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1947 Corn Performance Tests, South Dakota

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1947 CORN PERFORMANCE TESTS

SOUTH DAKOTA

SOUTH DAKOTA AGRICULTURAL EXPERIMENT STATION
SOUTH DAKOTA STATE COLLEGE
BROOKINGS

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South Dakota Corn Performance Tests 1947

By D. B. SHANK[1]

Each year the Agronomy Department of the South Dakota Agricultural Experiment Station conducts corn yield trials on commercial hybrids and varieties in order to make available impartial information on the relative performance of the entries included when they are grown at certain selected places in the state. Information includes yielding ability, maturity requirements and other characteristics. Entries in each test are those hybrids which have enjoyed the greatest popularity on the basis of sales' volume during the previous year for the area represented by that test and well known open-pollinated varieties which have been used in that area. The areas represented by the tests are those into which the state might be divided on the basis of soil type, elevation, rainfall and length of growing season.

Location of the 1947 Test Plots

Eleven corn performance tests, located throughout the state, were conducted in 1947, as shown in Figure 1. In some agricultural 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 1947 plots

Area	County	Cooperator	Post Office	Soil type	Date planted	Date harvested
1	Lawrence	Walter Tetrault	Spearfish	Vale silt loam	May 10	Oct 21
2	Dewey	Reinhold Heck	Isabel	Jordan fine sandy loam	May 29	Oct. 3
3	McPherson	Eureka Substation	Eureka	Williams loam	May 17	Oct. 2
3	Hyde	Highmore Substation	Highmore	Williams loam	May 28	Oct. 22
4	Brown	Ellis Barnes	Claremont	Bearden silt loam	May 16	Oct. 4
5	Grant	A. J. Pufahl	Milbank	Barnes silt loam	May 26	Oct. 16
5	Brookings	Agr. Exp. Sta.	Brookings	Barnes loam	May 23	Oct. 11
6	Tripp	C. E. Bailey	Winner	Boyd clay loam	May 19	Oct. 10
7	Hanson	Alvin Tilberg	Ethan	Barnes silt loam	May 20	Oct. 6
8	Minnehaha	Mervin Hokenstad	Garretson	Volin silt loam	May 15	Nov. 12
8	Clay	Willard Anderson	Wakonda	Barnes silt loam	May 21	Oct. 13

Temperature and Rainfall Data

Temperature and rainfall data for the 1947 growing season are presented in Table 2. Where data were not available for the immediate vicinity of each test, information from the closest reporting station was used.

For all locations temperatures averaged below normal during May and June and also for several locations during July. On the other hand, rainfall was above normal at all locations during June, with the exception of Milbank. During August the reverse was true with temperatures averaging several degrees above normal while rainfall was deficient for most areas. The cool wet spring caused corn to start very slowly. It then grew rapidly and looked good during the first part of July. However, in August the hot dry weather produced quite a bit of damage to most of the tests with the ones at Isabel, Eureka, Highmore, Winner, and Mitchell being hurt the most.

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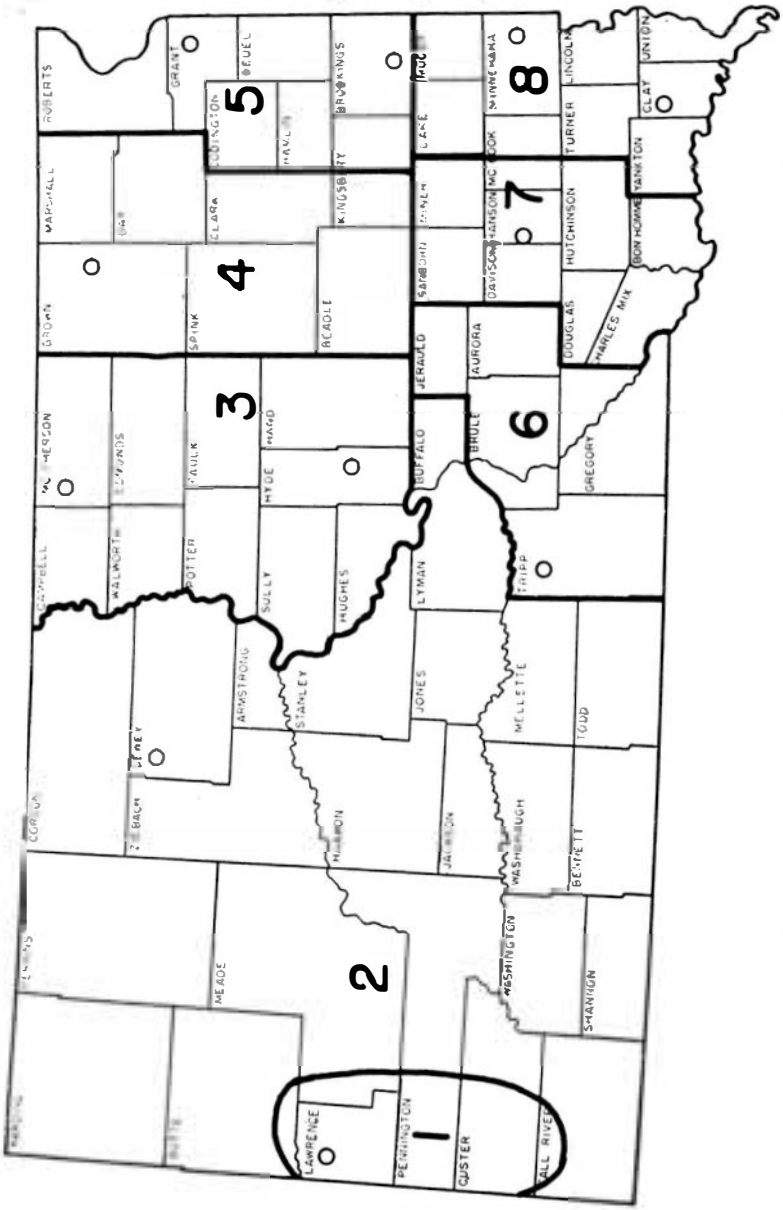

