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CORN PERFORMANCE TESTS

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AGRONOMY DEPARTMENT
AGRICULTURAL EXPERIMENT STATION
SOUTH DAKOTA STATE COLLEGE • BROOKINGS

SOUTH DAKOTA
Corn Performance Tests, 1950

By D. B. Shank and G. E. Nachtigal[1]

Corn yield tests are conducted each year by the Agronomy department of the South Dakota Agricultural Experiment Station to compare the performance of many hybrids being offered for sale to South Dakota farmers. Entries in these yield trials are the most widely sold commercial hybrids in the areas represented by each test. The information presented should be of value in helping farmers choose a hybrid for planting.

Location of the 1950 Tests

South Dakota has been divided into eight agricultural areas in which tests are conducted (Fig. 1). These areas have been established after careful consideration of the effects which the various soil types, rainfall, temperature, and elevation have on crop production. At least one test was located in each area in 1950, while two were planted in areas 1, 3 and 8. The exact location of each test may be determined by consulting Table 1. Results from the nearest test should be used by anyone evaluating and selecting a hybrid or variety.

Table 1. Location of the 1950 Tests

District	County	Cooperator	Post office	Soil type	Date planted	Date harvested
1	Lawrence	Walter Tetrault	Spearfish	Vale silt loam (Irrigated)	May 26	Oct. 31
1	Lawrence	Walter Tetrault	Spearfish	Weymouth silt loam (dry land)	May 26	Nov. 1
2	Jackson	Range Field Station†	Cottonwood	Pierre Clay loam	May 27	*
3	McPherson	North Central Station†	Eureka	Williams loam	May 30	Oct. 24
3	Hyde	Central Station†	Highmore	Williams loam	May 17	Oct. 30
4	Brown	Ellis Barnes	Claremont	Bearden silt loam	May 29	Oct. 23
5	Brookings	Agr. Expt. Station	Brookings	Barnes loam	May 23	Oct. 20
6	Tripp	C. E. Bailey, Jr.	Winner	Boyd clay loam	May 27	Nov. 2
7	Hanson	Alvin Tilberg	Ethan	Barnes silt loam	May 25	Oct. 26
8	Minnehaha	Paul Sorenson	Garretson	Moody silt loam	May 26	Nov. 3
8	Clay	Leo Trudeau	Vermillion	Kranzburg silt loam	May 27	Oct. 27

*Climatic conditions caused a complete loss of the test.
†Substations of the South Dakota Agricultural Experiment Station.

Temperature and Rainfall

Temperature and rainfall data are presented in Table 2. Where information was not available for the immediate vicinity of each test, reports for the closest station were used. The 1950 weather was characterized by below-average temperatures and below-average precipitation. With the exception of the month of June, temperatures were consistently from two to five degrees below average for the growing season at all points in the state. Rainfall, while not as

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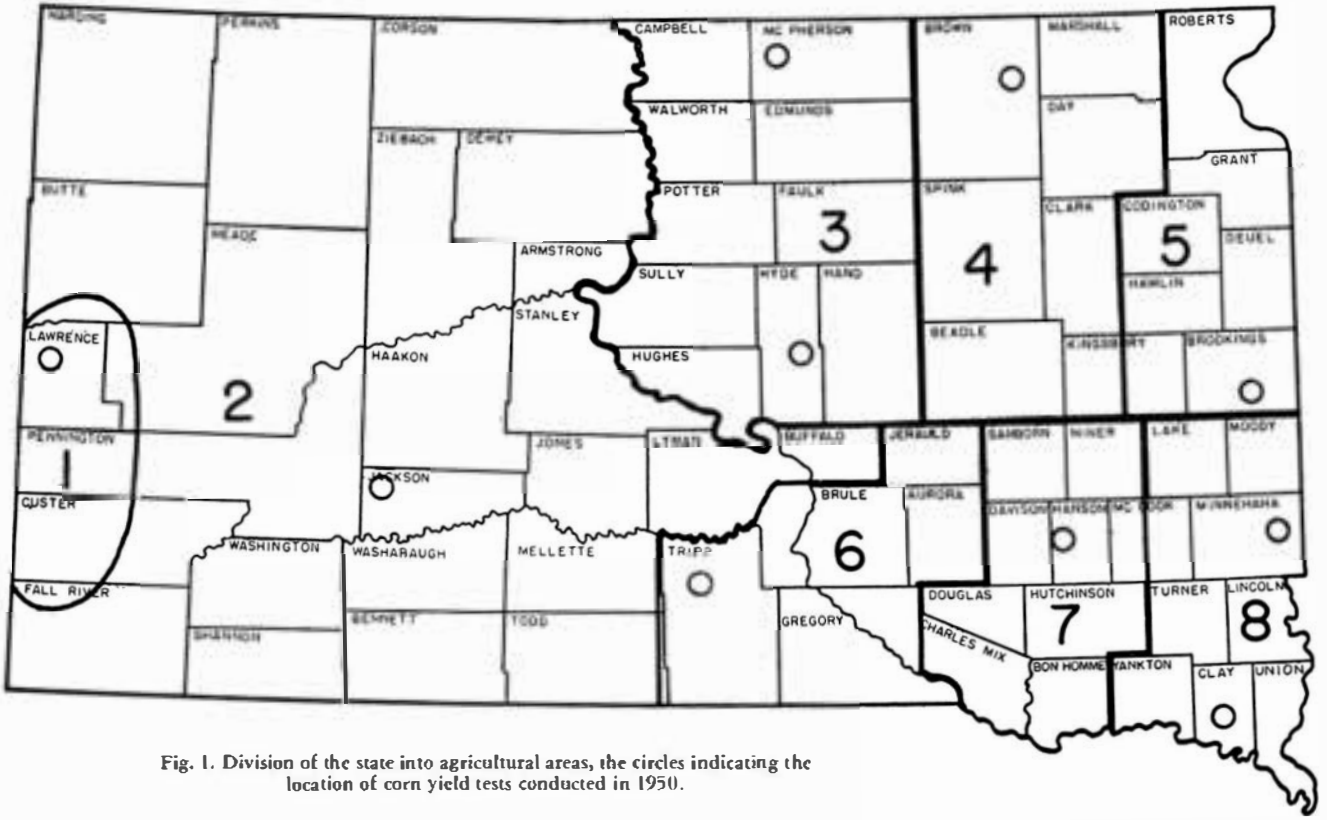

