

South Dakota State University
**Open PRAIRIE: Open Public Research Access Institutional
Repository and Information Exchange**

Extension Circulars

SDSU Extension

1-2001

Sunflower Oilseed, Non-Oilseed 2000 South Dakota Hybrid Performance Trials

Kathleen Grady
South Dakota State University

Lee Gilbertson
South Dakota State University

Follow this and additional works at: http://openprairie.sdstate.edu/extension_circ

Recommended Citation

Grady, Kathleen and Gilbertson, Lee, "Sunflower Oilseed, Non-Oilseed 2000 South Dakota Hybrid Performance Trials" (2001).
Extension Circulars. Paper 467.
http://openprairie.sdstate.edu/extension_circ/467

This Circular is brought to you for free and open access by the SDSU Extension at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in Extension Circulars by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact michael.biondo@sdstate.edu.

Sunflower

Oilseed Non-Oilseed

2000 South Dakota Hybrid Performance Trials



Available electronically on the internet

http://www.abs.sdstate.edu/abs/PDF/EC909_2000.pdf



Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the USDA. Larry Tidemann, Director of Extension, Associate Dean, College of Agriculture & Biological Sciences, South Dakota State University, Brookings. Educational programs and materials offered without regard for race, color, creed, religion, national origin, ancestry, citizenship, age, gender, sexual orientation, disability, or Vietnam Era Veteran status.

680 copies printed by CES at a cost of \$1.08 each. EC909. January 2001.

Sunflower

2000 South Dakota Hybrid Performance Trials Oilseed and Non-Oilseed

*Kathleen Grady, oilseed breeder and Extension specialist
Lee Gilbertson, senior ag research technician
SDSU Plant Science Department*

Sunflower production is greatly affected by choice of hybrid. When selecting a hybrid, carefully consider characteristics such as seed yield potential, oil content, oil composition, maturity, stalk strength, and disease resistance. Choose hybrids with characteristics that best suit your needs and production practices.

Yield

Evaluate as much performance information as possible when selecting a hybrid. Give more weight to information from trials close to home, and look at relative performance over many locations and years. Performance averaged over many tests is called “yield stability.”

Good yield stability means that a hybrid may or may not be the best yielder at all locations but that it does rank high in yielding potential at many locations. A hybrid that ranks in the upper 20% at all locations exhibits better yield stability than one that is the top yielder at two locations but ranks in the lower 40% at two other locations.

To determine if one hybrid is better than another for a given trait, use the least significant difference (LSD 5%) value at the bottom of each data table. This LSD 5% value is a statistical way to indicate if a trait like yield differs when comparing two hybrids. If two hybrids differ by more than the indicated LSD value for a given trait, they would most likely differ again when grown under similar conditions.

For example, if the Pukwana test (Table 5) could be repeated in 2001 exactly as it was in 2000, the yield ranking of a hybrid that yielded 2634 lbs/A and one that yielded 2244 lbs/A might change places since their yield difference (390 lbs/A) is less than the indicated yield LSD value of 434 lbs/A. There was no statistical difference in yield between the two hybrids when grown under the conditions that existed at Pukwana in 2000.

However, if the test were repeated under similar conditions, we would expect the hybrid that yielded 2634 lbs/A at Pukwana in 2000 to produce more than a hy-

brid that yielded 2121 lbs/A, since their yield difference (513 lbs/A) is greater than the indicated yield LSD value (434 lbs/A).

The coefficient of variability (C.V.) listed at the bottom of each data table is a relative measure of the amount of variation recorded for a particular trait expressed as a percentage of the mean for that trait. Generally, trials with low C.V. rates are more reliable for making hybrid choices than trials with higher C.V. rates. Trials with C.V. rates not exceeding 15-20% may be considered reliable.

Look at as many trials as possible. It is unlikely that environmental conditions of any particular test will be repeated in any future year.

Oil Content and Composition

Among similar-yielding hybrids, select the one with the highest oil content. The oilseed market pays a premium for over 40% oil (at 10% moisture) and discounts for less than 40% oil.

Oil type also may be important. Hybrids are available with traditional, high-oleic, and mid-oleic (NuSun) oil composition. Markets may pay a premium based on the composition of the oil produced by a particular hybrid. Some companies offer guarantees for NuSun oleic levels. Consistency of oleic levels for particular hybrids will be an important trait to evaluate as data become available.

Maturity

Full-season hybrids generally yield higher than early hybrids.

Maturity is especially important if planting is delayed. Often, with delayed planting, only an early hybrid will mature and exhibit its full yield potential. Yield, oil content, and test weight are often reduced when a hybrid is damaged by frost before it is fully mature. An earlier hybrid will likely be drier at harvest than a later

hybrid, thus reducing drying costs. To spread risk and workload, consider planting hybrids with different maturity dates.

Moisture Content

Harvesting sunflower at moisture contents as high as 20-25% may reduce bird damage and seed shattering loss during harvest. Seed must then be dried to 9.5% or less for storage.

Disease Resistance

The most economical and effective means of sunflower disease control is the planting of resistant or tolerant hybrids and using a minimum of four years rotation between successive sunflower crops.

Most sunflower hybrids in the United States have resistance to *Verticillium* wilt, races 1 and 2 of downy mildew, and to two or more races of rust. Consult the seed company for information on the reaction of a particular hybrid to these and other diseases that may pose a risk in your growing area.

2000 Trial Procedures

Locations and Hybrids

Oilseed hybrid sunflower trials were planted at four locations in South Dakota (Highmore, the Dakota Lakes Research Station near Pierre, Frankfort, and Pukwana). Entries in the oilseed sunflower trials included both traditional oil hybrids and NuSun (mid-oleic) hybrids. Non-oilseed (confection) sunflower trials were conducted at Dakota Lakes, Highmore, and Pukwana. Trial sites are indicated on the map in Figure 1. Lists of hybrids planted at each site appear in Tables 2 and 7.

Also included in this report are results from the NuSun Sunflower Show Field at Gettysburg. This Show Field was one of three plots sponsored by the National Sunflower Association (NSA) in North and South Dakota. The Gettysburg plot was planted and harvested by Joel Lampert of Dakota Crop Services. Yield results, oil and oleic acid levels, and other data from the plots were compiled by USDA Scientist Dr. Jerry Miller.

Climatic Conditions

The 2000 growing season began with short to adequate topsoil and subsoil moisture. A summary of 2000 climatic conditions near the sunflower test sites is presented in Table 1. Temperatures were above normal in May but normal to below normal in June through September at all locations. Most of the state received a killing frost on September 24. The 2000 growing season was generally dry, with all stations receiving below to much-below-normal precipitation in June through September.

Experimental Methods

Plots at all locations consisted of two rows, 24 feet long, spaced 30 inches apart. The plot layout was in a randomized complete block design with four replications

at each location. The experiments were randomized for a nearest-neighbors statistical analysis, which removes effects of field trends.

All plots were overseeded and thinned. Stands were poor at Highmore due to a high incidence of downy mildew. Where excess plants were present, oilseed plots at Highmore were thinned to a plant population of approximately 17,000 plants/acre, and non-oilseed plots were thinned to approximately 16,000 plants/acre. Plants systemically infected with downy mildew were preferentially removed during thinning. Stands were variable at Dakota Lakes. Oilseed plots with excess plants were thinned to approximately 18,000 plants/acre at Frankfort and Dakota Lakes, and 17,000 plants/acre at Pukwana. Non-oil plots at Dakota Lakes and Pukwana were thinned to 16,000 plants/acre.

The Dakota Lakes trial was seeded no-till. Frankfort was tilled in the fall, then planted no-till in the spring. All other trials were planted with conventional tillage practices. Spartan and Prowl herbicides were applied for weed control at Dakota Lakes. Spartan was also applied at Frankfort. All other locations had either Sonalan or Treflan applied.

Flowering was recorded at Frankfort as the number of days from planting to 50% ray petals extended. Plant height and lodging notes were taken at all locations immediately before harvest. Lodging was greatest at Highmore and Dakota Lakes, ranging from 0% to 56%. Lodging was fairly low at Frankfort and Pukwana. Percent of standing plants systemically infected with downy mildew was recorded at Highmore prior to harvest.

Plots were harvested with a Gleaner Model K combine fitted with a two-row all row crop header. All oilseed trial seed yields were adjusted to a 10% moisture basis. Oil content was determined by NMR analysis of oven-dry samples and converted to 10% moisture. Oil val-

ues for NuSun hybrids were adjusted according to the formula: (original NMR % * 0.953)+0.7148=true NuSun oil %. Oil yield was calculated by multiplying seed yield by oil percent.

Seed from the non-oilseed trials was dried before weighing. A one-pint subsample of seed from each plot was passed over 22/64, 20/64, and 18/64 round-hole screens to determine percent large seed. Nutmeat percent was determined by weighing 20 whole seeds, dehulling, and weighing the 20 dehulled kernels.

The NuSun Show Field at Gettysburg was planted on June 6. Each NSA NuSun plot consisted of four rows, 90 feet long, replicated three times, with a check hybrid planted between each company's hybrids. There were also USDA research plots planted at the same location. These plots consisted of four rows, 30 feet long, replicated three times. All rows were harvested. Randomly-selected heads in each hybrid were bagged prior to pollination for evaluation of fatty acid composition.

Results

Data from each SDSU location are contained in Tables 3-6 and 8-10. Results from Highmore are not included because high C.V.'s at that location (due to downy

mildew disease, lodging, and moisture stress) precluded valid hybrid comparisons. Hybrids in each table are sorted according to 2000 seed yield. The highest average seed yield across oilseed hybrids was 2023 lbs/A at Pukwana and the lowest was 1847 lbs/A at Frankfort. Non-oilseed hybrid seed yields were also highest at Pukwana (1423 lbs/A). Non-oil hybrids at Dakota Lakes averaged 1365 lbs/A seed yield.

Tables 11 and 12 contain results from the NuSun Show Field plots at Gettysburg. The average yield of all 54 hybrids in the NSA trial was 2353 lbs/A (Table 11). The 47 hybrids in the USDA trial averaged 2176 lbs/A seed yield (Table 12). In both the NSA and USDA plots, the top ten NuSun hybrids out-yielded the average of the five traditional hybrids included in the trial.

This report may be accessed on the internet at http://www.abs.sdstate.edu/abs/PDF/EC909_2000.pdf

Presentation of data in this report on the hybrids tested does not imply approval or endorsement by SDSU to the exclusion of other varieties that may be suitable. South Dakota State University approves the reproduction of any table in this publication only if no portion is deleted.

