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## 1991 South Dakota Corn Performance Trials

J. J. Bonnemann  
*South Dakota State University*

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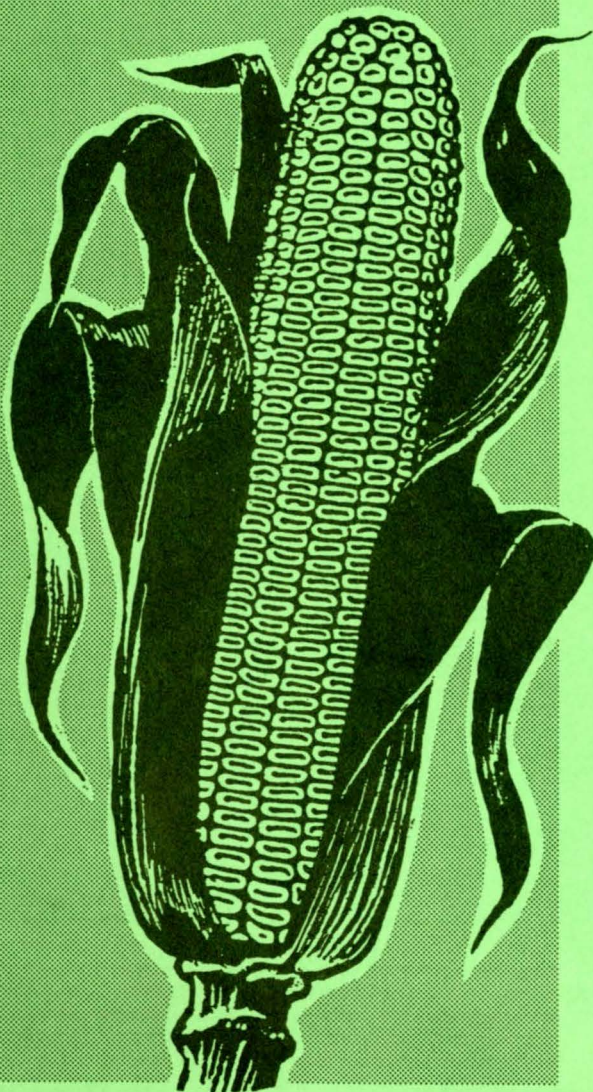
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# CORN

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PERFORMANCE  
TRIALS



Agricultural Experiment Station  
South Dakota State University  
U.S. Department of Agriculture

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## 1991 CORN PERFORMANCE TRIALS

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The relative performance of the corn hybrids grown under similar environmental conditions in 1991 is evaluated in this report. Information in the accompanying tables includes grain yields in bushels per acre, test weight, moisture percentages of shelled corn at harvest, performance scores, and other related information. Records of corn hybrids harvested in 1991 and available 2-, 3-, and 4-year averages of yield, moisture, and stalk lodging percentages are also presented. The trials reported in this circular were conducted under the Plant Science Department programs in Crop Performance Testing, Agricultural Experiment Station, South Dakota State University.

### Location of the 1991 Trials

Trials were located in the crop adaptation areas marked on the accompanying map of South Dakota. The station at Redfield was closed at the end of the 1989 crop year. The Area C1 dryland trial was moved about 15 miles southeast, near Frankfort, with a farmer-cooperator. Irrigated trials were then established in 1990 at the new Dakota Lakes Research Farm, 17 miles southeast of Pierre. The C2 trial was moved in 1990 from south of Geddes to west of Armour in Douglas County. The exact location of each trial and date of seeding and harvesting are included in Table 1. The soil classification, laboratory analyses of soil samples taken, and fertility applied are given in Table 2.

### Weather and Climatic Conditions

Climatic data (Table 3) for the 1991 corn growing season, May-September, are based upon U.S. Monthly Climatological Data (NOAA) recorded at a weather station reasonably near each trial site. The Milbank recording station is closest to the field north of Gary in Deuel County. The Watertown FAA data are used for the NE Farm trials. Stations are located at or near the other trial sites. Precipitation quantities would vary from the actual site to the recording station, but temperatures are similar over a much wider area and considered applicable to the trial area.

Field conditions varied in the eastern portion of South Dakota most of the growing period. The early spring was warm and very dry and seeding was off to an early start, all trials being seeded by May 14. Precipitation began falling in mid-May but amounts recorded were quite variable, the southern areas receiving the least. Cool, wet field conditions slowed growth, and emerging plants were small and yellow in the northeast quarter of the state. Rainfall was limited throughout much of the growing season in the southern areas of the state. Temperatures were high in the southern portion, especially the 10-12 days after July 4th. The lack of moisture and high temperatures, especially in the southern counties, caused stress that many corn hybrids could not overcome: the trials near Armour were virtually a total loss; note the very high CV's. Second-brood corn borers caused damage in plants already weakened by adverse climatic conditions. Some stalk lodging and ear dropping happened when several days of high velocity winds blew through the entire state the latter part of September and again in mid-October.

The assistance of the following individuals is appreciated: Dwayne Beck, Loyal Evjen, Delbert Robbins, and Dale Sorensen of the Stations; technicians Lucian Edler and Kevin Kirby; Robert Clark, John Heaton, and Steve Masat, farmer-cooperators; and Warren Hovland of the Computing Center.

Table 1. Location of Trials, Dates of Seeding, and Harvesting of Corn Performance Trials, South Dakota, 1991

| Area     | County    | Location                   | Post Office | Dates When |            |
|----------|-----------|----------------------------|-------------|------------|------------|
|          |           |                            |             | Seeded     | Harvested  |
| B3-irri. | Hughes    | Dakota Lakes Res. Farm     | Pierre      | May 7      | Oct. 16-17 |
| C1       | Spink     | Steve Masat Farm, 6S,2W    | Frankfort   | May 13     | Oct. 11    |
| C2       | Douglas   | Robert Clark Farm, 4W,1S   | Armour      | May 14     | Oct. 2     |
| D1       | Deuel     | John Heaton Farm, 1W,6N    | Gary        | May 13     | Sept. 30   |
| D2       | Codington | Northeast Exp. Farm, 15N   | Watertown   | May 9      | Oct. 11    |
| D3       | Brookings | Plant Science Farm, 2NE    | Brookings   | May 8      | Oct. 25    |
| E        | Clay      | Southeast Exp. Farm, 7W,3S | Beresford   | May 2      | Sept. 17   |

The first frost in the northern portion of the state generally occurred September 18. A killing frost occurred over the rest of the state on September 19. Corn harvest did not proceed anywhere very rapidly. It was cheaper to let the crop dry in the field if corn borer damage and stalk lodging were not a problem than pay the high cost of energy to run crop dryers. Moisture in the corn was not a problem in southern areas where drouth stress had already taken its toll. Corn harvest started early, with over 50% combined by October 4.

#### Hybrid Entry Procedure

Hybrids in the trials were entered by the participating companies, who designate the locations where their entries are to be grown. Beginning in 1986, the entries were placed into early or late trials based upon maturity information supplied by the entering company. The arbitrary breaks at each site were 95 days for Areas D1 and D2, 100 days for Areas B3, D3, and C1, and 110 days for Areas C2 and E. A maximum of five entries was entered by a company, in either the early or late or both trials, at any test site. A fee was charged for each entry in each area and each was allowed to be entered once in each adaptation area. A listing of the firms, with brands and hybrids harvested, is presented in Table 33.

#### Experimental Procedure

Entries included in each trial were seeded in three replications. Plots of individual hybrids were located at random within each replication. Available space, soil type and variability, and other factors determined plot size and number of replications. The plot size, plant populations, and related data are presented in Table 4.

No insecticides were used for corn rootworm control this year. A recommended short-residue preemergence herbicide was banded over the row at seeding at most sites.

All sites were seeded as drilled corn. A 31-cell cone seeder was used for all the plots. These units were mounted above commercial maxi-merge units. Seeding rate was 20% more than the number of plants per plot desired. Seedbeds were generally firm; however, germination was sometimes uneven because of the cool, very wet conditions that occurred during mid-May. Final stands in most of the trials were near desired levels.

Table 2. Laboratory Analysis, Soil Classification, and Fertilizer Applied to the 1991 Hybrid Corn Performance Trials

| Area | Soil Classification | % O.M. | P lb/A | K   | pH  | Preparation and method     | pounds/acre |    |    |
|------|---------------------|--------|--------|-----|-----|----------------------------|-------------|----|----|
|      |                     |        |        |     |     |                            | N           | P  | K  |
| B3   | Lowry SiL           | 3.5    | 57     | 999 | 7.2 | No-till into wheat stubble | 160         | 40 | 0  |
| C1   | Beotia SiCl         | 3.0    | 85     | 455 | 6.7 | No-till into wheat stubble | 120         | 18 | 0  |
| C2   | Eakin-Ethan         | 3.5    | 40     | 780 | 7.4 | Oats, plowed and disced    | 80          | 60 | 0  |
| D1   | Forman SiCl         | 3.4    | 21     | 21  | 8.2 | Soybean ground, disced     | 75          | 30 | 0  |
| D2   | Kranzburg SiL       | 3.0    | 63     | 310 | 5.9 | Wheat stubble, field cult. | 90          | 45 | 0  |
| D3   | Lamour SiL          | 2.4    | 84     | 320 | 7.0 | Soybean ground, chiseled   | 60          | 40 | 30 |
| E    | Egan SiL            | 3.2    | 31     | 530 | 5.9 | Soybean ground, chiseled   | 160         | 60 | 40 |

Table 3. Temperature and Precipitation Data for the 1991 Corn Performance Trials, South Dakota

| Location            | Type of Data     | Months of      |       |      |        |       | Total |
|---------------------|------------------|----------------|-------|------|--------|-------|-------|
|                     |                  | May            | June  | July | August | Sept. |       |
| Brookings<br>2 NE   | Precip. (inches) | 3.69           | 5.15  | 4.21 | 2.43   | 3.30  | 18.78 |
|                     | Temp. (mean)     | 58.7           | 70.7  | 69.7 | 69.4   | 58.2  |       |
|                     | Mean Departure   | +2.7           | +5.1  | -1.0 | -0.8   | -0.1  |       |
|                     | First freeze     | Sept. 19 - 25° |       |      |        |       |       |
| Centerville<br>6 SE | Precip. (inches) | 5.43           | 3.49  | 4.07 | 1.68   | 1.34  | 16.01 |
|                     | Temp. (mean)     | 62.1           | 73.1  | 73.0 | 72.4   | 62.0  |       |
|                     | Mean departure   | +1.8           | +2.9  | +1.9 | -0.4   | -0.9  |       |
|                     | First freeze     | Sept. 19 - 23° |       |      |        |       |       |
| Armour              | Precip. (inches) | 5.68           | 1.74  | 3.40 | 1.89   | 2.15  | 14.86 |
|                     | Temp. (mean)     | 62.4           | 75.0  | 77.0 | 75.6   | 65.7  |       |
|                     | Mean Departure   | +2.7           | +5.3  | +1.4 | +1.9   | +2.3  |       |
|                     | First freeze     | Sept. 19 - 24° |       |      |        |       |       |
| Redfield<br>2 NE    | Precip. (inches) | 9.41           | 3.94  | 1.00 | 3.50   | 1.66  | 19.51 |
|                     | Temp. (mean)     | 59.5           | 71.0  | 72.4 | 72.3   | 59.9  |       |
|                     | Mean Departure   | +2.3           | +4.2  | -0.7 | +0.8   | -0.8  |       |
|                     | First freeze     | Sept. 19 - 22° |       |      |        |       |       |
| Pierre<br>FAA       | Precip. (inches) | 5.10           | 6.30  | 1.23 | 0.96   | 1.22  | 14.81 |
|                     | Temp. (mean)     | 59.4           | 71.3  | 75.7 | 76.5   | 64.0  |       |
|                     | Mean Departure   | +1.7           | +3.3  | +0.6 | +2.9   | +1.5  |       |
|                     | First freeze     | Sept. 18 - 30° |       |      |        |       |       |
| Milbank<br>2 SSW    | Precip. (inches) | 5.04           | 5.68  | 5.68 | 4.81   | 3.79  | 25.00 |
|                     | Temp. (mean)     | 59.7           | 70.5  | 71.3 | 71.0   | M     |       |
|                     | Mean Departure   | +1.9           | +3.1  | -1.2 | -0.1   | M     |       |
|                     | First freeze     | Sept. 18       |       |      |        |       |       |
| Watertown<br>FAA    | Precip. (inches) | 5.77           | 11.37 | 1.63 | 3.69   | 2.09  | 24.55 |
|                     | Temp. (mean)     | 69.1           | 69.9  | 70.6 | 69.6   | 58.2  |       |
|                     | Mean Departure   | +3.9           | +4.3  | -0.6 | +0.3   | -0.2  |       |
|                     | First freeze     | Sept. 20 - 32° |       |      |        |       |       |

Measurements of Performance

**Yield.** The yield reported for each hybrid is the average obtained from the yield weights of all replications, expressed as bushels per acre of No. 2 corn at 15.5% moisture. Varieties of equal potential may yield differently because of variations in slope, soil fertility, and stand. Mathematical determinations have been made to determine whether differences obtained were caused by variations in environment or were true varietal differences. Some coefficients of variation were greater than desired, not attributable to any one specific cause, though influenced by interactions of soil variations, borer damage, and heat and moisture stress.

To convert data in these tables to the metric system of kilograms or quintals per hectare use the following methods. (The factor 1.121 converts from lbs/A to kg/ha.)

I. 1 B #2 shelled corn = 54 lb: 1 lb = 0.454 kilograms: 1 hectare = 2.471 A  
so  $54 \times 0.454 \times 2.471 = 60.6 \times B/A =$  kilograms per hectare.

II. Or, assuming a yield of 60.6 B/A from the tables;  
Step 1 =  $60.6 B/A \times 54 \text{ lb/B} = 3272 \text{ lb/A}$   
Step 2 =  $3272 \text{ lb/A} \times 1.121 = 3668 \text{ kilograms/hectare}$  or 36.7 quintals/hectare.

**Moisture Content.** The moisture content of each entry is expressed as the percentage of moisture in the shelled corn at the time of harvest. Moisture content is inversely related to maturity. Because maturity is of prime importance in South Dakota, moisture figures are of considerable importance in the evaluation of the trial entries.

