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Sunflower: 2004 South Dakota Hybrid Performance Trials

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EC 909
Revised
Annually

Sunflower

2004 South Dakota Hybrid Performance Trials

Oilseed
Confection

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Sunflower

2004 South Dakota Hybrid Performance Trials

Oilseed and Confection

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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 ranks 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 column. The 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 Miller oilseed test (Table 6) could be repeated in 2005 exactly as it was in 2004, the yield ranking of a hybrid that yielded 2,806 lb/A and one that yielded 2,583 lb/A might change places since their yield difference (223 lb/A) is less than the indicated yield LSD value of 441 lb/A. Within the accuracy level of the experiment, there was no statistical difference in yield between the two hybrids when grown under the conditions that existed at Miller in 2004. In contrast, a hybrid that yielded 2,316 lb/A at Miller in 2004 would likely be lower yielding than one that yielded 2,806 lb/A if the two hybrids were grown again under similar conditions, because the difference between them in 2004 ($2806 - 2316 = 490$ lb/A) exceeded the LSD value (441 lb/A).

The coefficient of variability (C.V.) listed at the bottom of each data column is a relative measure of the amount of variation recorded for a particular trait and is 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 may also be important. Hybrids are available with “traditional” (linoleic), 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 more 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 several 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 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 a minimum of 4 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.

2004 Trial Procedures

Locations and Hybrids

Oilseed hybrid sunflower trials were planted at four locations in South Dakota (Ipswich, Kennebec, Miller, and Onida). Entries in the oilseed sunflower trials included traditional oil hybrids (linoleic) and NuSun (mid-oleic) hybrids. Non-oilseed (confection) sunflower trials were conducted at Kennebec, Miller, and Onida. Trial sites are indicated in Figure 1. Lists of hybrids planted at each site appear in Tables 2 and 3.

Climatic Conditions

A summary of 2004 climatic conditions near the sunflower test sites is presented in Table 1. The 2004 growing season (June–August) was cooler than normal at all locations. Moisture at planting was adequate for stand establishment. Precipitation was near to above normal in May, June, and September at all sites. Kennebec and Ipswich were drier than normal in August, but Miller and Onida were wetter than average. Most of the state received a killing frost during the first week of October, although lighter frosts in August and September damaged leaf tissue.

Experimental Methods

Plots at all locations consisted of four rows 23 or 24 feet long and spaced 30 inches apart. The center two rows of each plot were harvested. The plot layout was 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 (Crop Science 34: 62–66).

All plots were overseeded and thinned. Oilseed plots were thinned to a plant population of approximately 18,000 plants/acre. Confection plots at all locations were thinned to 16,000 plants/acre. Stands were fair to good at all locations except the first replication at Ipswich, where most of two ranges of the test was drowned out, and the first replication at Kennebec, where stands were poor for unknown reasons. Data from the first replication at both Ipswich and Kennebec were excluded from all statistical analyses.

Some individual hybrids had poor stands at all locations due to dormant seed. Some of the hybrids entered in the trials had seed that was pre-treated with Cruiser insecticide, while some were not. There was no major flea-beetle damage at any of the test sites.

The Kennebec and Onida trials were seeded no-till. Miller and Ipswich were planted with conventional tillage practices. Spartan herbicide was applied for weed control at Kennebec and Onida. Sonalan or Treflan were applied at all other locations.

Flowering was recorded at Onida as the number of days from planting to 50% ray petals extended. Maturity at Onida was recorded as the number of days from planting to physiological maturity (backs of heads yellow and bracts turning brown). Plant height and lodging notes were taken at all locations immediately before harvest. Lodging was light to moderate at Kennebec, Miller, and Ipswich, and moderate to severe at Onida. Plots at Ipswich and Kennebec had moderate bird damage.

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 values for NuSun hybrids were adjusted for oleic acid content.

Seed from the non-oilseed trials was dried before weighing. A one-pint sub-sample 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.

Results

Data from each location and combined over locations are contained in Tables 4-8 (oilseed) and 9-12 (confection). The yield of 60 oilseed hybrids grown at Ipswich and Onida averaged 1,274 and 1,743 lb/A, respectively. Fifty-six hybrids grown at Kennebec averaged 1,615 lb/A, while 54 hybrids yielded an average of 2,151 lb/A at Miller. Confection seed yields averaged 1,599 lb/A at Kennebec, 1,843 lb/A at Miller, and 1,705 lb/A at Onida. In the tables that follow, hybrids are listed alphabetically according to brand.

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.

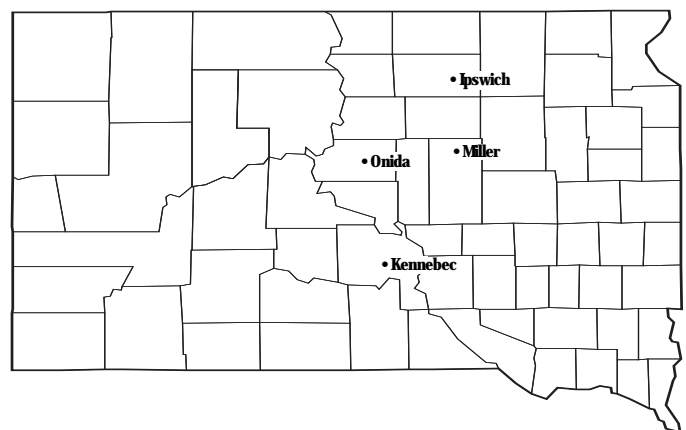


Figure 1. 2004 South Dakota sunflower trial locations.

Table 1. Climate summary for nearest weather stations to 2004 South Dakota sunflower test sites and departures from normal.

| LOCATION- MONTH | 2004 TEMPERATURE | | | TOTAL PRECIP IN. | DEPARTURE FROM NORMAL [^] | | | |
|---------------------------|--------------------------|--------------------------|----------------------|------------------------|------------------------------------|--------------------------|--------------------------|---------------|
| | AVG MAX. -----°F----- | AVG MIN. -----°F----- | MEAN -----°F----- | | MAX TEMP -----°F----- | MIN TEMP -----°F----- | AVG TEMP -----°F----- | PRECIP IN. |
| <u>Kennebec*</u> | | | | | | | | |
| May | 75.1 | 46.6 | 60.8 | 2.60 | 1.1 | 0.5 | 0.7 | -0.4 |
| June | 79.2 | 51.6 | 65.4 | 4.52 | -4.6 | -4.4 | -4.5 | 1.5 |
| July | 89.6 | 60.8 | 75.2 | 1.83 | -1.2 | -0.7 | -1.0 | -1.0 |
| August | 85.5 | 55.1 | 70.3 | 1.58 | -4.1 | -4.8 | -4.5 | -0.4 |
| September | 82.1 | 53.4 | 67.8 | 3.98 | 2.1 | 4.5 | 3.3 | 2.6 |
| October | 66.2 | 39.1 | 52.6 | 3.32 | 1.0 | 2.7 | 1.8 | 1.8 |
| <u>Ipswich*</u> | | | | | | | | |
| May | 65.9 | 41.8 | 53.9 | 3.62 | -3.9 | 0.5 | -1.7 | 0.9 |
| June | 73.6 | 49.5 | 61.5 | 2.89 | -4.9 | -1.6 | -3.3 | -0.6 |
| July | 79.3 | 56.6 | 68.0 | 3.61 | -5.4 | 0.5 | -2.4 | 0.6 |
| August | 75.9 | 51.2 | 63.5 | 1.54 | -7.1 | -2.4 | -4.8 | -0.7 |
| September | 73.7 | 49.0 | 61.3 | 3.39 | 0.7 | 6.0 | 3.3 | 1.8 |
| October | 58.9 | 34.4 | 46.6 | 1.00 | -0.6 | 3.1 | 1.2 | -0.5 |
| <u>Miller*</u> | | | | | | | | |
| May | 67.7 | 43.5 | 55.6 | 3.06 | -0.7 | -2.0 | -1.4 | -0.1 |
| June | 74.8 | 50.1 | 62.5 | 4.63 | -3.4 | -5.2 | -4.3 | 1.7 |
| July | 82.2 | 58.9 | 70.5 | 5.19 | -2.9 | -1.7 | -2.4 | 2.6 |
| August | 77.8 | 54.1 | 65.9 | 2.98 | -5.9 | -3.7 | -4.9 | 1.0 |
| September | 77.6 | 51.9 | 64.8 | 4.46 | 3.5 | 4.4 | 4.0 | 2.7 |
| October | 60.4 | 37.5 | 49.0 | 3.80 | -0.3 | 2.6 | 1.2 | 2.0 |
| <u>Onida 4 NW*</u> | | | | | | | | |
| May | 71.2 | 44.3 | 57.7 | 3.70 | 0.8 | 0.0 | 0.3 | 0.9 |
| June | 75.6 | 49.5 | 62.6 | 3.22 | -4.6 | -4.1 | -4.4 | 0.1 |
| July | 84.3 | 57.9 | 71.1 | 2.71 | -3.3 | -0.9 | -2.1 | 0.0 |
| August | 79.6 | 53.5 | 66.5 | 3.50 | -6.2 | -3.5 | -4.9 | 1.4 |
| September | 76.5 | 50.8 | 63.7 | 3.50 | 0.5 | 4.5 | 2.5 | 2.0 |
| October | 62.1 | 37.0 | 49.6 | 2.84 | 0.9 | 2.5 | 1.7 | 1.3 |

* Based on data from the High Plains Regional Climate Center, University of Nebraska, Lincoln.

Observations are from sites as close to the actual test plot sites as available. Temperature and/or precipitation at the actual test plot sites may have differed from the values shown above.

[^] Departures from normal were determined by comparing 2004 observations to 30-yr averages (1971-2000) for each site.