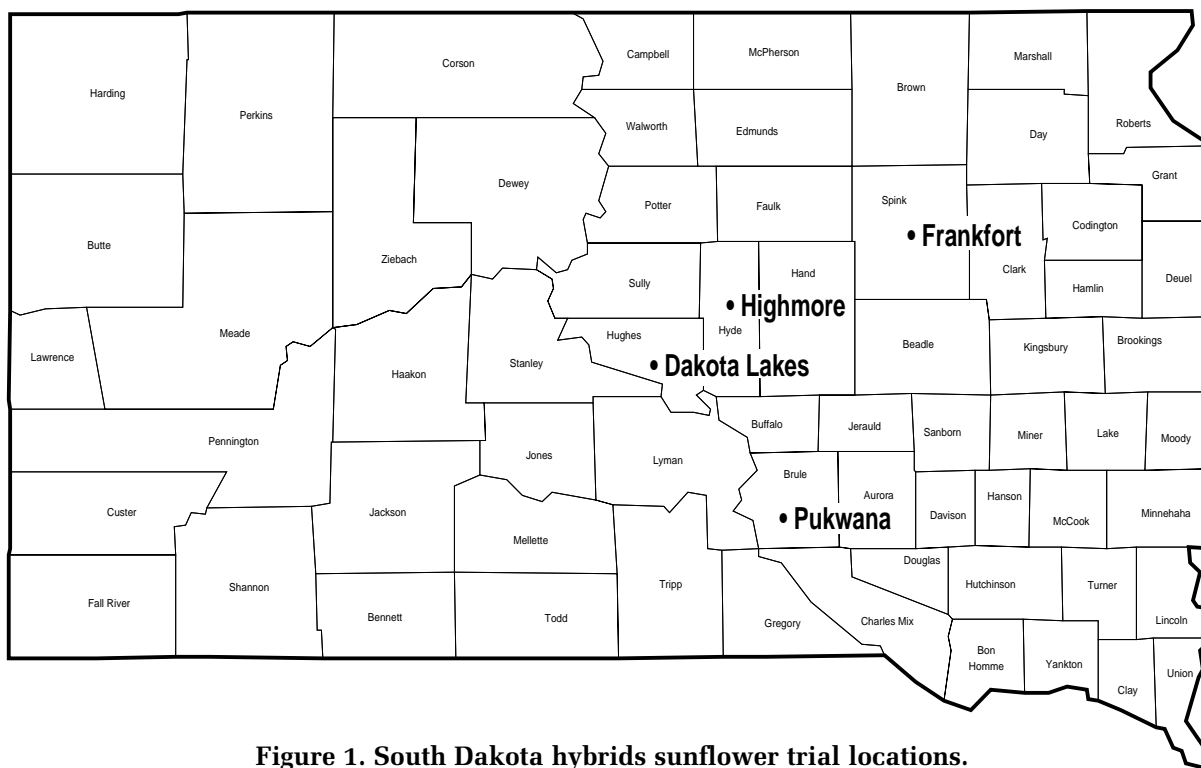


Figure 1. South Dakota hybrids sunflower trial locations.

Table 1. Climate summary for 2000 South Dakota sunflower test sites.

| Month | Temperature | | Depart. from Normal | | Precipitation | |
|-------------------------------------|-------------|-----------|---------------------|------------|---------------|---------|
| | Ave. Max. | Ave. Min. | Max. Temp. | Min. Temp. | Total | Depart. |
| <u>Highmore*</u> | | | | | | |
| May | 74.4 | 46.3 | 2.4 | 2.5 | 3.56 | 0.79 |
| June | 80.8 | 50.9 | -1.0 | -2.7 | 2.26 | -0.93 |
| July | 88.4 | 59.3 | -0.9 | -0.3 | 2.17 | -0.84 |
| August | 87.8 | 58.9 | 0.0 | 1.5 | 1.30 | -1.02 |
| September | NA | NA | NA | NA | 0.03 | -1.62 |
| <u>Dakota Lakes*</u> | | | | | | |
| May | 74.1 | 46.6 | 3.2 | 1.0 | 1.90 | -0.97 |
| June | 81.2 | 53.2 | -0.3 | -2.6 | 1.67 | -1.85 |
| July | NA | NA | NA | NA | NA | NA |
| August | NA | NA | NA | NA | NA | NA |
| September | 72.2 | 42.8 | -4.0 | -5.7 | 0.05 | -1.51 |
| <u>Redfield (Frankfort)*</u> | | | | | | |
| May | 71.9 | 44.9 | 1.6 | 1.3 | 1.31 | -1.58 |
| June | 77.7 | 51.3 | -2.3 | -2.5 | 0.56 | -2.61 |
| July | 83.7 | 58.1 | -3.4 | -1.3 | 0.24 | -2.43 |
| August | 81.6 | 55.6 | -3.4 | -0.8 | 1.58 | -0.60 |
| September | 77.0 | 41.6 | 2.8 | -5.8 | 0.63 | -1.14 |
| <u>Academy (Pukwana)*</u> | | | | | | |
| May | 72.4 | 45.7 | 0.3 | 0.5 | 3.43 | -0.10 |
| June | 79.2 | 51.6 | -2.9 | -3.5 | 2.39 | -1.19 |
| July | 89.1 | 60.8 | -0.3 | -0.1 | 0.98 | -1.96 |
| August | 86.5 | 58.1 | -0.7 | 0.7 | 0.84 | -1.21 |
| September | 81.0 | 46.5 | 4.0 | -0.7 | 0.27 | -1.82 |

* The data in this table are for sites as close to the actual test plot sites as available, however, temperature and/or precipitation at the actual test plot sites may have differed from the values shown above.

Table 2. Hybrids and test sites for the 2000 South Dakota oilseed hybrid sunflower trial.

| Sunflower Brand-Hybrid | Hybrid Type | Frankfort | Highmore | Dakota Lakes | Pukwana |
|------------------------------|-------------|-----------|----------|--------------|---------|
| Croplan Genetics CL322 NS | NuSun | | X | X | |
| Croplan Genetics CL345 NS | NuSun | X | X | X | |
| Croplan Genetics CL380 NS | NuSun | X | X | X | X |
| Croplan Genetics CL385 NS | NuSun | X | X | X | X |
| Croplan Genetics CL803 | Trad. | X | X | X | |
| Croplan Genetics CL821 | Trad. | X | | | |
| Dekalb DK3868 | Trad. | X | X | X | X |
| Dekalb DK3872NS | NuSun | X | X | X | X |
| Dekalb DK3875 | Trad. | X | X | X | X |
| Dekalb DK3900 | Trad. | X | X | X | X |
| Dekalb DKF29-90 | Trad. | X | X | X | X |
| Dekalb DKF29-99NS | NuSun | X | X | X | X |
| Dekalb DKF31-01NS | NuSun | X | X | X | X |
| Dekalb DKF36-40NS | NuSun | X | X | X | X |
| Dekalb EX9910NS | NuSun | X | X | X | X |
| Dekalb EX9915NS | NuSun | X | X | X | X |
| Dekalb EX9917NS | NuSun | X | X | X | X |
| Dekalb EX9918NS | NuSun | X | X | X | X |
| Interstate Garst IS 4340 | Trad. | X | X | X | X |
| Interstate Seed 971136 NS | NuSun | X | | X | |
| Interstate Seed IS 4049 | Trad. | X | X | X | X |
| Interstate Seed IS 5030 | Trad. | X | X | X | X |
| Interstate Seed IS 6039 | Trad. | X | X | X | X |
| Interstate Seed IS 6767 | Trad. | X | X | X | X |
| Interstate Seed IS Hysun 450 | NuSun | X | X | X | X |
| Interstate Seed IS Hysun 530 | NuSun | X | X | X | X |
| Interstate Seed IS X15045 | Trad. | X | X | X | X |
| Interstate Seed IS X33204 | Trad. | X | | X | |
| Interstate Seed IS X41978 | Trad. | X | X | X | |
| Interstate Seed IS X74018 | Trad. | X | X | X | |
| Interstate Seed IS X74066 | Trad. | X | X | X | |
| Interstate Seed IS X74091 | Trad. | X | X | X | |
| Interstate Seed IS X84021 | Trad. | X | X | X | |
| Interstate Seed ST 2102 | Trad. | X | | X | |
| Interstate Seed ST 2109 | Trad. | X | X | X | |
| Interstate Seed ST 2129 | Trad. | X | X | X | |
| Kaystar 9404 | Trad. | X | X | X | X |
| Kaystar 9501 | Trad. | X | X | X | X |
| Legend Seeds LSF142N | NuSun | X | X | X | X |
| Mycogen Seeds 8242 NS | NuSun | X | | | |
| Mycogen Seeds 8372 | Trad. | X | X | X | X |
| Mycogen Seeds 8377 NS | NuSun | X | X | X | X |
| Mycogen Seeds 8488 NS | NuSun | X | X | X | X |
| Mycogen Seeds Cavalry | Trad. | X | X | X | X |
| Mycogen Seeds X80454 | NuSun | | | X | X |

Table 2 (continued).

| Sunflower Brand-Hybrid | Hybrid Type | Frankfort | Highmore | Dakota Lakes | Pukwana |
|---------------------------|----------------|-----------|----------|-----------------|---------|
| Mycogen Seeds X80458 | NuSun | | | X | X |
| Nidera S.A. DN 1704 | Trad. | X | X | | |
| Nidera S.A. DN 2015 | Trad. | X | X | | |
| Novartis NK Brand 278 | Trad. | X | X | X | X |
| Novartis NK Brand NX16755 | NuSun | X | X | X | X |
| Novartis NK Brand NX16756 | NuSun | X | X | X | X |
| Novartis NK Brand NX30002 | NuSun | X | X | X | X |
| Novartis NK Brand T46-R9 | Trad. | X | X | X | X |
| Pioneer hybrid 63A70 | Trad. | X | X | X | X |
| Pioneer hybrid 63A81 | Trad. | X | X | X | X |
| Pioneer hybrid 63M80 | NuSun | X | X | X | X |
| Pioneer hybrid 63M91 | NuSun | X | X | X | X |
| Proseed EX9605(NS) | NuSun | X | X | X | X |
| Proseed 9103 | NuSun | X | X | X | X |
| Proseed 9123 | NuSun | X | X | X | X |
| Proseed 9405 | NuSun | X | X | X | X |
| Proseed 9612 | Trad. | X | X | X | X |
| Proseed 9911 | Trad. | X | X | X | X |
| Proseed EX9155(NS) | NuSun | X | X | X | X |
| Seeds 2000 Bronco | NuSun | X | X | X | X |
| Seeds 2000 Maverick | NuSun | X | X | X | X |
| Seeds 2000 Mustang | NuSun | X | X | | |
| Seeds 2000 Ranger | NuSun | X | X | | |
| Seeds 2000 X476 | NuSun | X | X | X | X |
| Triumph Seed 545A | Trad. | | | | X |
| Triumph Seed 652 | NuSun | | | X | X |
| USDA 894 (check) | Trad. | X | X | X | X |
| cmsHA412/RHA373 (check) | Trad. | | | | X |
| border | Trad. | X | | | |
| Total hybrids | | 68 | 63 | 65 | 54 |

Table 3. Results of the 2000 oilseed hybrid sunflower trial grown at Frankfort, SD.

