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1948 Corn Performance Tests, South Dakota

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1948 CORN PERFORMANCE TESTS

SOUTH DAKOTA

SOUTH DAKOTA AGRICULTURAL EXPERIMENT STATION
SOUTH DAKOTA STATE COLLEGE
BROOKINGS

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South Dakota Corn Performance Tests 1948

By D. B. SHANK[1]

In 1948, as in previous years, the Agronomy Department of the South Dakota Agricultural Experiment Station conducted corn yield trials on commercial hybrids and varieties. The purpose of these trials was to make available impartial information on the relative performance of the entries when they were grown at selected places in the state. Eleven tests were conducted, with at least one trial being located in each of the eight agricultural areas into which the state has been divided. In all, 106 hybrids and 13 open-pollinated varieties were tested. An attempt was made to include only the more popular hybrids and varieties in each area.

Location of the 1948 Test Plots

Each of the 11 corn performance tests which were conducted in 1948 may be located by consulting Table 1 and the map presented in Figure 1. As indicated above, at least one test was located in each of the eight agricultural areas of the state. In some areas two tests were conducted because of variations in soil type, rainfall, elevation, and length of growing season. Results from the nearest test should be used in evaluating and selecting a hybrid or open-pollinated variety for any specific farm.

Table 1. Location of the 1948 Plots

District	County	Cooperator	Post Office	Soil type	Date planted	Date harvested
1	Lawrence	Walter Tetrault	Spearfish	Vale silt loam	May 6	Oct. 14
2	Dewey	Wm. Lutz	Isabel	Jordan fine sandy loam	May 28	Oct. 13
3	McPherson	North Central Substation	Eureka	Williams loam	May 27	Oct. 12
3	Hyde	Central Substation	Highmore	Williams loam	May 19	Oct. 8
4	Brown	Ellis Barnes	Claremont	Bearden silt loam	May 18	Oct. 11
5	Roberts	E. B. Harms	Corona	Aastad silt loam	May 24	Nov. 1
5	Brookings	Agr. Exp. Station	Brookings	Barnes loam	May 13	Oct. 20
6	Tripp	C. E. Bailey	Winner	Boyd clay loam	May 26	Oct. 9
7	Hanson	Alvin Tilberg	Ethan	Barnes silt loam	May 21	Oct. 18
8	Minnehaha	Paul Sorenson	Garretson	Moody silt loam	May 20	Oct. 25
8	Clay	Leo Trudeau	Vermillion	Kranzburg silt loam	May 22	Oct. 21

Temperature and Rainfall Data

Temperature and rainfall data for the 1948 growing season are presented in Table 2. Where information was not available for the immediate vicinity of each test, reports from the closest station were used.

For most locations temperatures were average, or nearly so, in May, resulting in warm seedbeds and rapid germination. In June, while temperatures were slightly below the long-time average for most locations, they were not excessively low and probably did not retard corn growth to any great extent. July temperatures, in general, were very near the long time averages and August and September temperatures were above average, but were not, in most places, sufficiently high to cause damage. In summary, temperatures were very favorable for corn in 1948.

Rainfall was also favorable for good corn growth. While precipitation was below average at most locations in May, during June and July rainfall generally exceeded long time averages. August rainfall was above average while that in September was slightly below average. The rainfall and temperature conditions were such that an

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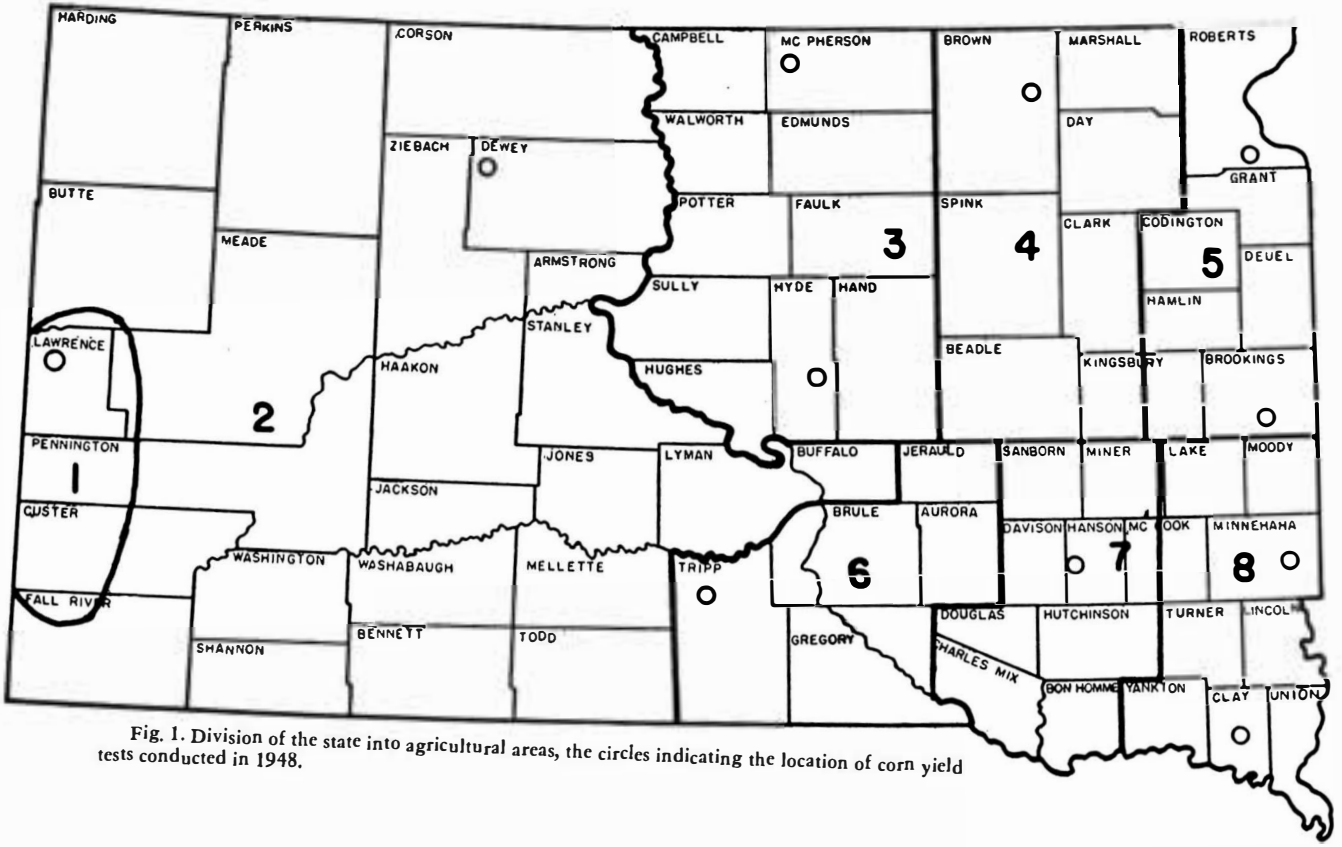