Fig. 1. Division of the state into agricultural areas with circles indicating the location of corn yield tests conducted in 1947.

Table 2. Temperature and precipitation data for the 1947 corn growing season*

Station and district	Month	Temperature in Degrees F. Average	Departure from normal	Average departure	Precipitation in inches. Monthly total	Season total	Departure from normal	Total departure	Frost-free days
Spearfish	May	53.0	—1.4		0.76		—2.53		110
	June	58.8	—4.6		10.75		+6.96		
(1)	July	71.4	+0.3		0.14		—2.04		
	Aug.	74.2	+5.0		0.91		—0.71		
	Sept.	61.0	+0.7	0.0	1.09	13.65	—0.53	+1.15	
Timber Lake	May	53.8	—2.2		0.75		—1.98		117
	June	62.2	—3.6		5.46		+1.22		
(2)	July	74.8	+0.5		0.41		—1.96		
	Aug.	78.2	+7.4		2.23		+0.38		
	Sept.	61.5	+1.5	+0.7	0.65	9.50	—0.58	—2.92	
Eureka	May	52.1	—3.2		0.62		—1.68		116
	June	61.0	—3.9		5.97		+2.61		
(3)	July	70.4	—1.6		1.04		—1.24		
	Aug.	75.8	+6.4		0.57		—1.60		
	Sept.	59.0	—0.6	—0.6	1.37	9.57	—0.10	—2.01	
Highmore	May	53.0	—3.5		0.62		—1.98		117
	June	61.5	—4.1		6.44		+3.13		
(3)	July	71.8	—1.9		0.44		—1.91		
	Aug.	75.8	+4.1		0.66		—1.40		
	Sept.	62.8	+0.4	—1.2	1.30	9.46	—0.09	—2.25	
Aberdeen	May	52.8	—4.5		0.91		—2.16		116
	June	62.8	—3.7		5.73		+1.63		
(4)	July	72.1	—0.7		4.09		+1.13		
	Aug.	76.8	+6.5		0.06		—2.75		
	Sept.	61.2	+0.7	—0.3	1.00	11.79	—0.91	—3.06	
Milbank	May	54.2	—2.5		1.14		—1.88		117
	June	64.7	—1.1		3.71		—0.24		
(5)	July	73.6	+1.6		1.05		—1.57		
	Aug.	78.0	+8.2		1.99		—0.82		
	Sept.	63.4	+2.6	+1.8	2.10	9.99	+0.12	—4.39	
Brookings	May	52.8	—1.0		1.22		—1.69		117
	June	63.7	—2.4		4.80		+0.95		
(5)	July	71.2	—0.7		0.73		—1.70		
	Aug.	77.0	+7.1		1.12		—1.56		
	Sept.	63.6	+2.7	+0.5	3.27	11.14	+1.25	—2.75	
Winner	May	55.8	—3.8		1.60		—1.10		149
	June	64.0	—4.7		5.95		+2.61		
(6)	July	73.6	—3.3		0.89		—1.44		
	Aug.	79.6	+5.3		0.32		—1.80		
	Sept.	65.2	+0.8	—1.1	0.69	9.45	—0.45	—2.18	
Mitchell	May	55.3	—3.7		1.56		—1.65		116
	June	65.0	—3.3		6.27		+2.24		
(7)	July	73.0	—1.5		0.24		—2.82		
	Aug.	78.6	+6.6		0.85		—1.75		
	Sept.	64.3	+1.1	—0.2	2.31	11.23	+0.19	—3.79	
Sioux Falls	May	53.6	—5.6		1.42		—2.41		117
	June	63.8	—4.3		7.27		+2.93		
(8)	July	72.6	—1.0		0.25		—2.90		
	Aug.	78.8	+7.7		2.32		—0.93		
	Sept.	64.0	+1.5	—0.3	2.82	11.08	+0.25	—3.06	
Vermillion	May	57.6	—3.6		2.82		—0.74		117
	June	67.5	—2.8		5.00		+0.95		
(8)	July	75.9	—0.5		1.13		—2.03		
	Aug.	82.3	+8.4		1.54		—1.44		
	Sept.	67.0	+1.7	+0.6	1.68	12.17	—1.48	—4.74	