Fig. 1. Division of the state into agricultural areas, the circles indicating the location of corn yield tests conducted in 1950.

Table 2. Temperature and Precipitation Data for the 1950 Corn Growing Season*

Station and district	Month	Temperature in degrees F. Average	Departure from normal	Average departure	Precipitation in inches Month total	Season total	Departure from normal	Total departure	Frost† free days
Spearfish	May	48.7	—5.7		2.33		—0.96		
	June	62.2	—1.2		1.61		—2.18		
(1)	July	65.1	—6.0		1.70		—0.48		
	Aug.	67.1	—2.1		1.71		+0.09		
	Sept.	57.9	—2.4	—3.5	2.51	9.86	+0.89	—2.64	109
Cottonwood	May	52.7	—3.9		2.08		—0.57		
	June	66.3	—0.9		0.35		—2.31		
(2)	July	69.7	—5.3		2.08		+0.08		
	Aug.	69.4	—3.1		0.30		—1.30		
	Sept.	61.8	—0.4	—2.7	2.28	7.09	+1.27	—2.83	128
Eureka	May	51.5	—3.8		5.17		+2.87		
	June	65.1	+0.2		1.22		—2.14		
(3)	July	66.9	—5.1		0.88		—1.40		
	Aug.	66.1	—3.3		1.79		—0.38		
	Sept.	60.0	+0.4	—2.3	1.81	10.87	+0.34	—0.71	145
Highmore	May	52.8	—3.7		2.25		—0.35		
	June	66.0	+0.4		1.02		—2.29		
(3)	July	68.0	—5.7		2.12		—0.23		
	Aug.	68.5	—3.2		2.25		+0.19		
	Sept.	60.4	—2.0	—2.8	1.84	9.48	+0.45	—2.23	145
Aberdeen	May	52.6	—4.7		5.30		+2.23		
	June	65.6	—0.9		0.97		—3.13		
(4)	July	67.2	—5.6		4.22		+1.26		
	Aug.	65.6	—4.7		2.12		—0.69		
	Sept.	58.5	—2.0	—3.6	1.29	13.90	—0.62	—0.95	126
Brookings	May	53.6	—3.2		4.99		+2.08		
	June	67.2	+1.1		1.42		—2.43		
(5)	July	67.4	—4.5		3.13		+0.70		
	Aug.	65.5	—4.4		0.98		—1.70		
	Sept.	62.3	+1.4	—1.9	3.97‡		+1.95‡	—0.60	146
Winner	May	55.7	—3.9		2.21		—0.49		
	June	68.7	0.0		2.21		—1.13		
(6)	July	70.2	—6.7		1.77		—0.56		
	Aug.	70.8	—3.5		5.81		+3.69		
	Sept.	61.1	—3.3	—3.5	4.08	16.80	+2.94	+4.45	148
Mitchell	May	56.3	—2.7		3.07		—0.14		
	June	69.5	+1.2		0.89		—3.14		
(7)	July	70.0	—4.5		1.69		—1.37		
	Aug.	69.6	—2.4		2.82		+0.22		
	Sept.	62.9	—0.3	—1.7	4.65	13.12	+2.53	—1.90	149
Sioux Falls	May	54.7	—4.5		4.33		+0.50		
	June	66.3	—1.8		3.65		—0.69		
(8)	July	68.0	—5.6		2.24		—0.91		
	Aug.	67.5	—3.6		0.93		—2.32		
	Sept.	62.1	—0.4	—3.2	3.75	14.90	+1.18	—2.24	148
Vermillion	May	58.3	—2.9		3.84		+0.28		
	June	70.8	+0.5		2.61		—1.44		
(8)	July	71.1	—5.3		4.95		+1.79		
	Aug	70.3	—3.6		1.38		—1.60		
	Sept.	64.9	—0.4	—2.3	3.83	16.61	+0.67	—0.30	149