Table 2. Hybrids tested in the 2004 South Dakota oilseed hybrid sunflower trials.

| Brand | Hybrid | Type | Ipswich | Ken- nebec | Miller | Onida |
|--------------------|-----------------|------------|---------|---------------|--------|-------|
| Croplan Genetics | 340 | High Oleic | X | | | |
| Croplan Genetics | 345 | NuSun | X | | X | X |
| Croplan Genetics | 380 | NuSun | X | X | X | |
| Croplan Genetics | 385 | NuSun | X | X | X | X |
| Croplan Genetics | 3080 DMR | NuSun | X | | X | |
| Croplan Genetics | 544 CL | NuSun | X | X | | |
| Dahlgren & Co. | 4421 | NuSun | X | | X | X |
| Dekalb | DKF30-33NS | NuSun | X | X | X | X |
| Dekalb | DKF33-33NS | NuSun | X | X | X | X |
| Dekalb | DKF38-30NS | NuSun | X | X | X | X |
| Dekalb | DKF38-80CL | Trad. | X | X | X | X |
| Dekalb | EXP35-10NS | NuSun | X | X | X | X |
| Dekalb | MH4231 | NuSun | X | X | X | X |
| Dekalb | MH4233 | NuSun | X | X | X | X |
| Dekalb | MH4433 | NuSun | X | X | X | X |
| DenBesten Seed | DB 764 | Trad. | | X | X | X |
| DenBesten Seed | DB 845NS | NuSun | X | X | X | X |
| DenBesten Seed | DB 848NS | NuSun | X | X | X | X |
| Fontanelle Hybrids | 920NS | NuSun | | X | | X |
| Garst/Interstate | 4049 | Trad. | X | X | X | X |
| Garst/Interstate | 4704NS (F10002) | NuSun | X | X | X | X |
| Garst/Interstate | F10016 NS | NuSun | X | X | X | X |
| Garst/Interstate | Hysun 424 | NuSun | X | X | X | X |
| Garst/Interstate | Hysun 450 | NuSun | X | X | X | X |
| Garst/Interstate | Hysun 454 | NuSun | X | X | X | X |
| Garst/Interstate | Hysun 525 | NuSun | X | X | X | X |
| Kaystar | 8300 | Trad. | X | | | |
| Kaystar | 9404 | Trad. | X | X | X | X |
| Kaystar | 9501 | Trad. | | X | X | X |
| Kaystar | 2020NS | NuSun | | X | | X |
| Kaystar | 8330NS | NuSun | X | | | |
| Kaystar | XF4001 | Trad. | | X | | X |
| Legend Seeds | LSF 119N | NuSun | X | X | X | X |
| Legend Seeds | LSF 121N | NuSun | X | X | X | X |
| Legend Seeds | LSF 126N | NuSun | X | X | X | X |
| Legend Seeds | LSF 142N | NuSun | X | X | X | X |
| Mycogen Seeds | 8377NS | NuSun | X | | | X |
| Mycogen Seeds | 8488NS | NuSun | X | X | X | X |
| Mycogen Seeds | 8D310 | NuSun | X | X | X | X |
| Mycogen Seeds | 8N352 | NuSun | X | X | X | X |
| Mycogen Seeds | 8N421 | NuSun | X | X | X | X |
| Mycogen Seeds | 8N510 | NuSun | X | X | X | X |
| Mycogen Seeds | SF187 | Trad. | X | X | X | X |
| Pioneer | hybrid 63M80 | NuSun | X | X | X | X |
| Pioneer | hybrid 63M91 | NuSun | X | X | X | X |
| Producers Hybrids | EX10104 | NuSun | X | X | X | X |
| Producers Hybrids | EX10204 | NuSun | X | X | X | X |
| Producers Hybrids | SF7303 | NuSun | X | X | X | X |
| Proseed | 9405 | NuSun | X | X | X | X |
| Proseed | 9441 | NuSun | X | X | X | X |

Table 2. Hybrids tested in the 2004 South Dakota oilseed hybrid sunflower trials.

| Brand | Hybrid | Type | Ipswich | Ken- nebec | Miller | Onida |
|---------------|----------------------|------------|---------|---------------|--------|-------|
| Proseed | CL55-15 | NuSun | X | X | X | X |
| Proseed | Exp 15 | NuSun | X | X | X | X |
| Proseed | Exp T1 | NuSun | X | X | X | X |
| Proseed | Exp T2 | NuSun | X | X | X | X |
| Proseed | Exp T3 | NuSun | X | X | X | X |
| Seeds 2000 | Blazer | NuSun | X | X | X | X |
| Seeds 2000 | Charger (X926) | NuSun (CL) | X | X | X | X |
| Seeds 2000 | X978 | NuSun (CL) | X | X | X | X |
| Triumph Seed | 636 | NuSun | X | X | X | X |
| Triumph Seed | 645 | NuSun | X | X | X | X |
| Triumph Seed | 658 | NuSun | | | | X |
| Triumph Seed | 665 | NuSun | | | | X |
| Triumph Seed | s667 | NuSun | X | X | | X |
| Triumph Seed | s675 (TRX2446) | NuSun | X | X | X | X |
| Triumph Seed | TRX4342CL | NuSun | X | | | |
| USDA | 894 (check) | Trad. | X | X | X | X |
| USDA | cmsHA406/RHA373(chk) | Trad. | X | | | X |
| Total hybrids | | | 60 | 56 | 54 | 60 |

Table 3. Hybrids tested in the 2004 South Dakota confection hybrid sunflower trials.

| Brand | Hybrid | Type | Ken- nebec | Miller | Onida |
|--------------------|-------------|----------|---------------|--------|-------|
| CHS Sunflower | 04-EXP01 | Confect. | X | X | X |
| CHS Sunflower | 04-EXP02 | Confect. | X | X | X |
| CHS Sunflower | RH 118 | Confect. | X | X | X |
| Croplan Genetics | 135 | Confect. | | X | |
| Dahlgren & Co. | 9518 | Confect. | | X | X |
| Dahlgren & Co. | 9530 | Confect. | | X | X |
| Garst/Interstate | 8048 | Confect. | X | X | X |
| Garst/Interstate | 8089 | Confect. | X | X | X |
| Mycogen Seeds | 8C416 | Confect. | X | X | X |
| Producers Hybrids | SF7203 | Oilseed | X | X | X |
| Red River Commod. | RR 2214 | Confect. | | | X |
| Red River Commod. | RR 2215 | Confect. | | | X |
| Red River Commod. | RR 7015 | Confect. | | | X |
| Seeds 2000 | Grizzly | Confect. | | X | X |
| Seeds 2000 | X3670 | Confect. | | X | X |
| Sigco Sun Products | Goliath RT | Confect. | X | X | X |
| Sigco Sun Products | SS3638 | Confect. | | X | X |
| Sigco Sun Products | SS3938 | Confect. | | X | X |
| Triumph Seed | 707CLS | Confect. | | X | |
| Triumph Seed | 757C | Confect. | | X | |
| USDA | 924 (check) | Confect. | X | X | X |
| Total hybrids | | | 9 | 18 | 18 |

Table 4. Oilseed sunflower hybrid yield trial, Ipswich, SD - 2004.