| Sunflower Brand-Hybrid | Type | Seed Yield (lbs/A) | | | 2000 | Oil | Test | Harv. | Plant | Flwr | Lodgng |
|---------------------------|-------|--------------------|--------|------|------|-------|-------|--------|--------|------|--------|
| | | 2000 | 1999 | Mean | Oil | Yield | Wt. | Moist. | Height | | |
| | | Frnkf | Miller | | % | lbs/A | lb/bu | % | cm | days | % |
| Proseed 9612 | Trad. | 2597 | 2702 | 2650 | 38.4 | 986 | 29.6 | 13.1 | 153 | 70 | 3 |
| Kaystar 9404 | Trad. | 2439 | 2846 | 2642 | 39.8 | 971 | 28.6 | 12.9 | 143 | 70 | 8 |
| Interstate Seed IS X41978 | Trad. | 2423 | 2887 | 2655 | 39.7 | 956 | 26.6 | 12.8 | 149 | 70 | 5 |
| Mycogen Seeds Cavalry | Trad. | 2420 | -- | -- | 41.2 | 998 | 30.0 | 12.8 | 161 | 72 | 4 |
| Croplan Genetics CL380 NS | NuSun | 2368 | 2543 | 2456 | 39.3 | 932 | 30.8 | 13.0 | 147 | 69 | 12 |
| Interstate Seed IS X15045 | Trad. | 2319 | 2634 | 2477 | 40.8 | 948 | 29.9 | 13.4 | 129 | 69 | 6 |
| Seeds 2000 X476 | NuSun | 2302 | -- | -- | 39.0 | 900 | 28.8 | 13.2 | 138 | 71 | 4 |
| Pioneer hybrid 63M80 | NuSun | 2295 | 3138 | 2717 | 40.1 | 920 | 29.9 | 12.7 | 140 | 69 | 9 |
| Dekalb DK3900 | Trad. | 2284 | 3001 | 2642 | 40.7 | 929 | 30.2 | 13.5 | 136 | 72 | 6 |
| Interstate Seed IS 4049 | Trad. | 2256 | 2578 | 2417 | 40.8 | 918 | 29.4 | 12.2 | 151 | 71 | 8 |
| Mycogen Seeds 8488 NS | NuSun | 2237 | -- | -- | 39.7 | 884 | 29.7 | 12.7 | 143 | 68 | 3 |
| Interstate Seed IS X74066 | Trad. | 2208 | -- | -- | 40.9 | 897 | 28.7 | 13.5 | 149 | 72 | 6 |
| Interstate Seed IS X74091 | Trad. | 2192 | -- | -- | 40.1 | 878 | 28.7 | 13.1 | 144 | 70 | 5 |
| Nidera S.A. DN 2015 | Trad. | 2122 | -- | -- | 39.8 | 846 | 29.0 | 13.9 | 158 | 70 | 2 |
| Croplan Genetics CL821 | Trad. | 2117 | -- | -- | 39.3 | 834 | 28.2 | 13.6 | 140 | 70 | 9 |
| Novartis NK Brand 278 | Trad. | 2102 | 2561 | 2331 | 41.1 | 865 | 29.6 | 13.8 | 155 | 69 | 4 |
| Interstate Seed 971136 NS | NuSun | 2064 | -- | -- | 38.8 | 799 | 27.6 | 12.6 | 151 | 70 | 15 |
| Seeds 2000 Ranger | NuSun | 2062 | -- | -- | 38.5 | 797 | 29.1 | 12.1 | 137 | 67 | 8 |
| Nidera S.A. DN 1704 | Trad. | 2052 | -- | -- | 40.1 | 823 | 28.5 | 13.0 | 177 | 72 | 12 |
| Kaystar 9501 | Trad. | 2043 | 3172 | 2608 | 38.9 | 799 | 29.0 | 12.2 | 160 | 70 | 6 |
| Mycogen Seeds 8372 | Trad. | 2039 | -- | -- | 40.2 | 818 | 29.8 | 12.7 | 143 | 67 | 10 |
| Interstate Seed IS 6767 | Trad. | 2013 | 1973 | 1993 | 40.9 | 823 | 29.2 | 13.1 | 153 | 70 | 7 |
| Proseed 9911 | Trad. | 2006 | -- | -- | 39.7 | 797 | 26.9 | 12.2 | 147 | 70 | 5 |
| Dekalb DKF29-90 | Trad. | 1976 | -- | -- | 41.5 | 827 | 28.2 | 12.5 | 140 | 68 | 7 |
| Interstate Seed IS X84021 | Trad. | 1962 | -- | -- | 39.5 | 774 | 30.3 | 12.9 | 145 | 72 | 9 |
| Proseed 9123 | NuSun | 1957 | 2566 | 2262 | 38.5 | 753 | 25.8 | 13.3 | 149 | 70 | 12 |
| Proseed 9405 | NuSun | 1949 | 2441 | 2195 | 40.2 | 782 | 28.7 | 12.9 | 147 | 71 | 9 |
| Novartis NK Brand T46-R9 | Trad. | 1939 | -- | -- | 39.5 | 766 | 30.2 | 13.0 | 142 | 68 | 7 |
| Seeds 2000 Maverick | NuSun | 1939 | 2045 | 1992 | 38.8 | 755 | 26.9 | 12.9 | 135 | 68 | 11 |
| Pioneer hybrid 63M91 | NuSun | 1935 | 2603 | 2269 | 40.1 | 774 | 29.0 | 12.8 | 157 | 68 | 6 |
| Pioneer hybrid 63A81 | Trad. | 1888 | 1923 | 1905 | 40.9 | 777 | 28.4 | 12.2 | 145 | 70 | 0 |
| Interstate Seed IS 6039 | Trad. | 1882 | 2509 | 2195 | 40.1 | 761 | 27.6 | 12.4 | 145 | 67 | 8 |
| Novartis NK Brand NX30002 | NuSun | 1877 | -- | -- | 39.3 | 734 | 28.9 | 12.6 | 139 | 68 | 3 |
| Novartis NK Brand NX16755 | NuSun | 1850 | -- | -- | 39.2 | 721 | 27.5 | 13.4 | 147 | 70 | 1 |
| Seeds 2000 Mustang | NuSun | 1845 | 2157 | 2001 | 39.6 | 729 | 30.0 | 13.7 | 143 | 67 | 8 |
| Seeds 2000 Bronco | NuSun | 1834 | 2614 | 2224 | 39.2 | 715 | 28.3 | 13.2 | 144 | 72 | 9 |
| Proseed EX9605(NS) | NuSun | 1803 | -- | -- | 40.2 | 724 | 28.9 | 11.7 | 135 | 70 | 5 |
| Interstate Seed ST 2109 | Trad. | 1794 | 2410 | 2102 | 40.7 | 732 | 30.6 | 12.5 | 139 | 67 | 8 |
| Croplan Genetics CL345 NS | NuSun | 1792 | -- | -- | 39.3 | 706 | 30.3 | 12.2 | 138 | 68 | 2 |
| Dekalb DK3872NS | NuSun | 1789 | 2345 | 2067 | 40.0 | 718 | 27.6 | 12.3 | 152 | 71 | 15 |
| Pioneer hybrid 63A70 | Trad. | 1767 | 2670 | 2219 | 41.9 | 741 | 28.0 | 12.3 | 142 | 68 | 4 |
| Mycogen Seeds 8377 NS | NuSun | 1733 | -- | -- | 39.1 | 678 | 27.9 | 12.5 | 144 | 67 | 2 |
| Dekalb DK3868 | Trad. | 1714 | 2693 | 2204 | 40.5 | 692 | 29.2 | 12.6 | 127 | 70 | 7 |
| Dekalb DKF29-99NS | NuSun | 1709 | -- | -- | 39.1 | 669 | 29.6 | 12.6 | 147 | 67 | 8 |

Table 3 (continued).

| Sunflower Brand-Hybrid | Type | Seed Yield (lbs/A) | | | 2000 | Oil | Test | Harv. | Plant | Flwr | Lodgng |
|------------------------------|-------|--------------------|--------|------|------|-------|-------|--------|--------|------|--------|
| | | 2000 | 1999 | Mean | Oil | Yield | Wt. | Moist. | Height | | |
| | | Frnkf | Miller | | % | lbs/A | lb/bu | % | cm | days | % |
| Dekalb DK3875 | Trad. | 1663 | 3074 | 2369 | 39.7 | 657 | 28.2 | 12.8 | 135 | 70 | 12 |
| Croplan Genetics CL385 NS | NuSun | 1661 | 2487 | 2074 | 39.0 | 651 | 27.1 | 13.4 | 148 | 71 | 8 |
| Interstate Seed IS X33204 | Trad. | 1657 | -- | -- | 39.9 | 660 | 27.1 | 13.2 | 152 | 70 | 8 |
| Interstate Seed IS Hysun 450 | NuSun | 1653 | 2267 | 1960 | 38.5 | 630 | 28.4 | 13.3 | 140 | 72 | 6 |
| Mycogen Seeds 8242 NS | NuSun | 1632 | -- | -- | 39.4 | 644 | 29.1 | 12.8 | 139 | 66 | 7 |
| Interstate Seed IS 5030 | Trad. | 1630 | 2069 | 1850 | 39.5 | 644 | 27.9 | 11.1 | 137 | 68 | 6 |
| Dekalb DKF36-40NS | NuSun | 1601 | -- | -- | 39.7 | 639 | 27.9 | 13.5 | 153 | 67 | 10 |
| Dekalb EX9915NS | NuSun | 1563 | -- | -- | 38.8 | 600 | 28.5 | 13.0 | 139 | 71 | 14 |
| Interstate Garst IS 4340 | Trad. | 1561 | -- | -- | 40.4 | 637 | 28.7 | 16.3 | 154 | 72 | 4 |
| Novartis NK Brand NX16756 | NuSun | 1553 | -- | -- | 38.3 | 590 | 27.9 | 12.5 | 142 | 70 | 9 |
| Dekalb EX9910NS | NuSun | 1547 | -- | -- | 38.8 | 604 | 30.0 | 12.2 | 137 | 65 | 3 |
| Interstate Seed IS Hysun 530 | NuSun | 1541 | 2198 | 1869 | 38.7 | 597 | 28.6 | 12.9 | 136 | 67 | 9 |
| Proseed EX9155(NS) | NuSun | 1540 | -- | -- | 40.2 | 618 | 27.0 | 12.6 | 141 | 70 | 9 |
| Interstate Seed ST 2102 | Trad. | 1522 | -- | -- | 39.5 | 598 | 28.9 | 12.6 | 136 | 68 | 12 |
| Interstate Seed ST 2129 | Trad. | 1517 | -- | -- | 40.5 | 617 | 28.5 | 13.1 | 157 | 70 | 12 |
| Dekalb EX9918NS | NuSun | 1494 | -- | -- | 38.2 | 571 | 29.5 | 13.6 | 145 | 66 | 4 |
| Proseed 9103 | NuSun | 1418 | 1978 | 1698 | 38.8 | 549 | 26.4 | 12.6 | 150 | 71 | 12 |
| Dekalb DKF31-01NS | NuSun | 1339 | -- | -- | 38.2 | 506 | 28.8 | 12.8 | 154 | 68 | 14 |
| USDA 894 (check) | Trad. | 1320 | 2421 | 1870 | 40.3 | 531 | 27.6 | 13.1 | 154 | 69 | 15 |
| Dekalb EX9917NS | NuSun | 1271 | -- | -- | 38.7 | 491 | 28.9 | 13.1 | 149 | 67 | 5 |
| Croplan Genetics CL803 | Trad. | 1269 | 2257 | 1763 | 41.1 | 520 | 28.2 | 12.5 | 136 | 67 | 5 |
| Legend Seeds LSF142N | NuSun | 1253 | -- | -- | 38.9 | 485 | 27.0 | 12.4 | 142 | 71 | 13 |
| Interstate Seed IS X74018 | Trad. | 1155 | -- | -- | 39.9 | 460 | 28.9 | 12.7 | 137 | 67 | 11 |
| Grand Mean | | 1847 | 2417 | 2132 | 39.7 | 734 | 28.6 | 12.9 | 145 | 69 | 8 |
| LSD 5% | | 442 | 409 | | 1.1 | 179 | 2.1 | 1.2 | 12 | 1 | 6 |
| C.V. | | 17.2 | 12.1 | | 2.0 | 17.5 | 5.3 | 6.6 | 5.7 | 0.9 | 59.9 |

Planted May 19, 2000.