Fig. 1. Division of the state into agricultural areas, the circles indicating the location of corn yield tests conducted in 1948.

excellent crop of corn was raised in most of the tests. The plot located in Hyde County was the only one which showed effects of drought. Referring to Table 2, it may be seen that only 0.73 inches of rain (1.62 inches below average) fell during July at Highmore.

Table 2. Temperature and Precipitation Data for the 1948 Corn Growing Season*

Station and district	Month	Temperature in degrees F.			Precipitation in inches				Frost free days
		Average	Departure from normal	Average departure	Monthly total	Season total	Departure from normal	Total departure	
Spearfish	May	‡	‡		1.52		—1.12		165
	June	‡	‡		3.47		+0.12		
(1)	July	71.1	0.0†		5.40		+3.27		
	Aug.	71.6	+2.4†		0.52		—1.10†		
	Sept.	66.7	+6.4†	+4.4	0.88	11.79	—0.74†	+0.43	
Timber Lake	May	58.1	+2.1		2.09		—0.64		176
	June	65.2	—0.6		3.48		—0.76		
(2)	July	73.4	—0.9		3.30		+0.93		
	Aug.	73.5	+2.7		1.22		—0.63		
	Sept.	67.1	+7.1	+2.1	0.11	10.20	—1.12	—2.22	
Eureka	May	57.0	+1.7		0.40		—1.90		176
	June	63.4	—1.5		3.72		+0.36		
(3)	July	71.5	—0.5		2.85		+0.57		
	Aug.	70.5	+1.1		2.33		+0.16		
	Sept.	65.8	+6.2	+1.4	0.65	9.95	—0.82	—1.63	
Highmore	May	56.2	—0.3		1.19		—1.41		178
	June	62.1	—3.5		5.06		+1.75		
(3)	July	71.4	—2.3		0.73		—1.62		
	Aug.	71.7	0.0		3.09		+1.03		
	Sept.	65.0	+2.6	—0.7	0.62	10.69	—0.77	—1.02	
Aberdeen	May	56.6	—0.7		0.28		—2.79		164
	June	63.8	—2.7		4.88		+0.78		
(4)	July	72.5	—0.3		3.37		+0.41		
	Aug.	70.4	+0.1		2.55		—0.26		
	Sept.	65.2	+4.7	+0.2	0.95	12.03	—0.96	—2.82	
Milbank	May	59.0	+2.3		0.82		—2.20		188
	June	66.6	+0.8		5.88		+1.93		
(5)	July	74.9	+2.9		2.98		+0.36		
	Aug.	72.8	+3.0		3.01		+0.20		
	Sept.	66.8	+6.0	+3.0	3.14	15.83	+1.16	+1.45	
Brookings	May	56.5	—0.3		2.06		—0.85		181§
	June	64.8	—1.3		4.72		+0.87		
(5)	July	72.5	+0.6†		3.43§		+1.00†		
	Aug.	71.3	+1.4		2.43		—0.25		
	Sept.	64.7	+3.8	+0.8	2.13§	14.77	+0.11†	+0.88	
Winner	May	60.6	+1.0		1.38		+0.68		184
	June	66.8	—1.9		5.94		+2.60		
(6)	July	75.7	—1.2		2.34		+0.01		
	Aug.	75.3	+1.0		1.15		—0.97		
	Sept.	69.1	+4.7	+0.7	1.87	12.68	+0.73	+3.05	
Mitchell	May	59.8	+0.8		2.78		—0.43		188
	June	66.8	—1.5		6.80		+2.77		
(7)	July	74.5	0.0		4.25		+1.19		
	Aug.	73.1	+1.1		1.41		—1.19		
	Sept.	67.6	+4.4	+1.0	1.11	16.35	—1.01	+1.33	
Sioux Falls	May	57.8	—1.4		2.56		—1.27		188
	June	65.5	—2.6		5.68		+1.34		
(8)	July	74.0	+0.4		7.79		+4.64		
	Aug.	73.0	+1.9		0.83		—2.42		
	Sept.	67.0	+4.5	+0.6	2.97	19.83	+0.40	+2.69	
Vermillion	May	61.7	+0.5		2.13		—1.43		191
	June	69.2	—1.1		6.08		+2.03		
(8)	July	77.2	+0.8		4.59		+1.43		
	Aug.	76.5	+2.6		2.16		—0.82		
	Sept.	70.7	+5.4	+1.6	0.78	15.74	—2.38	—1.17	

*Results presented were taken from monthly climatological Data, U. S. Department of Commerce, Weather Bureau, Huron, South Dakota.