Table 4. Field Methods, 1991

| Area     | Table No. | Number of Replications Harvested | Final Population Obtained | Row Description |               |             |
|----------|-----------|----------------------------------|---------------------------|-----------------|---------------|-------------|
|          |           |                                  |                           | Number of       | Width, inches | Length feet |
| B3-Early | 25        | 3                                | 32,055                    | 2               | 30            | 26          |
| B3-Late  | 27        | 3                                | 31,139                    | 2               | 30            | 26          |
| C1-Early | 21        | 3                                | 18,433                    | 2               | 30            | 26          |
| C1-Late  | 23        | 3                                | 18,450                    | 2               | 30            | 26          |
| C2-Early | 29        | 3                                | 18,297                    | 2               | 30            | 26          |
| C2-Late  | 31        | 3                                | 18,426                    | 2               | 30            | 26          |
| D1-Early | 13        | 3                                | 18,386                    | 2               | 30            | 26          |
| D1-Late  | 15        | 3                                | 18,718                    | 2               | 30            | 26          |
| D2-Early | 17        | 3                                | 19,658                    | 2               | 30            | 26          |
| D2-Late  | 19        | 3                                | 19,817                    | 2               | 30            | 26          |
| D3-Early | 9         | 3                                | 19,686                    | 2               | 30            | 26          |
| D3-Late  | 11        | 3                                | 19,440                    | 2               | 30            | 26          |
| E-Early  | 5         | 3                                | 21,193                    | 2               | 30            | 26          |
| E-Late   | 7         | 3                                | 21,215                    | 2               | 30            | 26          |

**Performance Rating.** Undue delays should be held to a minimum if farm operations are to be efficient and provide high economic returns. Prevention of harvest operation delays and reduction of additional drying costs are possible if an operator can produce sound, dry corn. Grain yield and moisture percentages are of prime importance. Cash grain operators who do not turn livestock into their fields after harvest will receive greater returns when the stalks remain upright so the ears will pass through their harvesting machinery. Because of the importance of the three factors - yield, moisture percentage, and upright stalks - the three results in the tables presenting this information are used to determine a rating or "performance score."

The yields in each test were converted to percentages by comparing them to the mean yield of the test. Similar calculations were made for moisture and stalks broken below the ear at harvest time after first subtracting the moisture content or stalks broken from 100%. Then the entries can be ranked according to their ability to produce sound, upright corn rather than soft, lodged corn.

The performance ratings that appear in the tables were computed as follows:

$$\frac{(\text{Yield \%} \times 50) + (\text{Dry matter \%} \times 35) + (\% \text{ upright stalks} \times 15)}{100}$$

**Use of the Tables.** South Dakota conditions are generally quite different from those in the midwestern Corn Belt. Most of the crop adaptation areas have conditions common to the Northern Great Plains, i.e., limited frost-free growing periods, limited precipitation, and high summer temperatures. Corn hybrids that provide satisfactory yields of harvestable corn that can be stored without additional costly drying are desirable. The performance score provides information on these factors in a weighted fashion or manner.

In choosing a hybrid, first check those which yield the most. Then look for entries with below-average moisture and good standability. The results will generally be similar to that of the performance scores. Finally, check the performance score over a "several-year period," if available, as the average of several years is considerably more reliable than the data from only one year. The acreage seeded to a new hybrid should be limited until the hybrid's adaptation to the environment of the particular farm is known.

Table 5. 1991 Corn Performance Trial, Area E(early), Southeast Farm, Beresford, SD

| Brand and Variety    | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|----------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| Golden Harvest H2404 | M 2X           | 119.2     | 61.8             | 0.0            | 22115              | 19.0    | 1                 |
| Crow's 237           | E 2X           | 115.1     | 57.4             | 0.0            | 21780              | 19.5    | 2                 |
| DeKalb DK554         | M 2X           | 114.6     | 58.0             | 0.0            | 21221              | 20.0    | 3                 |
| Kruger K8107++       | M 2X           | 114.1     | 56.0             | 0.5            | 21221              | 20.8    | 4                 |
| Terra TR1010         | M 2X           | 108.6     | 60.7             | 0.5            | 21892              | 19.3    | 5                 |
| Dahlgren D5057       | M 2X           | 106.1     | 60.5             | 0.0            | 20105              | 20.6    | 7                 |
| Wilson 1140          | E 2X           | 105.9     | 61.5             | 0.0            | 21668              | 18.6    | 6                 |
| AgriGene AG6450      | M 2X           | 104.9     | 56.6             | 0.5            | 21557              | 21.8    | 10                |
| Sigco 1814           | L 2X           | 104.4     | 57.6             | 0.0            | 21221              | 21.7    | 11                |
| Top Farm SX1112      | L 2X           | 104.4     | 55.4             | 0.6            | 19099              | 22.3    | 12                |
| Dahlgren DC510       | M 2X           | 102.9     | 60.4             | 0.0            | 20886              | 19.5    | 9                 |
| Golden Harvest H2390 | M 2X           | 102.3     | 61.2             | 0.5            | 21333              | 18.3    | 8                 |
| DeKalb DK584         | M 2X           | 102.0     | 58.0             | 0.0            | 22115              | 21.8    | 13                |
| Northrup King N6560  | M 2X           | 101.4     | 55.8             | 0.5            | 21668              | 22.0    | 18                |
| Legend LS8105        | M 2X           | 100.2     | 62.2             | 0.0            | 20886              | 20.3    | 14                |
| Fontanelle 4180      | E 2X           | 100.0     | 58.3             | 0.0            | 21445              | 20.3    | 16                |
| Kaltenberg K5909     | M 2X           | 99.8      | 58.5             | 0.0            | 22115              | 20.2    | 17                |
| Kaltenberg K6201     | M 2X           | 99.0      | 56.3             | 0.0            | 20440              | 21.1    | 19                |
| Sexauer 91-66        | M 2X           | 99.0      | 59.5             | 0.0            | 21110              | 19.0    | 15                |
| Cargill 5157         | L 2X           | 96.7      | 58.7             | 0.0            | 20216              | 19.8    | 21                |
| Crow's 179           | E 2X           | 96.4      | 62.1             | 1.0            | 21557              | 17.9    | 20                |
| Terra TR1020         | M 2X           | 95.2      | 60.7             | 0.5            | 20440              | 18.4    | 22                |
| Hoegemeyer SX2594    | M 2X           | 95.0      | 60.6             | 0.0            | 21445              | 20.9    | 25                |
| Asgrow RX578         | L 2X           | 94.4      | 59.3             | 0.0            | 22003              | 19.1    | 23                |
| Pioneer 3578         | M 2X           | 94.0      | 60.0             | 0.0            | 21892              | 19.2    | 24                |
| Hoegemeyer SX2628    | M 2X           | 93.7      | 55.1             | 0.0            | 22115              | 22.1    | 26                |
| Northrup King N6330  | M 2X           | 92.0      | 54.9             | 0.5            | 21780              | 22.3    | 28                |
| Funks G-4385         | M 2X           | 91.3      | 59.3             | 0.0            | 21780              | 20.4    | 27                |
| Funks 4145X          | M 2X           | 90.3      | 56.0             | 0.0            | 21892              | 21.9    | 30                |
| Legend LS8106        | M 2X           | 89.7      | 57.8             | 0.0            | 21333              | 21.0    | 29                |
| Curry 2149           | L 2X           | 87.4      | 59.5             | 0.5            | 20998              | 20.5    | 31                |
| Sands SOI-9080       | M M2X          | 86.4      | 56.8             | 0.0            | 17982              | 20.6    | 33                |
| Fontanelle 4020      | E 2X           | 85.5      | 58.0             | 0.0            | 21221              | 19.4    | 32                |
| Blaney B506          | M 2X           | 82.5      | 59.7             | 0.0            | 21333              | 19.8    | 34                |
| Cargill 5327         | M 2X           | 82.4      | 58.3             | 0.5            | 21110              | 19.6    | 35                |
| Producers 616        | M 2X           | 82.3      | 55.2             | 0.0            | 22115              | 23.1    | 37                |
| Funks G-4393         | M 2X           | 81.8      | 59.0             | 0.0            | 20663              | 20.2    | 36                |
| Curry 2183           | M 2X           | 79.2      | 54.4             | 0.0            | 21333              | 23.5    | 41                |
| Legend LS8104        | M 2X           | 79.1      | 60.8             | 0.0            | 20998              | 20.7    | 38                |
| Garst 8574           | M 2X           | 77.3      | 58.0             | 0.0            | 20663              | 19.9    | 39                |



Table 5.(Cont.) 1991 Corn Performance Trial, Area E(early), Beresford, SD

| Brand and Variety | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|-------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| Kruger K8108      | M 2X           | 77.1      | 59.3             | 0.0            | 21445              | 20.2    | 40                |
| Kaltenberg K6402  | M 2X           | 76.8      | 54.5             | 0.0            | 20998              | 22.3    | 43                |
| Fontanelle 4090   | E 2X           | 76.1      | 57.7             | 0.0            | 21110              | 20.4    | 42                |
| AgriGene AG5660   | M 2X           | 73.9      | 56.7             | 0.0            | 21221              | 21.4    | 44                |
| Curry 2172        | M 2X           | 72.1      | 51.3             | 0.0            | 21668              | 24.1    | 46                |
| Curry 2165        | M 2X           | 72.1      | 54.7             | 0.0            | 20663              | 22.6    | 45                |
| Kruger K81098     | M 2X           | 69.9      | 54.7             | 0.6            | 20216              | 22.9    | 47                |
| Means             |                | 93.1      | 58.1             | 0.2            | 21193              | 20.6    |                   |
| LSD(.05)18.2      |                |           | CV - 12.0 %      |                |                    |         |                   |

Table 6. Area E(early) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, Southeast Research Farm, Centerville, Clay Co., SD

|                      | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|----------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                      | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Asgrow RX578         | 87              | 95   | 97   | 2              | 2    | 1    | 16             | 16   | 17   |
| Cargill 5157         |                 |      | 102  |                |      | 2    |                |      | 17   |
| Cargill 5327         |                 |      | 100  |                |      | 1    |                |      | 17   |
| Crow's 237           |                 |      | 105  |                |      | 1    |                |      | 18   |
| DeKalb DK584         |                 | 105  | 106  |                | 3    | 1    |                | 18   | 18   |
| Funks G-4385         |                 |      | 99   |                |      | 1    |                |      | 17   |
| Funks G-4393         |                 |      | 94   |                |      | 2    |                |      | 17   |
| Garst 8574           |                 |      | 88   |                |      | 1    |                |      | 17   |
| Golden Harvest H2404 |                 | 110  | 116  |                | 1    | 1    |                | 16   | 17   |
| Hoegemeyer SX2594    |                 |      | 102  |                |      | 1    |                |      | 18   |
| Hoegemeyer SX2628    | 95              | 101  | 99   | 3              | 4    | 3    | 19             | 19   | 19   |
| Northrup King S6330  |                 |      | 98   |                |      | 1    |                |      | 19   |
| Northrup King S6560  |                 |      | 102  |                |      | 3    |                |      | 19   |
| Pioneer 3578         |                 | 100  | 102  |                | 1    | 1    |                | 16   | 16   |
| Sands SOI-9080       |                 |      | 96   |                |      | 1    |                |      | 18   |
| Terra TR1010         |                 |      | 99   |                |      | 3    |                |      | 17   |
| Terra TR1020         |                 |      | 97   |                |      | 2    |                |      | 16   |
| Top Farm SX1112      | 92              | 106  | 104  | 1              | 1    | 1    | 19             | 19   | 20   |

Table 7. 1991 Corn Performance Trial, Area E(late), Southeast Farm, Beresford, SD

| Brand and Variety    | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|----------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| Pioneer 3362         | L 2X           | 116.8     | 53.7             | 0.6            | 19881              | 21.8    | 1                 |
| Cargill 7997         | L 2X           | 116.0     | 49.6             | 0.0            | 22003              | 25.6    | 6                 |
| Pioneer 3357         | L 2X           | 115.1     | 55.4             | 0.5            | 22003              | 22.3    | 2                 |
| Legend LS9112        | L 2X           | 114.5     | 54.5             | 0.0            | 22115              | 21.8    | 3                 |
| Pioneer 3398         | L 2X           | 113.1     | 55.3             | 0.5            | 21892              | 21.0    | 4                 |
| Curry 2176           | L 2X           | 112.6     | 53.9             | 0.5            | 20998              | 21.4    | 5                 |
| Hoegemeyer SX2632    | L 2X           | 110.6     | 53.6             | 0.5            | 21780              | 22.2    | 8                 |
| Asgrow RX681         | L 2X           | 109.8     | 54.4             | 1.0            | 22115              | 20.7    | 7                 |
| Golden Harvest H2540 | L 2X           | 109.2     | 53.2             | 0.0            | 22227              | 21.4    | 9                 |
| Kruger 8111A         | L 2X           | 107.9     | 52.3             | 0.0            | 21333              | 22.2    | 10                |
| Horizon 9111         | L 2X           | 106.7     | 52.5             | 0.0            | 21557              | 22.3    | 11                |
| Dahlgren DC541       | L 2X           | 105.6     | 54.0             | 0.0            | 21892              | 22.1    | 12                |
| Sands SOI-9100       | L 2X           | 104.7     | 54.6             | 0.0            | 17089              | 22.4    | 15                |
| Pioneer 3417         | L 2X           | 104.5     | 54.1             | 0.0            | 21221              | 21.9    | 14                |
| Kaystar KX-750       | L 2X           | 104.4     | 54.4             | 0.0            | 21110              | 21.3    | 13                |
| Fontanelle 4280      | M 2X           | 103.9     | 54.2             | 0.0            | 21445              | 22.2    | 16                |
| Sexauer 91-77        | L 2X           | 102.1     | 51.5             | 0.0            | 21333              | 22.7    | 19                |
| Kaltenberg K7500     | L 2X           | 102.0     | 52.9             | 0.0            | 22115              | 21.8    | 17                |
| Horizon 7115         | L 2X           | 101.6     | 51.7             | 0.0            | 21892              | 22.2    | 20                |
| Crow's 498           | L 2X           | 101.6     | 52.8             | 0.0            | 21110              | 21.8    | 18                |
| Producers 721        | L 2X           | 100.8     | 49.4             | 0.0            | 21780              | 22.1    | 21                |
| Asgrow RX746         | L 2X           | 100.6     | 52.8             | 0.5            | 21557              | 21.9    | 22                |
| Garst 8532           | L 2X           | 100.4     | 53.5             | 0.0            | 21892              | 21.9    | 23                |
| Funk's G-4490        | M 2X           | 100.0     | 53.1             | 0.0            | 21557              | 22.1    | 24                |
| Wilson 1444          | M 2X           | 98.4      | 54.7             | 0.0            | 21333              | 20.8    | 25                |
| DeKalb DK612         | L 2X           | 98.0      | 53.4             | 0.0            | 22227              | 21.8    | 27                |
| Golden Harvest H2485 | M 2X           | 97.3      | 54.6             | 0.0            | 21333              | 20.6    | 26                |
| Jacques 7970         | L 2X           | 96.5      | 49.8             | 0.0            | 20663              | 25.5    | 31                |
| Terra TR1125         | L 2X           | 95.7      | 52.2             | 0.0            | 19658              | 22.9    | 28                |
| Hoegemeyer SX2635    | L 2X           | 93.8      | 49.7             | 0.0            | 20886              | 22.2    | 29                |
| Wilson 1640          | L 2X           | 93.4      | 53.1             | 0.0            | 21668              | 22.4    | 32                |
| Garst 8543           | L 2X           | 93.3      | 51.4             | 1.0            | 21557              | 22.6    | 33                |
| Crow's 449           | L 2X           | 93.2      | 54.4             | 0.0            | 21892              | 21.6    | 30                |
| Cargill 7697         | L 2X           | 90.5      | 53.7             | 0.0            | 20998              | 24.5    | 36                |
| Blaney 8608          | L 2X           | 89.9      | 52.3             | 0.0            | 21780              | 23.3    | 35                |
| Cargill 6927         | L 2X           | 89.8      | 58.7             | 0.0            | 20216              | 21.7    | 34                |
| Kaystar KX-800       | L 2X           | 88.1      | 51.9             | 0.0            | 16307              | 23.2    | 37                |
| Dahlgren D5088       | M 2X           | 86.7      | 55.2             | 0.0            | 20886              | 21.8    | 38                |
| Terra TR1120         | L 2X           | 85.2      | 48.9             | 0.0            | 21892              | 25.0    | 40                |
| Sexauer 91-72        | L 2X           | 84.0      | 54.6             | 0.0            | 21557              | 21.4    | 39                |
| Horizon 9110         | L 2X           | 83.1      | 52.6             | 0.5            | 21668              | 23.1    | 42                |
| Sexauer 91-76        | L 2X           | 80.9      | 56.1             | 0.0            | 21445              | 20.7    | 41                |
| Jacques 7710         | L 2X           | 79.4      | 48.6             | 0.5            | 22115              | 24.0    | 43                |
| Terra TR1090         | L 2X           | 78.8      | 52.4             | 1.0            | 21668              | 23.6    | 44                |