| Sunflower Brand-Hybrid | Type | Seed Yield (lbs/A) | | | Oil % | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000pl /A |
|----------------------------|-------|--------------------|------|------|----------|---------------------|-----------|----------------------|----------------------|----------------------|
| | | 2004 | 2003 | 2-yr | | | | | | |
| Croplan Genetics 340 | HO | 1242 | -- | -- | 39.8 | 151 | 0 | 18.3 | 25.9 | 18.2 |
| Croplan Genetics 345 | NuSun | 1473 | 2332 | 1903 | 42.6 | 165 | 0 | 14.3 | 29.0 | 18.2 |
| Croplan Genetics 380 | NuSun | 1351 | -- | -- | 39.8 | 165 | 6 | 16.5 | 28.6 | 18.2 |
| Croplan Genetics 385 | NuSun | 969 | 2396 | 1683 | 38.9 | 143 | 8 | 20.3 | 28.8 | 18.2 |
| Croplan Genetics 3080 DMR | NuSun | 1474 | -- | -- | 41.1 | 159 | 3 | 16.5 | 27.8 | 16.7 |
| Croplan Genetics 544 CL | NuSun | 1757 | -- | -- | 39.0 | 168 | 7 | 15.6 | 27.0 | 18.2 |
| Dahlgren & Co. 4421 | NuSun | 1433 | -- | -- | 36.6 | 157 | 0 | 15.5 | 26.6 | 18.2 |
| Dekalb DKF30-33NS | NuSun | 1212 | 2238 | 1725 | 39.3 | 162 | 6 | 18.0 | 28.3 | 18.2 |
| Dekalb DKF33-33NS | NuSun | 920 | 2453 | 1686 | 39.4 | 154 | 3 | 16.4 | 26.8 | 18.2 |
| Dekalb DKF38-30NS | NuSun | 1356 | 2053 | 1704 | 40.2 | 156 | 3 | 16.6 | 26.5 | 18.2 |
| Dekalb DKF38-80CL | Trad. | 1360 | 2399 | 1879 | 40.1 | 151 | 0 | 15.8 | 26.7 | 18.2 |
| Dekalb EXP35-10NS | NuSun | 1102 | -- | -- | 39.1 | 159 | 0 | 17.7 | 27.3 | 18.2 |
| Dekalb MH4231 | NuSun | 1410 | -- | -- | 40.2 | 161 | 0 | 14.7 | 28.3 | 18.2 |
| Dekalb MH4233 | NuSun | 1523 | -- | -- | 40.8 | 153 | 1 | 17.0 | 27.4 | 18.2 |
| Dekalb MH4433 | NuSun | 1106 | -- | -- | 39.0 | 155 | 20 | 22.2 | 26.8 | 18.2 |
| DenBesten Seed DB 845NS | NuSun | 1414 | -- | -- | 40.8 | 169 | 2 | 17.6 | 27.9 | 17.6 |
| DenBesten Seed DB 848NS | NuSun | 1799 | -- | -- | 39.9 | 161 | 4 | 14.9 | 27.1 | 18.2 |
| Garst/Interstate 4049 | Trad. | 1348 | 2257 | 1803 | 41.3 | 171 | 5 | 15.7 | 28.5 | 18.2 |
| Garst/Interstate 4704NS | NuSun | 1160 | -- | -- | 37.5 | 141 | 0 | 17.9 | 25.6 | 18.2 |
| Garst/Interstate F10016 NS | NuSun | 875 | -- | -- | 39.6 | 138 | 0 | 21.3 | 26.5 | 18.2 |
| Garst/Interstate Hysun 424 | NuSun | 887 | -- | -- | 39.0 | 158 | 10 | 21.5 | 25.3 | 18.2 |
| Garst/Interstate Hysun 450 | NuSun | 1078 | 1630 | 1354 | 38.4 | 142 | 5 | 21.9 | 27.4 | 14.6 |
| Garst/Interstate Hysun 454 | NuSun | 1304 | -- | -- | 39.3 | 167 | 3 | 18.7 | 28.4 | 18.2 |
| Garst/Interstate Hysun 525 | NuSun | 1074 | -- | -- | 39.4 | 156 | 4 | 14.3 | 27.8 | 18.2 |
| Kaystar 8300 | Trad. | 840 | -- | -- | 41.4 | 151 | 13 | 19.5 | 25.7 | 15.5 |
| Kaystar 9404 | Trad. | 1239 | -- | -- | 39.6 | 165 | 5 | 13.4 | 27.2 | 18.2 |
| Kaystar 8330NS | NuSun | 963 | 2331 | 1647 | 38.9 | 141 | 0 | 18.8 | 26.6 | 16.7 |
| Legend Seeds LSF 119N | NuSun | 797 | 1803 | 1300 | 38.5 | 153 | 21 | 18.6 | 24.7 | 16.4 |
| Legend Seeds LSF 121N | NuSun | 1456 | -- | -- | 38.2 | 137 | 4 | 19.7 | 26.0 | 18.2 |
| Legend Seeds LSF 126N | NuSun | 1219 | 2212 | 1716 | 40.0 | 147 | 6 | 18.5 | 27.6 | 18.2 |
| Legend Seeds LSF 142N | NuSun | 1352 | 2156 | 1754 | 40.1 | 159 | 19 | 17.0 | 27.8 | 16.7 |
| Mycogen Seeds 8377NS | NuSun | 1630 | 2278 | 1954 | 40.6 | 153 | 4 | 18.3 | 27.7 | 18.2 |
| Mycogen Seeds 8488NS | NuSun | 1588 | 2004 | 1796 | 40.0 | 161 | 5 | 18.7 | 27.7 | 18.2 |
| Mycogen Seeds 8D310 | NuSun | 1533 | -- | -- | 38.4 | 165 | 1 | 14.8 | 26.4 | 18.2 |
| Mycogen Seeds 8N352 | NuSun | 1690 | -- | -- | 42.5 | 164 | 9 | 17.6 | 27.9 | 15.8 |
| Mycogen Seeds 8N421 | NuSun | 1170 | 2278 | 1724 | 40.3 | 167 | 2 | 16.5 | 27.0 | 18.2 |
| Mycogen Seeds 8N510 | NuSun | 1777 | -- | -- | 39.9 | 160 | 0 | 19.7 | 27.7 | 18.2 |
| Mycogen Seeds SF187 | Trad. | 1277 | 1879 | 1578 | 39.9 | 142 | 2 | 16.3 | 27.7 | 18.2 |
| Pioneer hybrid 63M80 | NuSun | 942 | 2224 | 1583 | 39.6 | 155 | 9 | 18.1 | 25.8 | 18.2 |
| Pioneer hybrid 63M91 | NuSun | 1299 | 1747 | 1523 | 39.3 | 177 | 6 | 18.7 | 28.0 | 18.2 |
| Producers Hybrids EX10104 | NuSun | 1043 | -- | -- | 39.2 | 172 | 13 | 17.0 | 28.1 | 16.7 |
| Producers Hybrids EX10204 | NuSun | 1497 | -- | -- | 38.7 | 153 | 2 | 17.7 | 28.3 | 18.2 |
| Producers Hybrids SF7303 | NuSun | 1527 | -- | -- | 39.2 | 138 | 0 | 20.8 | 27.0 | 15.5 |
| Proseed 9405 | NuSun | 1372 | 1865 | 1619 | 40.8 | 153 | 6 | 21.1 | 25.7 | 18.2 |
| Proseed 9441 | NuSun | 1048 | 2532 | 1790 | 39.3 | 149 | 0 | 19.0 | 26.3 | 15.5 |
| Proseed CL55-15 | NuSun | 1454 | 1915 | 1684 | 39.0 | 144 | 5 | 16.7 | 28.0 | 14.6 |
| Proseed Exp 15 | NuSun | 1220 | 1501 | 1361 | 40.2 | 157 | 16 | 17.2 | 26.8 | 18.2 |
| Proseed Exp T1 | NuSun | 1351 | -- | -- | 40.9 | 145 | 6 | 19.9 | 24.3 | 18.2 |
| Proseed Exp T2 | NuSun | 1030 | -- | -- | 40.1 | 161 | 42 | 21.4 | 25.1 | 18.2 |

| | | | | | | | | | | |
|---------------------------|-------|------|------|------|------|-----|-------|------|------|------|
| Proseed Exp T3 | NuSun | 751 | -- | -- | 39.9 | 157 | 0 | 16.8 | 26.9 | 13.7 |
| Seeds 2000 Blazer | NuSun | 1465 | 2164 | 1814 | 40.8 | 159 | 0 | 16.9 | 26.4 | 18.2 |
| Seeds 2000 Charger (X926) | NuSun | 1099 | 1466 | 1283 | 39.7 | 165 | 3 | 14.7 | 25.9 | 18.2 |
| Seeds 2000 X978 | NuSun | 1439 | -- | -- | 40.1 | 174 | 0 | 18.9 | 27.4 | 16.7 |
| Triumph Seed 636 | NuSun | 997 | -- | -- | 40.1 | 147 | 48 | 21.8 | 24.9 | 18.2 |
| Triumph Seed 645 | NuSun | 1382 | -- | -- | 41.7 | 162 | 18 | 18.6 | 26.9 | 18.2 |
| Triumph Seed s667 | NuSun | 1418 | 2122 | 1770 | 41.1 | 123 | 10 | 19.6 | 27.0 | 15.5 |
| Triumph Seed s675 | NuSun | 1413 | -- | -- | 40.6 | 108 | 11 | 18.8 | 26.3 | 18.2 |
| Triumph Seed TRX4342CL | NuSun | 1103 | -- | -- | 40.2 | 162 | 6 | 18.2 | 26.1 | 17.0 |
| USDA 894 (check) | Trad. | 1018 | 1555 | 1287 | 41.5 | 151 | 23 | 16.8 | 27.6 | 18.2 |
| cmsHA406/RHA373 (chk) | Trad. | 1395 | 1706 | 1550 | 40.7 | 155 | 19 | 19.8 | 27.2 | 15.3 |
| Grand mean | | 1274 | 2074 | 1674 | 39.9 | 155 | 6 | 17.9 | 27.0 | 17.6 |
| LSD 5% | | 391 | 592 | | 1.3 | 13 | 11 | 2.5 | 2.0 | ns |
| C.V. | | 19.0 | 17.6 | | 2.0 | 5.4 | 109.6 | 8.7 | 4.5 | 10.3 |

Planted May 28, 2004. Harvested October 13, 2004.

Yield and oil % are reported at 10% moisture. Oil % is adjusted for oleic acid content.

Cooperator: Mark Volk, Ipswich, SD.

Table 5. Oilseed sunflower hybrid yield trial, Kennebec, SD - 2004.