†Data not supplied by Weather Bureau. Figures used calculated from 1947 reports.

‡No figures given.

§Information obtained from sources other than Weather Bureau.

A very long growing season occurred at the site of all tests. For most locations the last killing frost in the spring came around April 12-16, while the first killing frost in the fall occurred, for all tests, in the period from October 9 through October 17. Some parts of the state did have a light frost on May 6. The late killing frost in the fall gave the late corns a decided advantage, and in most tests, entries matured which would not have done so under a season of average growing length. This factor should be recognized when using the results for selecting hybrids for an area.

Selection of Entries

In order to select hybrid entries for the tests, a survey was conducted among seed producers and distributors by the South Dakota Department of Agriculture. Records were obtained of the sales of corn hybrids registered in 1948 and from these, the relative importance of individual hybrids was estimated. In general, if a hybrid was sold to the extent of one percent, or more, of the total hybrid seed corn sold in a given agricultural area, that hybrid was entered in the test for that area. Hybrid corn is not as generally grown in western districts as open-pollinated varieties and a number of early hybrids were entered in the tests in these areas even though the sales reords did not justify their being included on the basis of use.

Method of Planting and Harvesting

Planting. Each entry was planted in six plots, each plot being located, at random, within one complete grouping of all entries. This means that all varieties were planted in six groups or replications. Each plot consisted of two rows 10 hills long, or the equivalent if the corn was drilled rather than checked. Planting was done at the rate of five kernels per hill for the checked plots, two per hill for the drilled plots. Later the stand was thinned to either three plants or one plant per hill, depending on the method of planting used. Tests were located in the general field of the cooperator and received the same cultural treatments as his corn. Planting dates are given in Table 1.

Harvesting. The tests were picked at the time general harvesting was going on in the area where each was located. Each plot was picked separately and weighed. After weighing, samples for moisture determination were taken on the first, third and fifth replications of the plots. This was accomplished by selecting 10 ears at random, taking a one-inch cross section from the middle of each by means of a machine built for this purpose, and placing the ten cross sections in a paper bag. The samples were weighed when taken in the field, then they were transported to the laboratory where they were oven-dried at 105 degrees C., reweighed and moisture percentages determined. Harvesting dates are given in Table 1.

Measuring Performance

Yield. The yield reported for each hybrid or variety in each test is the average obtained for the six plots, expressed in bushels per acre on a basis of 15 percent moisture. All yields were computed from the field weights which had been corrected according to the moisture content of the individual entries. At the bottom of each table of results (Tables 3-13, inclusive) is given the minimum amount by which two entries must differ in yield in order for that difference to be considered statistically significant.

A slight amount of variation can occur between entries of equal performance

potential beause of field conditions such as variations in soil type, stand, and slope. Therefore, determinations have been made to establish what difference it is necessary to have between two entries before is can be said that there is a true difference between them rather than a chance variation. For example, in Clay County (Table 13), a difference of 6.8 bushels per acre in the yield of two entries is required before it can be said that one has a superior yielding ability over the other. This difference, required for significance, varies from test to test, depending upon the amount of chance variation within each. Also, at the bottom of the yield column in each table appears the average yield of all entries.

Moisture Content. The moisture content at harvest is given for each entry in the tables. This is the amount of moisture in the ear corn expressed in percentage. At the bottom of the moisture percentage column in each table appears the average moisture content of all entries. Moisture content is directly related to maturity, and because maturity is of primary consideration in South Dakota, these figures are very important when an evaluation of the various entries is made. As mentioned above, the late fall in 1948 caused the moisture contents of many late maturing entries to be very low.

Performance Score. Each entry in the various tables is ranked on the basis of a performance score. This score was computed for each entry from its performance record, expressed as a percentage of the average of all entries. In such calculations yield was weighted 60 percent and dry matter (100 minus percent moisture) 40 percent.

Stand. Stand percentage is presented in several tables. These values were computed from counts taken on missing hills. An excess of kernels was always planted and any extra plants were later thinned to three stalks per hill. Therefore, a reduction in stand below 100 percent is taken to mean that either the seed of an entry is unable to produce a good stand under the environmental conditions prevailing for the test, or that something destroyed either the kernels before germination or the young plants. Many tests in 1948 had an almost perfect stand.

Thin stands reduce yields and since these tests are designed primarily to test yielding potential of the various entries, rather than germination, corrections in yield were made for missing hills according to the formula:

$$CW = FW \frac{H - 0.3M}{H - M}$$

where CW = corrected weight, FW = field weight, H = number of hills per plot, and M = number of missing hills. No yield corrections were made for minor variations in stand ,that is, less than three stalks per hill.

Lodging. It has been customary to take both stalk and root lodging in previous years. In 1948, lodging was so slight that only minor differences existed among the entries. Therefore, such data have not been presented in the tables.

Period of Year's Results. Many of the entries included in the 1948 trials were also tested in 1947 and 1946. This makes possible the calculation of two and three year averages in those cases and such data are included in many of the tables which follow. These averages are better than the results obtained for a single year for determining the value of any hybrid or variety, for in any one year the entry may fluctuate in its relative value because of the specific environmental conditions under which the test was conducted. A hybrid or variety was included in the averages only when it was the same variety each year and was secured from the same source.

Black Hills Area

LAWRENCE COUNTY. This test was conducted on the farm of Walter Tetrault which is just north of Spearfish. The soil is Vale silt loam. Planting was done May 6 and harvesting, October 14. This test was planted on land which is ordinarily under irrigation but no watering was done throughout the growing season.