*Data taken from Monthly Climatological Data, U. S. Department of Commerce, Weather Bureau, Huron, South Dakota.

The last killing frost in the spring occurred either May 29 or May 30 for all locations while the first one in the fall came September 21 or 22 for all locations except Spearfish and Winner, the dates for those tests being September 15 and October 24, respectively. Much of the corn was not too well developed by the time of the first killing frost. This is reflected by the high moisture content of the entries in the tests harvested first.

Selection of Entries

In order to select the hybrid entries for the tests, a survey was conducted among seed producers and distributors by the South Dakota State Department of Agriculture. Data were obtained which listed the sales of the corn hybrids registered in 1946. From these records 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 district, that hybrid was entered in the test for that district. 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 records did not justify their being entered on the basis of use. In all, 105 hybrids and 12 open-pollinated varieties were included.

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 later oven-dried at 105° 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 because 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 it can be said that there is a true

difference between them rather than a chance variation. For example, in Grant County (Table 8), a difference of 6.0 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. 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. At the bottom of the moisture percentage column in each table appears the average moisture content of all entries.

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.

Reduced 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.

Root Lodging. Data on root lodging are presented for the test in Clay County (Table 13). This is expressed as the percentage of hills in which the plants lodged at an angle of 30° or more from the perpendicular at harvest time because of failure of the root system.

Period of Years' Results. Many of the entries included in the 1947 trials were also tested in 1946. This makes possible the calculation of 2-year averages in those cases and such data are included in many of the tables which follow. These 2-year 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. Although the season's temperature averaged normal and total rainfall was 1.15 inches above average, the months of July, August, and September were both hotter and drier than the long time averages for these respective months. The corn was irrigated once and high yields were obtained. The test was planted May 10 and harvested October 21.

Table 3. Area 1 (Lawrence County) 1947 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average Yield bu.	2-year average Moisture percent
DeKalb 240	120.92	116.0	18.2	—	—
Reid National 95	109.85	101.7	20.3	74.9	34.7
DeKalb 65	109.25	100.1	19.2	—	—
Funk G-1A	109.21	99.3	18.1	77.7	30.0
Silver King	106.92	94.5	15.0	69.3	25.1
DeKalb 404A	106.54	100.0	24.7	—	—
Sokota 212	103.62	91.3	18.0	70.5	28.0
Minhybrid 706 (white)	103.62	90.0	16.1	65.2	26.0
DeKalb 56	102.94	88.9	15.9	—	—
Kingscrost KE3	102.55	86.3	12.9	—	—
Kingscrost KE1	102.03	85.7	13.1	65.9	21.4
Kingscrost KF7	100.23	85.4	16.4	—	—
Black Hills Special	99.13	87.8	21.4	69.8	27.3
Wisconsin 275A	97.94	81.6	15.6	60.9	28.0
Pride B-3	97.71	81.0	15.2	—	—
Sokota 224	97.43	81.2	16.1	—	—
Jacques 852	97.15	80.4	15.5	60.2	21.4
Sokota 204	95.82	79.6	17.1	—	—
Minhybrid 800	95.76	77.4	14.0	56.6	23.5
Funk G-188	95.37	77.4	14.8	—	—
Master F-21	93.77	73.7	12.7	57.9	21.1
Minnesota 13	93.29	77.3	19.0	62.5	29.1
Jacques 803	93.28	76.0	17.1	59.5	22.3
Jacques 802	93.17	74.0	14.4	56.3	20.6
Wisconsin 240	91.25	73.8	18.1	55.8	23.8
Wisconsin 255	87.72	66.4	14.6	51.5	21.2
Nodakhybrid 201	86.20	64.3	14.7	49.9	17.0
Average of all entries		85.2	16.6		

*Differences in yield of less than 7.6 bushels per acre are not statistically significant.