| Sunflower Brand-Hybrid | Type | Seed Yield lbs/A | Oil % | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000pl /A |
|----------------------------|-------|------------------------|----------|---------------------|-----------|----------------------|----------------------|----------------------|
| Croplan Genetics 380 | NuSun | 2016 | 39.2 | 163 | 4 | 12.2 | 28.4 | 18.2 |
| Croplan Genetics 385 | NuSun | 1854 | 40.6 | 148 | 3 | 12.8 | 26.2 | 18.2 |
| Croplan Genetics 544 CL | NuSun | 1383 | 40.0 | 165 | 5 | 12.5 | 27.9 | 17.9 |
| Dekalb DKF30-33NS | NuSun | 1553 | 38.4 | 161 | 3 | 14.6 | 28.0 | 14.5 |
| Dekalb DKF33-33NS | NuSun | 1564 | 38.0 | 157 | 2 | 13.0 | 27.1 | 15.7 |
| Dekalb DKF38-30NS | NuSun | 1729 | 40.2 | 161 | 8 | 13.4 | 26.6 | 18.2 |
| Dekalb DKF38-80CL | Trad. | 1872 | 40.7 | 149 | 2 | 12.5 | 27.5 | 17.9 |
| Dekalb EXP35-10NS | NuSun | 1469 | 39.8 | 163 | 2 | 12.4 | 26.5 | 16.7 |
| Dekalb MH4231 | NuSun | 1846 | 40.1 | 159 | 0 | 13.0 | 28.1 | 18.2 |
| Dekalb MH4233 | NuSun | 1676 | 41.0 | 152 | 5 | 12.9 | 27.7 | 17.6 |
| Dekalb MH4433 | NuSun | 1067 | 41.6 | 165 | 2 | 12.5 | 27.4 | 18.2 |
| DenBesten Seed DB 764 | Trad. | 2114 | 39.7 | 166 | 3 | 12.8 | 27.3 | 18.2 |
| DenBesten Seed DB 845NS | NuSun | 1940 | 40.5 | 163 | 3 | 12.5 | 28.5 | 17.6 |
| DenBesten Seed DB 848NS | NuSun | 1408 | 41.7 | 169 | 0 | 12.2 | 26.9 | 17.0 |
| Fontanelle 920NS | NuSun | 1707 | 41.3 | 163 | 6 | 12.7 | 26.3 | 18.2 |
| Garst/Interstate 4049 | Trad. | 2018 | 40.6 | 169 | 0 | 12.0 | 26.8 | 16.7 |
| Garst/Interstate 4704NS | NuSun | 1260 | 38.7 | 152 | 1 | 12.7 | 24.7 | 17.9 |
| Garst/Interstate F10016 NS | NuSun | 1433 | 39.4 | 134 | 2 | 12.8 | 26.4 | 15.4 |
| Garst/Interstate Hysun 424 | NuSun | 1577 | 39.0 | 155 | 6 | 12.4 | 26.9 | 14.6 |
| Garst/Interstate Hysun 450 | NuSun | 1695 | 38.9 | 147 | 1 | 12.9 | 26.9 | 14.5 |
| Garst/Interstate Hysun 454 | NuSun | 1611 | 40.1 | 164 | 6 | 12.5 | 27.7 | 18.2 |
| Garst/Interstate Hysun 525 | NuSun | 1707 | 38.7 | 151 | 3 | 12.6 | 27.3 | 16.7 |
| Kaystar 9404 | Trad. | 1721 | 40.0 | 158 | 0 | 12.2 | 27.7 | 17.3 |
| Kaystar 9501 | Trad. | 1930 | 39.0 | 170 | 3 | 12.6 | 27.9 | 18.2 |
| Kaystar 2020NS | NuSun | 1889 | 39.8 | 152 | 9 | 12.9 | 27.6 | 18.2 |
| Kaystar XF4001 | Trad. | 1338 | 39.9 | 154 | 6 | 12.5 | 27.2 | 18.2 |
| Legend Seeds LSF 119N | NuSun | 1489 | 38.9 | 160 | 2 | 12.5 | 26.0 | 16.7 |
| Legend Seeds LSF 121N | NuSun | 825 | 39.8 | 150 | 2 | 12.1 | 27.4 | 18.2 |
| Legend Seeds LSF 126N | NuSun | 1580 | 37.6 | 160 | 0 | 12.4 | 27.7 | 16.7 |
| Legend Seeds LSF 142N | NuSun | 1611 | 39.5 | 144 | 8 | 12.9 | 25.5 | 16.0 |
| Mycogen Seeds 8488NS | NuSun | 2091 | 40.9 | 163 | 5 | 11.9 | 27.1 | 17.3 |
| Mycogen Seeds 8D310 | NuSun | 1522 | 37.7 | 163 | 2 | 12.5 | 26.2 | 17.6 |
| Mycogen Seeds 8N352 | NuSun | 1595 | 41.4 | 155 | 4 | 12.5 | 28.6 | 16.9 |
| Mycogen Seeds 8N421 | NuSun | 2584 | 40.9 | 161 | 2 | 12.5 | 26.9 | 16.0 |
| Mycogen Seeds 8N510 | NuSun | 2223 | 40.2 | 155 | 0 | 12.4 | 26.5 | 18.2 |
| Mycogen Seeds SF187 | Trad. | 2015 | 40.3 | 145 | 4 | 12.6 | 28.4 | 18.2 |
| Pioneer hybrid 63M80 | NuSun | 1659 | 40.1 | 162 | 1 | 12.7 | 26.7 | 17.9 |
| Pioneer hybrid 63M91 | NuSun | 461 | 39.3 | 164 | 2 | 12.7 | 26.3 | 17.3 |
| Producers Hybrids EX10104 | NuSun | 1764 | 38.9 | 161 | 5 | 12.5 | 26.8 | 17.3 |
| Producers Hybrids EX10204 | NuSun | 1096 | 38.5 | 136 | 0 | 12.9 | 29.0 | 17.3 |
| Producers Hybrids SF7303 | NuSun | 2041 | 39.5 | 147 | 5 | 12.7 | 26.2 | 17.9 |
| Proseed 9405 | NuSun | 1464 | 39.9 | 150 | 1 | 13.1 | 25.6 | 16.9 |
| Proseed 9441 | NuSun | 1633 | 40.3 | 171 | 1 | 12.7 | 28.2 | 16.9 |
| Proseed CL55-15 | NuSun | 794 | 38.9 | 149 | 4 | 12.4 | 24.9 | 18.2 |
| Proseed Exp 15 | NuSun | 1352 | 39.8 | 158 | 4 | 12.4 | 26.9 | 17.3 |
| Proseed Exp T1 | NuSun | 1845 | 40.8 | 154 | 7 | 12.6 | 25.9 | 17.6 |
| Proseed Exp T2 | NuSun | 1283 | 40.4 | 163 | 2 | 13.1 | 24.8 | 14.9 |
| Proseed Exp T3 | NuSun | 1419 | 39.7 | 168 | 2 | 12.8 | 26.8 | 16.7 |
| Seeds 2000 Blazer | NuSun | 1506 | 39.7 | 150 | 5 | 12.7 | 27.6 | 15.2 |
| Seeds 2000 Charger (X926) | NuSun | 1642 | 38.5 | 165 | 2 | 12.6 | 27.0 | 18.2 |
| Seeds 2000 X978 | NuSun | 1864 | 41.0 | 165 | 0 | 12.6 | 28.8 | 18.2 |
| Triumph Seed 636 | NuSun | 1425 | 39.9 | 159 | 3 | 12.5 | 26.9 | 18.2 |
| Triumph Seed 645 | NuSun | 1722 | 41.7 | 161 | 1 | 12.9 | 26.9 | 17.9 |
| Triumph Seed s667 | NuSun | 1598 | 42.0 | 125 | 10 | 12.5 | 26.7 | 18.2 |
| Triumph Seed s675 | NuSun | 1480 | 43.2 | 109 | 5 | 12.9 | 27.5 | 18.2 |
| USDA 894 (check) | Trad. | 1506 | 41.6 | 160 | 7 | 12.5 | 27.7 | 16.7 |
| Grand mean | | 1615 | 40.0 | 156 | 3 | 12.7 | 27.1 | 17.3 |
| LSD 5% | | 406 | 1.4 | 10 | ns | 0.8 | 1.6 | ns |
| C.V. | | 12.5 | 2.1 | 4.7 | 118.5 | 4.0 | 3.7 | 10.7 |

Planted June 2, 2004. Harvested October 18, 2004.

Yield and oil % are reported at 10% moisture. Oil % is adjusted for oleic acid content.

Cooperator: Carl Brakke, Presho, SD.

Table 6. Oilseed sunflower hybrid yield trial, Miller, SD - 2004.