Table 3. Area 1 (Lawrence County) 1948 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average		3-year average	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent
Sokota 400	115.5	135.4	24.8	----	----	----	----
Sokota Experimental 5	114.2	130.1	21.5	----	----	----	----
DeKalb 56	112.2	124.2	19.0	106.6	17.5	----	----
Iowa 4442	110.9	132.7	30.5	----	----	----	----
DeKalb 240	108.5	125.6	27.6	120.8	22.9	----	----
Funk G-1A	105.0	121.2	29.5	110.3	23.8	92.2	29.8
DeKalb 404A	105.0	123.2	31.6	111.6	28.2	----	----
Iowa 4316	103.3	120.3	31.8	----	----	----	----
Sokota 224	102.8	112.6	24.5	96.9	20.3	----	----
Funk G-12	102.3	120.7	34.1	----	----	----	----
Minhybrid 706 (white)	101.5	107.3	21.4	98.7	18.8	79.2	24.5
DeKalb 46	100.3	104.2	20.5	----	----	----	----
Kingscrost KE1	99.8	99.0	16.0	92.4	14.6	76.9	19.6
Pioneer 343	99.5	118.1	36.7	----	----	----	----
DeKalb 65	99.4	111.6	30.0	105.9	24.6	----	----
Wisconsin 240	99.1	100.2	18.5	87.0	18.3	70.6	22.0
Black Hills Special	97.2	107.4	29.6	97.6	25.5	82.3	28.1
Sokota 212	95.7	100.0	24.8	95.7	21.4	80.3	26.9
Master F21	94.1	90.6	17.9	82.2	15.3	68.8	20.0
Minhybrid 800	93.8	92.5	20.4	85.0	17.2	68.6	22.5
Wisconsin 275A	92.5	87.0	17.0	84.3	16.3	69.6	24.3
Silver King (white)	91.8	87.6	19.1	91.1	17.1	75.4	23.1
Jacques 802	86.2	76.8	18.2	75.4	16.3	63.1	19.8
Kingscrost KE3	86.0	74.6	16.3	80.5	14.6	----	----
Jacques 852	82.8	81.4	29.5	80.9	22.5	67.3	24.1
Average of all entries		**107.4**	**24.4**	**94.6**	**19.7**	**74.5**	**23.7**

*Differences in yield of less than 22.3 bushels per acre are not statistically significant.

West River Area

DEWEY COUNTY. Test work was done on the farm of William Lutz of Isabel. The soil is Jordan fine sandy loam and the topography is rolling. Planting was done May 28 and harvesting, October 13.

Table 4. Area 2 (Dewey County) 1948 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average Yield bu.	2-year average Moisture percent	3-year average Yield bu.	3-year average Moisture percent
Gehu	118.8	19.0	15.4	15.0	17.8	10.4	18.1
Kingscrost KF7	117.5	19.2	19.3	14.1	25.7	—	—
Kingscrost KE3	111.8	17.5	17.5	14.1	24.8	—	—
Wisconsin 240	110.7	17.3	18.1	14.3	23.1	12.3	24.7
Falconer	110.6	16.7	13.8	14.5	17.5	12.4	19.0
Wisconsin 255	110.3	17.3	18.8	13.7	23.7	12.0	23.7
Master F21	109.9	17.3	19.7	13.9	23.6	10.8	26.1
Nodakhybrid 304	109.8	16.9	16.8	—	—	—	—
Minhybrid 706 (white)	108.9	17.5	23.0	14.8	30.1	10.6	32.9
Kingscrost KE2	102.1	15.3	19.5	11.5	27.1	9.0	26.0
Kingscrost KE1	101.2	15.3	21.2	13.1	26.9	10.0	26.1
Nodakhybrid 301	100.0	15.4	24.3	—	—	—	—
DeKalb 46	99.0	15.4	26.2	—	—	—	—
Disco 85W	97.8	14.5	21.7	—	—	—	—
Sokota Experimental 5	97.1	16.0	34.4	—	—	—	—
Sokota 212	96.8	15.6	31.9	11.4	39.1	9.7	38.8
Sokota 204	96.5	15.1	28.7	12.3	36.4	—	—
Nodakhybrid 201	93.4	13.1	19.7	12.9	20.8	11.1	20.8
Silver King (white)	88.4	13.1	29.2	10.4	35.4	8.3	39.5
Funk G-188	85.2	11.6	23.8	8.5	30.9	—	—
Minhybrid 800	83.0	11.2	25.2	10.4	32.0	8.9	31.7
Rainbow Flint	80.4	11.2	30.2	11.9	34.0	9.6	34.0
Funk G-1A	73.8	10.0	33.8	8.1	41.8	6.3	42.5
Average of all entries		**15.3**	**23.5**	**12.5**	28.4	**10.1**	28.9

*Differences in yield of less than 5.0 bushels per acre are not statistically significant.

North Central Area

McPHERSON COUNTY. This test was located on the North Central Substation, just east of Eureka. The soil is Williams loam and the topography is rolling. Rainfall was above normal during June, July and August and yields were good. The test was planted May 27 and harvested October 12.

