303 is used as the seed parent. Texas 28 produces large ears with large yellow grains. Under favorable conditions this hybrid has a tendency to produce two ears per stalk. It has a wide adaptation range and is recommended for all areas of the State except the Coast Prairie where insects and diseases seriously damage corn.

Texas 30

A yellow hybrid produced by combining Tx173D X Tx203 as the seed parent, with Tx325 X Tx303 as the pollen parent. Texas 30 reaches maturity slightly later than Texas 28. It produces large ears with large, yellow dent-type grain. Although primarily a one-ear hybrid, it may produce two ears under optimum conditions. This hybrid is more resistant to root lodging and stalk breakage, insects and diseases than Texas

as 30 is recommended for all areas of the

xas 34

A yellow hybrid produced by combining 3 X Tx203 as the seed parent, with Tx601 x602 as the pollen parent. Texas 34 is more t and disease resistant than the other recom-ded yellow hybrids. It is later in maturity Texas 28 and 30 and, under favorable con-ons, will grow 1 to 2 feet taller. Texas 34 is mmended particularly for the Gulf Coast and fertile bottomland and irrigated land of id areas where high yields are anticipated.

as 36

A yellow hybrid produced by combining 5 X Tx533 as the seed parent, with Tx127C x203 as the pollinator parent. Texas 36 will about a day earlier than Texas 28 and is erior to Texas 28 in resistance to root and lodging. This hybrid is slightly more eptible to earworm damage than Texas 30, it is is similar to Texas 28 in its reaction arworms and ear-rot diseases. It is recom-ded particularly for the northern Blackland rie and Grand Prairie.

row 104

A medium maturity yellow dent hybrid loped by the Asgrow Texas Company of Antonio, Texas. Asgrow 104 is a semi-ific hybrid which produces medium sized ears large, deep yellow grain. It is comparable Texas 30 in maturity and resistance to both lodging and stalk breaking. Asgrow 104 bits a rather wide range of adaptation, and ars particularly well adapted to the Black-Prairie.

as 17W

A white hybrid produced by combining 1M X Tx585 as the seed parent, with K55 64 as the pollinator parent. The ears of this id are large, with a fairly large Surcropper-grain. It silks about 2 to 3 days earlier Texas 28, and it is somewhat drouth re-ant. Most of the white corn in the State is uced near San Antonio in South Texas and Sherman in North Texas. Drouth is im-ant as it limits corn production in both of e areas almost every year. Texas 17W is mmended particularly for these white corn ucing areas since its early maturity, drouth tance and large grain size are distinct ad-tages in these areas.

grow 101W

A white corn hybrid developed by the Asgrow s Company, San Antonio, Texas. Under good itions, Asgrow 101W characteristically pro-s two uniform ears. It silks about 4 days later than Texas 17W. This hybrid is slightly superior to Texas 17W in resistance to earworms and ear-rot organisms, but is more susceptible to stalk breaking. Asgrow 101W performs well under favorable moisture conditions, and is recommended for the Coast Prairie, southern Blacklands and the Lower Rio Grande Valley.

TABLE 11. CORN PERFORMANCE TEST, BRAZOS RIVER VALLEY NEAR COLLEGE STATION, 1957-59

Entries	Bushels of shelled corn per acre		
	Dryland	Irrigated	Average
Texas 30	86.9	104.5	95.8
Texas 34	86.6	100.5	93.6
Texas 32	84.0	101.0	92.5
Texas 28	85.4	96.5	91.0
Dekalb 1023	86.0	94.0	90.1
Texas 36	75.9	93.7	84.9
Funk G711B	70.8	90.0	80.4
Watson 111	72.2	81.8	77.1
Texas 17W	73.1	80.9	77.0
Surcropper	66.5	81.2	73.9
TRF 9	68.1	73.6	70.9
Texas 38	64.0	67.8	65.9
Yellow Dent	56.9	72.7	64.9
Average yield	75.1	87.6	81.4
Least significant difference, 19 to 1	12.0	12.3	11.5

Asgrow 105W

A white corn hybrid developed by the Asgrow Texas Company, San Antonio, Texas. Asgrow 105W is of the same maturity as Texas 17W and it ordinarily produces one ear per stalk. It is similar to Texas 17W in adaptation and may be expected to perform well in the white corn growing areas in Texas. Asgrow 105W has relatively short plants with low ear height, and is quite resistant to both root and stalk breaking. It has good resistance to drouth, insects and disease. The medium-to-large white kernels are well adapted to the various industrial uses for white corn.