Harvested Oct. 7, 2000.

Design: Nearest neighbors in RCBD layout with 4 replications.

Seed yield, % oil, and oil yield are reported at 10% moisture.

Table 4. Results of the 2000 oilseed hybrid sunflower trial grown at the Dakota Lakes Research Station, Pierre, SD.

| Sunflower Brand-Hybrid | Type | Seed Yield (lbs/A) | | | 2000 | Oil | Test | Harv. | Plant | Lodgng | Final |
|------------------------------|-------|--------------------|------|------|------|-------|-------|--------|--------|--------|--------|
| | | 2000 | 1999 | Mean | Oil | Yield | Wt. | Moist. | Height | | Pop. |
| | | | | | % | lbs/A | lb/bu | % | cm | % | plnt/A |
| Mycogen Seeds X80458 | NuSun | 2592 | -- | -- | 40.2 | 1048 | 28.4 | 15.8 | 144 | 0 | 18232 |
| Kaystar 9501 | Trad. | 2528 | 1478 | 2003 | 41.1 | 1037 | 30.4 | 12.3 | 168 | 15 | 17683 |
| Mycogen Seeds Cavalry | Trad. | 2509 | -- | -- | 44.2 | 1094 | 30.7 | 12.5 | 163 | 5 | 17803 |
| Dekalb DK3875 | Trad. | 2414 | 1546 | 1980 | 41.6 | 1007 | 30.2 | 14.1 | 147 | 16 | 18602 |
| Pioneer hybrid 63A70 | Trad. | 2391 | 1188 | 1790 | 45.0 | 1073 | 30.0 | 10.9 | 154 | 7 | 18128 |
| Proseed 9911 | Trad. | 2390 | -- | -- | 42.3 | 1003 | 30.3 | 11.9 | 161 | 9 | 18044 |
| Dekalb DK3900 | Trad. | 2379 | 1679 | 2029 | 42.3 | 1005 | 29.6 | 17.7 | 150 | 11 | 18490 |
| Novartis NK Brand T46-R9 | Trad. | 2362 | -- | -- | 41.3 | 975 | 29.5 | 15.9 | 151 | 10 | 16853 |
| Interstate Garst IS 4340 | Trad. | 2352 | -- | -- | 42.9 | 1011 | 29.6 | 15.6 | 151 | 4 | 17374 |
| Interstate Seed IS X15045 | Trad. | 2345 | -- | -- | 43.0 | 1007 | 28.2 | 17.4 | 132 | 1 | 17191 |
| Interstate Seed IS 4049 | Trad. | 2326 | 1639 | 1983 | 42.5 | 983 | 29.6 | 11.6 | 153 | 12 | 18244 |
| Interstate Seed IS X84021 | Trad. | 2316 | -- | -- | 42.0 | 977 | 29.2 | 12.9 | 151 | 15 | 17857 |
| Interstate Seed IS X33204 | Trad. | 2237 | -- | -- | 44.1 | 984 | 29.2 | 12.1 | 156 | 14 | 17457 |
| Interstate Seed ST 2102 | Trad. | 2216 | -- | -- | 43.0 | 961 | 29.6 | 14.4 | 138 | 11 | 18229 |
| Proseed 9612 | Trad. | 2151 | 1308 | 1730 | 39.9 | 855 | 30.9 | 16.7 | 163 | 17 | 17972 |
| Interstate Seed IS X74066 | Trad. | 2135 | -- | -- | 43.3 | 921 | 27.6 | 13.4 | 144 | 11 | 17107 |
| Interstate Seed IS 6039 | Trad. | 2126 | 1149 | 1637 | 42.9 | 912 | 31.1 | 13.5 | 142 | 13 | 16785 |
| Pioneer hybrid 63M80 | NuSun | 2114 | 1637 | 1876 | 42.5 | 900 | 28.8 | 14.8 | 160 | 10 | 17848 |
| Novartis NK Brand NX30002 | NuSun | 2114 | -- | -- | 41.1 | 869 | 29.9 | 10.8 | 139 | 6 | 17783 |
| Interstate Seed ST 2129 | Trad. | 2112 | -- | -- | 42.8 | 895 | 30.6 | 12.5 | 156 | 13 | 15917 |
| Seeds 2000 X476 | NuSun | 2077 | -- | -- | 41.2 | 856 | 27.8 | 14.9 | 140 | 13 | 15387 |
| Kaystar 9404 | Trad. | 2067 | 1731 | 1899 | 40.3 | 834 | 29.0 | 14.9 | 150 | 10 | 16180 |
| Interstate Seed IS X41978 | Trad. | 2048 | 1884 | 1966 | 40.5 | 828 | 27.7 | 16.3 | 165 | 16 | 17116 |
| Mycogen Seeds 8372 | Trad. | 2026 | -- | -- | 43.4 | 882 | 29.6 | 11.0 | 146 | 7 | 18132 |
| Mycogen Seeds 8488 NS | NuSun | 1996 | -- | -- | 41.8 | 832 | 29.2 | 15.0 | 164 | 13 | 17529 |
| Interstate Seed IS X74018 | Trad. | 1985 | -- | -- | 42.6 | 838 | 29.9 | 11.3 | 141 | 7 | 16893 |
| Dekalb DK3868 | Trad. | 1976 | 1319 | 1648 | 43.2 | 850 | 29.7 | 11.7 | 137 | 15 | 16703 |
| Mycogen Seeds 8377 NS | NuSun | 1962 | -- | -- | 42.3 | 833 | 29.4 | 13.8 | 151 | 8 | 16943 |
| Seeds 2000 Bronco | NuSun | 1942 | 1357 | 1650 | 41.2 | 799 | 28.5 | 17.8 | 146 | 0 | 18184 |
| Croplan Genetics CL345 NS | NuSun | 1914 | 1134 | 1524 | 41.9 | 801 | 28.6 | 16.0 | 152 | 5 | 17729 |
| Croplan Genetics CL385 NS | NuSun | 1911 | 958 | 1435 | 41.8 | 799 | 28.8 | 11.8 | 145 | 3 | 18095 |
| Novartis NK Brand NX16755 | NuSun | 1908 | -- | -- | 40.9 | 739 | 29.7 | 12.1 | 158 | 11 | 16356 |
| Interstate Seed IS Hysun 450 | NuSun | 1907 | 1272 | 1590 | 41.4 | 790 | 28.2 | 12.2 | 150 | 6 | 16290 |
| Mycogen Seeds X80454 | NuSun | 1901 | -- | -- | 41.9 | 798 | 29.1 | 13.2 | 143 | 9 | 14375 |
| Interstate Seed 971136 NS | NuSun | 1878 | -- | -- | 42.0 | 790 | 29.4 | 11.7 | 155 | 16 | 16538 |
| Pioneer hybrid 63M91 | NuSun | 1874 | 1192 | 1533 | 42.3 | 788 | 30.4 | 12.0 | 161 | 14 | 15657 |
| Dekalb EX9917NS | NuSun | 1868 | -- | -- | 41.4 | 773 | 29.7 | 13.8 | 156 | 15 | 16733 |
| Interstate Seed ST 2109 | Trad. | 1862 | -- | -- | 42.9 | 801 | 28.9 | 13.0 | 150 | 7 | 18139 |
| Dekalb DKF29-90 | Trad. | 1860 | -- | -- | 44.0 | 819 | 29.8 | 10.6 | 143 | 18 | 14044 |
| Dekalb DK3872NS | NuSun | 1840 | 1462 | 1651 | 41.6 | 766 | 28.9 | 12.0 | 157 | 10 | 17952 |
| Dekalb EX9910NS | NuSun | 1827 | -- | -- | 40.7 | 742 | 30.1 | 11.0 | 145 | 6 | 16223 |
| Interstate Seed IS X74091 | Trad. | 1813 | -- | -- | 43.7 | 797 | 28.7 | 13.8 | 147 | 17 | 17233 |
| Croplan Genetics CL380 NS | NuSun | 1790 | 1197 | 1494 | 41.1 | 740 | 30.3 | 13.5 | 161 | 6 | 18124 |
| Interstate Seed IS 6767 | Trad. | 1788 | 1282 | 1535 | 42.7 | 763 | 29.6 | 14.0 | 148 | 15 | 18281 |

Table 4 (continued).

| Sunflower Brand-Hybrid | Type | Seed Yield (lbs/A) | | | 2000 | Oil | Test | Harv. | Plant | Lodgng | Final |
|------------------------------|-------|--------------------|------|------|------|-------|-------|--------|--------|--------|--------|
| | | 2000 | 1999 | Mean | Oil | Yield | Wt. | Moist. | Height | | Pop. |
| | | | | | % | lbs/A | lb/bu | % | cm | % | plnt/A |
| Pioneer hybrid 63A81 | Trad. | 1728 | 1298 | 1513 | 42.0 | 724 | 27.3 | 12.5 | 153 | 8 | 17188 |
| Seeds 2000 Maverick | NuSun | 1718 | 1335 | 1526 | 41.6 | 721 | 29.0 | 10.6 | 155 | 9 | 15335 |
| Dekalb EX9915NS | NuSun | 1709 | -- | -- | 42.1 | 725 | 30.4 | 10.9 | 151 | 28 | 15374 |
| Novartis NK Brand 278 | Trad. | 1706 | 1247 | 1477 | 43.1 | 738 | 28.5 | 12.4 | 150 | 10 | 16462 |
| Proseed 9405 | NuSun | 1704 | 1266 | 1485 | 41.6 | 712 | 28.0 | 17.2 | 146 | 15 | 17927 |
| Triumph Seed 652 | NuSun | 1665 | -- | -- | 40.3 | 667 | 27.9 | 15.2 | 166 | 12 | 15671 |
| Proseed EX9605(NS) | NuSun | 1657 | -- | -- | 42.1 | 699 | 29.0 | 11.6 | 150 | 17 | 18823 |
| Proseed 9103 | NuSun | 1656 | 1028 | 1342 | 41.8 | 711 | 28.7 | 11.8 | 156 | 15 | 16975 |
| Proseed 9123 | NuSun | 1641 | 1545 | 1593 | 41.1 | 673 | 27.6 | 15.6 | 153 | 3 | 15244 |
| Dekalb DKF29-99NS | NuSun | 1625 | -- | -- | 42.3 | 688 | 29.0 | 11.3 | 146 | 15 | 16167 |
| Croplan Genetics CL803 | Trad. | 1620 | 1465 | 1542 | 43.5 | 699 | 28.9 | 11.7 | 138 | 17 | 17068 |
| Legend Seeds LSF142N | NuSun | 1568 | -- | -- | 42.0 | 659 | 28.3 | 12.7 | 146 | 10 | 16985 |
| Interstate Seed IS Hysun 530 | NuSun | 1558 | 1068 | 1313 | 41.1 | 641 | 28.4 | 11.8 | 146 | 16 | 15297 |
| Novartis NK Brand NX16756 | NuSun | 1557 | -- | -- | 41.6 | 645 | 29.7 | 13.4 | 161 | 14 | 17476 |
| Dekalb EX9918NS | NuSun | 1493 | -- | -- | 41.2 | 621 | 29.2 | 14.8 | 154 | 9 | 17532 |
| Dekalb DKF36-40NS | NuSun | 1441 | -- | -- | 40.6 | 577 | 28.7 | 16.1 | 167 | 25 | 12468 |
| Interstate Seed IS 5030 | Trad. | 1440 | 1479 | 1459 | 43.9 | 638 | 28.8 | 11.9 | 144 | 5 | 15469 |
| Proseed EX9155(NS) | NuSun | 1285 | -- | -- | 41.7 | 537 | 27.5 | 10.1 | 147 | 29 | 17697 |
| USDA 894 (check) | Trad. | 1279 | 1492 | 1386 | 41.4 | 531 | 28.2 | 10.8 | 154 | 12 | 17400 |
| Dekalb DKF31-01NS | NuSun | 1266 | -- | -- | 40.4 | 510 | 29.6 | 10.7 | 145 | 56 | 14270 |
| Croplan Genetics CL322 NS | NuSun | 1233 | 1255 | 1244 | 41.5 | 512 | 28.5 | 10.2 | 147 | 10 | 15629 |
| Grand Mean | | 1918 | 1277 | 1598 | 42.0 | 806 | 29.2 | 13.2 | 151 | 12 | 16937 |
| LSD 5% | | 452 | 373 | | 1.1 | 191 | 1.5 | 3.4 | 10 | 9 | 2428 |
| C.V. | | 16.9 | 20.9 | | 1.8 | 17.0 | 3.7 | 18.7 | 4.6 | 52.8 | 10.3 |