| Sunflower Brand-Hybrid | Type | Seed Yield (lbs/A) | | | Oil % | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000pl /A |
|----------------------------|-------|--------------------|------|------|----------|---------------------|-----------|----------------------|----------------------|----------------------|
| | | 2004 | 2003 | 2-yr | | | | | | |
| Croplan Genetics 345 | NuSun | 2347 | 1815 | 2081 | 40.1 | 141 | 0 | 12.9 | 28.3 | 18.2 |
| Croplan Genetics 380 | NuSun | 2233 | -- | -- | 40.6 | 140 | 5 | 13.5 | 31.3 | 18.2 |
| Croplan Genetics 385 | NuSun | 2367 | 1676 | 2022 | 41.8 | 130 | 8 | 14.2 | 29.0 | 18.2 |
| Croplan Genetics 3080 DMR | NuSun | 2060 | -- | -- | 41.6 | 136 | 6 | 11.7 | 28.1 | 18.2 |
| Dahlgren & Co. 4421 | NuSun | 2300 | -- | -- | 39.6 | 138 | 4 | 12.9 | 29.4 | 18.2 |
| Dekalb DKF30-33NS | NuSun | 2583 | 1725 | 2154 | 40.2 | 129 | 1 | 13.0 | 30.5 | 18.0 |
| Dekalb DKF33-33NS | NuSun | 2012 | 1717 | 1865 | 40.7 | 139 | 15 | 12.2 | 30.1 | 18.2 |
| Dekalb DKF38-30NS | NuSun | 2399 | 1812 | 2106 | 41.6 | 141 | 1 | 13.7 | 30.1 | 18.2 |
| Dekalb DKF38-80CL | Trad. | 2031 | 1794 | 1912 | 42.3 | 137 | 10 | 13.1 | 28.9 | 17.1 |
| Dekalb EXP35-10NS | NuSun | 1992 | -- | -- | 41.0 | 143 | 3 | 13.7 | 29.6 | 18.2 |
| Dekalb MH4231 | NuSun | 2533 | -- | -- | 41.6 | 135 | 7 | 12.9 | 28.7 | 18.2 |
| Dekalb MH4233 | NuSun | 2207 | -- | -- | 40.7 | 139 | 7 | 12.7 | 29.3 | 18.2 |
| Dekalb MH4433 | NuSun | 1829 | -- | -- | 41.5 | 141 | 10 | 13.4 | 29.7 | 18.2 |
| DenBesten Seed DB 764 | Trad. | 2120 | -- | -- | 40.5 | 142 | 5 | 12.5 | 29.2 | 18.2 |
| DenBesten Seed DB 845NS | NuSun | 2238 | -- | -- | 42.5 | 143 | 4 | 12.7 | 29.8 | 16.6 |
| DenBesten Seed DB 848NS | NuSun | 2385 | -- | -- | 41.0 | 142 | 2 | 14.0 | 29.1 | 18.2 |
| Garst/Interstate 4049 | Trad. | 2207 | 1812 | 2010 | 43.5 | 139 | 4 | 12.7 | 28.4 | 18.2 |
| Garst/Interstate 4704NS | NuSun | 2241 | -- | -- | 39.8 | 129 | 6 | 13.5 | 29.9 | 18.2 |
| Garst/Interstate F10016 NS | NuSun | 2226 | -- | -- | 41.2 | 128 | 3 | 13.4 | 29.2 | 17.7 |
| Garst/Interstate Hysun 424 | NuSun | 1910 | -- | -- | 41.2 | 137 | 8 | 13.6 | 28.8 | 18.2 |
| Garst/Interstate Hysun 450 | NuSun | 2146 | 1983 | 2065 | 40.3 | 122 | 6 | 14.5 | 29.7 | 18.2 |
| Garst/Interstate Hysun 454 | NuSun | 2477 | -- | -- | 41.1 | 141 | 5 | 14.6 | 27.7 | 17.5 |
| Garst/Interstate Hysun 525 | NuSun | 2115 | -- | -- | 40.7 | 126 | 5 | 12.7 | 29.4 | 18.2 |
| Kaystar 9404 | Trad. | 2372 | -- | -- | 40.4 | 144 | 7 | 12.7 | 28.1 | 18.2 |
| Kaystar 9501 | Trad. | 2168 | 2115 | 2141 | 41.2 | 140 | 6 | 13.7 | 29.3 | 18.2 |
| Legend Seeds LSF 119N | NuSun | 1278 | 1796 | 1537 | 40.6 | 127 | 17 | 14.3 | 28.5 | 18.2 |
| Legend Seeds LSF 121N | NuSun | 2256 | -- | -- | 41.0 | 126 | 6 | 13.0 | 29.1 | 18.2 |
| Legend Seeds LSF 126N | NuSun | 2020 | 1915 | 1968 | 39.1 | 124 | 3 | 13.4 | 29.0 | 18.2 |
| Legend Seeds LSF 142N | NuSun | 2734 | 2037 | 2385 | 42.3 | 131 | 3 | 14.9 | 28.6 | 18.2 |
| Mycogen Seeds 8488NS | NuSun | 2316 | 1617 | 1967 | 42.3 | 137 | 5 | 13.6 | 30.3 | 18.2 |
| Mycogen Seeds 8D310 | NuSun | 2435 | -- | -- | 40.8 | 144 | 4 | 12.2 | 28.1 | 18.2 |
| Mycogen Seeds 8N352 | NuSun | 1855 | -- | -- | 40.1 | 129 | 5 | 12.7 | 29.7 | 18.2 |
| Mycogen Seeds 8N421 | NuSun | 2241 | 2049 | 2145 | 41.3 | 136 | 4 | 13.0 | 29.0 | 18.2 |
| Mycogen Seeds 8N510 | NuSun | 2806 | -- | -- | 40.5 | 129 | 2 | 13.7 | 29.5 | 18.2 |
| Mycogen Seeds SF187 | Trad. | 2293 | 2052 | 2173 | 42.1 | 112 | 2 | 13.5 | 28.7 | 18.2 |
| Pioneer hybrid 63M80 | NuSun | 2161 | 2213 | 2187 | 41.8 | 132 | 6 | 12.8 | 28.4 | 18.2 |
| Pioneer hybrid 63M91 | NuSun | 2264 | 1893 | 2078 | 41.6 | 138 | 6 | 13.7 | 29.2 | 18.2 |
| Producers Hybrids EX10104 | NuSun | 1982 | -- | -- | 40.1 | 130 | 4 | 13.7 | 28.1 | 18.2 |
| Producers Hybrids EX10204 | NuSun | 2194 | -- | -- | 40.3 | 121 | 8 | 13.5 | 30.4 | 17.7 |
| Producers Hybrids SF7303 | NuSun | 2245 | -- | -- | 41.8 | 119 | 4 | 15.1 | 28.6 | 16.8 |
| Proseed 9405 | NuSun | 2117 | 1819 | 1968 | 41.1 | 123 | 8 | 13.9 | 28.9 | 18.2 |
| Proseed 9441 | NuSun | 1765 | 2229 | 1997 | 40.6 | 129 | 8 | 14.4 | 27.9 | 12.7 |
| Proseed CL55-15 | NuSun | 1476 | 1562 | 1519 | 41.0 | 119 | 6 | 13.0 | 28.1 | 15.9 |
| Proseed Exp 15 | NuSun | 2023 | 1563 | 1793 | 40.5 | 136 | 14 | 12.8 | 28.1 | 18.2 |
| Proseed Exp T1 | NuSun | 2015 | -- | -- | 42.3 | 126 | 29 | 16.0 | 27.9 | 18.2 |
| Proseed Exp T2 | NuSun | 1918 | -- | -- | 42.2 | 137 | 19 | 14.6 | 26.5 | 17.7 |
| Proseed Exp T3 | NuSun | 1343 | -- | -- | 40.8 | 135 | 14 | 14.2 | 27.9 | 9.5 |
| Seeds 2000 Blazer | NuSun | 2338 | 1745 | 2042 | 41.4 | 117 | 5 | 13.0 | 28.3 | 18.2 |
| Seeds 2000 Charger (X926) | NuSun | 1895 | 1956 | 1925 | 40.5 | 140 | 5 | 12.9 | 28.9 | 18.2 |
| Seeds 2000 X978 | NuSun | 2099 | -- | -- | 41.2 | 140 | 11 | 14.9 | 29.5 | 18.2 |
| Triumph Seed 636 | NuSun | 1958 | -- | -- | 41.2 | 144 | 7 | 14.0 | 26.4 | 17.7 |
| Triumph Seed 645 | NuSun | 2239 | -- | -- | 42.5 | 133 | 8 | 14.4 | 28.2 | 18.2 |
| Triumph Seed s675 | NuSun | 2535 | -- | -- | 42.6 | 98 | 3 | 17.2 | 28.9 | 18.2 |
| USDA 894 (check) | Trad. | 1834 | 1387 | 1611 | 43.3 | 131 | 16 | 12.4 | 28.5 | 18.2 |
| Grand mean | | 2151 | 1878 | 2015 | 41.2 | 133 | 7 | 13.5 | 28.9 | 17.8 |
| LSD 5% | | 441 | 411 | | 1.8 | 9 | 6 | 1.3 | 1.5 | 1.6 |
| C.V. | | 14.7 | 15.7 | | 3.1 | 5.1 | 62.7 | 7.0 | 3.7 | 6.5 |

Planted June 4, 2004. Harvested October 15, 2004.

Yield and oil % are reported at 10% moisture. Oil % is adjusted for oleic acid content.

Cooperator: Kelvin Grey, St. Lawrence, SD.

Table 7. Oilseed sunflower hybrid yield trial, Onida, SD - 2004.