*Information presented was taken from Monthly Climatological Data, U. S. Dept. of Commerce, Weather Bureau, Huron, South Dakota.
†Number of days between 32°F. or below, in the spring and 32°F. or below, in the fall.
‡Information obtained from other sources.

consistent for each month at each location, was still below average for the season for all tests, with the exceptions of Brookings and Winner.

Cold temperatures caused corn to make a slow start in the spring and continued slow growth the rest of the season. This meant that most corn was not dry at the usual harvest time. This is reflected by the high moisture percentages which are presented in Tables 3 to 12.

In addition to below-average temperatures throughout the growing season, part of the state was subjected to a light frost on August 20, the earliest ever recorded in eastern South Dakota. This frost covered all but the southwest quarter of the state. Corn was injured slightly at the edges of many fields, and quite severely in low spots where the cold air drained into them.

The number of frost-free days recorded in Table 2 consists of the number of days between 32° F., or below, in the spring and 32° F., or below, in the fall. However, the frost, discussed in the above paragraph, was not accompanied by temperatures as low as 32° F., and therefore, the growing season did not always coincide with the number of frost-free days. This early frost also contributed to immature, soft corn at harvest time.

Precipitation was low enough to reduce yields at many points in the state. The dry land test at Spearfish had poor germination because of a dry seed bed. The test at Cottonwood was a complete failure because of dry weather. Others were hurt some.

Selection of Entries

In order to select entries for the tests, a survey was conducted to ascertain those hybrids which were purchased most by farmers in the agricultural area represented by each test. Information was obtained on the hybrids of those companies which registered their corns with the South Dakota State Department of Agriculture. The survey included recommendations by representatives of the corn companies producing and registering the hybrids, lists submitted by county agents located in the areas where the tests were conducted, and information obtained from the South Dakota State Department of Agriculture. Facilities permitted testing only the most widely used hybrids.

Method of Planting and Harvesting

Planting. Each entry was planted in either four or five plots, each plot being located, at random, within one complete grouping of all entries. This means that all varieties were planted in either four or five 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 three kernels per hill for the check plots, one per hill for the drilled plots. 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 three replications of the plots. This was accomplished by selecting 12 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 12 cross sections in a paper bag. The samples were weighed when taken in the field, then they were taken 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 all replications, 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 3-12 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, mathematical 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 Brown County (Table 7), a difference of 6.2 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 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.

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. A reduction in the number of hills 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. Thin stands reduce yields and since this work is 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:

$$CW = FW\left(\frac{H-0.3M}{H-M}\right)$$

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

Lodging. In 1949, lodging was so slight that only minor differences existed among the entries. Therefore, such data are not given.

Period of Year's Results. Many of the entries included in the 1949 trials were also tested in previous years. This makes possible the calculation of two-, three-, four- and five-year averages in some cases, and such data are included in many of the tables which follow. These averages are more useful than the results obtained in 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 specific environmental conditions under which the test was conducted. Averages for a period of several years will iron out these environmental variations. 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. Two tests were completed on the farm of Walter Tetrault which lies on the northwest edge of Spearfish. One was on dry land, the other was under irrigation. Stands were quite variable from plot to plot in the dry land test. This affected the performance of the entries in many cases where there were too few plants to give maximum yields. The tests were planted May 26 and harvested on October 31 and November 1.