Planted May 31, 2000.

Harvested Sept. 27, 2000.

Design: Nearest neighbors in RCBD layout with 4 replications.

Seed yield, % oil, and oil yield are reported at 10% moisture.

Table 5. Results of the 2000 oilseed hybrid sunflower trial grown at Pukwana, SD.

| Sunflower Brand-Hybrid | Type | Seed Yield (lbs/A) | | | 2000 | Oil | Test | Harv. | Plant | Lodgng |
|------------------------------|-------|--------------------|------|------|------|-------|-------|--------|--------|--------|
| | | 2000 | 1999 | Mean | Oil | Yield | Wt. | Moist. | Height | |
| | | | | | % | lbs/A | lb/bu | % | cm | % |
| Kaystar 9501 | Trad. | 2634 | 3668 | 3151 | 39.3 | 1036 | 28.9 | 9.8 | 153 | 4 |
| Proseed 9612 | Trad. | 2595 | 3523 | 3059 | 39.8 | 1036 | 29.3 | 9.4 | 138 | 2 |
| Interstate Seed IS X15045 | Trad. | 2476 | -- | -- | 41.7 | 1032 | 27.3 | 10.0 | 116 | 4 |
| Mycogen Seeds Cavalry | Trad. | 2436 | -- | -- | 42.8 | 1043 | 28.9 | 8.1 | 151 | 3 |
| Dekalb DK3900 | Trad. | 2387 | 2485 | 2436 | 42.1 | 1010 | 28.5 | 10.9 | 132 | 8 |
| Pioneer hybrid 63A81 | Trad. | 2342 | -- | -- | 41.5 | 979 | 26.7 | 7.8 | 138 | 2 |
| Novartis NK Brand T46-R9 | Trad. | 2340 | -- | -- | 40.6 | 958 | 28.6 | 9.9 | 144 | 4 |
| Mycogen Seeds 8377 NS | NuSun | 2322 | -- | -- | 41.7 | 971 | 28.4 | 8.9 | 133 | 2 |
| Pioneer hybrid 63A70 | Trad. | 2244 | -- | -- | 43.7 | 975 | 27.8 | 8.9 | 135 | 2 |
| Dekalb EX9917NS | NuSun | 2243 | -- | -- | 40.7 | 915 | 29.5 | 9.8 | 146 | 4 |
| Pioneer hybrid 63M91 | NuSun | 2205 | -- | -- | 40.5 | 899 | 29.1 | 9.6 | 149 | 0 |
| Seeds 2000 Bronco | NuSun | 2190 | -- | -- | 40.0 | 877 | 28.8 | 9.1 | 127 | 2 |
| Triumph Seed 545A | Trad. | 2187 | 2736 | 2462 | 44.4 | 969 | 28.2 | 8.2 | 134 | 4 |
| Dekalb DKF36-40NS | NuSun | 2174 | -- | -- | 39.8 | 867 | 28.5 | 8.6 | 155 | 7 |
| Proseed 9405 | NuSun | 2151 | 2413 | 2282 | 41.4 | 888 | 27.1 | 10.8 | 136 | 2 |
| Novartis NK Brand NX16756 | NuSun | 2143 | -- | -- | 40.1 | 861 | 28.4 | 9.5 | 140 | 5 |
| Dekalb DK3875 | Trad. | 2142 | 3175 | 2659 | 40.9 | 879 | 28.7 | 9.5 | 132 | 0 |
| Dekalb EX9910NS | NuSun | 2133 | -- | -- | 40.3 | 857 | 28.0 | 7.6 | 131 | 3 |
| Interstate Seed IS 5030 | Trad. | 2126 | -- | -- | 42.7 | 915 | 26.6 | 7.9 | 135 | 1 |
| Interstate Seed IS 6039 | Trad. | 2121 | -- | -- | 42.8 | 914 | 29.2 | 8.2 | 136 | 5 |
| Kaystar 9404 | Trad. | 2121 | 2620 | 2371 | 41.0 | 868 | 27.6 | 8.4 | 131 | 7 |
| Interstate Seed IS 4049 | Trad. | 2110 | -- | -- | 42.3 | 893 | 29.1 | 8.8 | 139 | 4 |
| Proseed 9911 | Trad. | 2110 | -- | -- | 41.9 | 885 | 28.3 | 8.3 | 148 | 3 |
| Mycogen Seeds X80458 | NuSun | 2085 | -- | -- | 39.8 | 830 | 28.0 | 10.3 | 143 | 0 |
| Mycogen Seeds 8372 | Trad. | 2075 | -- | -- | 43.0 | 896 | 28.6 | 7.9 | 131 | 6 |
| Dekalb DKF29-99NS | NuSun | 2063 | -- | -- | 42.5 | 873 | 28.1 | 8.4 | 135 | 9 |
| Triumph Seed 652 | NuSun | 2044 | -- | -- | 39.2 | 805 | 28.1 | 10.2 | 137 | 6 |
| Interstate Seed IS 6767 | Trad. | 2043 | -- | -- | 42.7 | 872 | 28.6 | 8.3 | 137 | 5 |
| Dekalb DK3868 | Trad. | 1995 | 2153 | 2074 | 42.6 | 851 | 28.5 | 7.9 | 132 | 6 |
| Proseed EX9605(NS) | NuSun | 1979 | -- | -- | 41.4 | 823 | 27.1 | 8.4 | 140 | 6 |
| Mycogen Seeds 8488 NS | NuSun | 1960 | -- | -- | 41.6 | 818 | 28.8 | 8.7 | 144 | 1 |
| Interstate Seed IS Hysun 450 | NuSun | 1957 | -- | -- | 40.2 | 785 | 27.6 | 8.6 | 130 | 2 |
| Croplan Genetics CL380 NS | NuSun | 1952 | -- | -- | 41.3 | 808 | 27.6 | 8.3 | 137 | 4 |
| Dekalb DK3872NS | NuSun | 1948 | 2069 | 2008 | 40.8 | 802 | 28.5 | 7.6 | 146 | 8 |
| Seeds 2000 X476 | NuSun | 1937 | -- | -- | 40.4 | 786 | 27.9 | 8.7 | 124 | 7 |
| cmsHA412/RHA373 (check) | Trad. | 1935 | -- | -- | 41.8 | 808 | 27.7 | 9.2 | 137 | 12 |
| Dekalb DKF29-90 | Trad. | 1927 | -- | -- | 43.7 | 844 | 29.2 | 7.2 | 137 | 4 |
| Interstate Garst IS 4340 | Trad. | 1917 | -- | -- | 41.0 | 787 | 29.6 | 9.2 | 132 | 2 |
| Novartis NK Brand NX16755 | NuSun | 1917 | -- | -- | 41.2 | 791 | 28.3 | 8.3 | 131 | 8 |
| Proseed 9123 | NuSun | 1889 | 2485 | 2187 | 40.8 | 764 | 27.5 | 10.7 | 140 | 2 |
| Mycogen Seeds X80454 | NuSun | 1867 | -- | -- | 40.0 | 744 | 29.0 | 8.8 | 126 | 6 |
| Croplan Genetics CL385 NS | NuSun | 1802 | -- | -- | 41.4 | 744 | 27.4 | 9.0 | 130 | 4 |
| USDA 894 (check) | Trad. | 1802 | 2240 | 2021 | 40.6 | 736 | 28.7 | 9.2 | 133 | 2 |
| Novartis NK Brand 278 | Trad. | 1796 | 2450 | 2123 | 43.0 | 779 | 28.0 | 11.0 | 130 | 6 |

Table 5 (continued).

| Sunflower Brand-Hybrid | Type | Seed Yield (lbs/A) | | | 2000 | Oil | Test | Harv. | Plant | Lodgng |
|------------------------------|-------|--------------------|------|------|------|-------|-------|--------|--------|--------|
| | | 2000 | 1999 | Mean | Oil | Yield | Wt. | Moist. | Height | |
| | | | | | % | lbs/A | lb/bu | % | cm | % |
| Interstate Seed IS Hysun 530 | NuSun | 1762 | -- | -- | 41.0 | 725 | 27.2 | 7.6 | 135 | 9 |
| Dekalb EX9915NS | NuSun | 1751 | -- | -- | 40.5 | 714 | 27.8 | 8.6 | 141 | 7 |
| Pioneer hybrid 63M80 | NuSun | 1725 | -- | -- | 41.1 | 712 | 27.5 | 9.4 | 135 | 8 |
| Seeds 2000 Maverick | NuSun | 1724 | -- | -- | 40.2 | 691 | 27.1 | 7.5 | 128 | 7 |
| Novartis NK Brand NX30002 | NuSun | 1713 | -- | -- | 40.6 | 696 | 28.9 | 9.2 | 128 | 8 |
| Proseed 9103 | NuSun | 1647 | 2023 | 1835 | 40.2 | 664 | 27.5 | 7.9 | 138 | 7 |
| Proseed EX9155(NS) | NuSun | 1587 | -- | -- | 41.7 | 665 | 27.2 | 8.0 | 135 | 7 |
| Dekalb EX9918NS | NuSun | 1574 | -- | -- | 40.7 | 649 | 28.2 | 8.1 | 126 | 1 |
| Dekalb DKF31-01NS | NuSun | 1477 | -- | -- | 40.1 | 590 | 28.0 | 7.7 | 146 | 9 |
| Legend Seeds LSF142N | NuSun | 1432 | -- | -- | 40.1 | 569 | 28.4 | 8.5 | 122 | 8 |
| Grand Mean | | 2023 | 2449 | 2236 | 41.2 | 836 | 28.2 | 8.8 | 136 | 5 |
| LSD 5% | | 434 | 524 | | 1.2 | 186 | 1.3 | 1.3 | 9 | 6 |
| C.V. | | 15.4 | 15.3 | | 2.1 | 15.9 | 3.2 | 10.4 | 5.0 | 98.1 |

Planted May 30, 2000.