West River Area

DEWEY COUNTY. This plot was planted on the Reinhold Heck farm about four and one-half miles southeast of Isabel. The soil is Jordan fine sandy loam and the topography is rolling. Hot dry weather caused low yields. The test was planted May 29 and harvested October 3.

Table 4. Area 2 (Dewey County) 1947 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average Yield bu.	2-year average Moisture percent
Nodakhybrid 201	128.86	12.6	21.9	10.1	21.4
Falconer	126.19	12.2	22.1	10.3	21.6
Gehu	119.76	11.0	20.1	10.1	19.4
Rainbow Flint	119.06	12.6	37.7	8.8	35.9
Wisconsin 240	116.71	11.3	28.1	9.8	28.0
Jacques 802	115.16	10.9	26.5	9.7	24.1
Master F-21	111.98	10.5	27.5	7.5	29.3
Jacques 803	111.66	10.1	23.9	9.9	23.9
Kingscrost KE1	110.79	10.8	32.5	7.4	28.5
Kingscrost KE3	109.77	10.6	32.1		
Wisconsin 255	108.17	10.0	28.5	9.3	26.1
Minhybrid 706 (white)	102.77	10.0	37.2	7.2	37.9
Kingscrost KE7	98.92	8.9	32.1		
Minhybrid 800	98.65	9.5	38.7	7.7	34.9
Sokota 204	95.30	9.5	44.1		
Wisconsin 275A	94.44	9.2	42.4	8.8	39.2
Kingscrost KE2	89.07	7.6	34.6	5.9	29.2
Silver King	84.73	7.6	41.6	5.9	39.7
Sokota 212	79.26	7.2	46.3	6.8	42.3
Jacques 852	77.54	6.6	42.9	6.6	37.6
Funk G-188	72.98	5.4	37.9		
Funk G-1A	70.71	6.2	49.8	4.5	46.9
Reid National 95	55.16	4.3	55.3	4.4	50.5
Average of all entries		**9.4**	**35.5**		

*Differences in yield of less than 3.7 bushels per acre are not statistically significant.

North Central Area

McPHERSON COUNTY. The Eureka Substation, where this test was located, is just east of Eureka. The soil is Williams loam and the topography is rolling. Below normal rainfall in July, August, and September resulted in low yields. The test was planted May 17 and harvested October 2.

Table 5. Area 3 (McPherson County) 1947 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
Nodakhybrid 201	125.17	29.4	24.8	96.7	34.2	24.2
Wisconsin 240	121.72	28.9	28.8	95.0	32.6	29.5
Minhybrid 800	112.41	26.3	32.6	94.2	30.6	30.3
Jacques 803	111.05	24.0	25.1	84.2	29.5	27.7
Jacques 802	110.60	25.0	30.0	92.5	28.6	27.7
Wisconsin 255	110.06	24.7	29.6	97.5	30.8	27.6
Wisconsin 275A	109.48	26.6	38.5	99.2	32.0	38.1
Northwestern Dent	109.09	24.5	30.3	91.7	26.8	34.3
Minhybrid 706 (white)	107.93	25.3	35.5	96.7	29.3	37.1
Kingscrost KF7	105.18	23.1	30.6	99.2		
Master F-21	104.87	22.9	29.3	97.5	29.7	27.7
Sokota 212	99.87	23.6	41.1	98.3	31.3	40.2
Jacques 852	98.96	21.9	35.4	88.3	31.3	31.2
Funk G-188	95.84	21.2	37.4	97.5		
Kingscrost KA4	95.30	21.4	39.1	99.2	27.5	36.9
Sokota 204	92.81	21.7	44.3	96.7		
Eureka Yellow Dent	90.22	17.7	31.6	78.3	21.2	32.6
Kingscrost KE1	90.14	18.6	35.5	98.3	22.4	35.9
Minnesota 13	84.70	17.6	39.9	99.2	23.3	40.6
Silver King	83.59	18.0	42.4	97.5	25.1	40.1
Funk G-35	83.41	17.9	43.2	97.5		
Kingscrost KE2	81.84	15.5	35.6	97.5	16.7	34.3
Jacques 902	76.21	15.9	44.2	93.3	24.7	40.4
Funk G-1A	72.91	16.3	53.1	96.7	26.4	48.2
Reid National 95	72.75	16.5	54.2	95.0	22.9	53.7
Average of all entries		22.6	36.7			

*Differences in yield of less than 4.4 bushels per acre are not statistically significant.