Table 5. Area 3 (McPherson County) 1948 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average		3-year average	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent
Campbell County variety	121.5	41.2	24.0	—	—	—	—
Kingscrost KF7	116.8	37.7	20.2	30.4	25.4	—	—
Wisconsin 240	111.0	34.6	19.9	31.8	24.4	33.3	26.3
Nodakhybrid 201	108.8	35.2	25.9	32.3	25.4	34.5	24.8
Nodakhybrid 301	106.4	34.3	27.2	—	—	—	—
Kingscrost KE1	104.4	33.1	26.5	25.9	31.0	26.0	32.8
Minhybrid 706 (white)	104.4	33.0	26.2	29.2	30.9	30.5	33.5
Nodakhybrid 304	103.6	31.5	22.5	—	—	—	—
Kingscrost KE3	103.0	31.1	22.1	—	—	—	—
Funk G-35	102.7	31.9	25.6	24.9	34.4	—	—
Silver King (white)	100.5	32.1	30.2	25.1	36.3	27.4	36.8
Sokota Experimental 5	100.4	32.9	33.2	—	—	—	—
Master F21	98.3	29.4	24.8	26.2	27.1	29.6	26.7
Wisconsin 255	96.0	28.2	24.8	26.5	27.2	29.9	26.7
Sokota 212	95.7	30.7	34.0	27.2	37.6	31.1	38.1
Wisconsin 275A	95.1	29.0	29.1	27.8	33.8	31.0	35.1
Kingscrost KE2	92.7	26.8	25.8	21.2	30.7	20.1	31.5
Funk G-188	92.7	27.3	27.6	24.3	32.5	—	—
Sokota 204	92.0	28.7	33.7	25.2	39.0	—	—
Northwestern Dent	88.1	26.6	33.5	25.6	31.9	26.7	34.0
Funk G-1A	87.8	27.0	35.4	21.7	44.3	26.6	43.9
Minhybrid 800	84.7	24.1	30.8	25.2	31.7	28.4	30.5
Funk G-179	82.9	23.5	32.0	—	—	—	—
Average of all entries		**31.1**	**27.6**	**26.5**	**32.0**	28.9	**32.4**

*Differences in yield of less than 3.6 bushels per acre are not statistically significant.

North Central Area

HYDE COUNTY. The Central Substation, where this test was located, is just west of Highmore. The soil is Williams loam but is less rolling than that at Eureka. Planting was done on May 19 and harvesting, on October 8. Excellent stalk growth occurred but the ears were small. Table 2 shows rainfall was below normal in July.

Table 6. Area 3 (Hyde County) 1948 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average		3-year average	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent
Sokota 212	115.1	30.3	18.6	23.8	19.8	24.6	21.9
Minhyrid 706 (white)	114.2	29.1	14.6	23.1	14.5	20.3	18.9
Wisconsin 355	114.1	29.3	15.6	19.3	19.3	19.8	21.8
Master F41	112.9	28.7	15.0	—	—	—	—
Kingscrost KE1	111.7	28.2	15.0	19.5	16.3	19.4	19.1
DeKalb 65	111.3	29.1	20.3	20.8	20.1	23.0	22.1
Wisconsin 416	109.7	28.0	18.0	18.9	20.0	20.3	22.5
Kingscrost KA4	108.6	27.3	16.7	18.9	18.9	20.2	21.6
Sokota 204	104.8	26.0	18.0	21.5	18.4	—	—
DeKalb 56	104.3	25.7	17.6	20.2	18.8	22.4	21.9
Pioneer 359	101.0	25.1	21.1	16.9	24.2	22.8	26.3
Disco 105W	100.8	25.5	23.6	—	—	—	—
Sokota 224	100.7	24.5	18.9	21.8	19.2	23.3	22.1
Kingscrost KS2	99.7	24.9	22.8	18.2	25.0	23.0	25.8
Alta	98.3	22.5	13.9	19.0	15.6	19.3	18.8
Funk G-1A	97.5	23.9	22.4	17.2	25.9	23.3	27.7
Kingscrost KH	97.3	22.1	14.0	—	—	—	—
Disco 95W	94.9	22.9	22.6	14.7	23.5	—	—
Sokota Experimental 5	93.8	21.5	18.1	—	—	—	—
Sokota 400	93.5	22.7	24.6	19.2	25.3	24.2	27.9
Hagies 419B	86.7	21.0	29.7	—	—	—	—
Disco 90W	77.2	16.0	24.3	—	—	—	—
Funk G-31	76.2	16.6	29.3	12.7	33.1	20.3	34.2
Hagies 461C	73.8	16.1	31.5	—	—	—	—
Average of all entries		**24.5**	**20.3**	**19.1**	**21.1**	**21.7**	**23.5**

*Differences in yield of less than 10.2 bushels per acre are not statistically signficant.

North James River Area

BROWN COUNTY. This test was located on the farm of Ellis Barnes three or four miles west of Claremont. The soil is Bearden silt loam. Planting was done May 18 and harvesting was carried out on October 11. Dry soil conditions prevailed at planting time, resulting in many two plant hills and, in several cases, in hills with one or two plants which germinated very late.

Table 7. Area 4 (Brown County) 1948 Corn Performance Tests

Hybrid or variety	Per-formance score	Acre yield bu.*	Moisture percent	Stand percent	2-year average		3-year average	
					Yield bu.	Moisture percent	Yield bu.	Moisture percent
Winters MQ 97	118.4	53.6	21.9	96.7	—	—	—	—
DeKalb 65	113.1	49.7	21.3	92.5	51.5	27.4	54.1	27.9
Tomahawk 14	110.2	51.2	30.9	94.2	—	—	—	—
Sokota Experimental 5	106.2	46.8	26.6	96.7	—	—	—	—
Minhybrid 706 (white)	105.9	45.0	22.2	96.7	47.2	26.3	49.0	25.9
Master F60A	105.4	46.0	26.0	96.7	—	—	—	—
Wisconsin 416	104.9	45.3	24.9	96.7	50.1	30.2	50.4	29.9
Funk G-1A	103.4	46.3	30.5	94.2	48.3	33.5	52.0	32.4
DeKalb 56	102.4	43.0	23.5	96.7	45.6	28.0	48.6	27.7
Winters MQ355	100.9	41.4	21.9	95.8	—	—	—	—
Jacques Weather-Pruf No. 5	100.6	45.2	32.7	95.8	—	—	—	—
Sokota 224	99.8	41.2	23.5	92.5	45.5	27.7	47.5	28.4
Jacques 902	99.5	40.2	21.3	95.0	—	—	—	—
Silver King (white)	98.2	41.3	26.9	95.8	42.1	28.0	—	—
Pfister 50A	97.6	42.8	31.9	95.0	—	—	—	—
Disco 95W	97.4	41.4	28.6	94.2	41.8	32.2	—	—
Kingscrost KE2	97.4	36.3	14.8	90.8	38.4	20.2	39.0	20.7
Kingscrost KE1	96.8	39.1	23.4	91.7	40.6	24.7	40.6	26.2
Funk G-188	96.3	37.1	19.1	94.2	40.0	22.9	—	—
Sokota 204	94.6	38.8	26.7	97.5	44.6	29.9	44.5	30.2
Sokota 212	94.3	37.6	24.1	91.7	41.5	30.0	44.1	30.2
Brown County Yellow Dent	90.9	34.2	21.3	70.8	35.9	27.7	37.7	29.1
Wisconsin 275A	89.0	34.5	25.7	94.2	39.7	28.4	—	—
Kingscrost KA4	88.6	36.6	32.2	95.0	—	—	—	—
Minnesota 13	87.4	32.4	23.1	95.8	37.3	26.7	39.1	26.9
Average of all entries		**41.9**	**25.0**	**93.9**	**43.1**	**27.7**	**45.6**	**28.0**