Harvested Oct. 9, 2000.

Design: Nearest neighbors in RCBD layout with 4 replications.

Seed yield, % oil, and oil yield are reported at 10% moisture.

Table 6. Results of the 2000 oilseed hybrid sunflower trial, averaged over Dakota Lakes, Frankfort, and Pukwana.

| Sunflower Brand-Hybrid | Type | Seed Yield | Oil Oil | Oil Yield | Test Wt. | Harv. Moist. | Plant Height | Lodgng Lodgng |
|------------------------------|-------|---------------|------------|--------------|-------------|-----------------|-----------------|------------------|
| | | lbs/A | % | lbs/A | lb/bu | % | cm | % |
| Mycogen Seeds Cavalry | Trad. | 2458 | 42.7 | 1046 | 29.9 | 11.2 | 158 | 4 |
| Proseed 9612 | Trad. | 2451 | 39.3 | 960 | 30.0 | 13.1 | 151 | 7 |
| Kaystar 9501 | Trad. | 2405 | 39.8 | 958 | 29.5 | 11.5 | 160 | 8 |
| Interstate Seed IS X15045 | Trad. | 2383 | 41.8 | 997 | 28.5 | 13.6 | 126 | 4 |
| Dekalb DK3900 | Trad. | 2353 | 41.7 | 982 | 29.5 | 14.1 | 139 | 8 |
| Interstate Seed IS 4049 | Trad. | 2234 | 41.8 | 933 | 29.4 | 10.9 | 147 | 8 |
| Novartis NK Brand T46-R9 | Trad. | 2217 | 40.5 | 900 | 29.5 | 13.0 | 146 | 7 |
| Kaystar 9404 | Trad. | 2212 | 40.3 | 892 | 28.4 | 12.1 | 141 | 8 |
| Proseed 9911 | Trad. | 2172 | 41.3 | 896 | 28.5 | 10.8 | 152 | 5 |
| Pioneer hybrid 63A70 | Trad. | 2137 | 43.5 | 931 | 28.6 | 10.7 | 144 | 4 |
| Seeds 2000 X476 | NuSun | 2108 | 40.2 | 848 | 28.2 | 12.3 | 134 | 8 |
| Dekalb DK3875 | Trad. | 2076 | 40.7 | 848 | 29.1 | 12.2 | 138 | 9 |
| Mycogen Seeds 8488 NS | NuSun | 2067 | 41.0 | 846 | 29.3 | 12.2 | 150 | 5 |
| Mycogen Seeds 8372 | Trad. | 2050 | 42.2 | 866 | 29.4 | 10.6 | 140 | 7 |
| Pioneer hybrid 63M80 | NuSun | 2048 | 41.2 | 845 | 28.8 | 12.3 | 145 | 9 |
| Interstate Seed IS 6039 | Trad. | 2046 | 41.9 | 863 | 29.4 | 11.4 | 141 | 8 |
| Croplan Genetics CL380 NS | NuSun | 2040 | 40.5 | 828 | 29.6 | 11.6 | 148 | 7 |
| Mycogen Seeds 8377 NS | NuSun | 2009 | 41.0 | 828 | 28.6 | 11.8 | 143 | 4 |
| Pioneer hybrid 63M91 | NuSun | 2008 | 41.0 | 821 | 29.6 | 11.5 | 156 | 5 |
| Seeds 2000 Bronco | NuSun | 1992 | 40.1 | 798 | 28.6 | 13.4 | 139 | 3 |
| Pioneer hybrid 63A81 | Trad. | 1989 | 41.5 | 828 | 27.5 | 10.9 | 145 | 3 |
| Interstate Seed IS 6767 | Trad. | 1951 | 42.1 | 820 | 29.2 | 11.8 | 146 | 9 |
| Interstate Garst IS 4340 | Trad. | 1946 | 41.4 | 812 | 29.4 | 13.7 | 146 | 3 |
| Proseed 9405 | NuSun | 1938 | 41.1 | 795 | 28.0 | 13.7 | 143 | 9 |
| Dekalb DKF29-90 | Trad. | 1924 | 43.0 | 831 | 29.1 | 10.1 | 140 | 10 |
| Novartis NK Brand NX30002 | NuSun | 1904 | 40.3 | 767 | 29.3 | 10.9 | 135 | 6 |
| Dekalb DK3868 | Trad. | 1898 | 42.1 | 798 | 29.1 | 10.8 | 132 | 9 |
| Novartis NK Brand NX16755 | NuSun | 1894 | 40.4 | 751 | 28.5 | 11.3 | 145 | 7 |
| Novartis NK Brand 278 | Trad. | 1871 | 42.4 | 795 | 28.7 | 12.4 | 145 | 7 |
| Dekalb DK3872NS | NuSun | 1862 | 40.8 | 763 | 28.4 | 10.7 | 152 | 11 |
| Interstate Seed IS Hysun 450 | NuSun | 1842 | 40.0 | 736 | 28.1 | 11.4 | 140 | 5 |
| Dekalb EX9910NS | NuSun | 1839 | 39.9 | 735 | 29.4 | 10.3 | 138 | 4 |
| Proseed 9123 | NuSun | 1832 | 40.1 | 731 | 27.0 | 13.2 | 147 | 6 |
| Proseed EX9605(NS) | NuSun | 1816 | 41.2 | 750 | 28.4 | 10.6 | 142 | 10 |
| Dekalb DKF29-99NS | NuSun | 1802 | 41.3 | 744 | 28.9 | 10.8 | 142 | 10 |
| Dekalb EX9917NS | NuSun | 1797 | 40.2 | 727 | 29.4 | 12.3 | 150 | 8 |
| Seeds 2000 Maverick | NuSun | 1797 | 40.2 | 723 | 27.7 | 10.4 | 139 | 9 |
| Croplan Genetics CL385 NS | NuSun | 1794 | 40.7 | 732 | 27.8 | 11.5 | 141 | 5 |
| Novartis NK Brand NX16756 | NuSun | 1754 | 40.0 | 700 | 28.7 | 11.9 | 148 | 9 |
| Dekalb DKF36-40NS | NuSun | 1742 | 40.0 | 695 | 28.4 | 12.8 | 159 | 14 |
| Interstate Seed IS 5030 | Trad. | 1735 | 42.0 | 733 | 27.8 | 10.3 | 139 | 4 |
| Dekalb EX9915NS | NuSun | 1677 | 40.5 | 681 | 29.0 | 10.8 | 144 | 16 |
| Interstate Seed IS Hysun 530 | NuSun | 1623 | 40.2 | 656 | 28.1 | 10.8 | 139 | 11 |
| Proseed 9103 | NuSun | 1577 | 40.3 | 642 | 27.6 | 10.8 | 148 | 11 |

Table 6 (continued).

| Sunflower Brand-Hybrid | Type | Seed Yield | Oil | Oil Yield | Test Wt. | Harv. Moist. | Plant Height | Lodgng |
|---------------------------|-------|---------------|------|--------------|-------------|-----------------|-----------------|--------|
| | | lbs/A | % | lbs/A | lb/bu | % | cm | % |
| Dekalb EX9918NS | NuSun | 1523 | 40.0 | 614 | 29.0 | 12.2 | 142 | 5 |
| Proseed EX9155(NS) | NuSun | 1474 | 41.2 | 608 | 27.3 | 10.3 | 141 | 15 |
| USDA 894 (check) | Trad. | 1470 | 40.7 | 600 | 28.2 | 11.1 | 147 | 9 |
| Legend Seeds LSF142N | NuSun | 1421 | 40.3 | 572 | 28.0 | 11.3 | 136 | 10 |
| Dekalb DKF31-01NS | NuSun | 1364 | 39.5 | 537 | 28.9 | 10.5 | 148 | 27 |
| Grand Mean | | 1929 | 40.9 | 791 | 28.7 | 11.6 | 144 | 8 |
| LSD 5% | | 342 | 0.8 | 142 | 1.2 | 1.8 | 8 | 8 |
| C.V. | | 17.4 | 2.1 | 17.7 | 4.4 | 14.7 | 5.5 | 71.4 |

Seed yield, % oil, and oil yield are reported at 10% moisture.

Table 7. Hybrids and test sites for the 2000 South Dakota non-oilseed hybrid sunflower trial.

| Sunflower Brand-Hybrid | Dakota Lakes | Highmore | Pukwana |
|------------------------------|--------------|----------|---------|
| Agway Inc. EXP-001 | X | X | X |
| Agway Inc. EXP-002 | X | | X |
| Agway Inc. EXP-991 | X | | X |
| Agway Inc. RH 3703 | X | X | X |
| Agway Inc. RH 3733 | X | X | X |
| Interstate IS 8048 | X | X | X |
| Interstate IS X89008 | X | X | X |
| Proseed 9802 | X | X | X |
| USDA 924 (check) | X | X | X |
| Seeds 2000 Bigfoot | | X | X |
| Seeds 2000 X3985 | | X | X |
| Sigco Sun Products EXP-3228 | X | | X |
| Sigco Sun Products EXP-3993 | X | | X |
| Sigco Sun Products SS38A | X | | |
| Sigco Sun Products SS-62 | X | | X |
| Sigco Sun Products SSX-61 ex | X | | |
| Triumph Seed 765C | | X | X |
| Triumph Seed 766CRT | | | X |
| USDA 924 (check) | X | X | X |
| Total hybrids | 15 | 11 | 17 |

Table 8. Results of the 2000 non-oil sunflower hybrid trial grown at the Dakota Lakes Research Station, Pierre, SD.