North Central Area

HYDE COUNTY. The yield trial in Hyde County was located on the Highmore Substation just west of Highmore. The soil is Williams loam but the topography is less rolling than at Eureka. The corn made an excellent early growth, but high temperatures in August and September, coupled with below normal rainfall in July, August, and September resulted in low yields. The test was planted May 28 and harvested October 22.

Table 6. Area 3 (Hyde County) 1947 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
Sokota 224	140.84	19.0	19.4	100.0	22.7	23.7
Minhybrid 706 (white)	132.99	17.0	14.4	100.0	15.9	21.0
Sokota 212	131.19	17.3	20.9	99.2	21.7	23.6
Sokota 204	130.27	16.9	18.7	100.0	—	—
Alta	123.19	15.4	17.2	100.0	17.7	21.2
Sokota 400	120.26	15.7	25.9	100.0	25.0	29.5
DeKalb 56	118.09	11.7	20.0	99.2	20.7	24.1
DeKalb 65	106.20	12.4	19.8	100.0	19.9	23.0
Brookfield 44	103.01	11.8	19.9	100.0	—	—
Master F-40	101.70	11.4	18.4	97.5	12.5	19.3
Kingscrost KE1	98.99	10.8	17.6	100.0	15.0	21.1
Kingscrost KS2	97.72	11.5	27.1	100.0	22.1	27.3
Kingscrost KA4	95.66	10.5	21.0	99.2	16.6	24.1
Wisconsin 416	91.50	9.8	22.0	100.0	16.5	24.7
Funk G-1A	91.31	10.5	29.4	100.0	23.0	30.4
Pride B17	89.25	9.3	21.3	100.0	—	—
Wisconsin 355	87.90	9.2	22.9	100.0	15.0	24.9
Reid National 95	86.25	9.4	28.1	100.0	22.7	33.5
Jacques 957	83.83	8.5	23.7	100.0	15.8	26.4
Pioneer 359	83.06	8.7	27.2	100.0	21.6	28.9
Funk G-31	78.62	8.8	36.8	100.0	22.2	36.6
Kingscrost KS6	78.12	7.9	28.7	98.3	20.7	30.3
Jacques 902	76.72	6.9	21.3	100.0	12.1	25.5
Disco 95W	72.51	6.4	24.4	98.3	—	—
Average of all entries		11.5	22.7			

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

North James River Area

BROWN COUNTY. In Brown County the test was located on the farm of Ellis Barnes three or four miles west of Claremont. The soil is Bearden silt loam, and the topography is very level. The test was planted May 16 and harvested October 4.

Table 7. Area 4 (Brown County) 1947 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
Kingscrost KS2	108.55	55.3	35.7	95.8	—	—
Wisconsin 416	108.03	54.8	35.5	98.3	53.0	32.4
DeKalb 65	107.30	53.3	33.5	95.8	56.3	31.2
Master F-60	104.79	51.7	34.3	94.2	48.0	30.4
Pride B23	104.68	51.7	34.5	87.5	—	—
Minhybrid 706 (white)	104.11	49.3	30.3	95.8	51.0	27.8
Sokota 204	103.91	50.4	33.0	95.8	47.3	31.9
Sokota 224	103.73	49.7	31.8	96.7	50.6	30.9
Pride B17	101.64	48.2	32.1	92.5	—	—
Funk G-1A	101.58	50.2	36.5	99.2	54.9	33.4
DeKalb56	101.33	48.1	32.4	96.7	51.4	29.8
Brookfield 44	99.54	46.0	30.9	98.3	42.9	30.2
Reid National 95	98.97	48.9	38.1	94.2	53.7	39.5
Jacques 955J	98.91	46.2	32.4	96.7	44.5	30.2
Funk G-188	98.02	42.8	26.6	96.7	—	—
Pride B3	97.91	44.9	31.3	95.0	—	—
Wisconsin 275A	97.90	44.8	31.1	96.7	—	—
Kingscrost KE1	97.48	42.1	26.0	96.7	41.3	27.6
Silver King	96.72	42.9	29.0	96.7	—	—
Sokota 212	95.88	45.4	35.8	96.7	47.4	33.2
Kingscrost KE2	95.55	40.4	25.6	92.5	40.3	23.7
Minnesota 13	95.06	42.2	30.3	95.8	42.4	28.8
Disco 95W	91.73	42.1	35.7	97.5	—	—
Jacques 1001J	91.30	41.9	36.0	87.5	39.2	34.3
Brown County Yellow Dent	86.95	37.6	34.1	80.0	39.5	33.0
Average of all entries		**47.1**	**32.5**			

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

North East Area

GRANT COUNTY. The test in Grant County was carried out on the farm of A. J. Pufahl, approximately five miles north of Milbank. This farm is fairly level and the soil is Barnes silt loam. The plot was planted May 26 and harvested October 16.