| Sunflower Brand-Hybrid | Type | Seed Yield (lbs/A) | | | Oil % | Days to | | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000pl /A | Hulling Quality Test |
|----------------------------|-------|--------------------|------|------|-------|---------|------|---------------|--------|----------------|----------------|----------------|----------------------|
| | | 2004 | 2003 | 2-yr | | Flwr | Mat. | | | | | | |
| Croplan Genetics 345 | NuSun | 1947 | 1761 | 1854 | 41.6 | 69 | 112 | 161 | 0 | 16.8 | 26.7 | 18.2 | NT |
| Croplan Genetics 385 | NuSun | 1959 | 1720 | 1840 | 41.6 | 77 | 121 | 149 | 3 | 19.3 | 25.9 | 18.2 | NT |
| Dahlgren & Co. 4421 | NuSun | 2141 | -- | -- | 39.1 | 72 | 111 | 164 | 7 | 17.0 | 26.0 | 18.2 | Excel. |
| Dekalb DKF30-33NS | NuSun | 1624 | 1695 | 1659 | 40.4 | 72 | 117 | 157 | 8 | 17.0 | 25.8 | 18.2 | Excel. |
| Dekalb DKF33-33NS | NuSun | 1579 | 1390 | 1485 | 40.1 | 69 | 114 | 153 | 15 | 17.1 | 26.2 | 18.2 | Excel. |
| Dekalb DKF38-30NS | NuSun | 1927 | 2018 | 1972 | 40.4 | 76 | 120 | 157 | 20 | 19.7 | 26.4 | 18.2 | Excel. |
| Dekalb DKF38-80CL | Trad. | 1699 | -- | -- | 40.5 | 72 | 114 | 141 | 18 | 16.8 | 25.6 | 17.3 | Excel. |
| Dekalb EXP35-10NS | NuSun | 1545 | -- | -- | 40.8 | 72 | 118 | 155 | 0 | 17.6 | 26.0 | 18.2 | Excel. |
| Dekalb MH4231 | NuSun | 1777 | -- | -- | 41.9 | 72 | 118 | 159 | 2 | 18.2 | 26.0 | 17.7 | Excel. |
| Dekalb MH4233 | NuSun | 1808 | -- | -- | 42.7 | 71 | 118 | 158 | 0 | 17.9 | 25.7 | 18.2 | Excel. |
| Dekalb MH4433 | NuSun | 1545 | -- | -- | 40.9 | 76 | 119 | 165 | 4 | 17.9 | 26.6 | 18.2 | Excel. |
| DenBesten Seed DB 764 | Trad. | 1766 | -- | -- | 39.8 | 75 | 120 | 162 | 18 | 17.3 | 26.2 | 18.2 | NT |
| DenBesten Seed DB 845NS | NuSun | 2083 | -- | -- | 40.8 | 71 | 115 | 162 | 4 | 17.6 | 26.9 | 17.1 | NT |
| DenBesten Seed DB 848NS | NuSun | 2016 | -- | -- | 40.5 | 75 | 118 | 163 | 0 | 18.0 | 26.0 | 18.2 | NT |
| Fontanelle 920NS | NuSun | 1481 | -- | -- | 41.9 | 74 | 120 | 149 | 56 | 17.6 | 24.1 | 18.2 | NT |
| Garst/Interstate 4049 | Trad. | 2037 | -- | -- | 42.2 | 74 | 116 | 167 | 7 | 17.0 | 25.0 | 18.2 | NT |
| Garst/Interstate 4704NS | NuSun | 1553 | -- | -- | 39.4 | 70 | 115 | 153 | 12 | 17.7 | 24.7 | 18.2 | NT |
| Garst/Interstate F10016 NS | NuSun | 1962 | 1776 | 1869 | 41.0 | 71 | 108 | 141 | 2 | 17.3 | 27.3 | 17.1 | NT |
| Garst/Interstate Hysun 424 | NuSun | 2070 | 1628 | 1849 | 41.2 | 76 | 115 | 159 | 6 | 17.7 | 26.5 | 17.5 | NT |
| Garst/Interstate Hysun 450 | NuSun | 2045 | 2006 | 2025 | 40.9 | 77 | 121 | 155 | 6 | 18.9 | 26.1 | 18.2 | NT |
| Garst/Interstate Hysun 454 | NuSun | 1608 | -- | -- | 41.1 | 72 | 115 | 162 | 7 | 17.4 | 25.6 | 18.2 | NT |
| Garst/Interstate Hysun 525 | NuSun | 2070 | 1299 | 1685 | 39.5 | 75 | 116 | 152 | 10 | 17.8 | 25.8 | 18.2 | NT |
| Kaystar 9404 | Trad. | 1626 | -- | -- | 40.5 | 70 | 115 | 153 | 10 | 17.6 | 25.6 | 17.7 | NT |
| Kaystar 9501 | Trad. | 2261 | -- | -- | 40.1 | 76 | 119 | 169 | 7 | 18.0 | 25.6 | 18.2 | NT |
| Kaystar 2020NS | NuSun | 1896 | -- | -- | 40.5 | 76 | 120 | 146 | 0 | 18.6 | 25.6 | 18.2 | NT |
| Kaystar XF4001 | Trad. | 1553 | -- | -- | 41.0 | 73 | 118 | 153 | 26 | 17.3 | 26.3 | 18.2 | NT |
| Legend Seeds LSF 119N | NuSun | 1022 | 1782 | 1402 | 39.8 | 73 | 113 | 161 | 44 | 17.1 | 25.1 | 18.2 | Excel. |
| Legend Seeds LSF 121N | NuSun | 1473 | -- | -- | 39.8 | 72 | 115 | 151 | 15 | 16.9 | 25.5 | 17.3 | NT |
| Legend Seeds LSF 126N | NuSun | 1637 | 1334 | 1485 | 40.1 | 74 | 115 | 154 | 10 | 17.6 | 26.2 | 18.2 | Excel. |
| Legend Seeds LSF 142N | NuSun | 2265 | 1730 | 1997 | 41.1 | 77 | 119 | 157 | 8 | 18.0 | 25.8 | 18.2 | NT |
| Mycogen Seeds 8377NS | NuSun | 1827 | 2031 | 1929 | 41.5 | 70 | 113 | 165 | 5 | 16.8 | 26.2 | 18.2 | NT |
| Mycogen Seeds 8488NS | NuSun | 1985 | 1884 | 1934 | 40.9 | 74 | 122 | 163 | 2 | 17.8 | 25.8 | 18.2 | NT |
| Mycogen Seeds 8D310 | NuSun | 1833 | -- | -- | 38.4 | 72 | 112 | 161 | 3 | 16.9 | 25.9 | 18.2 | Excel. |
| Mycogen Seeds 8N352 | NuSun | 1797 | -- | -- | 42.4 | 73 | 123 | 159 | 16 | 17.9 | 26.0 | 18.2 | NT |
| Mycogen Seeds 8N421 | NuSun | 2221 | 1826 | 2023 | 41.6 | 74 | 121 | 163 | 3 | 17.6 | 27.9 | 18.2 | NT |
| Mycogen Seeds 8N510 | NuSun | 2082 | -- | -- | 40.2 | 77 | 122 | 162 | 9 | 18.4 | 25.6 | 18.0 | NT |
| Mycogen Seeds SF187 | Trad. | 1983 | 2134 | 2058 | 39.9 | 73 | 113 | 157 | 9 | 17.9 | 25.2 | 18.2 | Excel. |
| Pioneer hybrid 63M80 | NuSun | 1503 | 1827 | 1665 | 42.3 | 70 | 113 | 163 | 11 | 17.1 | 25.2 | 18.2 | NT |
| Pioneer hybrid 63M91 | NuSun | 2220 | 1895 | 2057 | 41.0 | 69 | 113 | 167 | 10 | 17.2 | 26.8 | 18.2 | NT |
| Producers Hybrids EX10104 | NuSun | 1372 | -- | -- | 39.6 | 73 | 117 | 160 | 15 | 18.0 | 25.4 | 18.2 | NT |
| Producers Hybrids EX10204 | NuSun | 1919 | -- | -- | 40.7 | 68 | 114 | 153 | 19 | 17.5 | 26.7 | 18.2 | NT |
| Producers Hybrids SF7303 | NuSun | 1978 | -- | -- | 41.1 | 77 | 119 | 148 | 3 | 19.9 | 26.2 | 18.2 | NT |
| Proseed 9405 | NuSun | 1579 | 1917 | 1748 | 41.4 | 73 | 116 | 160 | 3 | 18.3 | 25.2 | 17.1 | NT |
| Proseed 9441 | NuSun | 825 | 1780 | 1303 | 40.3 | 74 | 116 | 137 | 47 | 17.7 | 24.5 | 13.6 | NT |
| Proseed CL55-15 | NuSun | 1250 | 1627 | 1439 | 39.6 | 72 | 112 | 135 | 51 | 18.3 | 24.9 | 18.2 | NT |
| Proseed Exp 15 | NuSun | 1280 | 1610 | 1445 | 40.5 | 70 | 109 | 156 | 29 | 16.8 | 25.4 | 16.9 | Excel. |
| Proseed Exp T1 | NuSun | 1393 | -- | -- | 41.1 | 72 | 118 | 152 | 43 | 17.8 | 24.2 | 18.2 | Excel. |
| Proseed Exp T2 | NuSun | 1255 | -- | -- | 42.2 | 76 | 122 | 147 | 31 | 18.2 | 24.1 | 17.1 | Excel. |
| Proseed Exp T3 | NuSun | 1303 | -- | -- | 40.6 | 74 | 114 | 139 | 23 | 18.5 | 25.5 | 14.5 | Excel. |
| Seeds 2000 Blazer | NuSun | 1965 | 1514 | 1740 | 41.6 | 73 | 117 | 151 | 14 | 18.8 | 26.0 | 17.5 | NT |
| Seeds 2000 Charger | NuSun | 1562 | 1719 | 1640 | 39.9 | 73 | 116 | 160 | 8 | 18.1 | 25.4 | 18.2 | NT |
| Seeds 2000 X978 | NuSun | 1626 | -- | -- | 40.8 | 76 | 119 | 163 | 29 | 18.4 | 26.4 | 18.2 | NT |
| Triumph Seed 636 | NuSun | 1561 | 1908 | 1735 | 41.4 | 73 | 119 | 157 | 23 | 17.3 | 24.8 | 18.2 | Excel. |
| Triumph Seed 645 | NuSun | 2020 | 1903 | 1962 | 41.1 | 74 | 120 | 155 | 13 | 18.6 | 24.6 | 18.2 | Excel. |
| Triumph Seed 658 | NuSun | 1820 | 1821 | 1820 | 41.1 | 74 | 118 | 156 | 41 | 19.1 | 25.5 | 18.2 | Excel. |
| Triumph Seed 665 | NuSun | 1413 | 1757 | 1585 | 40.6 | 76 | 117 | 156 | 29 | 17.7 | 25.2 | 18.2 | NT |
| Triumph Seed s667 | NuSun | 1942 | 2171 | 2056 | 43.0 | 77 | 123 | 124 | 0 | 17.8 | 25.6 | 17.5 | NT |
| Triumph Seed s675 | NuSun | 1899 | -- | -- | 41.0 | 79 | 124 | 112 | 0 | 17.6 | 24.0 | 18.2 | NT |
| USDA 894 (check) | Trad. | 1392 | -- | -- | 42.2 | 74 | 117 | 152 | 35 | 17.5 | 26.3 | 17.1 | NT |
| cmsHA406/RHA373 (chk) | Trad. | 1779 | -- | -- | 42.7 | 75 | 117 | 163 | 4 | 19.3 | 25.7 | 18.2 | NT |
| Grand mean | | 1743 | 1745 | 1744 | 40.9 | 73 | 117 | 155 | 14 | 17.8 | 25.7 | 17.9 | |
| LSD 5% | | 464 | 301 | | 1.4 | 1 | 3 | 10 | 13 | 1.1 | 1.3 | 1.3 | |
| C.V. | | 19.1 | 10.6 | | 2.4 | 1.3 | 1.7 | 4.7 | 65.2 | 4.3 | 3.7 | 5.1 | |

Planted June 4, 2004. Harvested October 25, 2004.

Yield and oil % are reported at 10% moisture. Oil % is adjusted for oleic acid content.

Hulling quality test: NT = not tested, Excel. = ≥65% of seed passes over a 14/64 screen, Good = ≥75% of seed passes over a 13/64 screen.

Cooperator: Van and Chris Huse, Onida, SD.