| Sunflower Brand-Hybrid | Seed Yield | Plant Height | Test Weight | Lodgng % | % Over Screen | | | Nut- meat % |
|------------------------------|---------------|-----------------|----------------|-------------|---------------|-------|-------|-------------------|
| | | | | | 22/64 | 20/64 | 18/64 | |
| Interstate IS X89008 | 1717 | 167 | 25.7 | 9 | 20 | 50 | 77 | 62.3 |
| Sigco Sun Products SS-62 | 1672 | 153 | 25.6 | 4 | 20 | 44 | 70 | 58.3 |
| USDA 924 (check) | 1626 | 165 | 25.5 | 10 | 20 | 58 | 83 | 60.0 |
| Sigco Sun Products EXP-3228 | 1554 | 158 | 26.3 | 7 | 21 | 53 | 73 | 58.3 |
| Proseed 9802 | 1543 | 171 | 25.5 | 13 | 23 | 48 | 74 | 61.4 |
| Agway Inc. RH 3703 | 1511 | 166 | 25.4 | 5 | 33 | 63 | 81 | 57.2 |
| Agway Inc. RH 3733 | 1405 | 174 | 24.9 | 1 | 34 | 67 | 86 | 56.6 |
| Sigco Sun Products EXP-3993 | 1395 | 189 | 24.6 | 6 | 36 | 62 | 81 | 54.4 |
| Interstate IS 8048 | 1392 | 161 | 25.0 | 5 | 47 | 77 | 91 | 55.5 |
| Sigco Sun Products SS38A | 1253 | 169 | 25.9 | 1 | 18 | 49 | 76 | 61.0 |
| Sigco Sun Products SSX-61 ex | 1193 | 180 | 24.9 | 6 | 21 | 52 | 74 | 58.3 |
| Agway Inc. EXP-002 | 1115 | 188 | 25.6 | 2 | 22 | 58 | 82 | 56.7 |
| Agway Inc. EXP-991 | 1105 | 166 | 26.3 | 3 | 40 | 65 | 80 | 59.2 |
| USDA 924 (check) | 1071 | 167 | 26.2 | 5 | 19 | 46 | 70 | 59.9 |
| Agway Inc. EXP-001 | 919 | 163 | 25.3 | 0 | 36 | 63 | 87 | 57.8 |
| Grand Mean | 1365 | 169 | 25.5 | 5 | 27 | 57 | 79 | 58.5 |
| LSD 5% | 384 | 12 | ns | 6 | 17 | 16 | ns | 3.4 |
| C.V. | 19.7 | 5.0 | 4.1 | 84.4 | 44.3 | 19.9 | 12.7 | 4.1 |

Planted May 31, 2000.

Harvested Sept. 28, 2000.

Design: Nearest neighbors in RCBD layout with 4 replications.

Table 9. Results for the 2000 non-oil sunflower hybrid trial grown at Pukwana, SD.

| Sunflower Brand-Hybrid | Seed Yield (lbs/A) | | | Plant Height (cm) | Test Weight lb/bu | Lodgng % | % Over Screen | | | Nut- meat % |
|-----------------------------|--------------------|------|------|-------------------------|-------------------------|-------------|---------------|-------|-------|-------------------|
| | 2000 | 1999 | Mean | | | | 22/64 | 20/64 | 18/64 | |
| Agway Inc. RH 3703 | 1737 | 2000 | 1869 | 143 | 23.5 | 3 | 23 | 50 | 76 | 55.2 |
| Seeds 2000 Bigfoot | 1709 | 1790 | 1749 | 141 | 22.7 | 3 | 16 | 46 | 78 | 60.8 |
| Interstate IS X89008 | 1589 | -- | -- | 141 | 22.8 | 5 | 19 | 49 | 79 | 57.7 |
| Triumph Seed 765C | 1511 | 1846 | 1679 | 142 | 21.9 | 2 | 27 | 62 | 84 | 55.4 |
| Triumph Seed 766CRT | 1487 | 1856 | 1672 | 148 | 22.6 | 2 | 20 | 52 | 79 | 58.3 |
| USDA 924 (check) | 1486 | 1904 | 1695 | 142 | 22.2 | 2 | 18 | 44 | 79 | 58.3 |
| Proseed 9802 | 1469 | 1746 | 1608 | 150 | 23.7 | 6 | 14 | 37 | 69 | 60.6 |
| Agway Inc. EXP-991 | 1424 | -- | -- | 142 | 23.8 | 6 | 14 | 41 | 74 | 56.6 |
| Seeds 2000 X3985 | 1401 | -- | -- | 145 | 21.7 | 4 | 24 | 54 | 84 | 54.9 |
| Interstate IS 8048 | 1385 | -- | -- | 142 | 23.4 | 1 | 29 | 62 | 85 | 52.8 |
| Agway Inc. EXP-002 | 1350 | -- | -- | 152 | 23.5 | 0 | 17 | 41 | 71 | 56.5 |
| USDA 924 (check) | 1349 | 1904 | 1627 | 149 | 22.8 | 1 | 9 | 36 | 70 | 61.3 |
| Sigco Sun Products EXP-3228 | 1339 | -- | -- | 141 | 23.0 | 4 | 20 | 49 | 74 | 58.4 |
| Agway Inc. RH 3733 | 1300 | 1960 | 1630 | 143 | 23.5 | 1 | 12 | 37 | 70 | 58.8 |
| Agway Inc. EXP-001 | 1233 | -- | -- | 144 | 23.0 | 2 | 27 | 57 | 79 | 54.9 |
| Sigco Sun Products EXP-3993 | 1219 | -- | -- | 170 | 23.2 | 4 | 24 | 52 | 78 | 55.1 |
| Sigco Sun Products SS-62 | 1197 | -- | -- | 147 | 23.4 | 2 | 14 | 44 | 75 | 55.3 |
| Grand Mean | 1423 | 1816 | 1619 | 146 | 23.0 | 3 | 19 | 48 | 77 | 57.1 |
| LSD 5% | ns | ns | | 9 | ns | ns | 11 | 12 | 7 | 3.3 |
| C.V. | 16.6 | 16.6 | | 4.6 | 5.8 | 101.3 | 40.3 | 17.6 | 6.5 | 4.1 |

Planted May 30, 2000.

Harvested Oct. 10, 2000.

Design: Nearest neighbors in RCBD layout with 4 replications.

Table 10. Results of the 2000 non-oil sunflower hybrid trial averaged over Dakota Lakes and Pukwana.

| Sunflower Brand-Hybrid | Seed Yield | Plant Height | Test Weight | Lodgng % | % Over Screen | | | Nut- meat % |
|-----------------------------|---------------|-----------------|----------------|-------------|---------------|-------|-------|-------------------|
| | | | | | 22/64 | 20/64 | 18/64 | |
| Interstate IS X89008 | 1664 | 154 | 24.3 | 7 | 20 | 49 | 77 | 60.0 |
| Agway Inc. RH 3703 | 1635 | 154 | 24.4 | 4 | 28 | 56 | 78 | 56.2 |
| Proseed 9802 | 1517 | 160 | 24.6 | 9 | 19 | 41 | 70 | 61.0 |
| USDA 924 (check) | 1499 | 157 | 24.2 | 6 | 15 | 46 | 75 | 60.6 |
| Sigco Sun Products EXP-3228 | 1458 | 150 | 24.6 | 6 | 20 | 50 | 72 | 58.3 |
| Sigco Sun Products SS-62 | 1446 | 150 | 24.5 | 3 | 17 | 43 | 72 | 56.8 |
| Interstate IS 8048 | 1400 | 151 | 24.2 | 3 | 39 | 69 | 87 | 54.2 |
| Agway Inc. RH 3733 | 1364 | 158 | 24.2 | 1 | 23 | 51 | 77 | 57.7 |
| Sigco Sun Products EXP-3993 | 1318 | 179 | 23.9 | 5 | 30 | 56 | 78 | 54.7 |
| USDA 924 (check) | 1290 | 155 | 24.2 | 4 | 19 | 44 | 73 | 59.1 |
| Agway Inc. EXP-991 | 1276 | 154 | 25.0 | 5 | 27 | 53 | 76 | 57.9 |
| Agway Inc. EXP-002 | 1244 | 170 | 24.5 | 1 | 20 | 49 | 75 | 56.6 |
| Agway Inc. EXP-001 | 1087 | 153 | 24.2 | 1 | 31 | 59 | 82 | 56.3 |
| Grand Mean | 1400 | 157 | 24.4 | 4 | 24 | 51 | 76 | 57.6 |
| LSD 5% | ns | 11 | ns | ns | 12 | ns | ns | 3.1 |
| C.V. | 19.1 | 4.9 | 4.8 | 106.9 | 43.3 | 21.6 | 12.4 | 4.6 |

Table 11. NSA NuSun Show Field, Gettysburg, SD, 2000.

| COMPANY | HYBRID | YIELD LB/AC | YIELD RANK | OIL % | Oleic % | DAYS TO MAT | MOIST % |
|----------------------|------------|----------------|---------------|----------|------------|-------------------|------------|
| NuSun Hybrids | | | | | | | |
| Cargill Hybrid Seeds | SF 125NL | 2298 | 34 | 46.7 | 60.37 | M | 7.2 |
| Cargill Hybrid Seeds | SF 290NL | 2758 | 1 | 46.2 | 59.75 | ML | 8.5 |
| Croplan | CL 320 | 2423 | 20 | 45.8 | 57.37 | ME | 7.0 |
| Croplan | CL 322 | 1981 | 54 | 47.0 | 65.31 | E | 7.0 |
| Croplan | CL 345 | 2431 | 19 | 48.9 | 60.88 | ML | 7.2 |
| Croplan | CL 380 | 2298 | 35 | 47.4 | 61.38 | L | 7.5 |
| Croplan | CL 385 | 2408 | 21 | 46.9 | 67.83 | ML | 9.2 |
| Dekalb Genetics | DK 3872 NS | 2155 | 47 | 50.2 | 50.81 | ML | 7.1 |
| Dekalb Genetics | EX 9915 | 2580 | 5 | 49.1 | 61.73 | M | 9.0 |
| Dekalb Genetics | EX 9917 | 2238 | 39 | 47.7 | 75.10 | ML | 7.5 |
| Dekalb Genetics | DKF 36-40 | 2076 | 51 | 45.3 | 61.25 | ME | 7.3 |
| Dekalb Genetics | DKF 31-01 | 2146 | 49 | 47.8 | 58.01 | M | 6.9 |
| Dekalb Genetics | DKF 29-99 | 2127 | 50 | 49.4 | 56.28 | M | 6.9 |
| Integra Seed | 541 | 2332 | 31 | 46.2 | 78.28 | ML | 8.9 |
| Integra Seed | 544 | 2433 | 18 | 44.2 | 73.17 | M | 8.1 |
| Integra Seed | 548 | 2348 | 28 | 47.9 | 47.24 | L | 9.0 |
| Integra Seed | 550 | 2565 | 7 | 45.6 | 69.17 | ML | 11.2 |
| Interstate Payco | Hysun 530 | 2450 | 15 | 47.8 | 69.28 | E | 7.9 |
| Interstate Payco | 982727 | 2690 | 2 | 44.9 | 75.55 | ML | 9.7 |
| Interstate Payco | Hysun 450 | 2676 | 3 | 44.5 | 67.57 | L | 10.2 |
| Interstate Payco | 97136 | 2344 | 30 | 48.7 | 65.94 | M | 9.8 |
| Interstate Payco | 982802 | 2479 | 11 | 46.2 | 71.13 | M | 8.2 |
| Interstate Payco | 90161 | 2381 | 24 | 46.6 | 57.85 | M | 8.3 |
| Mycogen | NS 8488 | 2222 | 43 | 48.1 | 57.93 | M | 7.9 |
| Mycogen | NS 8377 | 2251 | 37 | 49.7 | 72.11 | ML | 7.0 |
| Mycogen | NS 80551 | 2245 | 38 | 48.3 | 70.89 | ME | 7.9 |
| Mycogen | X 80356 | 2438 | 17 | 44.6 | 50.86 | ME | 7.3 |
| Mycogen | X 80357 | 2367 | 27 | 48.8 | 63.33 | L | 7.1 |
| Mycogen | X 80454 | 2647 | 4 | 48.4 | 55.19 | L | 8.3 |
| Novartis Seeds | NX 16755 | 2051 | 53 | 47.2 | 47.33 | M | 7.8 |
| Novartis Seeds | NX 16756 | 2225 | 42 | 46.4 | 37.88 | M | 8.2 |
| Novartis Seeds | NX 30002 | 2282 | 36 | 45.5 | 59.58 | ME | 8.2 |
| Pioneer Hi-Bred | 63M80 | 2554 | 8 | 47.4 | 59.31 | M | 7.6 |
| Pioneer Hi-Bred | 63M91 | 2441 | 16 | 47.3 | 65.17 | ME | 7.9 |
| Pioneer Hi-Bred | XF 4949 | 2347 | 29 | 47.9 | 86.92 | ML | 7.7 |
| Pioneer Hi-Bred | XF 4950 | 2310 | 33 | 48.8 | 85.00 | ML | 7.7 |
| Pioneer Hi-Bred | XF 4951 | 2393 | 23 | 47.9 | 79.63 | M | 7.7 |
| Pioneer Hi-Bred | XF 3925 | 2236 | 40 | 48.0 | 63.31 | ME | 7.6 |
| Proseed Inc | EX 9605 | 2394 | 22 | 47.5 | 62.83 | ME | 6.8 |
| Proseed Inc | EX 9155 | 2376 | 25 | 47.1 | 69.37 | M | 7.1 |
| Proseed Inc | 9123 | 2229 | 41 | 48.7 | 40.83 | L | 7.9 |
| Proseed Inc | 9103 | 2198 | 45 | 47.2 | 71.11 | M | 6.4 |
| Proseed Inc | EXC 9802 | 2065 | 52 | 39.6 | 62.47 | ME | 17.1 |
| Seeds 2000 | Bronco | 2476 | 12 | 47.7 | 68.29 | ML | 10.0 |