Table 3. Area 1 (Lawrence County) 1950 Corn Performance Tests—Results from Irrigation

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average		3-year average		4-year average	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent
DeKalb 46	110.51	98.7	23.8	99.5	24.3	101.1	23.0		
DeKalb 56	108.02	96.8	25.9	95.2	26.5	100.5	24.0	100.9	22.0
Pioneer 377A	106.83	101.9	33.9						
S. Dak. Experimental 5	106.81	97.5	28.8	95.9	29.4	107.3	26.7		
Disco 90W	106.60	97.7	29.4						
Kingscrost KE1	104.62	89.1	22.8						
Jacques 803	103.27	88.2	24.1						
Sokota 400	101.93	94.2	33.4	93.4	33.1	107.5	30.3		
DeKalb 65	100.85	90.8	31.3	95.6	31.5	100.9	31.0	100.7	28.1
Disco 85W	100.01	85.6	26.7						
Funk G-1A	99.16	90.6	34.0	90.3	31.4	100.5	31.1	100.2	27.9
Sokota 224	98.45	87.4	31.5	92.7	29.5	98.7	27.8	94.3	24.9
DeKalb 240	94.82	87.0	37.3	95.3	34.5	105.4	33.0	108.1	29.3
Funk G-6	89.14	76.5	34.9	87.8	32.7				
S. Dak. 270	86.31	70.5	32.8	84.4	29.3				
DeKalb 404A	82.29	73.2	42.9	76.7	41.2				
Average of all entries		**89.1**	**30.8**	**91.5**	**31.2**	**102.7**	**28.4**	**100.8**	**26.4**

*Differences in yield of less than 12.7 bushels per acre are not statistically significant.

Table 4. Area 1 (Lawrence County) 1950 Corn Performance Tests—Results on Dryland

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent
DeKalb 41	115.65	24.5	17.8
Jacques 803	112.15	23.9	21.0
Wisconsin 255	107.84	22.6	22.1
Kingscrost KE1	107.23	22.1	20.7
DeKalb 46	105.71	23.0	27.9
Disco 90W	104.37	24.2	36.3
DeKalb 43	101.41	21.1	26.0
Kingscrost KE3	98.90	19.5	22.4
Wisconsin 355	98.89	22.4	37.0
United U17	98.65	20.4	14.6
Disco 85W	97.05	20.3	29.7
DeKalb 56	95.88	20.8	34.3
Sokota 224	92.21	19.9	36.3
Funk G-13	90.11	18.9	35.0
Wisconsin 416A	88.25	18.9	38.3
S. Dak. 270	75.82	15.9	45.3
Average of all entries		**21.2**	**29.0**

*Differences in yield of less than 4.2 bushels per acre are not statistically significant.

North Central Area

McPHERSON COUNTY. The North Central substation at Eureka, South Dakota, is used as the location for the test in this area each year. Yields were quite good, but the corn was still very wet when it was harvested on October 24. Planting was done May 30.

Table 5. Area 3 (McPherson County) 1950 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average		3-year average		4-year average		5-year average	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent
Hansmann	122.77	43.7	37.7	38.7	31.4	39.6	29.0				
Wisconsin 240	119.61	40.3	33.5	36.3	28.7	35.7	25.8	34.0	26.5	34.5	27.3
Nodakhybrid 304	119.04	40.3	34.3	36.4	30.7	34.8	28.0				
Agsco 275	110.03	37.8	40.3								
Wisconsin 355	109.55	39.7	46.2								
Agsco 301	109.31	36.7	38.9								
Cargill 85N	107.74	36.5	40.6								
DeKalb 46	106.06	36.0	41.7								
Nodakhybrid 201	105.80	32.6	33.4	32.3	27.6	33.3	27.0	32.2	26.5	33.6	25.9
S. Dak. Experimental 10	103.38	34.0	40.4								
Kingscrost KE2	102.57	33.2	39.5								
Wisconsin 255	100.57	31.5	38.0	27.5	32.8	27.8	30.3	27.0	30.0	28.9	29.1
Jacques 901J	99.76	33.6	44.5								
United U22	96.72	31.6	43.7	29.1	37.5						
Sokota 212	92.02	32.5	52.1	31.3	47.3	30.8	42.8	29.0	42.4	31.0	41.8
Kingscrost KE1	91.94	28.4	42.3	28.8	35.7	30.2	32.6	27.4	33.4	27.1	34.0
Funk G-188	90.26	28.8	45.7	26.1	38.0	26.5	34.6	25.2	35.3		
Master F31	90.07	28.5	45.2								
Cargill 90N	89.02	29.8	50.0								
Sokota 204	83.73	28.0	52.9	27.6	46.6	28.0	42.3	26.4	42.8		
Silver King	79.26	26.5	53.5	26.7	44.0	28.5	39.4	25.9	40.2	27.1	39.7
DeKalb 56	71.24	23.6	59.4								
Average of all entries		33.3	43.4	31.0	36.4	31.5	33.2	28.4	34.6	30.4	33.0

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

North Central Area

HYDE COUNTY. A second test in Agricultural Area 3 was conducted on the Central substation located at Highmore. Planting was done May 17 and harvesting October 30.