Table 7. (Cont.) 1991 Corn Performance Trial, Area E(late), Beresford, SD

| Brand and Variety | Type and Cross | Yield B/A     | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|-------------------|----------------|---------------|------------------|----------------|--------------------|---------|-------------------|
| Producers 642     | L 2X           | 77.5          | 50.7             | 0.0            | 21668              | 24.4    | 47                |
| Kaltenberg K7201  | L 2X           | 77.1          | 52.8             | 0.0            | 20551              | 23.3    | 45                |
| Kruger 9111       | L 2X           | 76.3          | 50.7             | 0.0            | 21445              | 24.2    | 48                |
| Legend LS9113     | L 2X           | 76.0          | 52.1             | 0.0            | 19211              | 24.1    | 49                |
| Crow's 440        | L 2X           | 74.0          | 55.4             | 0.0            | 20998              | 20.0    | 46                |
| Means             |                | 96.8          | 53.0             | 0.2            | 21215              | 22.4    |                   |
|                   |                | LSD(.05) 15.3 | CV - 9.8%        |                |                    |         |                   |

Table 8. Area E(late) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, Southeast Research Farm, Centerville, Clay Co., SD

| Brand and Variety    | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|----------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                      | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Asgrow RX746         |                 |      | 105  |                |      | 1    |                |      | 20   |
| Cargill 6927         | 87              | 102  | 98   | 1              | 1    | 2    | 19             | 19   | 19   |
| Crow's 449           |                 |      | 101  |                |      | 1    |                |      | 18   |
| Crow's 498           |                 |      | 101  |                |      | 1    |                |      | 19   |
| DeKalb DK612         |                 | 110  | 102  |                | 1    | 1    |                | 19   | 19   |
| Fontanelle 4280      | 100             | 109  | 109  | 1              | 1    | 1    | 19             | 19   | 20   |
| Garst 8532           |                 | 114  | 108  |                | 1    | 1    |                | 20   | 20   |
| Golden Harvest H2540 |                 |      | 115  |                |      | 1    |                |      | 19   |
| Hoegemeyer SX2632    | 97              | 110  | 111  | 1              | 1    | 1    | 20             | 20   | 20   |
| Kaltenberg K7500     | 95              | 106  | 106  | 1              | 1    | 2    | 19             | 19   | 19   |
| Pioneer 3362         |                 | 123  | 124  |                | 2    | 1    |                | 18   | 19   |
| Pioneer 3417         |                 |      | 113  |                |      | 1    |                |      | 18   |
| Producers PH721      |                 |      | 105  |                |      | 0    |                |      | 20   |
| Sands SOI-9100       |                 |      | 111  |                |      | 1    |                |      | 20   |
| Terra TR1090         |                 |      | 87   |                |      | 3    |                |      | 20   |
| Terra TR1120         | 83              | 100  | 90   | 1              | 2    | 1    | 22             | 22   | 23   |
| Terra TR1125         | 93              | 105  | 105  | 1              | 2    | 1    | 19             | 19   | 20   |
| Wilson 1640          | 97              | 105  | 103  | 1              | 1    | 2    | 19             | 19   | 20   |

Table 9. 1991 Corn Performance Trial, Area D3(early), Plant Science Farm, Brookings, SD

| Brand and Variety      | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|------------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| DeKalb DK-462          | E 2X           | 162.3     | 59.7             | 0.0            | 19881              | 15.0    | 1                 |
| AgriGene AG3980        | M 2X           | 159.9     | 62.9             | 0.0            | 20216              | 16.0    | 2                 |
| Pioneer 3733           | E 2X           | 159.8     | 63.5             | 0.0            | 19993              | 16.1    | 3                 |
| Horizon 9107           | M 2X           | 158.0     | 63.7             | 0.0            | 19546              | 16.7    | 6                 |
| Northrup King N4350    | E 2X           | 157.2     | 61.1             | 1.7            | 20105              | 14.9    | 4                 |
| Dairyland Stealth 1198 | E 2X           | 157.0     | 61.9             | 0.0            | 19769              | 15.5    | 5                 |
| Pioneer DX1198         | E 2X           | 153.9     | 60.8             | 0.6            | 19323              | 14.7    | 7                 |
| Cargill 3637           | M 2X           | 153.8     | 63.6             | 0.6            | 19323              | 15.2    | 8                 |
| Northrup King N4428    | E 2X           | 153.6     | 64.3             | 0.0            | 20105              | 16.1    | 9                 |
| Crow's 210             | E 2X           | 153.2     | 60.1             | 0.0            | 20105              | 16.1    | 10                |
| Funks 2078X            | E 2X           | 152.1     | 63.3             | 0.0            | 19993              | 15.7    | 11                |
| Sands SOI 9980         | E 2X           | 151.3     | 64.0             | 0.0            | 19993              | 15.7    | 12                |
| Hoegemeyer SX2588      | E 2X           | 150.6     | 62.0             | 0.0            | 20105              | 16.3    | 13                |
| Interstate IS531       | M 2X           | 149.8     | 61.6             | 0.6            | 19769              | 15.7    | 15                |
| Northrup King N3624    | E 2X           | 148.4     | 63.1             | 0.0            | 18988              | 14.6    | 14                |
| Funks G-4299           | E 2X           | 147.1     | 63.0             | 0.0            | 17089              | 15.7    | 17                |
| Sexauer 91-40          | M 2X           | 146.9     | 64.7             | 0.0            | 20105              | 15.1    | 16                |
| Top Farm SX1097A       | E 2X           | 146.0     | 60.6             | 0.0            | 19881              | 15.6    | 18                |
| Sigco 1799             | M 2X           | 144.8     | 61.8             | 1.1            | 19881              | 15.0    | 19                |
| TopFarm SX1195A        | E 2X           | 144.2     | 62.6             | 0.0            | 20105              | 15.0    | 20                |
| Garst 8777             | M 2X           | 143.2     | 59.7             | 0.0            | 19434              | 14.6    | 21                |
| Terra TR1010           | M 2X           | 143.1     | 62.3             | 1.2            | 18764              | 16.1    | 23                |
| Kaystar KX-606         | M 2X           | 142.8     | 63.5             | 1.7            | 19658              | 16.3    | 25                |
| Cargill 3427           | M 2X           | 141.3     | 58.7             | 0.0            | 20216              | 14.6    | 22                |
| DeKalb DK-485          | E 2X           | 141.1     | 60.0             | 0.0            | 19658              | 14.9    | 24                |
| Golden Harvest H2295   | E 2X           | 139.4     | 61.7             | 1.1            | 19434              | 15.0    | 26                |
| Crow's 179             | E 2X           | 138.5     | 62.3             | 0.6            | 20105              | 15.3    | 27                |
| Interstate IS549       | M 2X           | 138.4     | 63.7             | 1.1            | 20105              | 15.7    | 29                |
| Dairyland Stealth 1201 | E 2X           | 137.9     | 61.0             | 0.0            | 19546              | 15.3    | 28                |
| AgriGene DXAG3430      | M 2X           | 135.5     | 63.2             | 0.0            | 19211              | 14.9    | 30                |
| Garst AG3430           | M 2X           | 135.3     | 58.4             | 0.0            | 19769              | 15.1    | 31                |
| Interstate IS443       | E 2X           | 134.8     | 63.4             | 0.6            | 20216              | 15.1    | 32                |
| Asgrow RX406           | E 2X           | 134.2     | 64.8             | 1.1            | 19769              | 15.0    | 34                |
| Asgrow RX409           | M 2X           | 133.8     | 60.8             | 0.0            | 19434              | 14.9    | 33                |
| Terra TR1020           | M 2X           | 132.4     | 60.6             | 0.0            | 19769              | 16.0    | 35                |
| Hoegemeyer SX2564      | E 2X           | 131.6     | 61.8             | 0.6            | 19546              | 16.0    | 36                |
| Sigco 1099             | M 2X           | 130.5     | 62.9             | 0.0            | 18988              | 16.1    | 37                |
| Dairyland DX1101       | E 2X           | 128.9     | 62.7             | 1.1            | 20216              | 15.6    | 39                |
| Golden Harvest H2343   | E 2X           | 128.8     | 61.4             | 1.2            | 18541              | 14.9    | 38                |
| Kaystar KX-600         | M 2X           | 127.7     | 61.5             | 0.0            | 19993              | 16.0    | 40                |
| Blaney B405            | E 2X           | 126.0     | 62.1             | 1.1            | 20105              | 15.6    | 41                |
| Legend LS7198          | E 2X           | 125.8     | 60.7             | 0.6            | 20216              | 15.7    | 42                |
| Legend LS7194          | E 2X           | 125.3     | 61.9             | 1.1            | 20105              | 15.6    | 43                |
| Interstate IS523       | E 2X           | 124.4     | 61.4             | 0.0            | 19993              | 15.9    | 47                |

Table 9. (Cont.) 1991 Corn Performance Trial, Area D3(early), Brookings, SD

| Brand and Variety | Type and Cross | Yield B/A     | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|-------------------|----------------|---------------|------------------|----------------|--------------------|---------|-------------------|
| Legend LS7192     | E 2X           | 123.8         | 61.2             | 0.6            | 19546              | 14.9    | 44                |
| Sexauer 91-42     | M 2X           | 123.6         | 62.2             | 0.0            | 20105              | 15.0    | 46                |
| Sexauer 91-45     | M 2X           | 123.1         | 60.7             | 0.0            | 19658              | 14.5    | 45                |
| Asgrow RX469      | E 2X           | 121.7         | 61.5             | 0.0            | 20105              | 16.1    | 48                |
| Garst SC1594      | M 2X           | 118.8         | 62.1             | 0.0            | 19658              | 15.0    | 49                |
| Top Farm SX1194   | E 2X           | 117.6         | 63.8             | 1.7            | 20105              | 15.1    | 50                |
| Horizon 3737      | E 2X           | 98.7          | 62.6             | 0.6            | 17759              | 14.7    | 51                |
| Means             |                | 139.2         | 62.0             | 0.4            | 19686              | 15.4    |                   |
|                   |                | LSD(.05) 17.1 | CV - 7.6%        |                |                    |         |                   |

Table 10. Area (early) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, Plant Science Farm, Brookings, Brookings Co., SD

| Brand and Variety    | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|----------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                      | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Asgrow RX406         | 116             | 138  | 140  | 1              | 1    | 1    | 16             | 16   | 16   |
| Asgrow RX409         |                 | 139  | 142  |                | 1    | 1    |                | 16   | 16   |
| Asgrow RX469         |                 |      | 124  |                |      | 0    |                |      | 17   |
| Cargill 3637         |                 |      | 161  |                |      | 1    |                |      | 16   |
| Crow's 210           | 124             | 147  | 147  | 0              | 0    | 0    | 20             | 18   | 18   |
| DeKalb DK485         |                 |      | 153  |                |      | 1    |                |      | 17   |
| Funk's G-4299        |                 |      | 155  |                |      | 1    |                |      | 17   |
| Garst 8851           |                 |      | 141  |                |      | 1    |                |      | 16   |
| Golden Harvest H2295 |                 |      | 134  |                |      | 1    |                |      | 16   |
| Golden Harvest H2343 | 120             | 146  | 142  | 1              | 1    | 2    | 18             | 16   | 16   |
| Horizon 9107         |                 |      | 148  |                |      | 0    |                |      | 18   |
| Interstate IS443     | 124             | 148  | 149  | 1              | 1    | 1    | 17             | 17   | 16   |
| Interstate IS549     |                 |      | 144  |                |      | 2    |                |      | 17   |
| Northrup King N4350  | 125             | 147  | 145  | 1              | 1    | 1    | 17             | 16   | 16   |
| Pioneer 3733         |                 | 158  | 158  |                | 0    | 0    |                | 18   | 17   |
| Pioneer 3751         | 126             | 150  | 150  | 1              | 1    | 1    | 17             | 16   | 16   |
| Sigco 1099           |                 |      | 137  |                |      | 0    |                |      | 17   |
| Terra TR1020         |                 |      | 128  |                |      | 0    |                |      | 18   |
| Top Farm TF1194      |                 |      | 139  |                |      | 1    |                |      | 16   |