Table 11 (continued).

| COMPANY | HYBRID | YIELD LB/AC | YIELD RANK | OIL % | Oleic % | DAYS TO MAT | MOIST % |
|----------------------------|----------|----------------|---------------|----------|------------|-------------------|------------|
| Seeds 2000 | Mavrick | 2203 | 44 | 48.7 | 70.89 | ME | 7.6 |
| Seeds 2000 | Mustang | 2151 | 48 | 48.6 | 68.85 | ME | 6.9 |
| Seeds 2000 | Ranger | 2325 | 32 | 48.2 | 67.47 | ME | 7.4 |
| Seeds 2000 | X 476 | 2469 | 13 | 48.6 | 64.38 | ML | 8.7 |
| Seeds 2000 | X 696 | 2370 | 26 | 45.2 | 63.47 | ML | 8.7 |
| Traditional Hybrids | | | | | | | |
| Cargill Hybrid Seeds | C 187 | 2513 | 10 | 46.7 | 21.11 | M | 7.0 |
| Dekalb Genetics | 3790 | 2192 | 46 | 50.1 | 23.97 | M | 6.9 |
| Interstate Payco | IS 4049 | 2569 | 6 | 49.0 | 19.45 | ML | 7.1 |
| Mycogen Seeds | MY 8372 | 2521 | 9 | 52.3 | 23.70 | ML | 6.7 |
| Pioneer HI-Bred | P 63A81 | 2465 | 14 | 48.6 | 20.01 | M | 6.8 |
| | EXP MEAN | 2353 | | | | | 8.1 |
| | C.V. % | 10 | | | | | 18.0 |
| | LSD 5% | 386 | | | | | 2.3 |

Planted June 6, 2000.

Trial was sponsored by the National Sunflower Association. Planted and harvested by Dakota Crop Services. Data compiled by Dr. Jerry Miller, USDA-ARS.

Table 12. USDA NuSun hybrid sunflower yield trial, Gettysburg, SD, 2000.

| COMPANY | HYBRID | YIELD LB/AC | YIELD RANK | OIL % | % Oleic | DAYS | | MOIST % |
|----------------------|--------------|----------------|---------------|----------|------------|-----------|------------|------------|
| | | | | | | TO FLW | HT. IN. | |
| NuSun Hybrids | | | | | | | | |
| Agripro | Hysun 530 | 1602 | 46 | 48.6 | 60.13 | 65 | 64 | 6.2 |
| Cargill Hybrid Seeds | SF 125NL | 1819 | 40 | 48.8 | 61.12 | 66 | 72 | 4.1 |
| Cargill Hybrid Seeds | SF 290NL | 2317 | 13 | 49.6 | 59.78 | 68 | 64 | 5.6 |
| Croplan | CL 322 | 2054 | 31 | 48.6 | 69.07 | 66 | 63 | 5.6 |
| Croplan | CL 345 | 2118 | 29 | 49.9 | 62.84 | 66 | 73 | 5.4 |
| Croplan | CL 380 | 2453 | 7 | 48.5 | 51.53 | 67 | 72 | 6.5 |
| Croplan | CL 385 | 2788 | 3 | 48.2 | 61.93 | 72 | 66 | 7.7 |
| Dekalb Genetics | DKF 29-99 NS | 1900 | 38 | 50.2 | 58.67 | 66 | 64 | 5.2 |
| Dekalb Genetics | DKF 31-01 NS | 2416 | 8 | 47.7 | 55.65 | 66 | 69 | 6.3 |
| Dekalb Genetics | DKF 36-40 NS | 2199 | 24 | 46.9 | 55.65 | 67 | 68 | 5.6 |
| Dekalb Genetics | DKE 9910 NS | 1719 | 43 | 47.0 | 60.84 | 64 | 67 | 4.4 |
| Dekalb Genetics | DKE 9915 NS | 1946 | 35 | 48.8 | 70.28 | 68 | 69 | 5.4 |
| Dekalb Genetics | DKE 9917 NS | 2190 | 25 | 48.5 | 56.49 | 65 | 72 | 5.6 |
| Dekalb Genetics | DKE 9918 NS | 2290 | 15 | 49.5 | 48.18 | 64 | 71 | 6.0 |
| Integra Seed | Int 550 | 2251 | 20 | 47.5 | 65.65 | 71 | 66 | 7.6 |
| Interstate Payco | Hysun 450 | 2716 | 4 | 47.1 | 61.30 | 71 | 65 | 7.6 |
| Interstate Payco | 982790 NS | 1810 | 41 | 49.2 | 67.83 | 68 | 64 | 5.3 |
| Interstate Payco | 971136 NS | 2969 | 2 | 47.9 | 61.99 | 68 | 69 | 7.4 |
| Interstate Payco | 982802 NS | 1906 | 37 | 48.5 | 61.85 | 69 | 64 | 5.0 |
| Legend Seeds | LSF 142 N | 2509 | 6 | 47.6 | 65.69 | 71 | 66 | 7.3 |
| Mycogen | 8377 NS | 2263 | 18 | 50.0 | 58.63 | 66 | 73 | 5.8 |
| Mycogen | 8488 NS | 2281 | 16 | 49.1 | 55.58 | 67 | 71 | 6.8 |
| Novartis Seeds | NX 16755 | 2263 | 19 | 48.6 | 34.69 | 68 | 67 | 7.0 |
| Novartis Seeds | NX 16756 | 2344 | 12 | 47.6 | 43.04 | 67 | 70 | 6.0 |
| Novartis Seeds | NX 30002 | 2375 | 10 | 49.3 | 69.10 | 66 | 65 | 5.8 |
| Pioneer Hi-Bred | 63M80 | 1991 | 33 | 50.4 | 61.13 | 67 | 65 | 5.3 |
| Pioneer Hi-Bred | 63M91 | 1746 | 42 | 49.1 | 51.08 | 66 | 70 | 4.6 |
| Pioneer Hi-Bred | XF 3925 | 1891 | 39 | 49.3 | 62.23 | 68 | 65 | 5.2 |
| Proseed Inc | 9103 | 1592 | 47 | 49.2 | 75.95 | 69 | 70 | 5.0 |
| Proseed Inc | 9123 | 2416 | 9 | 48.6 | 51.68 | 68 | 69 | 6.8 |
| Proseed Inc | 9405 | 2371 | 11 | 50.4 | 70.43 | 67 | 68 | 6.4 |
| Proseed Inc | 9155 | 2208 | 22 | 48.5 | 74.43 | 68 | 64 | 6.7 |
| Proseed Inc | 9620 | 1674 | 44 | 46.0 | 64.94 | 66 | 65 | 4.7 |
| Seeds 2000 | Mustang | 1991 | 34 | 48.1 | 68.66 | 65 | 67 | 5.6 |
| Seeds 2000 | Mavrick | 2236 | 21 | 47.3 | 75.67 | 66 | 68 | 6.6 |
| Seeds 2000 | Bronco | 3177 | 1 | 47.2 | 66.84 | 70 | 66 | 7.5 |
| Seeds 2000 | Ranger | 2149 | 27 | 48.5 | 57.87 | 65 | 64 | 5.1 |
| Seeds 2000 | X 476 | 2281 | 17 | 49.4 | 60.33 | 70 | 62 | 7.1 |
| Triumph Seed Co. | 652 | 2561 | 5 | 46.9 | 53.52 | 69 | 72 | 7.1 |
| Triumph Seed Co. | TRX 9443 | 2127 | 28 | 50.5 | 57.39 | 70 | 71 | 5.7 |
| Triumph Seed Co. | TRX 0342 | 2109 | 30 | 50.1 | 69.63 | 69 | 71 | 4.6 |
| Triumph Seed Co. | TRX 0448 | 1928 | 36 | 51.1 | 59.85 | 69 | 72 | 5.3 |

Table 12 (continued).

| COMPANY | HYBRID | YIELD LB/AC | YIELD RANK | OIL % | % Oleic | DAYS | | MOIST % |
|----------------------------|----------|----------------|---------------|----------|------------|-----------|------------|------------|
| | | | | | | TO FLW | HT. IN. | |
| Traditional Hybrids | | | | | | | | |
| Pioneer Hi-Bred | 63A81 | 1647 | 45 | 50.2 | 19.95 | 69 | 64 | 4.6 |
| Interstate Payco | 4049 | 2308 | 14 | 49.4 | 20.57 | 68 | 70 | 5.9 |
| Dekalb Genetics | 3790 | 2000 | 32 | 50.6 | 25.55 | 66 | 64 | 5.1 |
| Cargill Hybrid Seeds | SF 187 | 2186 | 26 | 48.2 | 20.94 | 69 | 60 | 6.2 |
| Mycogen Seeds | 8372 | 2203 | 23 | 51.9 | 23.65 | 67 | 66 | 6.2 |
| | EXP MEAN | 2176 | | 48.7 | | 68 | 67 | 5.9 |
| | C.V. % | 17 | | 2.2 | | 1 | 3 | 20.2 |
| | LSD 5% | 609 | | 1.8 | | 2 | 4 | 1.9 |

Planted May , 2000. Harvested October , 2000.

Yield is reported at 10% moisture.

Oil % adjusted for oleic acid content and determined on a 10% moisture basis.