Miscellaneous Series #221

DRY-LAND HYBRID CORN TESTS IN 1943[1]

D. W. Robertson and J. F. Brandon[2]

Paper 221, Miscellaneous Series, Colorado Agr. Experiment Station, Fort Collins

The dry-land hybrid tests were conducted at the U. S. Dry Land Field Station, Akron, Colorado, in cooperation with the Colorado Agricultural Experiment Station.

The U. S. Dry Land Station is located near Akron, Colo., on what is known, locally, as "hard land." The soil type of the Station is classified as Weld silt loam.

Experiments conducted with corn at Akron should be applicable to corn-growing conditions on the "hard lands" in this area, but should not be applied too closely to the earlier sandy soil conditions found in eastern Colorado.

The results of these tests make available to purchasers and producers alike the performance records of the different hybrids tested. Many of these sorts are offered for sale to Colorado farmers. If these performance tests are studied they should help the purchaser to select the corn best adapted for his purpose.

The 1943 season at Akron was well adapted to corn production. Most of the varieties tested matured good corn in 1943. The "days to silking" and the "weight per measured bushel" give a good indication of the ability to mature and consequently of the adaptability of the various hybrids and varieties tested. Akron White, a locally-adapted, open-pollinated corn selected by the Station, is used as a check. Only a very limited quantity of the Akron White and Akron Yellow open-pollinated corn is available.

In the earlier sandy sections, later-maturing hybrids should give higher yields than the open-pollinated varieties or the high-yielding, better-maturing hybrids do at Akron.

In considering the yields, the tables having the longest number of years in which the same varieties were tested give a better idea of the performance of the hybrids and, therefore, should receive more attention. Several summary tables are given for the varieties tested for varying periods of years. The tables include the yield of shelled corn per acre, weight per measured bushel, days to silk, percent smut, and percent suckers. The days to silk and weight per measured bushel together give a good indication of the adaptability of the hybrid or variety.

---

[1]The U. S. Dry Land Field Station, located in northeastern Colorado at an altitude of about 4,600 feet, is operated by the Division of Dry Land Agriculture of the Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, U. S. D. A., in full cooperation with the Colorado Agricultural Experiment Station.

[2]Agronomist, Colorado Agricultural Experiment Station, and Associate Agronomist, Division of Dry Land Agriculture, Bureau of Plant Industry, Soils and Agricultural Engineering, Agricultural Research Administration, U. S. D. A.

The authors wish to express their appreciation to Mr. Sam Callahan for taking notes and collecting data on the test.

Comparison of time to silk should not be made between varieties grown at different localities.

In table 1 it will be noted that all varieties matured well under Akron conditions. Three bushel weights, however, were slightly below standard. In table 2 several of the hybrids showed light bushel weights and take slightly longer periods to silk. The table indicates that in the 2 years of the test, hybrids taking more than 66½ days to silk have bushel weights 2 or 3 pounds below standard.

Table 1. Average yield and agronomic data of hybrid and open-pollinated corn varieties grown at the U. S. Dry Land Field Station for varying periods of years from 1939 to 1943, inclusive.

Variety or Hybrid	Acre yield shelled corn[1]	Wt. per measured bushel[3]	Days to silk[3]	Plants with suckers[3]	Smutted[3] plants
	Bus.	Lbs.	Number	Pct.	Pct.
Funk G-7	20.2	52.7	72.9	10.6	3.8
Wisconsin 625	19.8	52.8	73.9	9.8	4.1
Minhybrid 403	19.8	56.0	70.3	13.8	5.1
Akron White[2]	19.7	54.9	69.8	21.9	4.2
Wisconsin 570	18.9	53.0	72.8	7.7	6.4
Akron Yellow[2]	18.1	56.0	67.4	10.9	8.7
Colorado 13[2]	16.9	54.0	71.4	1.6	8.8

1. 5-year average on basis of 15.5 percent moisture.

2 Open-pollinated varieties.

3 4-year average.