Table 11. 1991 Corn Performance Trial, Area D3(late), Plant Science Farm, Brookings, SD

| Brand and Variety      | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|------------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| Terra TR1090           | M 2X           | 177.2     | 63.0             | 0.6            | 19429              | 17.6    | 1                 |
| Cargill 5327           | M 2X           | 168.4     | 63.3             | 0.6            | 20105              | 15.8    | 2                 |
| Terra TR1120           | L 2X           | 168.3     | 61.0             | 0.0            | 20105              | 19.5    | 3                 |
| Terra TR1125           | L 2X           | 165.0     | 62.4             | 0.0            | 20105              | 18.3    | 8                 |
| DeKalb DK535           | M 2X           | 164.8     | 61.8             | 0.6            | 19658              | 16.7    | 5                 |
| Kruger K9007           | M 2X           | 164.3     | 63.5             | 0.0            | 19546              | 17.0    | 6                 |
| Interstate IS711       | L 2X           | 163.9     | 63.1             | 0.0            | 19658              | 16.1    | 4                 |
| Kruger K9104           | M 2X           | 163.8     | 62.8             | 0.0            | 19658              | 16.9    | 7                 |
| Legend LS8102          | M 2X           | 160.4     | 63.9             | 1.1            | 19658              | 16.6    | 11                |
| Curry 2165             | M 2X           | 160.0     | 62.7             | 0.0            | 19323              | 16.5    | 9                 |
| Asgrow RX578           | M 2X           | 159.8     | 63.0             | 0.6            | 19993              | 16.5    | 12                |
| Horizon 5151           | M 2X           | 159.6     | 64.0             | 0.0            | 19993              | 16.2    | 10                |
| Crow's 498             | M 2X           | 158.9     | 62.1             | 0.0            | 18541              | 18.2    | 17                |
| Cargill 4327           | M 2X           | 158.3     | 61.5             | 0.6            | 20105              | 16.0    | 15                |
| Jacques 4770           | M 2X           | 158.3     | 60.6             | 0.0            | 20216              | 15.7    | 13                |
| Curry 4442             | M 2X           | 158.0     | 61.4             | 0.6            | 20105              | 17.0    | 16                |
| Golden Harvest H2390   | M 2X           | 157.6     | 62.1             | 0.0            | 19769              | 15.6    | 14                |
| Crow's 449             | M 2X           | 156.8     | 61.3             | 0.0            | 18429              | 17.6    | 18                |
| Pioneer 3563           | M 2X           | 155.1     | 65.3             | 0.0            | 17759              | 16.2    | 19                |
| Dairyland Stealth 1203 | M 2X           | 153.8     | 61.3             | 3.3            | 20105              | 16.9    | 20                |
| Legend LS8104          | M 2X           | 152.7     | 63.0             | 0.0            | 20216              | 17.7    | 23                |
| Kruger K8107++         | M 2X           | 152.1     | 62.1             | 0.0            | 17536              | 17.1    | 22                |
| Caragill 5157          | M 2X           | 152.0     | 62.9             | 0.0            | 19769              | 16.9    | 21                |
| Golden Harvest H2404   | M 2X           | 150.4     | 63.1             | 0.6            | 19881              | 16.3    | 25                |
| Sands SOI 905M         | M 2X           | 149.8     | 61.8             | 0.0            | 19323              | 15.9    | 24                |
| Sigco 1701             | M 2X           | 149.0     | 63.7             | 0.6            | 19769              | 16.5    | 26                |
| Funks G-4393           | L 2X           | 147.1     | 63.5             | 0.0            | 19993              | 16.3    | 27                |
| Crow's 414             | L 2X           | 146.5     | 62.4             | 0.0            | 19769              | 15.9    | 29                |
| Blaney B603            | M 2X           | 145.3     | 63.0             | 0.0            | 19881              | 16.9    | 30                |
| Dairyland DX1103       | M 2X           | 144.7     | 63.1             | 0.0            | 19211              | 16.4    | 29                |
| Northrup King N4545    | M 2X           | 142.7     | 62.9             | 0.6            | 19434              | 15.1    | 31                |
| Funks G-4385           | L 2X           | 142.4     | 63.1             | 0.0            | 19658              | 16.3    | 32                |
| Northrup King S4590    | M 2X           | 140.2     | 64.7             | 0.6            | 17536              | 16.5    | 33                |
| Curry 2149             | M 2X           | 137.4     | 65.5             | 0.0            | 19881              | 16.2    | 34                |
| Jacques 5170           | M 2X           | 136.9     | 65.3             | 0.6            | 18541              | 16.0    | 35                |
| Hoegemeyer SX2617      | M 2X           | 132.6     | 61.8             | 0.0            | 19434              | 15.5    | 36                |
| Hoegemeyer SX2594      | M 2X           | 132.6     | 63.7             | 0.0            | 18988              | 16.8    | 37                |
| Sexaauer 91-62         | M 2X           | 128.1     | 65.1             | 0.0            | 17759              | 16.6    | 38                |
| Top Farm SX1101        | M 2X           | 127.3     | 63.2             | 0.6            | 19993              | 16.4    | 39                |
| Kaystar KX-675         | M 2X           | 122.5     | 62.1             | 0.6            | 19211              | 16.1    | 40                |
| Garst 8574             | M 2X           | 120.1     | 64.8             | 0.0            | 18317              | 16.2    | 41                |
| Top Farm SX1101A       | M 2X           | 116.2     | 65.2             | 0.0            | 19211              | 16.1    | 42                |
| Sexauer 91-54          | M 2X           | 114.5     | 65.5             | 0.0            | 19099              | 16.0    | 43                |
| Means                  |                | 149.2     | 63.1             | 0.3            | 19440              | 16.6    |                   |

LSD (.05) 17.9

CV - 7.4 %

Table 12. Area D3(late) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, Plant Science Farm, Brookings, Brookings Co., SD

| Brand and Variety    | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|----------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                      | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Cargill 4327         |                 |      | 165  |                |      | 0    |                |      | 18   |
| Crow's 414           |                 | 145  | 145  |                | 0    | 1    |                | 19   | 17   |
| Crow's 449           |                 |      | 150  |                |      | 0    |                |      | 20   |
| DeKalb DK535         |                 | 153  | 153  |                | 2    | 1    |                | 19   | 18   |
| Funks G-4385         |                 |      | 148  |                |      | 0    |                |      | 18   |
| Funks G-4393         |                 |      | 152  |                |      | 0    |                |      | 18   |
| Golden Harvest H2404 |                 | 147  | 148  |                | 1    | 1    |                | 18   | 18   |
| Hoegemeyer 2594      |                 |      | 136  |                |      | 0    |                |      | 18   |
| Hoegemeyer 2617      | 119             | 141  | 138  | 0              | 0    | 1    | 20             | 19   | 18   |
| Jacques 5170         |                 |      | 139  |                |      | 1    |                |      | 17   |
| Northrup King N4545  | 123             | 143  | 140  | 1              | 1    | 1    | 19             | 17   | 17   |
| Northrup King S4590  | 123             | 144  | 141  | 1              | 1    | 1    | 20             | 19   | 18   |
| Sigco 1701           |                 |      | 152  |                |      | 1    |                |      | 18   |
| Terra TR1090         |                 |      | 157  |                |      | 0    |                |      | 21   |
| Terra TR1120         |                 |      | 149  |                |      | 0    |                |      | 24   |
| Terra TR1125         |                 | 150  | 152  |                | 0    | 0    |                | 22   | 21   |
| Top Farm TF1101      |                 |      | 130  |                |      | 0    |                |      | 17   |

Table 13. 1991 Corn Performance Trial, Area D1(early), John Heaton Farm, Deuel Co., SD

| Brand and Variety      | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|------------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| Top Farm SX1097A       | E 2X           | 122.1     | 54.2             | 0.6            | 19434              | 22.5    | 1                 |
| Golden Valley 282      | E 2X           | 119.7     | 58.8             | 1.1            | 19546              | 20.3    | 2                 |
| Dairyland Stealth 1198 | E 2X           | 116.8     | 52.0             | 0.0            | 19546              | 23.5    | 3                 |
| Jacques 5170           | E 2X           | 112.7     | 55.5             | 3.2            | 17647              | 21.9    | 4                 |
| Sigco 1799             | E 2X           | 112.0     | 55.1             | 1.1            | 19881              | 22.7    | 6                 |
| Pioneer 3751           | E 2X           | 111.3     | 55.1             | 2.4            | 18317              | 21.4    | 5                 |
| Golden Harvest H2295   | E 2X           | 110.2     | 54.6             | 2.3            | 19211              | 21.9    | 7                 |
| Asgrow RX409           | E 2X           | 109.5     | 54.5             | 2.5            | 18094              | 21.0    | 8                 |
| Interstate IS443       | E 2X           | 107.3     | 56.8             | 0.6            | 17647              | 21.1    | 9                 |
| Jacques 4770           | E 2X           | 106.2     | 50.6             | 1.8            | 18541              | 23.3    | 11                |
| Top Farm SX1195A       | E 2X           | 105.1     | 56.0             | 1.8            | 18653              | 21.2    | 10                |
| Dairyland Stealth 1189 | E 2X           | 102.3     | 57.4             | 1.9            | 17871              | 20.7    | 12                |
| Interstate IS448       | E 2X           | 101.5     | 56.8             | 4.2            | 18764              | 21.0    | 14                |
| Kaystar KX-430         | E 2X           | 101.1     | 54.2             | 0.6            | 19211              | 21.7    | 13                |
| Cargill 3627           | E 2X           | 100.0     | 58.7             | 2.5            | 20216              | 24.1    | 16                |
| Pioneer 3737           | E 2X           | 97.9      | 54.6             | 4.3            | 17982              | 21.1    | 17                |
| AgriGene AG3980        | E 2X           | 97.7      | 53.2             | 1.9            | 17871              | 23.2    | 19                |
| Asgrow RX469           | E 2X           | 96.7      | 54.9             | 1.8            | 18764              | 23.1    | 21                |
| Golden Harvest H2266   | E 2X           | 95.7      | 55.7             | 1.8            | 18764              | 20.3    | 18                |
| Garst SC 1348          | M 2X           | 95.5      | 59.6             | 3.0            | 18541              | 18.5    | 15                |
| Cargill 3427           | E 2X           | 95.3      | 53.5             | 2.8            | 16084              | 21.1    | 20                |
| Interstate IS406       | E 2X           | 93.4      | 57.9             | 4.3            | 18094              | 20.6    | 24                |
| Pioneer 3788           | E 2X           | 93.0      | 56.1             | 1.3            | 17871              | 21.0    | 22                |
| Garst 8952             | E 2X           | 92.3      | 59.1             | 3.3            | 16754              | 19.6    | 23                |
| Sigco 1099             | E 2X           | 90.6      | 55.2             | 1.9            | 17312              | 23.0    | 27                |
| DeKalb DK401           | E 2X           | 90.1      | 56.6             | 1.9            | 17312              | 20.1    | 25                |
| Sigco 1793             | E 2X           | 89.4      | 55.2             | 2.5            | 18206              | 21.7    | 28                |
| Cargill 2927           | E 2X           | 89.0      | 55.6             | 0.6            | 19211              | 20.2    | 26                |
| AgriGene AG3430        | E 2X           | 88.6      | 56.4             | 2.4            | 18653              | 21.3    | 29                |
| Garst 8777             | M 2X           | 85.5      | 52.1             | 0.6            | 17647              | 22.3    | 30                |
| Northrup King N2440    | E 2X           | 73.9      | 57.3             | 2.4            | 18317              | 20.4    | 31                |
| Means                  |                | 100.1     | 55.6             | 2.0            | 18386              | 21.5    |                   |

LSD (.05) N.S.

CV - 15.5 %

Table 14. Area D1(early) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, John Heaton Farm, Gary, Deuel Co., SD

| Brand and Variety    | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|----------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                      | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Asgrow RX409         |                 | 102  | 95   |                | 2    | 1    |                | 19   | 19   |
| Cargill 3427         |                 |      | 104  |                |      | 0    |                |      | 15   |
| Garst 8952           |                 |      | 85   |                |      | 2    |                |      | 17   |
| Golden Harvest H2266 |                 |      | 92   |                |      | 1    |                |      | 18   |
| Golden Harvest H2295 |                 |      | 107  |                |      | 2    |                |      | 19   |
| Interstate IS406     |                 |      | 100  |                |      | 2    |                |      | 18   |
| Interstate IS443     | 99              | 109  | 103  | 1              | 1    | 1    | 20             | 19   | 18   |
| Northrup King N2440  |                 |      | 73   |                |      | 1    |                |      | 17   |
| Pioneer 3737         |                 | 106  | 100  |                |      | 1    |                | 19   | 19   |
| Pioneer 3751         | 97              | 111  | 104  | 1              | 1    | 1    | 19             | 19   | 19   |
| Pioneer 3788         |                 |      | 95   |                |      | 2    |                |      | 18   |
| Sigco 1099           |                 |      | 94   |                |      | 1    |                |      | 20   |
| Sigco 1793           | 90              | 98   | 94   | 1              | 1    | 2    | 19             | 19   | 19   |
| Sigco 1799           |                 | 110  | 107  |                |      | 1    |                | 20   | 19   |
| Top Farm SX1195A     | 93              | 104  | 102  | 1              | 1    | 1    | 19             | 19   | 18   |



Table 15. 1991 Corn Performance Trial, Area D1(late), John Heaton Farm, Deuel Co., SD

| Brand and Variety      | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|------------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| Golden Harvest H2390   | M 2X           | 130.0     | 52.6             | 1.1            | 19658              | 23.9    | 1                 |
| Cargill 4327           | M 2X           | 124.5     | 58.7             | 2.3            | 20216              | 23.3    | 2                 |
| Interstate IS531       | M 2X           | 117.6     | 55.0             | 2.3            | 19434              | 23.2    | 3                 |
| Pioneer 3563           | M 2X           | 116.1     | 56.4             | 0.6            | 19434              | 22.7    | 4                 |
| DeKalb DK462           | M 2X           | 110.8     | 56.3             | 0.0            | 18876              | 21.1    | 5                 |
| Cargill 5327           | M 2X           | 108.4     | 53.7             | 0.0            | 19546              | 23.4    | 6                 |
| Pioneer 3733           | M 2X           | 103.3     | 57.3             | 1.2            | 18761              | 22.8    | 7                 |
| Asgrow RX498           | M 2X           | 102.0     | 54.7             | 0.6            | 18541              | 22.4    | 8                 |
| Dairyland Stealth 1201 | M 2X           | 97.8      | 54.2             | 5.8            | 17201              | 22.8    | 10                |
| Dairyland DX1101       | M 2X           | 97.5      | 57.4             | 0.0            | 18876              | 22.5    | 9                 |
| Top Farm SX1104A       | M 2X           | 96.6      | 54.3             | 1.9            | 18094              | 24.2    | 11                |
| Golden Harvest H2343   | M 2X           | 94.7      | 57.7             | 3.6            | 18764              | 21.9    | 12                |
| Interstate IS549       | M 2X           | 90.2      | 56.0             | 0.6            | 17871              | 22.4    | 14                |
| Dairyland DX1100       | M 2X           | 89.5      | 54.2             | 2.4            | 18764              | 20.9    | 13                |
| Northrup King N3624    | M 2X           | 87.5      | 55.8             | 1.9            | 17982              | 20.8    | 15                |
| Golden Valley 298      | M 2X           | 86.7      | 58.5             | 1.8            | 18429              | 21.8    | 16                |
| Top Farm SX1101        | M 2X           | 85.3      | 57.4             | 0.6            | 17647              | 22.7    | 17                |
| Means                  |                | 102.3     | 55.9             | 1.6            | 18718              | 22.5    |                   |
| LSD(.05)               |                | 20.8      |                  | CV - 12.2 %    |                    |         |                   |