Table 6. Area 3 (Hyde County) 1950 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	4-year average† Yield bu.	4-year average† Moisture percent
S. Dak. Experimental 10	122.90	30.8	17.9	—	—	—	—	—	—
Peavey PV355	110.40	26.8	22.2	—	—	—	—	—	—
Pioneer 377A	108.16	26.8	26.3	—	—	—	—	—	—
S. Dak. 270	106.54	26.5	27.9	—	—	—	—	—	—
DeKalb 65	106.25	25.4	23.1	27.3	21.7	22.3	21.1	23.6	22.4
Sokota 224	103.60	24.8	25.2	24.7	22.1	22.8	21.2	23.7	22.6
Sokota 212	102.08	23.8	23.2	27.6	20.9	23.8	20.9	24.4	22.2
Kingscrost KA4	101.95	23.4	21.5	25.4	19.1	20.4	19.4	21.0	21.6
Rainbow Flint	99.80	23.1	24.1	—	—	—	—	—	—
Funk G-1A	99.59	24.4	30.8	24.2	26.6	19.6	27.5	24.6	28.5
Funk G-13	99.52	22.6	22.2	—	—	—	—	—	—
S. Dak. Experimental 5	99.49	24.3	30.5	—	—	—	—	—	—
United U26	98.98	23.4	27.1	—	—	—	—	—	—
DeKalb 56	98.85	23.0	25.4	24.4	21.5	21.1	21.0	22.5	22.5
Pioneer 382	97.88	21.9	21.9	—	—	—	—	—	—
Kingscrost KS2	94.96	21.9	27.4	23.4	25.1	19.4	25.8	22.7	26.2
Master F41	94.64	20.6	21.7	—	—	—	—	—	—
Disco 95W	94.37	21.3	25.6	22.1	24.1	16.9	24.2	—	—
Sokota 400	93.64	22.5	32.8	22.6	28.7	20.3	27.8	23.8	29.1
New Day 31	93.49	20.4	22.9	—	—	—	—	—	—
Falconer	91.00	17.7	16.2	—	—	—	—	—	—
Disco 100W	81.96	17.1	28.6	—	—	—	—	—	—
Average of all entries		**23.3**	**24.7**	**24.6**	**23.3**	**20.7**	**23.2**	**23.3**	**24.4**

*Differences in yield of less than 2.1 bushels per acre are not statistically significant.

†No test was harvested in 1949. Therefore, the two-year averages are for 1950 and 1948; the three-year averages are for 1950, 1948, and 1947; the four-year averages are for 1950, 1948, 1947, and 1946.

North James River Area

BROWN COUNTY. Ellis Barnes, whose farm is three or four miles west of Claremont, continued as the cooperator for the test in Brown County. The plots were planted May 29 and harvested October 23.

Table 7. Area 4 (Brown County) 1950 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average		3-year average		4-year average		5-year average	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent
Funk G-13	112.36	45.4	29.3								
Trojan B45	109.80	40.5	21.4								
Agsco 301	108.24	40.4	23.7								
Cargill 90	108.06	43.7	32.1								
Cargill 95	106.86	42.3	30.6								
DeKalb 56	106.76	43.7	34.2	53.1	28.6	51.0	26.9	49.3	28.3	50.4	28.0
Brookfield 430	106.24	43.6	34.8								
S. Dak. Experimental 9	105.40	42.8	34.2	54.5	27.6						
S. Dak. Experimental 5	104.35	42.1	34.2	51.2	28.1	49.8	27.6				
Sokota 224	103.88	42.2	35.2	51.2	30.1	47.9	27.9	48.4	28.9	49.0	29.0
Haapala 400	103.76	40.7	31.7								
New Day 535	103.42	40.6	32.0								
Peavey PV97	103.13	40.0	31.0								
Pioneer 382	102.79	40.1	31.8								
DeKalb 65	100.94	41.4	38.0	50.7	30.1	50.4	27.2	51.3	28.8	52.8	28.8
Wisconsin 416	100.88	39.7	33.9	49.2	28.9	47.9	27.6	49.6	29.6	49.9	29.5
Jacques 956J	100.46	39.9	35.1								
Trojan C57	100.08	39.9	35.7								
Disco 100W	98.68	41.7	42.4								
Kingscrost KS2	97.07	38.4	36.9								
Sokota 212	96.12	35.9	32.3	46.0	28.1	42.6	26.8	43.8	29.1	44.9	29.3
Pride B17A	95.06	35.2	32.4								
S. Dak. 270	94.57	35.9	36.8								
Jacques WP-2	94.34	36.8	37.4								
Disco 95W	89.31	34.5	39.9	47.7	31.6	45.6	30.6	44.7	31.9		
Kingscrost KS6	89.04	35.5	42.8								
Pfister 61	84.14	34.5	48.3								
Brookfield 740	72.60	30.3	56.7								
Average of all entries		39.6	35.1	50.5	29.1	47.9	27.8	47.9	29.4	49.4	28.9

*Differences in yield of less than 6.2 bushels per acre are not statistically significant.