Table 8. Oilseed sunflower hybrid yield trial averaged over four locations - 2004.

| Sunflower Brand-Hybrid | Type | Seed Yield (lbs/A) | | | Oil % | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000pl /A |
|----------------------------------|-------|--------------------|-------------|-------------|----------|---------------------|-----------|----------------------|----------------------|----------------------|
| | | 2004 -4- | 2003 -2- | 2-yr -6- | | | | | | |
| Croplan Genetics 385 | NuSun | 1787 | 1987 | 1854 | 40.7 | 143 | 5 | 16.7 | 27.5 | 18.2 |
| Dekalb DKF30-33NS | NuSun | 1743 | 1946 | 1811 | 39.6 | 152 | 4 | 15.7 | 28.2 | 17.2 |
| Dekalb DKF33-33NS | NuSun | 1519 | 2034 | 1690 | 39.6 | 151 | 9 | 14.7 | 27.6 | 17.6 |
| Dekalb DKF38-30NS | NuSun | 1852 | 1917 | 1874 | 40.6 | 154 | 8 | 15.9 | 27.4 | 18.2 |
| Dekalb DKF38-80CL | Trad. | 1740 | 2054 | 1845 | 40.9 | 144 | 7 | 14.6 | 27.2 | 17.6 |
| Dekalb EXP35-10NS | NuSun | 1527 | -- | -- | 40.2 | 155 | 0 | 15.4 | 27.4 | 17.8 |
| Dekalb MH4231 | NuSun | 1891 | -- | -- | 41.0 | 154 | 2 | 14.7 | 27.8 | 18.1 |
| Dekalb MH4233 | NuSun | 1803 | -- | -- | 41.3 | 150 | 3 | 15.1 | 27.5 | 18.1 |
| Dekalb MH4433 | NuSun | 1387 | -- | -- | 40.8 | 157 | 9 | 16.5 | 27.6 | 18.2 |
| DenBesten Seed DB 845NS | NuSun | 1919 | -- | -- | 41.2 | 159 | 3 | 15.1 | 28.3 | 17.2 |
| DenBesten Seed DB 848NS | NuSun | 1902 | -- | -- | 40.8 | 159 | 1 | 14.8 | 27.3 | 17.9 |
| Garst/Interstate 4049 | Trad. | 1903 | 2004 | 1937 | 41.9 | 162 | 3 | 14.4 | 27.2 | 17.8 |
| Garst/Interstate 4704NS (F10002) | NuSun | 1554 | -- | -- | 38.9 | 144 | 4 | 15.5 | 26.2 | 18.1 |
| Garst/Interstate F10016 NS | NuSun | 1624 | -- | -- | 40.3 | 135 | 1 | 16.2 | 27.4 | 17.1 |
| Garst/Interstate Hysun 424 | NuSun | 1611 | -- | -- | 40.1 | 152 | 8 | 16.3 | 26.9 | 17.1 |
| Garst/Interstate Hysun 450 | NuSun | 1741 | 1833 | 1772 | 39.6 | 141 | 4 | 17.1 | 27.5 | 16.4 |
| Garst/Interstate Hysun 454 | NuSun | 1750 | -- | -- | 40.4 | 159 | 5 | 15.8 | 27.4 | 18.0 |
| Garst/Interstate Hysun 525 | NuSun | 1741 | -- | -- | 39.6 | 146 | 6 | 14.4 | 27.6 | 17.8 |
| Kaystar 9404 | Trad. | 1740 | -- | -- | 40.1 | 155 | 5 | 14.0 | 27.2 | 17.9 |
| Legend Seeds LSF 119N | NuSun | 1147 | 1801 | 1365 | 39.5 | 150 | 21 | 15.6 | 26.1 | 17.4 |
| Legend Seeds LSF 121N | NuSun | 1502 | -- | -- | 39.7 | 141 | 7 | 15.4 | 27.0 | 18.0 |
| Legend Seeds LSF 126N | NuSun | 1614 | 2044 | 1757 | 39.2 | 146 | 5 | 15.5 | 27.6 | 17.8 |
| Legend Seeds LSF 142N | NuSun | 1990 | 2089 | 2023 | 40.8 | 148 | 9 | 15.7 | 26.9 | 17.3 |
| Mycogen Seeds 8488NS | NuSun | 1995 | 1784 | 1925 | 41.0 | 156 | 4 | 15.5 | 27.7 | 18.0 |
| Mycogen Seeds 8D310 | NuSun | 1831 | -- | -- | 38.8 | 158 | 2 | 14.1 | 26.7 | 18.1 |
| Mycogen Seeds 8N352 | NuSun | 1734 | -- | -- | 41.6 | 152 | 9 | 15.2 | 28.1 | 17.3 |
| Mycogen Seeds 8N421 | NuSun | 2054 | 2173 | 2093 | 41.0 | 157 | 3 | 14.9 | 27.7 | 17.7 |
| Mycogen Seeds 8N510 | NuSun | 2222 | -- | -- | 40.2 | 151 | 2 | 16.1 | 27.3 | 18.2 |
| Mycogen Seeds SF187 | Trad. | 1892 | -- | -- | 40.6 | 139 | 4 | 15.1 | 27.5 | 18.2 |
| Pioneer Hi-Bred hybrid 63M80 | NuSun | 1566 | 2219 | 1784 | 41.0 | 153 | 7 | 15.2 | 26.5 | 18.1 |
| Pioneer Hi-Bred hybrid 63M91 | NuSun | 1561 | 1832 | 1651 | 40.3 | 162 | 6 | 15.6 | 27.6 | 18.0 |
| Producers Hybrids EX10104 | NuSun | 1540 | -- | -- | 39.5 | 156 | 9 | 15.3 | 27.1 | 17.6 |
| Producers Hybrids EX10204 | NuSun | 1676 | -- | -- | 39.6 | 141 | 7 | 15.4 | 28.6 | 17.9 |
| Producers Hybrids SF7303 | NuSun | 1948 | -- | -- | 40.4 | 138 | 3 | 17.1 | 27.0 | 17.1 |
| Proseed 9405 | NuSun | 1633 | 1840 | 1702 | 40.8 | 146 | 4 | 16.6 | 26.4 | 17.6 |
| Proseed 9441 | NuSun | 1318 | 2360 | 1665 | 40.1 | 147 | 13 | 16.0 | 26.7 | 14.7 |
| Proseed CL55-15 | NuSun | 1244 | 1715 | 1401 | 39.6 | 137 | 16 | 15.1 | 26.5 | 16.7 |
| Proseed Exp 15 | NuSun | 1469 | -- | -- | 40.3 | 152 | 16 | 14.8 | 26.8 | 17.7 |
| Proseed Exp T1 | NuSun | 1651 | -- | -- | 41.3 | 144 | 21 | 16.6 | 25.6 | 18.1 |
| Proseed Exp T2 | NuSun | 1371 | -- | -- | 41.2 | 152 | 23 | 16.8 | 25.1 | 17.0 |
| Proseed Exp T3 | NuSun | 1204 | -- | -- | 40.3 | 150 | 8 | 15.6 | 26.8 | 13.6 |
| Seeds 2000 Blazer | NuSun | 1819 | 1926 | 1854 | 40.9 | 144 | 6 | 15.4 | 27.1 | 17.3 |
| Seeds 2000 Charger (X926) | NuSun | 1549 | 1748 | 1615 | 39.7 | 157 | 4 | 14.6 | 26.8 | 18.2 |
| Seeds 2000 X978 | NuSun | 1757 | -- | -- | 40.8 | 160 | 10 | 16.2 | 28.0 | 17.8 |
| Triumph Seed 636 | NuSun | 1485 | -- | -- | 40.7 | 152 | 21 | 16.4 | 25.8 | 18.1 |
| Triumph Seed 645 | NuSun | 1841 | -- | -- | 41.8 | 153 | 10 | 16.1 | 26.7 | 18.1 |
| Triumph Seed s675 (TRX2446) | NuSun | 1832 | -- | -- | 41.9 | 107 | 5 | 16.6 | 26.7 | 18.2 |
| USDA 894 (check) | Trad. | 1437 | 1461 | 1445 | 42.2 | 148 | 20 | 14.8 | 27.5 | 17.6 |
| Grand mean | | 1680 | 1964 | 1774 | 40.4 | 149 | 8 | 15.5 | 27.1 | 17.6 |
| LSD 5% | | 350 | 364 | | 0.9 | 8 | 11 | 1.6 | 1.0 | 1.3 |
| C.V. | | 14.9 | 17.6 | | 1.6 | 4.0 | 103.8 | 7.4 | 2.7 | 5.4 |

Yield and oil % are reported at 10% moisture. Oil % is adjusted for oleic acid content.

Table 9. Confection hybrid sunflower trial, Kennebec, SD - 2004.

| Sunflower Brand-Hybrid | Seed Yield (lbs/A) | | | Plant Height cm | Lodg- ing % | Test Wt. lb/bu | Pop. 1000pl /A | % Seed Over Screen | | | Nut- meat % |
|----------------------------|--------------------|------|------|-----------------------|-------------------|----------------------|----------------------|--------------------|-------|-------|-------------------|
| | 2004 | 2003 | 2-yr | | | | | 22/64 | 20/64 | 18/64 | |
| | Kenn | Pukw | | | | | | | | | |
| CHS Sunflower 04-EXP01 | 1455 | -- | -- | 174 | 4 | 23.4 | 12.3 | 49.2 | 68.9 | 79.6 | 48.9 |
| CHS Sunflower 04-EXP02 | 1813 | -- | -- | 165 | 6 | 25.9 | 13.9 | 67.4 | 83.7 | 92.9 | 49.5 |
| CHS Sunflower RH 118 | 1839 | 2181 | 2010 | 177 | 0 | 25.8 | 15.4 | 55.4 | 74.3 | 86.3 | 50.3 |
| Garst/Interstate 8048 | 1368 | 1670 | 1519 | 171 | 0 | 27.6 | 14.8 | 45.7 | 64.2 | 76.2 | 51.2 |
| Garst/Interstate 8089 | 1587 | -- | -- | 170 | 1 | 27.2 | 11.6 | 34.4 | 56.3 | 73.4 | 49.3 |
| Mycogen Seeds 8C416 | 1539 | -- | -- | 171 | 3 | 25.1 | 13.0 | 51.4 | 73.3 | 82.6 | 52.9 |
| Producers Hybrids SF7203** | 1882 | -- | -- | 178 | 1 | 28.9 | 15.0 | -- | -- | -- | -- |
| Sigco Sun Prod. Goliath RT | 1381 | 1799 | 1590 | 165 | 3 | 25.3 | 15.5 | 49.8 | 71.5 | 83.9 | 50.4 |
| USDA 924 (check) | 1522 | 1977 | 1750 | 173 | 2 | 26.2 | 15.5 | 28.1 | 50.7 | 70.1 | 54.5 |
| Grand mean | 1599 | 1761 | 1680 | 172 | 2 | 26.2 | 14.1 | 45.6 | 65.9 | 78.7 | 50.9 |
| LSD 5% | 353 | 439 | | 8 | ns | 2.5 | ns | 18.8 | 16.3 | 16.0 | ns |
| C.V. | 14.7 | 16.4 | | 3.1 | 140.6 | 6.6 | 18.1 | 27.9 | 16.8 | 13.8 | 5.0 |

Planted June 2, 2004. Harvested October 20, 2004.