Table 16. Area D1(late) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, John Heaton Farm, Deuel Co., SD

|                     | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|---------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                     | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Asgrow RX498        |                 |      | 104  |                |      | 0    |                |      | 21   |
| Northrup King N3624 | 94              | 104  | 97   | 1              | 1    | 1    | 18             | 18   | 18   |
| Pioneer 3733        |                 | 111  | 112  |                | 1    | 1    |                | 21   | 20   |
| Top Farm SX1101     | 95              | 104  | 100  | 0              | 0    | 0    | 21             | 21   | 19   |

Table 17. 1991 Corn Performance Trial, Area D2(early), Northeast Farm, Watertown, SD

| Brand and Variety    | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|----------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| AgriGene AG3860      | E 2X           | 158.8     | 56.9             | 1.1            | 20105              | 20.6    | 2                 |
| DeKalb DK462         | E 2X           | 156.7     | 54.8             | 0.0            | 19881              | 19.1    | 1                 |
| Cargill 3637         | E 2X           | 156.1     | 56.9             | 2.2            | 20328              | 19.6    | 3                 |
| Dahlgren DC440       | E 2X           | 151.5     | 59.2             | 1.7            | 20105              | 17.9    | 4                 |
| Cargill 3427         | E 2X           | 150.7     | 58.7             | 0.0            | 20216              | 19.3    | 5                 |
| Northrup King N3624  | E 2X           | 149.8     | 56.9             | 0.0            | 19881              | 18.8    | 6                 |
| Cargill 2927         | E 2X           | 148.7     | 60.6             | 1.7            | 20105              | 17.8    | 7                 |
| Asgrow RX406         | E 2X           | 144.3     | 58.0             | 1.7            | 20105              | 19.5    | 9                 |
| Interstate IS448     | E 2X           | 144.0     | 58.5             | 1.1            | 19993              | 19.1    | 8                 |
| Golden Harvest H2343 | E 2X           | 143.0     | 56.3             | 0.0            | 18429              | 20.1    | 11                |
| Top Farm SX1097A     | E 2X           | 141.6     | 55.1             | 0.0            | 19993              | 21.5    | 15                |
| Horizon 4545         | E 2X           | 141.2     | 62.1             | 0.6            | 19658              | 17.8    | 10                |
| Top Farm SX1195A     | E 2X           | 140.4     | 59.1             | 0.6            | 19881              | 19.1    | 14                |
| AgriGene AG3200      | E 2X           | 140.0     | 58.7             | 0.0            | 20105              | 18.7    | 13                |
| DeKalb DK401         | E 2X           | 138.7     | 57.3             | 0.0            | 19099              | 17.4    | 12                |
| Garst 8777           | E 2X           | 138.2     | 53.8             | 1.1            | 20105              | 19.5    | 17                |
| Funks G-4120         | E 2X           | 137.0     | 61.7             | 0.0            | 19993              | 18.0    | 16                |
| Top Farm SX1194      | E 2X           | 136.0     | 61.7             | 0.5            | 20328              | 18.6    | 18                |
| Golden Harvest H2295 | E 2X           | 135.9     | 60.6             | 1.7            | 19993              | 18.8    | 19                |
| Funks G-4070         | E 2X           | 134.4     | 58.0             | 1.1            | 19769              | 18.7    | 20                |
| Pioneer 3787         | E 2X           | 133.5     | 56.2             | 0.0            | 17759              | 19.1    | 24                |
| Garst 8851           | E 2X           | 133.2     | 60.2             | 0.6            | 19658              | 18.6    | 23                |
| Garst SC 1594        | E 2X           | 132.9     | 58.6             | 0.6            | 18988              | 18.3    | 22                |
| Asgrow RX337         | E 2X           | 132.3     | 61.5             | 0.0            | 19546              | 17.7    | 21                |
| Interstate IS463     | E 2X           | 131.3     | 59.0             | 1.7            | 19546              | 19.1    | 25                |
| Kaystar KX-450       | E 2X           | 129.7     | 58.3             | 0.0            | 20105              | 18.7    | 27                |
| Dahlgren D5911       | E 2X           | 129.6     | 59.5             | 0.0            | 19323              | 18.4    | 26                |
| Pioneer 3921         | E 2X           | 127.6     | 61.0             | 0.6            | 20105              | 18.5    | 28                |
| Funks G-4160         | E 2X           | 125.5     | 58.8             | 0.6            | 18653              | 18.7    | 30                |
| Garst 8952           | E 2X           | 124.8     | 60.8             | 0.0            | 20105              | 18.0    | 29                |
| Horizon 8095         | E 2X           | 124.2     | 56.0             | 0.6            | 19769              | 19.3    | 31                |
| Horizon 3737         | E 2X           | 115.8     | 62.1             | 0.0            | 17201              | 16.8    | 32                |
| Pioneer 3917         | E 2X           | 115.1     | 64.3             | 0.6            | 19881              | 18.3    | 33                |
| Means                |                | 137.7     | 58.8             | 0.6            | 19658              | 18.8    |                   |

LSD(.05) 15.8

CV - 7.0 %

Table 18. Area D2(early) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, Northeast Research Farm, Watertown, Codington Co, SD

| Brand and Variety    | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|----------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                      | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Asgrow RX337         |                 | 113  | 125  |                | 0    | 0    |                | 18   | 19   |
| Asgrow RX406         |                 | 112  | 125  |                | 2    | 2    |                | 19   | 20   |
| Cargill 3637         |                 |      | 141  |                |      | 2    |                |      | 20   |
| Funks G-4160         |                 |      | 116  |                |      | 0    |                |      | 20   |
| Garst SC1594         |                 |      | 116  |                |      | 1    |                |      | 20   |
| Garst 8952           |                 |      | 129  |                |      | 0    |                |      | 19   |
| Golden Harvest H2295 |                 |      | 134  |                |      | 1    |                |      | 21   |
| Horizon 8095         |                 |      | 107  |                |      | 3    |                |      | 18   |
| Interstate IS463     | 99              | 113  | 118  | 2              | 2    | 3    | 21             | 19   | 20   |
| Northrup King N3624  |                 |      | 128  |                |      | 1    |                |      | 21   |
| Pioneer 3787         |                 |      | 127  |                |      | 1    |                |      | 20   |
| Pioneer 3921         |                 |      | 125  |                |      | 1    |                |      | 20   |
| Top Farm TF1195A     |                 | 111  | 120  |                | 1    | 2    |                | 20   | 21   |

Table 19. 1991 Corn Performance Trial, Area D2(late), Northeast Farm, Watertown, SD

| Brand and Variety    | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|----------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| Cargill 4327         | M 2X           | 168.0     | 58.7             | 0.0            | 20216              | 22.2    | 1                 |
| Cargill 5327         | M 2X           | 159.2     | 54.7             | 0.0            | 20216              | 22.0    | 2                 |
| Golden Harvest H2390 | E 2X           | 153.7     | 56.1             | 0.0            | 19993              | 22.1    | 5                 |
| Pioneer 3563         | M 2X           | 153.3     | 57.1             | 0.0            | 20105              | 21.4    | 3                 |
| Sigco 1799           | M 2X           | 151.6     | 59.2             | 0.6            | 20216              | 20.0    | 4                 |
| Northrup King N4350  | M 2X           | 149.0     | 53.6             | 0.0            | 19993              | 20.8    | 6                 |
| DeKalb DK485         | E 2X           | 147.0     | 56.9             | 0.0            | 18876              | 20.7    | 7                 |
| Interstate IS549     | M 2X           | 146.6     | 58.8             | 0.0            | 19993              | 21.0    | 8                 |
| Funks G-4299         | M 2X           | 145.0     | 59.7             | 0.6            | 19323              | 20.5    | 9                 |
| Interstate IS523     | M 2X           | 143.5     | 58.5             | 0.0            | 20105              | 21.6    | 11                |
| Top Farm SX1101      | M 2X           | 143.0     | 58.7             | 0.6            | 19769              | 20.8    | 10                |
| Interstate IS531     | M 2X           | 141.9     | 57.1             | 0.6            | 19881              | 21.1    | 12                |
| Asgrow RX469         | M 2X           | 141.4     | 59.1             | 0.0            | 20105              | 21.2    | 13                |
| Dahlgren DC494       | E 2X           | 1411.1    | 55.6             | 0.0            | 19769              | 21.3    | 14                |
| Top Farm SX1101A     | M 2X           | 140.6     | 56.7             | 0.0            | 19881              | 21.5    | 15                |
| Northrup King N4428  | M 2X           | 136.3     | 56.9             | 0.0            | 19099              | 21.7    | 16                |
| Funks 2078X          | M 2X           | 131.1     | 57.0             | 0.0            | 19658              | 20.8    | 17                |
| Dahlgren D5999       | M 2X           | 129.1     | 58.9             | 0.0            | 19658              | 20.3    | 18                |
| Sigco 1099           | M 2X           | 127.7     | 56.6             | 0.0            | 19658              | 20.7    | 19                |
| Means                |                | 144.7     | 57.4             | 0.2            | 19817              | 21.0    |                   |
| LSD(.05)             |                | 15.8      |                  | CV - 7.0 %     |                    |         |                   |

Table 20. Area D2(late) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, Northeast Research Farm, Watertown, Codington Co, SD

| Brand and Variety   | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|---------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                     | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Asgrow RX469        |                 |      | 127  |                |      | 2    |                |      | 22   |
| Cargill 4327        |                 |      | 132  |                |      | 0    |                |      | 23   |
| Cargill 5327        |                 |      | 140  |                |      | 0    |                |      | 24   |
| DeKalb DK485        |                 |      | 135  |                |      | 1    |                |      | 22   |
| Funks G-4299        |                 |      | 132  |                |      | 2    |                |      | 22   |
| Interstate IS523    | 108             | 116  | 127  | 1              | 1    | 1    | 25             | 23   | 23   |
| Interstate IS549    |                 |      | 124  |                |      | 2    |                |      | 22   |
| Northrup King N4350 |                 |      | 128  |                |      | 2    |                |      | 22   |
| Sigco 1099          |                 |      | 121  |                |      | 2    |                |      | 22   |
| Sigco 1799          |                 | 109  | 117  |                | 2    | 3    |                | 21   | 21   |
| Top Farm TF1101     |                 | 116  | 124  |                | 1    | 1    |                | 22   | 23   |
| Top Farm TF1101A    |                 |      | 130  |                |      | 0    |                |      | 23   |

Table 21. 1991 Corn Performance Trial, Area C1(early), Steve Masat Farm, Frankfort, SD

| Brand and Variety    | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|----------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| DeKalb DK485         | E 2X           | 138.4     | 59.6             | 0.0            | 18876              | 15.6    | 1                 |
| Pioneer 3563         | E 2X           | 138.3     | 60.1             | 3.6            | 18653              | 17.4    | 3                 |
| Sigco 1799           | M 2X           | 136.1     | 62.2             | 1.2            | 18653              | 15.6    | 2                 |
| DeKalb DK462         | E 2X           | 129.7     | 60.0             | 0.0            | 18764              | 15.5    | 4                 |
| Top Farm SX1102      | M 2X           | 127.5     | 62.0             | 0.0            | 18653              | 15.7    | 5                 |
| Northrup King N4428  | E 2X           | 125.4     | 62.5             | 0.0            | 17871              | 16.4    | 8                 |
| Garst 8777           | M 2X           | 125.0     | 59.2             | 0.0            | 18764              | 14.4    | 6                 |
| Pioneer 3733         | E 2X           | 124.4     | 64.2             | 0.0            | 17647              | 15.9    | 9                 |
| Northrup King N4350  | E 2X           | 124.1     | 60.2             | 1.2            | 18541              | 14.6    | 7                 |
| Interstate IS531     | E 2X           | 123.4     | 60.3             | 0.6            | 18764              | 16.5    | 10                |
| Kaystar KX-555       | M 2X           | 121.2     | 62.1             | 0.0            | 17647              | 15.6    | 12                |
| Funks 2078X          | E 2X           | 120.8     | 60.6             | 0.0            | 17759              | 15.5    | 13                |
| Funks G-4299         | E 2X           | 119.9     | 62.5             | 0.6            | 18653              | 15.2    | 14                |
| Cargill 3427         | E 2X           | 119.9     | 59.5             | 0.6            | 18429              | 13.6    | 11                |
| Golden Harvest H2295 | E 2X           | 117.1     | 63.3             | 1.2            | 18429              | 14.3    | 16                |
| Interstate IS443     | E 2X           | 116.9     | 64.5             | 0.6            | 18988              | 14.1    | 15                |
| Top Farm SX1101A     | E 2X           | 116.1     | 62.6             | 0.0            | 18876              | 15.0    | 17                |
| Garst SC1594         | M 2X           | 114.7     | 63.3             | 0.6            | 18541              | 14.5    | 18                |
| Interstate IS523     | E 2X           | 112.5     | 60.6             | 0.0            | 18764              | 15.3    | 19                |
| Asgrow RX469         | M 2X           | 111.7     | 61.5             | 0.6            | 17982              | 15.1    | 20                |
| Garst 8708           | M 2X           | 111.0     | 61.3             | 0.6            | 18653              | 15.7    | 22                |
| Cargill 3627         | E 2X           | 110.7     | 58.7             | 0.6            | 20216              | 15.4    | 21                |
| Cargill 3637         | E 2X           | 109.8     | 61.3             | 0.6            | 18653              | 15.5    | 23                |
| Horizon 4545         | E 2X           | 107.2     | 64.1             | 1.3            | 17871              | 13.9    | 24                |
| Sigco 1099           | E 2X           | 105.5     | 62.6             | 0.6            | 17982              | 15.6    | 25                |
| Golden Harvest H2343 | E 2X           | 100.5     | 59.6             | 0.6            | 18094              | 16.1    | 27                |
| Kaystar KX-600       | M 2X           | 99.3      | 62.7             | 0.0            | 17201              | 14.8    | 26                |
| Garst 8714           | M 2X           | 96.0      | 60.9             | 0.0            | 18206              | 15.5    | 28                |
| Means                |                | 118.0     | 61.5             | 0.5            | 18433              | 15.3    |                   |
| LSD(.05)             |                | 18.5      |                  | CV - 9.6 %     |                    |         |                   |