Northeast Area

BROOKINGS COUNTY. The Agronomy Experimental farm, which is located one mile east of the college campus at Brookings, is used for this test. Yields were quite good, but, as in most tests in 1950, moisture contents were high. Planting was done May 23 and harvesting October 20.

Table 8. Area 5 (Brookings County) 1950 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average		3-year average		4-year average		5-year average	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent
S. Dak. Experimental 9	112.58	69.1	33.2	52.1	30.3						
Funk G-13	109.24	67.2	35.4								
Cargill 100N	105.85	64.2	36.0								
S. Dak. Experimental 5	105.11	64.5	37.6								
Sokota 224	104.61	62.3	35.0	46.0	32.2	56.9	29.4	55.5	30.4	55.8	30.4
Pioneer 379A	104.56	65.0	39.2	42.8	37.5						
Pioneer 377A	104.36	64.8	39.2								
DeKalb 65	104.23	61.2	33.9	42.7	32.0	55.3	30.0	55.2	31.9	55.5	31.1
Minhybrid 706 (white)	102.45	57.0	30.2	43.1	27.6	51.7	24.7	40.6	26.6		
Kingscrost KS6	101.95	61.2	37.4	41.3	35.6	57.5	33.3	56.6	34.6	56.2	35.7
Pfister 56	101.52	62.6	40.2	39.8	40.3						
Kingscrost KS2	101.43	61.4	38.5	43.6	37.0	47.3	30.5	49.1	31.9	50.8	33.7
Peavy PV 97	101.37	58.0	33.4								
Pride B45A	101.03	62.7	41.1								
Funk G-1A	101.03	61.0	38.5	42.7	37.3	57.1	34.6	56.2	34.9	56.5	34.3
Sokota 400	100.36	61.7	40.6	42.8	39.0	58.6	35.9	57.3	36.0	57.5	35.4
S. Dak. 270	99.95	60.7	39.7	44.6	36.0						
Jacques 1003J	99.26	58.9	38.0								
Jacques 1055J	99.02	59.9	39.9								
Pfister 52	98.73	62.1	43.7								
Wisconsin 355	97.39	56.7	37.5								
Sokota 212	96.98	55.5	36.3	41.5	33.4	51.3	31.3	51.1	32.6	52.0	32.2
Brookfield 54	95.06	54.5	37.7								
Cargill 105N	94.99	57.5	42.4								
United U30	93.42	57.3	44.5	37.9	39.6						
Wisconsin 464	93.00	52.5	37.8	36.1	36.6	49.1	32.2	49.5	33.9	48.4	33.7
Disco 100W	91.98	53.7	41.2								
Brookfield 691	90.68	52.2	40.9								
DeKalb 240	89.35	62.0	42.6	40.7	40.4	56.5	37.5	56.2	38.4	56.8	38.7
Disco 107A	87.72	54.6	49.1								
Average of all entries		**60.1**	**38.7**	**42.5**	**35.7**	**54.2**	**31.9**	**52.7**	**33.1**	**54.4**	**33.9**

*Differences in yields of less than 4.3 bushels per acre are not statistically significant.

South Central Area

TRIPP COUNTY. As in the past few years, the test in Area 6 was conducted in cooperation with C. E. Bailey, Jr., who farms five or six miles south of the White River along Federal Highway 183. These plots were subjected to a heavy rain just when the corn was emerging. Very erratic stands resulted which greatly affected the yield from plot to plot. Planting was done May 27 and harvesting November 2.