*Differences in yield of less than 7.0 bushels per acre are not statistically significant.

North East Area

ROBERTS COUNTY. In Roberts County a test was located on the E. B. Harm's place. It is about four miles northeast of Corona. The soil type is Aastad silt loam. The test was planted May 24 and harvested November 1. Dry weather at the time of planting followed by rains in June caused a very erratic germination.

Table 8. Area 5 (Roberts County) 1948 Corn Performance Tests

Hybrid or variety	Per-formance score	Acre yield bu.*	Moisture percent	Stand percent	2-year average† Yield bu.	2-year average† Moisture percent	3-year average† Yield bu.	3-year average† Moisture percent
Sokota Experimental 5	114.6	69.8	25.0	97.5	—	—	—	—
Kingscrost KS2	113.5	70.4	28.0	87.5	64.1	27.4	66.9	29.1
Sokota 400	108.0	65.8	29.2	92.5	62.0	30.3	63.8	31.7
Wisconsin 412A	105.5	63.3	29.2	95.8	60.7	29.6	—	—
Sokota 212	103.6	59.2	24.8	99.2	59.0	26.6	60.2	27.3
Pioneer 379	102.9	61.7	30.8	96.7	60.7	31.0	63.8	32.0
DeKalb 65	102.8	59.9	27.6	90.8	60.2	27.5	61.6	28.1
Pioneer 359	102.2	61.4	31.4	95.8	58.0	28.6	60.7	30.3
Haapala 400	102.1	59.0	27.2	99.2	—	—	—	—
Jacques 902	101.6	58.3	26.7	94.2	—	—	—	—
DeKalb 240	101.2	61.9	34.3	90.0	57.5	33.2	64.4	33.8
Kingscrost KH	100.1	55.4	24.0	96.7	—	—	—	—
Master F82	99.7	58.5	30.5	93.3	55.4	30.5	58.8	31.4
Minhybrid 503	99.5	59.8	33.3	90.8	56.1	31.8	60.0	32.8
Jacques 852	98.9	52.8	21.3	95.0	—	—	—	—
Funk G-1A	98.7	58.7	32.7	93.3	59.6	30.6	63.4	31.2
Kingscrost KE1	97.9	54.9	27.0	96.7	54.9	24.8	—	—
Pfister 35	97.5	54.9	27.7	95.0	53.2	28.6	—	—
Wisconsin 531	95.5	54.9	31.4	97.5	45.0	33.3	51.4	33.9
Sokota 224	94.2	51.4	27.2	86.7	55.8	26.4	57.7	27.6
DeKalb 56	94.0	52.3	29.2	92.5	55.2	27.3	56.0	28.9
Sokota 204	89.3	48.5	30.3	92.5	51.0	29.4	—	—
Funk G-188	80.8	38.3	26.6	85.0	44.8	25.4	—	—
Average of all entries		**57.5**	**28.1**	**93.7**	**56.3**	**29.0**	**60.7**	**30.6**

*Differences in yield of less than 8.3 bushels per acre are not statistically significant.
†To figure averages, data obtained from tests conducted in Grant County in 1946 and 1947 were used. All three tests were conducted in the same general area and such averaging was considered feasible.

North East Area

BROOKINGS COUNTY. Test work in Brookings County was located on the Agronomy experimental farm, one mile east of the college campus at Brookings. The farm is on Barnes loam soil. Planting was done on May 13 and harvesting, on October 20.

Table 9. Area 5 (Brookings County) 1948 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average		3-year average	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent
Haapala 130	111.8	97.0	30.0	—	—	—	—
Funk G-6	109.1	91.9	27.8	72.1	33.5	68.3	32.3
Kingscrost KS6	107.1	89.8	28.6	71.9	33.6	66.1	34.1
Sokota 400	106.8	90.1	29.5	71.8	33.3	67.4	33.0
Sokota Experimental 5	105.7	83.4	22.1	—	—	—	—
Pioneer 359	105.3	84.1	23.9	68.5	28.5	65.1	29.8
Funk G-1A	104.1	85.8	29.0	69.7	32.5	65.7	32.4
Minhybrid 504	104.1	87.3	30.7	66.7	36.1	—	—
DeKalb 240	104.1	88.2	31.9	71.8	36.9	67.5	37.6
Pioneer 379	103.8	82.8	24.8	68.5	32.5	64.9	32.4
Minhybrid 607	102.2	81.3	25.7	65.9	30.6	—	—
Master F82	101.7	81.6	27.0	64.3	33.4	60.1	33.7
Sokota 224	101.1	78.6	23.8	65.0	28.5	62.4	29.3
DeKalb 65	101.0	80.0	26.0	67.5	31.3	63.9	30.5
DeKalb 56	98.8	75.6	24.0	62.7	28.7	58.3	28.9
Wisconsin 464	98.7	75.1	23.3	62.3	31.2	56.6	31.8
Pfister 50A	96.9	81.2	35.2	—	—	—	—
Minhybrid 706 (white)	96.4	69.0	19.1	58.2	25.6	—	—
Jacques Weather-Pruf No. 4	93.6	71.2	27.4	—	—	—	—
Sokota 212	93.3	70.8	27.2	60.7	31.7	58.9	31.4
Jacques 957	93.3	69.2	25.0	—	—	—	—
Funk G-188	92.2	64.5	20.5	53.8	25.8	—	—
Sokota 204	91.6	67.3	25.4	57.2	31.4	56.7	28.6
Pfister 35	90.8	63.2	21.2	54.0	29.2	—	—
Kingscrost KS2	86.8	55.3	17.5	54.0	26.9	55.6	28.2
Average of all entries		**78.6**	**25.9**	**64.3**	**31.1**	**62.5**	**31.6**