Table 22. Area C1(early) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, Steve Masat Farm, Frankfort, Spink Co., SD

| Brand and Variety   | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|---------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                     | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Asgrow RX469        |                 |      | 116  |                |      | 1    |                |      | 15   |
| Cargill 3427        |                 |      | 121  |                |      | 0    |                |      | 14   |
| DeKalb DK485        |                 |      | 126  |                |      | 0    |                |      | 15   |
| Funks G-4299        |                 |      | 121  |                |      | 1    |                |      | 15   |
| Interstate IS443    |                 |      | 118  |                |      | 1    |                |      | 14   |
| Northrup King N4350 |                 |      | 130  |                |      | 2    |                |      | 14   |
| Northrup King N4545 |                 |      | 116  |                |      | 1    |                |      | 15   |
| Northrup King N4590 |                 |      | 131  |                |      | 2    |                |      | 16   |
| Pioneer 3733        |                 | 120  | 123  |                | 0    | 0    |                | 17   | 16   |
| Sigco 1099          |                 |      | 112  |                |      | 1    |                |      | 15   |
| Sigco 1701          |                 | 111  | 118  |                | 1    | 0    |                | 17   | 16   |
| Sigco 1799          | 123             | 128  | 128  | 1              | 2    | 1    | 17             | 16   | 15   |
| Top Farm SX1102     | 127             | 127  | 127  | 1              | 1    | 1    | 17             | 16   | 15   |

Table 23. 1991 Corn Performance Trial, Area C1(late), Steve Masat Farm, Frankfort, SD

| Brand and Variety    | Type and Cross |    | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist |    | Performance Score |
|----------------------|----------------|----|-----------|------------------|----------------|--------------------|---------|----|-------------------|
|                      |                |    |           |                  |                |                    |         |    |                   |
| Pioneer 3503         | M              | 2X | 142.8     | 59.2             | 0.0            | 18317              | 18.5    | 1  |                   |
| Asgrow RX746         | L              | 2X | 139.3     | 55.7             | 0.0            | 18541              | 19.1    | 2  |                   |
| Interstate IS543     | M              | 2X | 134.9     | 61.7             | 1.3            | 17871              | 16.2    | 3  |                   |
| Top Farm SX1104A     | M              | 2X | 133.1     | 59.1             | 0.0            | 18429              | 18.2    | 6  |                   |
| Pioneer 3578         | M              | 2X | 132.8     | 58.9             | 0.0            | 18429              | 16.5    | 4  |                   |
| Northrup King N4590  | M              | 2X | 132.0     | 61.9             | 0.6            | 17871              | 16.6    | 5  |                   |
| Funks 4393           | M              | 2X | 130.1     | 59.0             | 0.0            | 18764              | 16.8    | 8  |                   |
| Top Farm SX1107      | L              | 2X | 129.8     | 59.5             | 0.0            | 18764              | 18.4    | 10 |                   |
| Cargill 4327         | M              | 2X | 129.5     | 58.7             | 0.0            | 20216              | 16.1    | 7  |                   |
| Sigco 1701           | M              | 2X | 129.4     | 61.7             | 0.0            | 18764              | 16.2    | 9  |                   |
| Cargill 5327         | M              | 2X | 127.9     | 59.9             | 0.0            | 18764              | 16.9    | 11 |                   |
| Funks 4385           | M              | 2X | 126.8     | 58.7             | 0.0            | 18764              | 16.8    | 12 |                   |
| Golden Harvest H2404 | M              | 2X | 126.0     | 59.7             | 0.0            | 18429              | 16.7    | 13 |                   |
| Golden Harvest H2390 | M              | 2X | 125.5     | 57.9             | 0.0            | 18429              | 16.5    | 14 |                   |
| DeKalb DK554         | M              | 2X | 123.6     | 56.9             | 0.0            | 17201              | 17.2    | 15 |                   |
| Interstate IS711     | L              | 2X | 119.5     | 58.7             | 1.2            | 18764              | 16.8    | 16 |                   |
| Asgrow RX706         | L              | 2X | 113.9     | 57.7             | 0.0            | 18764              | 17.9    | 18 |                   |
| Kaystar KX-680       | M              | 2X | 112.6     | 59.3             | 0.0            | 18764              | 16.3    | 17 |                   |
| Northrup King N4545  | M              | 2X | 107.6     | 58.3             | 2.4            | 18764              | 16.4    | 19 |                   |
| Horizon 9107         | M              | 2X | 105.0     | 60.9             | 0.7            | 16307              | 17.5    | 21 |                   |
| Kaystar KX-606       | M              | 2X | 104.0     | 59.6             | 1.2            | 18541              | 15.9    | 20 |                   |
| Means                |                |    | 125.1     | 59.2             | 0.4            | 18450              | 17.0    |    |                   |
| LSD(.05)             |                |    | 15.6      |                  |                | CV - 7.6 %         |         |    |                   |

Table 24. Area C1(late) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, Spink County, Steve Masat Farm, Frankfort, SD

|                  | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                  | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Asgrow RX746     |                 |      | 137  |                |      | 0    |                |      | 19   |
| Funks G-4385     |                 |      | 119  |                |      | 0    |                |      | 17   |
| Funks G-4393     |                 |      | 123  |                |      | 0    |                |      | 17   |
| Horizon 9107     |                 |      | 111  |                |      | 0    |                |      | 17   |
| Interstate IS543 | 126             | 124  | 133  | 0              | 0    | 1    | 18             | 17   | 16   |
| Pioneer 3503     |                 |      | 132  |                |      | 0    |                |      | 18   |
| Pioneer 3578     |                 | 124  | 130  |                | 0    | 0    |                | 17   | 16   |

Table 25. 1991 Corn Performance Trial, Area B3(irrigated-early), Dakota Lakes Research Farm, Pierre, SD

| Brand and Variety    | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|----------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| Legend LS8205        | M 2X           | 221.6     | 65.6             | 0.0            | 31720              | 15.0    | 1                 |
| Cargill 5877         | M 2X           | 214.1     | 62.6             | 0.3            | 33061              | 13.8    | 2                 |
| Cargill 5327         | M 2X           | 213.7     | 63.2             | 0.7            | 31497              | 14.3    | 3                 |
| Legend LS8203        | M 2X           | 209.9     | 63.1             | 0.7            | 32837              | 13.7    | 4                 |
| Interstate IS531     | M 2X           | 206.7     | 63.0             | 0.0            | 33283              | 13.5    | 5                 |
| Northrup King N4545  | E 2X           | 201.8     | 64.0             | 0.3            | 32279              | 13.1    | 6                 |
| Legend LS8104        | M 2X           | 200.9     | 65.5             | 0.3            | 31944              | 16.0    | 9                 |
| Legend LS8201        | M 2X           | 199.0     | 66.4             | 0.0            | 31385              | 14.2    | 7                 |
| Pioneer 3563         | E 2X           | 198.2     | 63.9             | 3.2            | 31385              | 14.6    | 11                |
| Funks 2078X          | E 2X           | 197.0     | 65.2             | 0.0            | 30268              | 13.5    | 8                 |
| DeKalb DK554         | E 2X           | 195.3     | 60.4             | 0.7            | 29822              | 12.8    | 10                |
| Dahlgren DC494       | E 2X           | 194.7     | 67.4             | 0.0            | 33172              | 13.8    | 12                |
| Top Farm SX1097A     | M 2X           | 194.3     | 61.4             | 0.0            | 32391              | 13.8    | 13                |
| Garst 8574           | E 2X           | 194.2     | 64.7             | 0.0            | 32167              | 14.4    | 15                |
| DeKalb DK485         | E 2X           | 193.2     | 59.5             | 1.0            | 32391              | 13.0    | 14                |
| Dahlgren DC510       | M 2X           | 191.4     | 65.8             | 0.0            | 32391              | 14.0    | 16                |
| Northrup King N4428  | E 2X           | 190.9     | 63.4             | 0.4            | 30715              | 14.7    | 17                |
| Asgrow RX578         | M 2X           | 189.5     | 65.3             | 0.7            | 31832              | 14.0    | 18                |
| Interstate IS549     | M 2X           | 188.4     | 64.4             | 0.7            | 32056              | 13.8    | 20                |
| DeKalb DK535         | E 2X           | 187.9     | 61.6             | 0.0            | 29040              | 13.6    | 19                |
| Pioneer 3578         | E 2X           | 187.8     | 62.8             | 0.8            | 28928              | 13.9    | 21                |
| Asgrow RX469         | E 2X           | 187.2     | 68.1             | 0.0            | 31720              | 14.2    | 22                |
| Top Farm SX1101A     | M 2X           | 185.3     | 66.7             | 0.3            | 32167              | 14.0    | 23                |
| Kaystar KX-606       | M 2X           | 184.3     | 62.3             | 0.3            | 32279              | 14.3    | 24                |
| Horizon 9107         | M 2X           | 179.6     | 65.8             | 0.4            | 29487              | 14.7    | 26                |
| Golden Harvest H2390 | M 2X           | 179.2     | 64.5             | 0.0            | 29710              | 13.6    | 25                |
| Cargill 4327         | M 2X           | 166.0     | 58.7             | 0.7            | 20216              | 13.6    | 27                |
| Horizon 5151         | M 2X           | 156.9     | 62.5             | 0.0            | 23344              | 13.8    | 28                |
| Horizon 4545         | E 2X           | 151.1     | 68.6             | 0.0            | 26918              | 12.9    | 29                |
| Means                |                | 191.7     | 64.0             | 0.4            | 31139              | 14.0    |                   |

LSD(.05) 24.9                      CV - 7.9 %

Table 26. Area B3(irrigated-early) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, Dakota Lakes Farm, Pierre, Hughes Co, SD

| Brand and Variety   | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|---------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                     | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Asgrow RX469        |                 |      | 183  |                |      | 1    |                |      | 14   |
| Asgrow RX578        |                 |      | 194  |                |      | 0    |                |      | 15   |
| Cargill 4327        |                 |      | 178  |                |      | 1    |                |      | 15   |
| Cargill 5327        |                 |      | 216  |                |      | 1    |                |      | 15   |
| DeKalb DK485        |                 |      | 189  |                |      | 2    |                |      | 14   |
| DeKalb DK535        |                 |      | 217  |                |      | 1    |                |      | 14   |
| Garst 8574          |                 |      | 193  |                |      | 1    |                |      | 15   |
| Horizon 9107        |                 |      | 187  |                |      | 1    |                |      | 15   |
| Interstate IS549    |                 |      | 185  |                |      | 1    |                |      | 15   |
| Northrup King N4545 |                 |      | 202  |                |      | 1    |                |      | 14   |
| Pioneer 3578        |                 |      | 193  |                |      | 1    |                |      | 14   |
| Top Farm TF1101A    |                 |      | 191  |                |      | 1    |                |      | 15   |

Table 27. 1991 Corn Performance Trial, Area B3(irrigated-late), Dakota Lakes Research Farm, Pierre, SD

| Brand and Variety    | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|----------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| Northrup King N6560  | M 2X           | 204.4     | 62.8             | 0.3            | 33284              | 15.9    | 1                 |
| Funks G-4472         | M 2X           | 203.1     | 61.3             | 0.7            | 32614              | 17.1    | 3                 |
| Pioneer 3357         | M 2X           | 200.7     | 66.9             | 0.4            | 31720              | 16.4    | 4                 |
| Funks G-4393         | M 2X           | 199.7     | 65.5             | 0.0            | 32614              | 14.9    | 2                 |
| Pioneer 3417         | M 2X           | 196.7     | 66.5             | 0.4            | 30939              | 14.2    | 5                 |
| Cargill 6227         | L 2X           | 195.2     | 58.7             | 0.0            | 30216              | 15.3    | 6                 |
| Asgrow RX746         | L 2X           | 194.3     | 67.7             | 0.4            | 31720              | 16.7    | 8                 |
| Top Farm SX1104A     | M 2X           | 192.0     | 64.7             | 0.0            | 32391              | 14.8    | 7                 |
| Golden Harvest H2485 | M 2X           | 191.0     | 66.0             | 0.0            | 32837              | 15.2    | 9                 |
| Dahlgren D5088       | M 2X           | 189.3     | 66.1             | 0.0            | 31609              | 15.8    | 11                |
| Sigco 1814           | M 2X           | 187.9     | 64.6             | 0.4            | 29152              | 16.2    | 14                |
| Cargill 6927         | L 2X           | 187.4     | 62.9             | 0.0            | 33061              | 15.7    | 13                |
| Pioneer 3398         | M 2X           | 187.4     | 65.3             | 0.0            | 30157              | 14.8    | 12                |
| Kaystar KX-685       | L 2X           | 187.3     | 65.8             | 0.0            | 33508              | 13.8    | 10                |
| Dahlgren D5129       | L 2X           | 186.3     | 63.8             | 0.3            | 31944              | 15.2    | 15                |
| Garst 8543           | M 2X           | 184.2     | 67.0             | 0.3            | 32837              | 14.1    | 16                |
| Sigco 1701           | M 2X           | 184.0     | 68.7             | 0.0            | 31050              | 14.1    | 17                |
| DeKalb DK584         | M 2X           | 179.8     | 65.9             | 0.4            | 31720              | 15.1    | 19                |
| Golden Harvest H2454 | M 2X           | 178.9     | 65.9             | 0.0            | 32726              | 13.0    | 18                |
| Golden Harvest H2404 | M 2X           | 175.6     | 67.3             | 0.0            | 32949              | 13.5    | 20                |
| Producers Hybrid 707 | L 2X           | 173.3     | 66.3             | 0.0            | 33284              | 14.6    | 22                |
| Interstate IS543     | M 2X           | 173.3     | 67.8             | 0.3            | 32279              | 13.6    | 21                |
| Producers 616        | L 2X           | 171.5     | 67.8             | 0.0            | 31720              | 13.9    | 23                |
| Top Farm SX1107      | M 2X           | 169.8     | 66.9             | 0.3            | 32056              | 15.0    | 24                |
| Interstate IS711     | L 2X           | 164.9     | 62.9             | 0.3            | 32056              | 13.0    | 25                |
| Producers 10601      | L 2X           | 161.1     | 65.6             | 0.7            | 32055              | 14.2    | 26                |
| Asgrow RX681         | M 2X           | 160.8     | 63.7             | 0.0            | 30939              | 15.7    | 28                |
| Funks G-4385         | M 2X           | 159.8     | 66.8             | 0.0            | 30380              | 13.7    | 27                |
| Kaystar KX-750       | L 2X           | 147.2     | 66.7             | 0.0            | 32279              | 13.6    | 29                |
| Means                |                | 182.3     | 65.4             | 0.2            | 32055              | 22.5    |                   |

