Oklahoma 301

a new Hybrid Corn for Oklahoma

OKLAHOMA AGRICULTURAL EXPERIMENT STATION

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A New Hybrid Corn for Oklahoma

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Oklahoma 301 is a new strain of hybrid corn developed especially for Oklahoma conditions. It is a late-maturing yellow corn, and is normally ready for harvest by early or mid-September. It produces good yields, stands well, and has good quality ears.

This new hybrid is best suited to soils capable of producing 50 bushels or more per acre, but it has done well in comparison with other late-maturing hybrids at all locations in the Oklahoma Corn Performance Tests. Test data indicate that it is well adapted to the main corn-growing sections of Oklahoma.

Oklahoma 301 is an open-pedigree hybrid developed in the Station's corn-breeding program. The first seed for farm planting was released through the Oklahoma Crop Improvement Association for use in 1953, after the new strain had been tested for three years in the Oklahoma Corn Performance Tests.*

Performance

The performance of Oklahoma 301 is reported in Tables I, II, and III. The comparison in each of these tables is with other late-maturing hybrids now on the list recommended for planting in Oklahoma. Hybrids are placed on the recommended list only after at least two

* Oklahoma 301 was tested under the experimental designation Okla. 0806. Results at individual locations, by years, are reported in the following Station Miscellaneous Publications: MP-18 (1950), MP-24 (1951), and MP-29 (1952).

seasons of outstanding performance in the Oklahoma Corn Performance Tests. The strains with which Oklahoma 301 is compared in these tables are those which have survived from two to seven years of testing, with 47 strains of late-maturing yellow hybrids being tested at from seven to 10 locations each year.

Table I shows that Oklahoma 301 is adapted to most corn-growing conditions in Oklahoma. It exceeded the average of other recommended hybrids in its class at all but two locations, and the difference was less than one bushel at those two.

Table I.—Average Yield of Oklahoma 301 at Various Test Locations.* (Bushels per acre)

Location of test (county)	No. of test years	Oklahoma 301	Average of recommended late hybrids
Bryan (black land)	1	48.4	48.2
Bryan (bottom land)	3	79.7	72.0
Garvin	3	64.2	61.5
Grady	2	44.8	42.4
Jefferson	1	36.3	34.6
Kay	2	33.3	27.5
McClain	1	58.1	53.7
Muskogee	2	59.9	60.8
Nowata	1	40.4	39.2
Payne (Perkins)	3	37.4	33.7
Payne (Stillwater)	1	54.4	45.9
Seminole	3	62.9	63.3
Tulsa	3	76.2	73.4

* In Oklahoma Corn Performance Tests, 1950, 1951 and 1952. Detailed annual data available as indicated in footnote on page 3.

Table II.—Average Yields of Oklahoma 301 and Other Recommended Late-maturing Yellow Hybrids.* (Bushels per acre)

	Year					
	1950	1951	1952	3-yr. avg.	Years tested	Adjusted avg. for all years tested
Nichols 101	68.5	65.0	35.2	56.2	4	59.2
Texas 28	67.3	61.6	31.7	53.5	4	58.9
Texas 24	69.2	59.8	31.1	53.4	5	57.8
Oklahoma 301	68.6	62.8	31.1	54.2	3	57.8
Texas 26	61.5	**	32.7	**	3	57.5
Keystone 222	64.9	58.6	32.1	51.9	7	56.8
Dekalb 1002	64.4	61.7	30.7	52.3	5	56.3
Funk G-711	64.4	55.6	30.2	50.0	7	56.2
Watson 124	68.8	58.4	32.1	53.1	4	55.8
McCurdy 135	67.0	58.2	30.4	51.9	6	54.8

* In Oklahoma Corn Performance Tests. Detailed annual data available as indicated in footnote on page 3.

** Stands of Texas 26 were very poor in all tests in 1951. The 3-year adjusted average is for 1949, 1950 and 1952.

Table II, reporting three years of testing, shows Oklahoma 301 surpassed in yield only by Nichols 101.