ACKNOWLEDGMENTS

The authors express their appreciation to the following substation personnel and cooperating growers who participated in the corn testing program: Lucas Reyes, Glenn Black and Edward Neal, Substation No. 1, Beeville; P. R. Johnson, Substation No. 2, Tyler; B. E. Jeter, Jr. and J. C. Smith, Substation No. 3, Angleton; R. M. Smith, Substation No. 5, Temple; James Gardenhire and D. I. Dudley, Substation No. 6, Denton; H. C. Hutson, Substation No. 11, Nacogdoches; J. R. Quinby, Substation No. 12, Chillicothe; W. R. Cowley, Substation No. 15, Weslaco; O. E. Smith and J. C. Williams, Substation No. 18, Prairie View; B. C. Langley, Substation No. 20, Stephenville; J. R. Wood, Substation No. 22, Kirbyville;

M. J. Norris and H. O. Hill, Substation No. 23, McGregor; J. A. Lancaster, Dairy Investigations Lab., Mount Pleasant; D. D. Porter, U. S. Cotton Field Sta., Greenville; Herman Lynch, County Agricultural Agent, Bowie county; Paul Mebane and Quinton Raab, Asgrow Texas Co., San Antonio; Emmett and B. A. Harper, Harper Seed Farms, Martindale; F. B. Romberg, Romberg Seed Farm, Holland; and Hosa Rogers, Farmer, Waxahachie.

Statistical analyses of the data were [illegible] by Brad Lisenbee and R. L. Smith, Jr., [illegible] Data Processing Center.

Acknowledgment is made to Dr. J. S. [illegible] formerly head of the Department of Agron[illegible] for his valuable aid in guiding the corn improv[illegible] ment program.

Appreciation is expressed to L. E. Clark [illegible] A. G. Douglas, research assistants, for [illegible] assistance in collecting data.

[Blank Page in Original Bulletin]

Location of field research units of the Texas Agricultural Experiment Station and cooperating agencies

State-wide Research

★

The Texas Agricultural Experiment Station is the public agricultural research agency of the State of Texas, and is one of the parts of the A&M College of Texas.

ORGANIZATION

IN THE MAIN STATION, with headquarters at College Station, are 16 subject matter departments, 2 service departments, 3 regulatory services and the administrative staff. Located out in the major agricultural areas of Texas are 21 substations and 9 field laboratories. In addition, there are 14 cooperating stations owned by other agencies. Cooperating agencies include the U. S. Forest Service, Game and Fish Commission of Texas, Texas Prison System, U. S. Department of Agriculture, University of Texas, Texas Technological College, Texas College of Arts and Industries and the King Ranch. Many experiments are conducted on farms and ranches and in rural homes.

OPERATION

THE TEXAS STATION is conducting about 400 active research projects, grouped in 25 programs, which include all phases of agriculture in Texas. Some of these are:

- Conservation and improvement of soil
- Conservation and use of water
- Grasses and legumes
- Grain crops
- Cotton and other fiber crops
- Vegetable crops
- Citrus and other subtropical fruits
- Fruits and nuts
- Oil seed crops
- Ornamental plants
- Brush and weeds
- Insects
- Beef cattle
- Dairy cattle
- Sheep and goats
- Swine
- Chickens and turkeys
- Animal diseases and parasites
- Fish and game
- Farm and ranch engineering
- Farm and ranch business
- Marketing agricultural products
- Rural home economics
- Rural agricultural economics
- Plant diseases

Two additional programs are maintenance and upkeep, and central services.

Research results are carried to Texas farmers, ranchmen and homemakers by county agents and specialists of the Texas Agricultural Extension Service

AGRICULTURAL RESEARCH seeks the WHATS, the WHYS, the WHENS, the WHERES and the HOWS of hundreds of problems which confront operators of farms and ranches, and the many industries depending on or serving agriculture. Workers of the Main Station and the field units of the Texas Agricultural Experiment Station seek diligently to find solutions to these problems.

Today's Research Is Tomorrow's Progress