*Differences in yield of less than 5.1 bushels per acre are not statistically significant.

South Central Area

TRIPP COUNTY. This test was located on the farm of C. E. Bailey about 25 miles northwest of Winner. The soil is Boyd clay loam and the topography is rolling. The test was planted May 26 and harvested October 9.

Table 10. Area 6 (Tripp County) 1948 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average		3-year average	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent
Iowa 4316	122.3	54.3	27.4				
Sokota 224	144.2	44.3	13.9	26.1	19.2	27.0	19.4
Funk G-29	111.5	49.3	33.2	29.4	37.8	32.3	35.8
Kingscrost KS2	111.1	45.0	21.6				
Sly Corn	108.4	45.3	27.6	25.8	30.5		
Sokota 400	106.7	43.4	25.3	26.3	31.9	32.3	29.0
DeKalb 240	106.5	42.9	24.1	25.9	30.1	28.8	27.8
Disco 107A	105.0	42.9	27.0	24.7	35.9	30.9	33.4
Tomahawk 14	103.3	40.9	24.4	24.9	30.3		
Wisconsin 240	102.7	35.9	11.2				
Kingscrost KS6	102.5	39.9	22.9				
Sokota Experimental 5	102.4	38.8	20.0				
Disco 105W	100.1	38.5	23.5				
Kingscrost KF 7	97.8	33.2	12.5				
Jacques 1004	96.9	36.4	23.4				
Disco 102 (white)	96.8	35.1	19.8	22.5	27.4	25.3	25.5
Funk G-114	95.7	38.8	32.5	23.1	38.5	24.9	35.6
Tek 31	94.6	36.8	28.9				
Pfister 374	92.2	35.5	29.8				
Pioneer 353A	89.5	33.8	29.9	19.9	35.2	22.9	31.9
Hagies 419B	88.0	34.0	33.3				
DeKalb 404A	87.0	30.6	25.3	17.3	33.2		
Tomahawk 45	85.3	31.5	31.1				
Pfister 274	81.2	28.0	28.6	17.5	35.5		
Average of all entries		**39.0**	**25.1**	**23.6**	**32.1**	**28.1**	**29.8**

*Differences in yield of less than 10.0 bushels per acre are not statistically significant.

South James River Area

HANSON COUNTY. The farm of Alvin Tilberg, which is about eight miles southeast of Mitchell, was the site of this test. The soil is Barnes silt loam. Planting was done May 21 and harvesting, October 18.

Table 11. Area 7 (Hanson County) 1948 Corn Performance Tests

Hybrid or variety	Per-formance score	Acre yield bu.*	Moisture percent	Stand percent	2-year average		3-year average	
					Yield bu.	Moisture percent	Yield bu.	Moisture percent
Pfister 299	108.0	108.6	28.7	95.0	—	—	—	—
Funk G-29	105.9	107.9	31.7	98.3	70.3	33.9	72.5	32.4
DeKalb 240	105.6	101.5	25.1	97.5	66.9	27.1	65.2	26.9
Iowa 4316	104.4	105.7	31.9	99.2	—	—	—	—
Iowa 306	103.8	104.3	31.5	96.7	—	—	—	—
Pfister 274	103.6	100.9	28.0	97.5	66.6	30.3	63.1	29.1
Tomahawk 45	103.4	99.7	27.1	97.5	—	—	—	—
Disco 111A	102.4	103.3	32.8	97.5	69.6	33.0	70.6	31.9
DeKalb 404A	102.2	98.8	28.1	95.8	58.4	30.7	62.1	29.9
Disco 102 (white)	101.9	88.9	17.8	99.2	61.8	20.5	62.4	20.6
Tomahawk 35	100.9	96.7	28.2	95.8	65.1	29.8	—	—
Tomahawk 27	100.7	96.2	27.3	94.2	—	—	—	—
Tek 115	100.7	98.5	30.5	93.3	—	—	—	—
Farmers Hybrid 322	100.5	100.0	32.7	96.7	—	—	—	—
Pioneer 353A	100.2	94.9	27.5	97.5	61.6	28.5	65.6	27.8
Kingscrost KR2	99.6	96.0	29.7	95.0	—	—	—	—
Farmers Hybrid 427A	98.2	97.4	33.7	98.3	—	—	—	—
Pioneer 343	97.8	95.1	32.0	100.0	61.5	33.7	—	—
Funk G-1A	97.5	88.1	24.7	95.0	60.7	24.9	—	—
Sokota Experimental 5	97.1	85.4	22.5	98.3	—	—	—	—
Sokota 400	97.0	90.3	28.1	97.5	61.7	29.1	65.0	27.6
Master F101A	94.7	90.4	32.3	97.5	—	—	—	—
Sokota 224	93.3	77.1	19.9	96.7	54.4	21.0	53.0	21.6
Funk G-114	91.5	89.2	36.6	98.3	60.6	36.5	65.9	34.6
Vinton V24A	88.6	81.7	33.4	98.3	—	—	—	—
Average of all entries		**95.9**	**28.9**	**97.1**	**63.0**	**29.2**	**64.5**	**28.2**

*Differences in yield of less than 9.8 bushels per acre are not statistically significant.