Table III, reporting other characteristics considered in the performance tests, shows that only Texas 24 has more standing plants at harvest. Only Texas 28 has better ear quality; and Oklahoma 301 has the least amount of shelling during mechanical harvest, although it also has the fewest ears husked clean.

Separate tests were made in 1951 and 1952 to compare the standing ability of hybrids when heavily infested with Southwestern corn borer. The tests were planted late (about May 15) to give maximum opportunity for borer development. Under these conditions, Oklahoma 301 had more standing plants than any other hybrid tested.

Description

Plants of Oklahoma 301 are rather tall, with wide, dark-green leaves and good stalk quality. The tassel is well branched and frequently less spreading (branches pointing upward) than most hybrids. There usually is one ear per stalk, but sometimes two ears are produced. Ear height is about 50 inches.

The ears are covered by moderately heavy, tightly-fitting husks. Ears are of moderate length and average 14 to 16 rows of grain. Three-fourths of the cobs are red and one-fourth white.

The grain has a good yellow color, is of medium depth, and dimple

Table III.—Average Ratings on Characteristics Other Than Yield; Oklahoma 301 and Other Recommended Late-maturing Yellow Hybrids.*

	Percentage of erect plants	Husking score**	Shelling score†	Quality score††
Nichols 101	87.8	2.6	1.7	2.8
Texas 28	89.5	2.5	1.6	2.1
Texas 24	91.4	2.5	1.6	2.6
Oklahoma 301	90.2	3.3	1.4	2.4
Texas 26	88.0	2.5	1.6	2.7
Keystone 222	83.4	2.7	1.7	2.8
Dekalb 1002	85.4	3.1	1.8	2.6
Funk G-711	80.4	2.9	1.7	2.6
Watson 124	89.8	2.4	1.6	2.8
McCurdy 135	83.6	2.9	1.5	2.5

* In Oklahoma Corn Performance Tests. Detailed annual data available as indicated in footnote on page 00.

** Husking score is based on: 1.0=ears husked clean by mechanical picker; 5.0=few if any ears husked clean.

† Shelling score is based on: 1.0=little or no grain shelled from ears in mechanical harvest; 5.0=excessive shelling.

†† Quality score is based on: 1.0=good quality (ears of good size, and free from disease and insect damage); 5.0=very poor quality.

to wrinkle dented. The ear shank is short, and when drying is rapid in the fall some ears do not turn down.

Origin and Pedigree

Oklahoma 301 is a double cross hybrid developed at the Oklahoma Agricultural Experiment Station. It is the result of testing many hybrid combinations of inbred lines developed at the Oklahoma Station with lines originating from other experiment stations.

The pedigree of Oklahoma 301 is (CI.21E X K201) - (Ok. 12 X Kys). The four inbred lines used in producing Oklahoma 301 have the following origin:

CI.21E	U. S. Department of Agriculture, Beltsville, Maryland.
K201	Kansas Agricultural Experiment Station.
Ok.12	Oklahoma Agricultural Experiment Station.
Kys	Kansas Agricultural Experiment Station.

Seed Production

The seed-parent single cross, CI.21E X K201, is very slightly earlier than the pollen parent Ok.12 X Kys. Both single crosses should be planted at the same date for double cross seed production. Proper detasseling of the ear-parent single cross is made more difficult by the tassel sometimes shedding pollen while enclosed in the rolled upper leaves. This tendency is more pronounced under less favorable growing conditions and probably results from the erect, stiff leaf-habit of CI.21E and the slight tendency to leaf roll of K201. The ears of this single cross are normally of good size and have about 16 rows of moderately wide and deep grain. (The grain of this single cross was used for the photograph on the cover of this bulletin.)

The male-parent single cross produces abundant pollen and yields well, particularly on the more fertile soils. The ears may be smaller and of lower row number than the seed-parent single cross.

Foundation single cross seed may be produced by planting the inbreds for either cross at the same date. Good seed yields were obtained for both crosses in 1951, but very poor yields resulted in 1952 because of the severe drouth.