Table 8. Area 5 (Grant County) 1947 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
Sokota 224	111.09	60.2	25.6	97.5	60.8	27.8
DeKalb 65	110.36	60.4	27.3	97.5	62.5	28.4
Funk G-1A	109.75	60.4	28.4	100.0	65.8	30.4
DeKalb 56	108.77	58.1	25.4	95.8	57.9	28.8
Sokota 212	107.96	58.8	28.3	100.0	60.7	28.6
Kingscrost KS2	107.64	57.8	26.8	98.3	65.1	29.7
Pioneer 379	107.26	59.6	31.2	100.0	64.8	32.6
Wisconsin 412A	106.81	58.1	29.9	97.5	—	—
Kingscrost KE1	106.70	54.9	22.5	99.2	—	—
Pride B3	105.84	55.7	25.7	100.0	—	—
Sokota 400	105.58	58.2	31.3	96.7	62.8	32.9
Pioneer 359	104.57	54.6	25.7	98.3	60.3	29.8
Sokota 204	101.78	53.5	28.4	95.0	—	—
Funk G-188	101.54	51.2	24.1	96.7	—	—
Minhybrid 503	99.51	52.4	30.2	99.2	60.1	32.6
DeKalb 240	99.31	53.1	32.0	95.8	65.6	33.5
Master F-82	99.11	52.2	30.5	100.0	58.9	31.8
Pfister 35	98.92	51.5	29.4	99.2	—	—
Pride B17	98.23	51.1	29.8	98.3	—	—
Reid National 95	97.41	51.5	32.1	100.0	59.2	35.4
Minnesota 13	97.14	48.4	26.2	100.0	46.3	27.3
Kingscrost KE2	96.39	44.8	20.1	100.0	48.7	21.1
Jacques 1001J	83.37	38.9	31.2	98.3	49.0	32.1
Wisconsin 531	76.75	35.1	35.2	98.3	49.7	35.2
Jacques 1050J	68.75	28.5	35.9	98.3	46.5	35.1
Average of all entries		**52.0**	**28.5**			

*Differences in yield of less than 6.0 bushels per acre are not statistically significant.

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. The test was planted May 23 and harvested October 11.

Table 9. Area 5 (Brookings County) 1947 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
Pioneer 359	108.71	53.6	33.0	95.8	55.6	32.7
DeKalb 65	108.22	55.0	36.5	97.5	55.8	32.8
Funk G-1A	106.62	53.5	36.1	98.3	55.7	34.1
DeKalb 240	106.46	56.3	41.8	92.5	57.2	40.5
Sokota 400	105.98	53.5	37.1	95.8	56.1	34.8
Sokota 224	105.75	51.3	33.2	98.3	54.3	32.1
Kingscrost KS6	105.59	53.9	38.5	99.2	54.2	36.9
Kingscrost KS2	105.38	52.6	36.3	100.0	55.8	33.5
Pioneer 379	104.88	54.2	40.2	99.2	55.9	36.2
Reid National 95	104.80	52.9	37.8	100.0	54.9	39.4
DeKalb 56	103.77	49.8	33.4	100.0	49.7	31.4
Minhybrid 607	103.36	50.5	35.4	100.0	—	—
Funk G-6	103.17	52.3	39.2	100.0	56.5	34.6
Sokota 212	102.98	50.6	36.2	99.2	53.0	33.5
Minhybrid 706 (white)	101.63	47.4	32.1	100.0	—	—
Wisconsin 464	99.81	49.5	39.0	100.0	47.3	36.1
Sokota 204	97.95	47.1	37.3	99.2	51.4	30.2
Funk G-188	96.90	43.0	31.0	100.0	—	—
Master F-82	96.31	47.0	39.7	99.2	49.3	37.1
Pfister 35	95.24	44.8	37.1	99.2	—	—
Minhybrid 504	94.06	46.1	41.5	99.2	—	—
Minnesota 13	91.77	40.5	34.2	100.0	—	—
Gurney U28A	90.47	37.9	31.2	99.2	—	—
Jacques 1050J	80.09	35.2	42.3	97.5	39.8	39.8
Jacques 1001J	79.25	35.6	44.4	100.0	42.8	39.2
Average of all entries		**48.6**	**37.0**			

*Differences in yield of less than 4.4 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. Low rainfall in July, August, and September caused low yields. The test was planted May 19 and harvested October 10.