Table 9. Area 6 (Tripp County) 1950 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average†		3-year average†		4-year average†	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent
S. Dak. Experimental 5	125.62	39.4	20.1	39.1	20.1	—	—	—	—
Pioneer 349	122.73	40.0	27.7	—	—	—	—	—	—
S. Dak. Experimental 9	119.99	35.6	15.9	—	—	—	—	—	—
Turner T5	113.23	34.6	24.5	—	—	—	—	—	—
Kingscrost KS6	112.15	33.3	21.5	26.6	22.2	—	—	—	—
Sokota 224	107.45	31.2	22.1	37.8	18.0	27.8	20.2	28.2	20.1
Wisconsin 464	106.30	30.1	20.0	—	—	—	—	—	—
Disco 107A	104.31	32.1	31.3	37.5	29.2	27.2	34.4	31.2	32.9
Sokota 400	102.60	28.9	22.2	—	—	—	—	—	—
Funk G-29	100.74	31.8	36.7	40.6	35.0	30.2	37.3	32.2	36.0
DeKalb 404A	99.04	29.1	29.5	29.8	27.2	21.3	32.0	—	—
DeKalb 410	96.12	26.6	25.3	—	—	—	—	—	—
United U40	94.06	28.2	35.2	—	—	—	—	—	—
Pioneer 379A	93.50	24.4	21.7	—	—	—	—	—	—
Disco 111A	90.04	25.8	33.4	—	—	—	—	—	—
United U32A	89.11	25.3	33.2	—	—	—	—	—	—
S. Dak. 270	86.56	21.8	24.5	—	—	—	—	—	—
Peavey PV706 (white)	85.74	19.6	17.6	—	—	—	—	—	—
Iowa 4316	78.44	22.4	41.7	38.4	34.6	—	—	—	—
DeKalb 240	72.99	16.1	27.6	29.5	25.9	22.6	29.3	25.6	27.8
Average of all entries		**28.8**	**26.6**	**34.9**	**26.5**	**25.8**	**30.6**	**29.3**	**29.2**

*Differences in yield of less than 13.1 bushels per acre are not statistically significant.

†No test was harvested in 1949. Therefore, the two-year averages are for 1950 and 1948; the three-year averages are for 1950, 1948, and 1947; the four-year averages are for 1950, 1948, 1947, and 1946.

South James River Area

HANSON COUNTY. This test was located on the farm of Alvin Tilberg which is about eight miles southeast of Mitchell. Yields were quite good, and the corn was fairly dry at the time of harvest. The test was planted May 25. It was harvested October 26.

Table 10. Area 7 (Hanson County) 1950 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average		3-year average		4-year average		5-year average	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent
S. Dak. Experimental 9	110.21	63.9	23.2	51.7	23.6						
S. Dak. Experimental 5	109.21	63.5	24.2	50.0	23.7						
DeKalb 410	108.84	67.8	32.2								
S. Dak. 270	107.08	61.4	24.2	49.9	24.3	61.1	23.3				
Kingscrost KR2	106.17	64.3	30.7	45.2	31.9	62.1	31.2				
Pioneer 379A	105.71	61.5	26.7								
Pioneer 349	105.53	64.6	32.3								
Kingscrost KY4	103.32	62.6	32.6								
United 3688	103.13	61.3	30.7								
Pfister 270	102.35	62.1	33.4								
DeKalb 406	100.43	59.5	32.2								
Pride D78	99.84	61.2	36.1								
Sokota 400	99.78	56.7	28.5	43.9	27.6	59.4	27.8	52.8	28.4	56.5	27.6
Disco 107A	99.70	60.3	34.8								
Iowa 4316	99.38	59.4	33.8	45.0	33.2	65.2	32.7				
Tomahawk 40	99.00	57.4	31.0								
Sokota 224	98.81	53.0	23.8	42.0	22.8	53.7	21.8	48.2	21.9	48.6	22.0
Funk G-29	97.39	58.2	35.1	43.6	34.2	65.0	33.4	56.9	34.1	60.9	33.1
Funk G-30	97.17	57.4	34.1								
DeKalb 609	97.02	57.9	35.2								
Disco 111A	96.44	58.2	36.7	40.8	35.1	61.7	34.4	55.2	34.1	58.7	33.2
Pfister 299	96.07	56.9	35.1	43.5	34.5	65.2	32.6				
Farmers 427A	95.65	58.7	38.9	42.5	35.4	60.8	34.8				
Iowa 4297	94.96	55.4	34.4								
Tomahawk 42	93.40	54.9	36.2								
United U40	92.20	52.9	34.8								
Funk G-59	91.99	55.5	39.6								
Iowa 306	90.35	52.6	37.4								
Average of all entries		**59.2**	**32.4**	**45.3**	**29.7**	**61.6**	**30.2**	**53.3**	**29.6**	**56.2**	**29.0**

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

Southeast Area

MINNEHAHA COUNTY. Paul Sorenson's farm, about three miles south of Garretson, was the location for this test. The plots were located on upland soil and suffered from lack of soil uniformity, dry weather and an early frost. As a result yields were not too high and early hybrids performed the best. Planting was done May 26 and harvesting November 3.