LSD(.05) 30.9

CV - 10.4 %

Table 28. Area B3(irrigated-late) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, Dakota Lakes Farm, Pierre, Hughes Co, SD

| Brand and Variety | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|-------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                   | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Asgrow RX746      |                 |      | 206  |                |      | 1    |                |      | 18   |
| Cargill 6227      |                 |      | 202  |                |      | 1    |                |      | 17   |
| Cargill 6927      |                 |      | 197  |                |      | 1    |                |      | 18   |
| DeKalb DK584      |                 |      | 195  |                |      | 0    |                |      | 16   |
| Funks G-4385      |                 |      | 181  |                |      | 0    |                |      | 15   |
| Funks G-4393      |                 |      | 193  |                |      | 1    |                |      | 16   |
| Interstate IS543  |                 |      | 180  |                |      | 1    |                |      | 15   |
| Pioneer 3417      |                 |      | 206  |                |      | 1    |                |      | 16   |
| Sigco 1701        |                 |      | 187  |                |      | 2    |                |      | 14   |

Table 29. 1991 Corn Performance Trial, Area C2(early), Robert Clark Farm, Armour, SD

| Brand and Variety    | Type and Cross | Yield B/A       | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|----------------------|----------------|-----------------|------------------|----------------|--------------------|---------|-------------------|
| Crow's 237           | E 2X           | 39.0            | 49.4             | 0.0            | 18094              | 12.6    | 1                 |
| DeKalb DK554         | M 2X           | 35.8            | 48.4             | 0.0            | 18317              | 14.2    | 2                 |
| Kaystar KX-680       | M 2X           | 33.9            | 49.7             | 0.0            | 18541              | 10.7    | 3                 |
| Golden Valley 282    | E 2X           | 33.3            | 52.9             | 0.0            | 18988              | 11.3    | 4                 |
| Sands SOI-9040       | M 2X           | 32.7            | 56.6             | 0.0            | 17312              | 12.7    | 5                 |
| Wilson 1140          | E 2X           | 30.0            | 33.5             | 0.0            | 17312              | 7.2     | 6                 |
| Northrup King N6560  | M 2X           | 29.6            | 30.8             | 0.0            | 18541              | 11.8    | 7                 |
| Golden Harvest H2404 | M 2X           | 29.4            | 49.8             | 0.0            | 18206              | 12.4    | 8                 |
| Pioneer 3563         | M 2X           | 26.0            | 42.0             | 0.6            | 18094              | 12.0    | 9                 |
| Kruger K8109B        | M 2X           | 25.2            | 41.4             | 0.0            | 17424              | 12.7    | 13                |
| Kruger K9010         | M 2X           | 25.1            | 36.3             | 0.0            | 18764              | 13.2    | 15                |
| Golden Harvest H2390 | M 2X           | 25.1            | 37.4             | 0.0            | 18429              | 8.7     | 10                |
| Top Farm SX1101      | M 2X           | 25.0            | 46.5             | 0.0            | 17982              | 11.2    | 12                |
| Sigco 1814           | L 2X           | 24.9            | 37.2             | 0.0            | 18653              | 10.9    | 14                |
| Top Farm SX1097A     | M 2X           | 24.7            | 40.6             | 0.0            | 18094              | 9.1     | 11                |
| Dahlgren DC527       | M 2X           | 23.6            | 42.9             | 0.0            | 17982              | 11.8    | 16                |
| Asgrow RX578         | M 2X           | 22.7            | 39.4             | 0.0            | 18206              | 9.9     | 17                |
| Hoegemeyer SX2588    | E 2X           | 21.4            | 35.3             | 0.0            | 18317              | 8.9     | 18                |
| Crow's 179           | E 2X           | 19.6            | 35.6             | 0.0            | 18317              | 9.2     | 19                |
| Kaystar KX-809       | E 2X           | 19.4            | 27.8             | 0.0            | 18653              | 10.9    | 20                |
| Hoegemeyer SX2594    | E 2X           | 18.9            | 28.3             | 0.0            | 18867              | 10.1    | 22                |
| Funks 4145X          | M 2X           | 18.7            | 32.5             | 0.0            | 17982              | 8.2     | 21                |
| Top Farm SX1104A     | M 2X           | 18.5            | 29.2             | 0.0            | 18429              | 8.9     | 24                |
| Funks G-4393         | M 2X           | 18.2            | 28.9             | 0.0            | 18206              | 6.5     | 23                |
| Northrup King N6330  | M 2X           | 17.4            | 29.0             | 0.0            | 18317              | 9.9     | 28                |
| Pioneer 3578         | M 2X           | 17.3            | 25.4             | 0.0            | 18317              | 6.3     | 26                |
| Garst 8574           | M 2X           | 17.3            | 19.5             | 0.0            | 18206              | 5.4     | 25                |
| Funks G-4385         | M 2X           | 17.3            | 28.6             | 0.0            | 18764              | 6.8     | 27                |
| Dahlgren D5088       | M 2X           | 16.7            | 29.0             | 0.0            | 17871              | 8.1     | 29                |
| Asgrow RX469         | M 2X           | 15.1            | 26.0             | 0.0            | 17201              | 6.6     | 30                |
| Cargill 4327         | M 2X           | 14.2            | 58.7             | 0.0            | 20216              | 6.9     | 31                |
| Cargill 5327         | M 2X           | 13.5            | 19.0             | 0.0            | 18876              | 4.9     | 32                |
| Means                |                | 23.4            | 37.1             | 0.1            | 18297              | 9.7     |                   |
|                      |                | LSD (.05) N..S. |                  | CV - 56.0 %    |                    |         |                   |

Table 30. Area C2(early) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, Robert Clark Farm, Armour, Douglas Co., SD

| Brand and Variety    | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|----------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                      | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Asgrow RX469         |                 |      | 34   |                |      | 5    |                |      | 11   |
| Asgrow RX578         | 59              | 57   | 38   | 3              | 4    | 6    | 15             | 15   | 13   |
| Cargill 4327         |                 |      | 31   |                |      | 3    |                |      | 11   |
| Cargill 5327         |                 |      | 34   |                |      | 3    |                |      | 11   |
| Crow's 237           |                 |      | 51   |                |      | 2    |                |      | 14   |
| Funk's G-4385        |                 |      | 39   |                |      | 7    |                |      | 12   |
| Funk's G-4393        |                 |      | 40   |                |      | 5    |                |      | 12   |
| Golden Harvest H2404 |                 | 70   | 46   |                | 2    | 1    |                | 15   | 14   |
| Hoegemeyer 2594      |                 |      | 44   |                |      | 2    |                |      | 13   |
| Northrup King N6330  |                 |      | 34   |                |      | 5    |                |      | 16   |
| Northrup King N6560  |                 |      | 45   |                |      | 4    |                |      | 15   |
| Pioneer 3578         |                 | 63   | 39   |                | 2    | 1    |                | 12   | 10   |



Table 31. 1991 Corn Performance Trial, Area C2(late), Robert Clark Farm, Armour, SD

| Brand and Variety    | Type and Cross | Yield B/A | Test Weight Lb/B | % Stalk Lodged | Aver. Plants /acre | % Moist | Performance Score |
|----------------------|----------------|-----------|------------------|----------------|--------------------|---------|-------------------|
| Pioneer 3417         | L 2X           | 61.1      | 59.1             | 0.0            | 18094              | 17.1    | 1                 |
| Dahlgren DC541       | L 2X           | 60.9      | 59.8             | 0.0            | 17982              | 19.6    | 2                 |
| Sands SOI-9080       | M 2X           | 55.5      | 60.4             | 0.0            | 18206              | 15.8    | 3                 |
| Dahlgren D5129       | L 2X           | 44.8      | 47.8             | 0.0            | 17647              | 14.0    | 4                 |
| Horizon 7115         | L 2X           | 43.3      | 45.6             | 0.0            | 18653              | 13.8    | 5                 |
| Crow's 498           | L 2X           | 43.1      | 58.0             | 0.0            | 18317              | 18.1    | 7                 |
| DeKalb DK584         | M 2X           | 43.0      | 51.6             | 0.0            | 18764              | 17.5    | 6                 |
| Hoegemeyer SX2635    | M 2X           | 41.5      | 55.0             | 0.0            | 18094              | 17.4    | 8                 |
| Funks G-4490         | L 2X           | 40.4      | 51.9             | 0.0            | 18541              | 16.4    | 9                 |
| Kruger K8111a        | L 2X           | 37.1      | 42.5             | 0.0            | 18206              | 17.7    | 11                |
| Cargill 6927         | L 2X           | 37.1      | 51.5             | 0.0            | 18094              | 15.4    | 10                |
| Kaystar KX-750       | L 2X           | 36.1      | 57.8             | 0.0            | 17759              | 15.3    | 12                |
| Pioneer 3357         | L 2X           | 35.7      | 54.0             | 0.0            | 18094              | 17.5    | 13                |
| Wilson 1640          | L 2X           | 33.7      | 48.4             | 0.0            | 18429              | 14.2    | 14                |
| Pioneer 3398         | L 2X           | 33.4      | 51.2             | 0.0            | 18764              | 14.2    | 15                |
| Wilson 1444          | M 2X           | 30.7      | 47.1             | 0.0            | 18429              | 13.0    | 16                |
| Golden Harvest H2454 | M 2X           | 29.8      | 48.5             | 0.0            | 18541              | 14.9    | 18                |
| Garst 8532           | L 2X           | 29.7      | 39.5             | 0.0            | 18206              | 12.2    | 17                |
| DeKalb DK612         | L 2X           | 29.4      | 47.8             | 0.0            | 18206              | 15.4    | 21                |
| Cargill 6727         | L 2X           | 29.4      | 41.0             | 0.0            | 19211              | 14.4    | 20                |
| Hoegemeyer SX2632    | L 2X           | 29.2      | 37.8             | 0.0            | 18988              | 13.0    | 19                |
| Top Farm SX1107      | L 2X           | 27.8      | 45.5             | 0.0            | 18429              | 13.6    | 22                |
| Horizon 9110         | L 2X           | 25.8      | 47.7             | 0.0            | 18429              | 14.4    | 23                |
| Kruger K9111         | L 2X           | 24.8      | 45.7             | 0.0            | 18876              | 12.1    | 24                |
| Golden Valley 298    | L 2X           | 24.3      | 46.7             | 0.0            | 18876              | 11.3    | 25                |
| Crow's 697           | L 2X           | 23.6      | 39.3             | 0.0            | 18653              | 15.4    | 27                |
| Asgrow RX706         | M 2X           | 22.9      | 38.7             | 0.0            | 18206              | 11.9    | 26                |
| Kaystar KX-675       | L 2X           | 21.4      | 35.7             | 0.0            | 18764              | 9.2     | 28                |
| Garst 8543           | L 2X           | 20.1      | 37.0             | 0.0            | 18094              | 11.7    | 29                |
| Cargill 6227         | L 2X           | 17.8      | 58.7             | 0.0            | 20216              | 11.3    | 30                |
| Crow's 440           | L 2X           | 16.5      | 35.0             | 0.0            | 17424              | 11.3    | 31                |
| Means                |                | 33.9      | 47.9             | 0.1            | 18426              | 14.5    |                   |
| LSD (.05)            |                | 22.1      |                  | CV - 40.0 %    |                    |         |                   |

Table 32. Area C2(late) 1988-1991 Yield, Moisture, and Stalk Lodging Averages of Corn Hybrids, Robert Clark Farm, Armour, SD

|                      | Acre Yield, B/A |      |      | Stk Lodging, % |      |      | Grain Moist, % |      |      |
|----------------------|-----------------|------|------|----------------|------|------|----------------|------|------|
|                      | 4-Yr            | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr | 4-Yr           | 3-Yr | 2-Yr |
| Cargill 6927         |                 | 60   | 45   |                | 3    | 4    |                | 19   | 18   |
| Crow's 498           |                 |      | 59   |                |      | 2    |                |      | 20   |
| Crow's 697           |                 |      | 44   |                |      | 4    |                |      | 20   |
| Funks G-4490         |                 |      | 54   |                |      | 1    |                |      | 19   |
| Golden Harvest H2454 |                 |      | 49   |                |      | 3    |                |      | 17   |
| Pioneer 3417         |                 |      | 81   |                |      | 0    |                |      | 19   |
| Wilson 1640          | 66              | 68   | 47   | 2              | 3    | 4    | 19             | 19   | 18   |

Table 33. Entries Included in the 1991 Corn Trials and Tables where the results appear.