Table 10. Area 6 (Tripp County) 1947 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average Yield bu.	2-year average Moisture percent
Tomahawk 27	140.48	12.0	41.0	—	—
Disco 102 (white)	125.93	9.8	34.9	20.4	28.3
Funk G-29	118.49	9.5	42.3	23.8	37.1
Sokota 400	118.48	9.2	38.5	26.7	30.8
Tomahawk 14	117.53	8.9	36.1	—	—
DeKalb 240	116.75	8.8	36.0	21.8	29.6
Sokota 224	115.92	7.8	24.5	18.3	22.2
Reid National 110A$_1$	112.56	8.5	38.5	—	—
Kingscrost KR2	106.53	8.1	42.5	24.9	34.3
Kingscrost KT	101.57	7.2	38.5	—	—
Disco 111A	101.13	7.5	43.0	19.9	36.5
Wisconsin 606	100.33	7.1	39.1	16.7	33.8
Funk G-114A	98.51	7.3	44.4	18.0	37.2
Sly Corn	97.41	6.3	33.3	—	—
Pfister 274	96.52	6.9	42.3	—	—
Pioneer 353A	90.18	6.0	40.4	17.4	32.9
Disco 107A	89.32	6.4	44.8	24.9	36.6
Brookfield 54	89.03	5.7	38.3	—	—
Gurney U30	79.44	4.8	41.3	—	—
Minhybrid 404	78.08	4.6	40.8	17.7	32.8
Gurney U41	76.42	5.0	48.4	—	—
DeKalb 404A	72.03	3.9	41.0	—	—
Jacques 1050J	70.59	3.8	41.9	12.1	31.7
Jacques 1102J	69.01	3.3	37.9	—	—
Average of all entries		**7.1**	**39.6**		

*Differences in yield of less than 2.6 bushels per acre are not statistically significant.

South James River Area

HANSON COUNTY. In Hanson County the test was planted on the farm of Alvin Tilberg which is about eight miles southeast of Mitchell. The soil is Barnes silt loam. Low rainfall the last part of the season caused low yields. The plot was planted May 20 and harvested October 6.

Table 11. Area 7 (Hanson County) 1947 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
Sokota 224	113.89	31.6	22.1	97.5	41.0	22.4
Disco 102 (white)	113.71	34.6	23.1	93.3	49.1	22.0
Reid National 110A$_1$	111.69	35.7	30.3	98.3	54.6	28.4
Disco 111A	110.25	35.8	33.1	98.3	54.2	31.5
Brookfield 81	110.01	34.8	30.1	94.2		
Funk G-1A	109.82	33.2	25.0	98.3		
Tomahawk 14	109.50	34.1	28.6	95.8		
Nebraska 301	107.63	34.1	31.8	100.0		
Tomahawk 35	106.73	33.5	31.3	92.5		
Sokota 400	106.50	33.0	30.0	94.2	52.4	27.4
DeKalb 240	105.63	32.3	29.1	95.0	47.1	27.8
Pfister 274	103.44	32.2	32.5	98.3	44.2	29.6
Funk G-29	102.20	32.6	36.0	97.5	54.8	32.7
Funk G-114A	100.63	31.9	36.3	99.2	54.2	33.6
Gurney U41	99.07	30.7	34.9	98.3		
Pioneer 353A	97.45	28.3	29.5	96.7	50.9	28.0
Vinton V-32	95.98	28.5	32.7	100.0	47.6	31.2
Reid Yellow Dent	94.96	26.9	29.0	97.5	47.1	29.2
Tomahawk 42	94.49	29.2	37.3	96.7		
Kingscrost KT	94.02	28.1	34.7	99.2		
Pioneer 343	93.20	27.9	35.4	100.0		
Jacques Weather Pruf No. 6	88.85	26.0	36.4	97.5	44.4	35.2
Master F-101	87.46	24.3	33.0	100.0	45.8	30.4
DeKalb 404A	74.82	18.0	33.2	99.2	43.7	30.8
Brookfield 69	74.44	17.6	32.5	94.2		
Average of all entries		**30.2**	**31.6**			

*Differences in yield of less than 5.9 bushels per acre are not statistically significant.