Table 2. Average yield and agronomic data of hybrid and open-pollinated corn varieties grown at the U. S. Dry Land Field Station for a 2-year period, 1942-1943.

Variety or Hybrid	Acre yield shelled corn[1]	Wt. per measured bushel	Days to silk	Plants with suckers	Smutted plants
	Bus.	Lbs.	Number	Pct.	Pct.
Funk G-7	35.4	51.2	67.5	13.2	2.4
Wisconsin 570	35.1	53.1	65.9	11.2	4.6
Wisconsin 645	34.8	51.4	67.9	8.3	2.6
Colorado 13[2]	34.7	54.2	65.5	2.7	9.1
Akron White[2]	34.2	54.4	64.7	39.6	7.1
Wisconsin 625	33.4	51.9	69.4	15.2	2.8
Akron Yellow[2]	32.8	55.4	64.8	15.6	8.3
Minhybrid 403	32.2	55.2	66.5	17.9	5.6
Wisconsin 696	29.5	51.2	71.4	17.7	3.7
Pioneer 334	17.2	46.0	73.5	39.8	5.3

[1]Shelled corn on 15.5 percent moisture basis.

[2]Open-pollinated varieties.
Difference to be significant = 7.37 bushels.
Average yield of all varieties = 31.9 bushels.

Table 3. Average yields and agronomic data of corn hybrids and open-pollinated varieties tested at the U. S. Dry Land Field Station in 1943.

Rank	Hybrid or variety	Acre yield shelled corn (1)	Wt. per measured bushel	Days to silking	Moisture in corn (2)	Plants with suckers	Smutted plants	Broken or lodged stalks
		Bus.	Lbs.	Number	Pct.	Pct.	Pct.	Pct.
1	Wisconsin 570	37.9	55.1	62.8	15.0	20.8	5.1	21.5
2	Funk G-7	35.7	54.2	64.0	16.9	25.8	3.5	13.3
3	Colorado 13(3)	35.1	55.2	61.0	14.1	4.9	16.0	30.9
4	Akron Yellow(3)	34.6	57.7	60.5	15.7	31.2	14.1	33.8
5	Minhybrid 403	34.1	58.1	62.0	13.6	34.6	10.0	14.0
6	Wisconsin 696	34.1	54.8	66.8	23.3	34.1	6.2	16.2
7	Wisconsin 625	33.5	55.7	64.8	18.1	29.9	3.7	28.0
8	Funk G-550W	33.2	55.2	69.0	17.4	68.4	4.0	36.4
9	Wisconsin 645	32.8	54.4	63.8	25.2	14.8	2.9	21.7
10	Reids National 110W	32.4	54.4	66.0	15.6	94.6	4.2	33.3
11	Akron White (3)	31.6	55.0	60.3	18.3	50.4	12.0	31.3
12	Sure Crop (3)	31.8	56.0	59.6	16.0	68.3	12.2	35.7
13	Funk G-11	31.3	55.6	67.0	18.7	26.7	3.0	11.5
14	Local Strain Y.D. (3)	29.0	55.1	62.5	25.0	79.9	12.4	35.0
15	DeKalb 458	26.1	53.7	68.8	27.3	29.3	4.2	18.1
16	Funk G-65	25.3	52.0	68.8	32.4	73.2	9.6	28.8
17	DeKalb 404-A	24.4	55.4	66.5	23.3	28.2	3.9	22.8
18	Pioneer 333	20.7	53.7	70.3	26.6	49.6	5.8	8.5
19	Pioneer 334	16.6	52.0	68.0	28.4	78.1	9.8	17.7
20	Pioneer 300	15.8	48.8	71.5	38.9	74.0	7.6	16.6
21	Golden Republic (3)	15.0	52.4	72.5	36.9	122.5	11.1	43.1

(1) Bushels of shelled corn per acre 15.5 percent moisture basis.

(2) Moisture in ear at harvest.

(3) Open-pollinated varieties

Difference to be significant = 7.47 bushels
Mean yield of all varieties = 29.1 bushels