Table 11. Area 8 (Minnehaha County) 1950 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average		3-year average		4-year average		5-year average	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent
Sokota 224	114.93	46.4	15.9	47.0	17.1	56.9	19.8	55.6	19.3	54.2	20.5
Wisconsin 464	109.71	43.6	17.7								
Lowe 32	106.81	42.0	18.5								
Iowa 4417	106.16	42.6	21.8	45.0	23.2	61.4	25.1				
Sokota 400	105.42	42.1	21.5	44.2	21.9	61.4	22.6	60.8	23.0	58.8	25.1
Funk G-6	105.34	41.6	20.2								
Pioneer 377A	104.47	41.2	20.7								
Trojan G98	103.83	41.4	22.5								
S. Dak. Experimental 5	103.67	39.3	16.7								
Pride D56	102.90	42.4	27.2								
S. Dak. 270	102.72	39.3	18.5	42.4	17.7						
Peavey PV100	102.65	38.6	16.6								
Pioneer 349	101.71	40.9	23.5								
Tomahawk 14	101.64	40.0	22.6								
Kingscrost KS6	101.05	38.1	18.2								
Funk G-1A	100.81	38.8	20.7	42.8	20.7	56.2	23.8	55.8	22.7	55.7	23.3
Lowe 38	100.52	39.5	21.0								
Kingscrost KO	99.61	39.7	25.6								
Funk G-30	98.92	39.9	27.5								
S. Dak. Experimental 9	98.72	36.4	17.7	47.5	18.1						
DeKalb 240	98.58	38.2	23.2	41.7	31.3	61.2	25.3	60.3	24.0	60.0	24.7
United U36	95.76	38.1	28.3	40.4	27.8						
Pfister 4897	91.65	36.3	30.9								
Iowa 4417	90.99	36.8	33.6	42.1	29.1	59.5	29.1				
DeKalb 404A	90.03	34.9	29.9								
Pfister 299	88.01	35.5	35.5	39.9	31.6	60.6	32.7				
Trojan F102	86.05	32.5	30.5								
United U40	85.67	34.1	35.9								
Average of all entries		39.3	23.7	43.3	23.9	59.6	25.5	58.1	22.3	57.2	23.4

*Differences in yield of less than 6.3 bushels per acre are not statistically significant.

Southeast Area

CLAY COUNTY. This plot was located on the farm of Leo Trudeau who lives about six miles north of Vermillion on State Highway 19. Hail, late in the summer, severely injured the plants, and all ears were small when the plots were harvested. Planting was done May 27 and harvesting October 27.

Table 12. Area 8 (Clay County) 1950 Corn Performance Tests

Hybrid or variety	Performance score	Acre yield bu.*	Moisture percent	2-year average		3-year average		4-year average	
				Yield bu.	Moisture percent	Yield bu.	Moisture percent	Yield bu.	Moisture percent
S. Dak. Experimental 8	112.42	67.7	29.5	61.1	27.5				
DeKalb 410	106.58	60.4	25.8	58.3	26.1	62.4	23.9	58.2	24.3
Pioneer 352	106.58	61.4	27.9						
S. Dak. Experimental 11	105.72	60.5	27.7						
Tekseed 115	105.68	62.2	31.0						
Lowe 38	104.16	58.3	26.3						
Pfister 347	103.85	60.7	31.4						
DeKalb 627	103.83	60.0	30.1						
Iowa 4316	103.13	58.4	28.3	54.0	28.3	56.8	27.2	53.4	28.1
McCurdy 96M	101.74	58.1	30.2						
Wisconsin 641AA	101.17	55.6	26.4	55.2	27.5				
Sokota 400	100.82	54.6	25.2	56.8	23.5	54.8	22.1	55.6	22.1
Cargill 108N	100.55	57.1	30.4						
Pride D66	100.52	57.5	31.2						
Jacobsen J20	100.23	54.9	26.8	55.0	26.5	58.9	25.5		
Farmers 427A	99.93	57.2	31.7	56.9	30.3				
Pioneer 339	99.81	57.2	31.9						
Cargill 110N	99.72	56.0	29.8						
United U52	99.30	56.3	31.1						
Tomahawk 77	98.17	54.4	29.5						
Funk G-29	97.44	54.2	30.4	53.3	30.0	57.9	29.7	53.1	30.5
Kingscrost KY4	97.36	52.9	27.6						
Cornelius C40	96.61	53.1	29.8						
Funk G-59	95.81	52.2	29.5						
United U42A	94.96	52.3	31.2						
Peavey PV110	94.80	48.4	24.1						
Vinton V35	93.05	50.2	30.6						
Turner T46	92.12	49.7	31.3						
Pfister 299	91.44	49.7	32.5	54.0	30.9				
Iowa 306	91.10	47.7	29.3	50.2	29.4	53.6	28.4	51.4	28.4
Average of all entries		**56.0**	**29.3**	**55.5**	**28.0**	**57.4**	**26.1**	**54.3**	**26.7**

*Differences in yield of less than 7.5 bushels per acre are not statistically significant.