South East Area

MINNEHAHA COUNTY. This test was located on the R. I. Hokenstad farm which is located about five miles south of Garretson. The soil is Volin silt loam. The test was planted May 15 and harvested November 12.

Table 12. Area 8 (Minnehaha County) 1947 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
Sokota 400	109.24	58.9	19.1	95.8	54.9	26.3
Iowa 4316	107.74	58.7	21.6	96.7	—	—
DeKalb 240	106.51	57.5	20.1	96.7	58.3	23.9
DeKalb 410	106.50	57.2	20.6	89.2	—	—
Funk G-1A	104.04	54.5	19.3	98.3	54.9	22.6
Gurney U41	103.21	55.8	23.9	80.0	—	—
Pioneer 343	103.08	54.9	22.1	97.5	—	—
Reid National 110A$_1$	102.44	54.3	22.0	95.8	52.2	27.3
Pioneer 353A	101.96	53.1	20.2	98.3	46.2	26.9
Sokota 224	101.32	51.5	17.8	91.7	50.1	21.6
Reid National 95	101.10	52.4	20.3	98.3	49.3	27.5
Kingscrost KR2	100.97	53.6	23.3	98.3	53.1	30.6
Funk G-114A	100.83	54.4	25.4	98.3	44.7	33.2
Minhybrid 503	99.62	51.3	20.7	95.8	49.2	27.4
Pioneer 373	99.29	51.8	22.5	95.0	52.6	27.9
Minhybrid 404	99.24	51.0	19.6	100.0	45.0	26.0
Pfister 374	99.13	51.7	22.6	90.8	52.4	28.6
Kingscrost KT	98.68	50.7	21.2	97.5	—	—
Funk G-12	97.70	50.3	22.2	96.7	49.7	28.9
Pfister 274	96.81	50.4	24.2	95.8	47.4	28.3
Iowa 4442	96.03	47.8	19.8	95.8	—	—
DeKalb 404A	93.25	47.2	23.9	98.3	45.5	29.4
Reid National 107W (white)	93.01	44.8	18.9	97.5	45.6	24.1
Average of all entries		**51.8**	**21.1**			

*Differences in yield of less than 4.4 bushels per acre are not statistically significant.

South East Area

CLAY COUNTY. Test work in Clay County was located on land farmed by Willard Anderson. It is located about four miles south and one east of Wakonda. The soil is Barnes silt loam. Dry weather in July, August, and September lowered yields. A storm caused considerable root lodging. Planting was done May 21 and harvesting, October 13.

Table 13. Area 8 (Clay County) 1947 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	Stand percent	Root lodging percent
Iowa 4441	111.46	46.7	19.1	90.0	32.1
Sokota 400	111.45	47.9	22.2	90.0	24.2
Iowa 4417	109.31	46.4	22.2	99.2	65.8
DeKalb 410	106.68	45.4	25.3	95.0	60.4
Iowa 4308	105.45	43.8	22.5	98.3	42.0
Pioneer 343	102.51	44.4	29.3	89.2	42.5
DeKalb 628A	102.46	44.4	29.4	88.3	35.4
Pfister 1897	102.35	44.4	29.6	94.2	27.5
Pfister 380	102.25	44.6	30.3	95.8	34.2
Iowa 306	102.11	43.8	28.5	93.3	42.5
Iowa 4442	101.15	42.3	26.4	97.5	39.6
Reid National 118R	101.11	42.9	28.0	92.5	19.6
Wisconsin 692	100.37	44.5	33.4	95.0	20.8
Iowa 4316	99.94	43.1	30.6	94.2	50.8
Vinton V-32	99.09	42.5	30.6	99.2	58.8
Kingscrost KY	99.00	41.5	28.2	97.5	33.8
Minhybrid 408	98.93	40.7	26.3	90.8	2.1
Funk G-12	98.66	41.1	27.8	95.8	60.0
Farmers Hybrid 427A	98.07	41.9	30.9	90.0	40.5
Disco 111A	97.10	41.1	30.6	91.7	23.3
Funk G 29	96.16	41.3	32.8	85.8	35.0
Funk G-114A	94.51	38.5	28.6	96.7	59.6
DeKalb 458	94.05	38.8	30.2	91.7	32.9
DeKalb 404A	92.00	36.8	27.7	96.7	35.5
Kingscrost KR2	91.23	37.2	30.1	91.7	52.1
Reid National 110A1	90.87	35.9	28.5	96.7	37.1
Indiana 608C	89.70	36.6	32.4	90.8	34.2
Average of all entries		**42.2**	**28.2**		

*Differences in yield of less than 6.6 bushels per acre are not statistically significant.