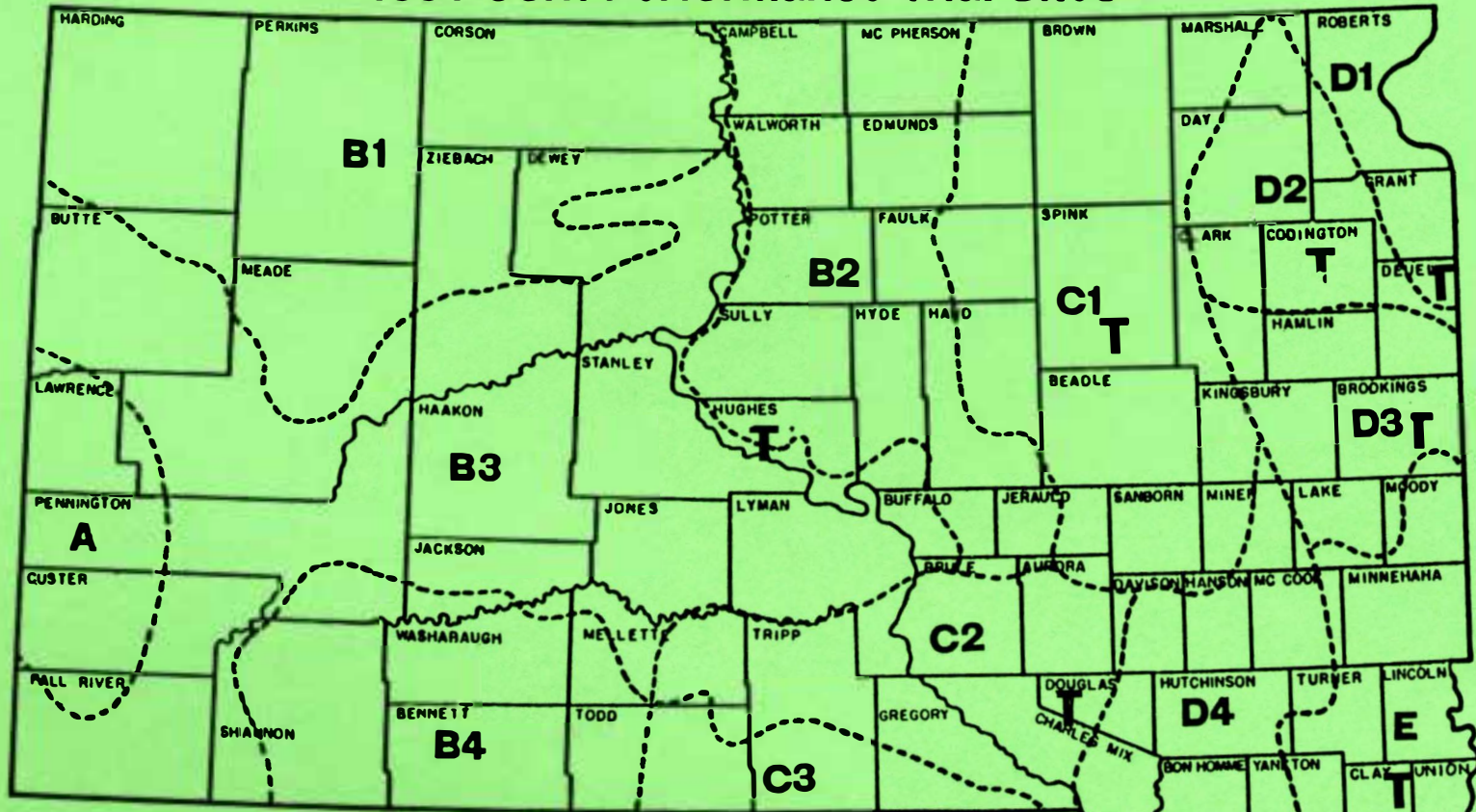
| Company and Brand  | Entry  | Tables  | Company and Brand  | Entry  | Tables   |
|--|--|---|--|--|--|
| AgriGene<br>11331 Aurora Ave.<br>Des Moines, IA 50322<br>"AgriGene"                    | AG3200<br>AG3430<br>AG3860<br>AG3980<br>AG5660<br>AG6450   | 17<br>9, 13<br>17<br>9, 13<br>5<br>5  | Dairyland Seed Co.<br>PO Box 958<br>West Bend, WI 53095<br>"Dairyland/Stealth" | 1189<br>1198<br>DX1100<br>DX1101<br>1201<br>DX1103<br>1203   | 13<br>9, 13<br>15<br>9, 15<br>9, 15<br>11<br>11  |
| Asgrow Seed Company<br>PO Box 7570<br>Des Moines, IA 50322<br>"Asgrow"                 | RX337<br>RX406<br>RX409<br>RX469<br>RX498<br>RX578<br>RX681<br>RX706<br>RX746                            | 17, 18<br>9, 10, 17, 18<br>9, 10, 13, 14<br>9, 10, 13, 21, 22, 25, 26, 29, 30<br>15, 16<br>5, 6, 11, 25, 26, 29, 30<br>7, 27<br>23, 31<br>7, 8, 23, 24, 27, 28  | DeKalb Plant Genetics<br>3100 Sycamore Road<br>DeKalb, IL 60115<br>"DeKalb"    | DK401<br>DK462<br>DK485<br>DK535<br>DK554<br>DK584<br>DK612  | 13, 17<br>9, 15, 17, 21<br>9, 10, 19, 20, 21, 22, 25, 26<br>11, 12, 25, 26<br>5, 23, 25, 29<br>5, 6, 27, 28, 31<br>7, 8, 31  |
| Blaney Seeds, Inc.<br>5292 E. Lacy Road<br>Madison, WI 53711<br>"Blaney"               | B405<br>B506<br>B603<br>B608   | 9<br>5<br>11<br>7   | Fontanelle Hybrids<br>Rt. 1, Box 18<br>Nickerson, NE 68044<br>"Fontanelle"     | 4020<br>4090<br>4180<br>4280   | 5<br>5<br>5<br>7, 8  |
| Cargill Hybrid Seeds<br>PO Box 5645<br>Minneapolis, MN 55440<br>"Cargill"              | 2927<br>3427<br>3627<br>3637<br>4327<br><br>5157<br>5327<br>5877<br>6227<br>6727<br>6927<br>7697<br>7997 | 13, 17<br>9, 13, 14, 17, 21, 22<br>13, 21<br>9, 10, 17, 18, 21<br>11, 12, 15, 19, 20, 23, 25, 26,<br>29, 30<br>5, 6, 11<br>5, 6, 15, 19, 20, 23, 25, 26, 29, 30<br>25, 26<br>27, 28, 31<br>31<br>7, 8, 27, 28, 31, 32<br>7<br>7 | Garst Seed Company<br>RR 4, Box 46<br>Sleepy Eye, MN 56085<br>"Garst"          | 8952<br>8851<br>8777<br>8714<br>8708<br>8574<br>8543<br>8532<br>SC1348<br>SC1594                           | 13, 14, 17, 18<br>9, 10, 17<br>9, 13, 17, 21<br>21<br>21<br>25, 29<br>7, 27, 31<br>7, 8, 31<br>13<br>9, 17, 21   |
| Ciba-Geigy Seed Division<br>3801 Ronning Drive<br>Sioux Falls, SD 57103<br>"Funk's G-" | 4070<br>4120<br>4160<br>4299<br>4385<br>4393<br>4472<br>4490<br>2078X<br>4145X                           | 17<br>17<br>17, 18<br>9, 10, 19, 20, 21, 22<br>5, 6, 11, 12, 23, 24, 27, 28, 29, 30<br>5, 6, 11, 12, 23, 24, 27, 28, 29, 30<br>27<br>7, 31, 32<br>9, 19, 21, 25<br>5, 29  | Hoegemeyer Hybrids<br>Route 2,<br>Hooper, NE 68031<br>"Hoegemeyer"             | 2564<br>2588<br>2594<br>2617<br>2628<br>2632<br>2635   | 9<br>9, 29<br>5, 6, 11, 12, 29, 30<br>11, 12<br>5, 6<br>7, 8, 31<br>7, 31  |
| Crow's Hybrids<br>PO Box 306<br>Milford, IA 60953<br>"Crow's"                          | 179<br>210<br>237<br>414<br>440<br>449<br>498<br>697   | 5, 9, 29<br>9, 10<br>5, 6, 29, 30<br>11, 12<br>7, 31<br>7, 8, 11, 12<br>7, 8, 11, 31, 32<br>31, 32  | Horizon Seeds<br>PO Box 83002<br>Lincoln, NE 68501<br>"Horizon"                | 3777<br>4545<br>5151<br>7115<br>8095<br>9107<br>9110<br>9111   | 9, 17<br>17, 21, 25<br>25<br>7, 31<br>17, 18<br>9, 10, 23, 24, 25, 26<br>7, 31<br>7  |
| Curry Seed Co.<br>PO Box 517<br>Elk Point, SD 57025<br>"Curry"                         | 2149<br>2165<br>2172<br>2176<br>2183<br>4442   | 5, 11<br>5, 11<br>5<br>7<br>5<br>11   | Interstate Seed Co.<br>PO Box 338<br>West Fargo, ND 58038<br>"Interstate"      | IS406<br>IS443<br>IS448<br>IS463<br>IS523<br>IS531<br>IS543<br>IS549<br>IS711<br>IS729                     | 13, 14<br>9, 10, 13, 14, 21, 22<br>13, 17<br>17, 18<br>9, 19, 20, 21<br>9, 15, 19, 21, 25<br>23, 24, 27, 28<br>9, 10, 15, 19, 20, 25, 26<br>11, 23, 27<br>6, 8, 11, 12, 26, 28, 30 |
| Dahlgren & Co.<br>PO Box 609<br>Crookston, MN 56716<br>"Dahlgren"                      | DC-440<br>D5911<br>DC-494<br>D5999<br>DC-510<br>D5057<br>D5058<br>D5129<br>DC-527<br>DC-541              | 17<br>17<br>19, 25<br>19<br>5, 25<br>5<br>7, 27, 29<br>27, 31<br>7, 31<br>29  | Jacques Seed Company<br>720 St. Croix St.<br>Prescott, WI 54021<br>"Jacques"   | 4770<br>5170<br>7710<br>7970   | 11, 13<br>11, 12, 13<br>7<br>7   |
|  |  |   | Kaystar Seed<br>PO Box 947<br>Huron, SD 57350<br>"Kaystar"                     | KX-430<br>KX-450<br>KX-555<br>KX-600<br>KX-606<br>KX-675<br>KX-680<br>KX-685<br>KX-750<br>KX-800<br>KX-809 | 13<br>17<br>21<br>9, 21<br>9, 23<br>11, 31<br>23, 29<br>27<br>7, 27, 31<br>7<br>29   |

Table 33(cont). Entries Included in the 1991 Corn Trials and Tables where the results appear.

| Company and Brand  | Entry  | Tables  | Company and Brand  | Entry  | Tables  |
|--|--|---|--|--|---|
| Kaltenberg Seed Farms<br>Box 278<br>Waunakee, WI 53597<br>"Kaltenberg"                       | K5909<br>K6201<br>K6402<br>K7201<br>K7500  | 5<br>5<br>5<br>7<br>7,8   | Producers Hybrids<br>Box C<br>Battle Creek, NE 68715<br>"Producers"            | 616<br>642<br>707<br>721<br>10601  | 5,27<br>7<br>27<br>7,8<br>27  |
| Kruger Seed Co.<br>Box A<br>Dike, IA 50624<br>"Kruger"                                       | K8107++<br>K8108<br>K8109b<br>K8111A<br>K9007<br>K9010<br>K9104<br>K9111                                     | 5,11<br>5<br>5,29<br>7,31<br>11<br>29<br>11<br>7,31   | Sand Seed Service, Inc.<br>Box 648<br>Marcus, IA 51035<br>"SOI"                | 905M<br>9040<br>9080<br>9100<br>9980   | 11<br>29<br>5,6,31<br>7,8<br>9  |
| Legend Seeds, Inc.<br>Box 241<br>DeSmet, SD 57231<br>"Legend"                                | LS9113<br>LS9112<br>LS8106<br>LS8105<br>LS8104<br>LS8102<br>LS7198<br>LS7194<br>LS7192                       | 7<br>7<br>5<br>5<br>5<br>11<br>9<br>9<br>9  | Sexauer Seeds<br>PO Box 58<br>Brookings, SD 57006<br>"Sexauer"                 | 91-40<br>91-42<br>91-45<br>91-54<br>91-62<br>91-66<br>91-72<br>91-76<br>91-77              | 9<br>9<br>9<br>11<br>11<br>5<br>7<br>7<br>7   |
| Northrup King Co.<br>920 Holiday Drive, #231<br>Moorhead, MN 56560<br>"Northrup King"        | N2440<br>N3624<br>N4350<br>N4428<br>N4545<br>N4590<br>N6560<br>N6330   | 13,14<br>9,15,16,17,18<br>9,10,19,20,21,22<br>9,19,21,25<br>11,12,23,25,26<br>11,12,23<br>5,6,27,29,30<br>5,6,29,30   | Sigco Research<br>Box 289<br>Breckenridge, MN 56520<br>"Sigco"                 | 1099<br>1701<br>1793<br>1799<br>1814   | 9,10,13,14,19,20,21,22<br>11,12,23,27,28<br>13,14<br>9,13,14,19,20,21,22<br>5,27,29   |
| Pioneer Hi-Bred, Intn'l<br>130 SE Willmar Ave.<br>Willmar, MN 56201<br>"Pioneer"             | 3921<br>3917<br>3788<br>3787<br>3751<br>3737<br>3733<br>3578<br>3563<br>3503<br>3417<br>3398<br>3362<br>3357 | 17,18<br>17<br>13,14<br>17,18<br>9,10,13,14<br>13,14<br>9,10,15,16,21,22<br>5,6,23,24,25,26,29,30<br>11,15,19,21,25,29<br>23,24<br>7,8,27,28,31,32<br>7,27,31<br>7,8<br>7,27,31 | A. C. Stengel & Sons<br>Rt. 1, Box 315<br>Milbank, SD 57252<br>"Golden Valley" | 282<br>298   | 13,29<br>15,31  |
| J. C. Robinson Seed Co.<br>100 J.C. Robinson Blvd.<br>Waterloo, NE 68069<br>"Golden Harvest" | H-2266<br>H-2295<br>H-2343<br>H-2390<br>H-2404<br>H-2454<br>H-2485<br>H-2540                                 | 13,14<br>9,10,13,14,17,18,21<br>9,10,15,17,21<br>5,11,15,19,23,25,29<br>5,6,11,12,23,27,29,30<br>27,31,32<br>7,27<br>7,8  | Terra International, Inc.<br>600 4th Street<br>Sioux City, SD 51101<br>"Terra" | TR1010<br>TR1020<br>TR1090<br>TR1120<br>TR1125   | 5,6,9<br>5,6,9,10<br>7,8,11,11<br>7,8,11,12<br>7,8,11,12  |
|  |  |   | Top Farm Hybrids, Inc.<br>PO Box 850<br>Cokato, MN 55321<br>"Top Farm"         | TF1194<br>TF1195A<br>TF1097A<br>TF1102<br>TF1101<br>TF1101A<br>TF1104A<br>TF1107<br>TF1112 | 9,10,17<br>9,13,14,17,18<br>9,13,17,25,29<br>21,22<br>11,12,15,16,19,20,29<br>11,19,20,21<br>15,23,27,29<br>23,27,29<br>6,7 |
|  |  |   | Wilson Hybrids, Inc.<br>PO Box 391<br>Harlan, IA 51537<br>"Wilson"             | 1140<br>1444<br>1640   | 5,29<br>7,31<br>7,8,31,32   |

# CROP ADAPTATION AREAS OF SOUTH DAKOTA

## 1991 Corn Performance Trial Sites



- |           |                              |           |                          |
|-----------|------------------------------|-----------|--------------------------|
| <b>A</b>  | Black Hills                  | <b>C2</b> | South-Central Upland     |
| <b>B1</b> | Northwestern Tableland       | <b>C3</b> | South-Central Tableland  |
| <b>B2</b> | North-Central Glacial Upland | <b>D1</b> | Northeast Lowland        |
| <b>B3</b> | Pierre Plain                 | <b>D2</b> | Northern Prairie Coteau  |
| <b>B4</b> | Southwestern Tableland       | <b>D3</b> | Central Prairie Coteau   |
| <b>C1</b> | Northern James Valley        | <b>D4</b> | Southern James Flatland  |
|           |                              | <b>E</b>  | Southeast Prairie Upland |