South East Area

MINNEHAHA COUNTY. This test was located on the farm of Paul Sorenson, about five miles south of Garretson. The soil is Moody silt loam with colluvium from adjoining upland. The test was planted May 20 and harvested October 25. Above normal rains in July resulted in very good yields.

Table 12. Area 8 (Minnehaha County) 1948 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	Stand percent	2-year average		3-year average	
					Yield bu.	Moisture percent	Yield bu.	Moisture percent
Cornelius C 40	112.0	108.6	34.2	100.0	----	----	----	----
DeKalb 410	111.2	108.4	29.8	99.2	82.8	25.2	----	----
DeKalb 404A	107.5	104.2	31.5	100.0	75.7	27.7	65.1	30.1
DeKalb 240	106.7	100.3	28.4	100.0	78.9	24.3	72.3	25.4
Iowa 4316	105.1	101.3	32.4	98.3	80.0	27.0	----	----
Pfister 299	103.9	102.0	35.2	96.7	----	----	----	----
Sokota Experimental 5	103.6	92.5	25.0	97.5	----	----	----	----
Tek 45	103.5	99.7	33.3	96.7	----	----	----	----
Sokota 400	103.3	95.6	29.1	98.3	77.3	24.1	68.5	27.2
Iowa 4417	102.5	94.3	29.0	100.0	----	----	----	----
Pioneer 353A	102.3	94.1	29.2	98.3	73.6	24.7	62.2	27.7
Pioneer 343	101.8	98.0	34.4	93.3	76.5	28.3	----	----
Pioneer 373	101.5	94.3	30.8	97.5	73.1	26.7	66.5	28.9
Pfister 274	100.8	94.2	31.9	100.0	72.3	28.1	63.0	29.5
Farmers Hybrid 322	100.3	98.5	37.5	100.0	----	----	----	----
Kingscrost KR2	99.7	92.3	31.6	99.2	73.0	27.5	66.2	30.9
Iowa 4442	98.0	88.6	30.3	96.7	68.2	25.1	----	----
Funk G-114	97.5	92.8	36.0	98.3	73.6	30.7	60.7	34.1
Tomahawk 14	97.4	88.4	31.1	100.0	----	----	----	----
Minhybrid 503	95.3	85.1	31.0	100.0	68.2	25.9	61.2	28.6
Funk G-12	94.9	86.6	33.3	99.2	68.5	27.8	62.0	30.4
Funk G-1A	94.6	83.1	30.0	99.2	68.8	24.7	64.3	25.1
Sokota 224	93.3	76.7	25.1	97.5	64.1	21.5	59.0	22.8
Average of all entries		**92.0**	**30.7**	**98.5**	**73.4**	**26.2**	**64.3**	**28.4**

*Differences in yield of less than 7.1 bushels per acre are not statistically significant.

South East Area

CLAY COUNTY. Test work in Clay County was on the farm of Leo Trudeau, about six miles north of Vermillion on State Highway 19. The soil is Kranzburg silt loam. Planting was done May 22 and harvesting, October 21. Thin stands probably reduced yields.

Table 13. Area 8 (Clay County) 1948 Corn Performance Tests

Hybrid or variety	Performance score	Acre Yield bu.*	Moisture percent	Stand percent	2-year Average Yield bu.	2-year Average Moisture percent
DeKalb 410	109.5	70.6	19.6	92.5	58.0	22.5
Pfister 4897	108.7	71.9	23.5	95.0	—	—
Jacobsen J20	103.8	66.6	23.4	95.0	—	—
Tek 31	103.6	66.5	23.6	94.2	—	—
Farmers Hybrid 427A	103.4	67.0	24.5	89.2	54.5	27.7
Pfister 380	103.3	69.2	28.8	93.3	56.9	29.6
Indiana 608C	103.0	70.6	31.9	94.2	53.6	32.2
Turner T46	102.8	66.0	24.0	92.5	—	—
Pfister 1897	102.6	69.0	29.8	95.0	56.7	29.7
Funk G-29	101.2	67.2	29.2	85.8	54.3	31.0
Sokota 400	100.5	60.8	19.2	92.5	94.4	20.7
Iowa 939	100.1	63.6	24.9	96.7	—	—
Iowa 4316	99.8	63.4	25.1	95.0	53.3	27.9
Disco 111A	99.3	62.9	25.1	93.3	52.0	27.9
Vinton V34A	98.8	63.3	26.9	86.7	—	—
Turner S51A	98.8	66.6	32.7	95.8	—	—
Iowa 306	97.4	61.5	26.2	92.5	52.7	27.4
DeKalb 404A	96.9	59.4	23.4	91.7	48.1	25.6
Iowa 4442	96.6	57.1	20.0	90.8	49.7	23.2
DeKalb 458	96.2	60.8	27.3	90.0	49.8	28.8
Kingscrost KR2	95.9	58.3	23.4	80.8	47.8	26.8
Iowa 4417	95.7	56.9	21.4	91.7	51.7	21.8
Funk G-114	95.4	61.0	29.1	87.5	49.8	28.9
Pioneer 343	94.2	58.4	26.8	92.5	51.4	28.1
Funk G-12	93.2	54.9	22.6	89.2	48.0	25.2
Average of all entries		**63.7**	**25.3**	**91.7**	**52.4**	**26.9**

*Differences in yield of less than 6.8 bushels per acre are not statistically significant.