**Producers Hybrids SF7203 is an oilseed hybrid that was mistakenly entered into the confection trial.

Table 10. Confection hybrid sunflower trial, Miller, SD - 2004.

| Sunflower Brand-Hybrid | Seed Yield (lbs/A) | | | Lodg- ing % | Test Wt. lb/bu | % Seed Over Screen | | | Nut- meat % |
|----------------------------|--------------------|------|------|-------------------|----------------------|--------------------|-------|-------|-------------------|
| | 2004 | 2003 | 2-yr | | | 22/64 | 20/64 | 18/64 | |
| | | | | | | | | | |
| CHS Sunflower 04-EXP01 | 1836 | -- | -- | 6 | 23.8 | 56.1 | 78.8 | 89.3 | 50.5 |
| CHS Sunflower 04-EXP02 | 1634 | -- | -- | 16 | 23.5 | 74.1 | 85.3 | 89.3 | 53.0 |
| CHS Sunflower RH 118 | 2035 | 1874 | 1954 | 0 | 25.8 | 40.1 | 76.5 | 89.7 | 50.2 |
| Croplan Genetics 135 | 1466 | -- | -- | 24 | 22.7 | 67.8 | 80.5 | 88.8 | 49.5 |
| Dahlgren & Co. 9518 | 1813 | -- | -- | 3 | 23.2 | 57.7 | 82.1 | 93.3 | 52.9 |
| Dahlgren & Co. 9530 | 2055 | -- | -- | 4 | 22.4 | 64.8 | 81.7 | 90.8 | 51.0 |
| Garst/Interstate 8048 | 1960 | 1728 | 1844 | 3 | 24.2 | 58.2 | 77.2 | 88.2 | 51.1 |
| Garst/Interstate 8089 | 2476 | -- | -- | 10 | 23.5 | 57.9 | 83.5 | 90.7 | 49.7 |
| Mycogen Seeds 8C416 | 1658 | -- | -- | 13 | 21.8 | 56.1 | 76.3 | 87.6 | 51.0 |
| Producers Hybrids SF7203** | 2169 | -- | -- | 5 | 29.5 | -- | -- | -- | -- |
| Seeds 2000 Grizzly | 2031 | 1801 | 1916 | 4 | 23.4 | 54.0 | 75.0 | 88.3 | 49.3 |
| Seeds 2000 X3670 | 1531 | -- | -- | 11 | 20.9 | 75.2 | 82.2 | 89.2 | 48.6 |
| Sigco Sun Prod. Goliath RT | 1901 | 1523 | 1712 | 0 | 23.9 | 66.0 | 79.4 | 89.5 | 49.7 |
| Sigco Sun Prod. SS3638 | 1827 | -- | -- | 20 | 23.5 | 56.6 | 79.8 | 87.7 | 50.4 |
| Sigco Sun Prod. SS3938 | 1992 | -- | -- | 0 | 23.7 | 61.2 | 83.4 | 93.3 | 47.8 |
| Triumph Seed 707CLS | 1785 | -- | -- | 15 | 21.2 | 61.5 | 77.4 | 87.6 | 50.3 |
| Triumph Seed 757C | 1365 | 1651 | 1508 | 39 | 22.7 | 71.0 | 80.6 | 90.5 | 50.7 |
| USDA 924 (check) | 1648 | 1520 | 1584 | 8 | 23.8 | 30.1 | 65.3 | 85.6 | 55.8 |
| Grand mean | 1843 | 1639 | 1741 | 10 | 23.5 | 57.0 | 76.1 | 86.1 | 50.7 |
| LSD 5% | 464 | ns | | 10 | 2.1 | 12.0 | 8.4 | 6.8 | 3.0 |
| C.V. | 17.7 | 15.9 | | 71.3 | 6.3 | 14.7 | 7.8 | 5.5 | 4.2 |

Planted June 4, 2004. Harvested October 18, 2004.

**Producers Hybrids SF7203 is an oilseed hybrid that was mistakenly entered into the confection trial.

Table 11. Confection hybrid sunflower trial, Onida, SD - 2004.

| Sunflower Brand-Hybrid | Seed Yield (lbs/A) | | | Plant Height cm | Days to | | Lodg- ing % | Test Wt. lb/bu | Pop. 1000pl /A | % Seed Over Screen | | | Nut- meat % |
|----------------------------|--------------------|------|------|-----------------------|---------|------|-------------------|----------------------|----------------------|--------------------|-------|-------|-------------------|
| | 2004 | 2003 | 2-yr | | Flwr | Mat. | | | | 22/64 | 20/64 | 18/64 | |
| CHS Sunflower 04-EXP01 | 1531 | -- | -- | 175 | 69 | 111 | 16 | 22.6 | 15.9 | 70.3 | 87.7 | 95.7 | 48.2 |
| CHS Sunflower 04-EXP02 | 1499 | -- | -- | 165 | 73 | 120 | 15 | 23.3 | 15.7 | 68.1 | 85.6 | 93.4 | 45.9 |
| CHS Sunflower RH 118 | 1614 | -- | -- | 171 | 77 | 119 | 6 | 24.3 | 15.9 | 61.8 | 85.6 | 94.8 | 44.6 |
| Dahlgren & Co. 9518 | 2047 | -- | -- | 173 | 77 | 121 | 7 | 23.5 | 15.9 | 73.8 | 86.9 | 94.4 | 45.4 |
| Dahlgren & Co. 9530 | 2088 | -- | -- | 163 | 76 | 115 | 5 | 23.2 | 15.0 | 64.3 | 83.1 | 89.9 | 48.1 |
| Garst/Interstate 8048 | 1385 | 1899 | 1642 | 168 | 68 | 115 | 10 | 24.6 | 15.7 | 61.8 | 83.2 | 92.0 | 48.2 |
| Garst/Interstate 8089 | 1685 | -- | -- | 176 | 76 | 124 | 16 | 25.2 | 15.0 | 55.7 | 79.9 | 88.4 | 52.7 |
| Mycogen Seeds 8C416 | 1727 | -- | -- | 170 | 75 | 118 | 13 | 24.5 | 15.5 | 56.9 | 84.5 | 93.0 | 47.9 |
| Producers Hybrids SF7203** | 2061 | -- | -- | 172 | 74 | 117 | 9 | 26.2 | 15.9 | -- | -- | -- | -- |
| Red River Commod RR 2214 | 1743 | -- | -- | 170 | 75 | 121 | 3 | 24.3 | 14.7 | 59.4 | 77.3 | 90.8 | 49.3 |
| Red River Commod RR 2215 | 1544 | 2034 | 1789 | 170 | 77 | 119 | 10 | 21.2 | 15.9 | 63.6 | 88.9 | 91.6 | 44.9 |
| Red River Commod RR 7015 | 1338 | 2142 | 1740 | 176 | 77 | 119 | 18 | 21.5 | 15.3 | 52.1 | 71.4 | 90.1 | 48.0 |
| Seeds 2000 Grizzly | 2167 | 2145 | 2156 | 174 | 78 | 124 | 2 | 23.6 | 15.9 | 63.1 | 85.4 | 95.3 | 47.4 |
| Seeds 2000 X3670 | 1377 | -- | -- | 157 | 73 | 125 | 13 | 23.8 | 15.9 | 77.2 | 94.4 | 93.7 | 46.6 |
| Sigco Sun Prod. Goliath RT | 1593 | -- | -- | 166 | 77 | 125 | 4 | 22.4 | 14.1 | 59.1 | 79.2 | 90.4 | 44.5 |
| Sigco Sun Prod. SS3638 | 1782 | -- | -- | 171 | 75 | 121 | 12 | 21.7 | 15.3 | 67.0 | 86.1 | 91.7 | 46.2 |
| Sigco Sun Prod. SS3938 | 2009 | -- | -- | 165 | 70 | 112 | 5 | 23.9 | 15.5 | 55.1 | 78.1 | 90.6 | 52.4 |
| USDA 924 (check) | 1508 | -- | -- | 174 | 72 | 111 | 10 | 24.3 | 15.3 | 35.8 | 56.8 | 80.8 | 49.8 |
| Grand mean | 1705 | 2020 | 1863 | 170 | 74 | 119 | 10 | 23.6 | 15.5 | 59.9 | 80.1 | 89.5 | 47.6 |
| LSD 5% | 416 | ns | | 8 | 1 | 4 | 6 | 2.6 | ns | 15.4 | 12.3 | 11.9 | ns |
| C.V. | 17.1 | 8.1 | | 3.3 | 1.4 | 2.2 | 46.6 | 7.8 | 6.8 | 18.1 | 10.8 | 9.3 | 9.3 |

Planted June 4, 2004. Harvested November 2, 2004.

**Producers Hybrids SF7203 is an oilseed hybrid that was mistakenly entered into the confection trial.

Table 12. Confection hybrid sunflower trial averaged over Miller, Kennebec, and Onida - 2004.

| Sunflower Brand-Hybrid | Seed Yield (lbs/A) | | | Plant Height cm | Lodg- ing % | Test Wt. lb/bu | Pop. 1000pl /A | % Seed Over Screen | | | Nut- meat % |
|----------------------------|--------------------|------|------|-----------------------|-------------------|----------------------|----------------------|--------------------|-------|-------|-------------------|
| | 2004 | 2003 | 2-yr | | | | | 22/64 | 20/64 | 18/64 | |
| CHS Sunflower 04-EXP01 | 1595 | -- | -- | 175 | 8 | 23.3 | 14.1 | 58.4 | 78.4 | 88.2 | 49.2 |
| CHS Sunflower 04-EXP02 | 1640 | -- | -- | 165 | 12 | 24.3 | 14.8 | 69.7 | 84.8 | 91.8 | 49.5 |
| CHS Sunflower RH 118 | 1813 | 2026 | 1898 | 174 | 1 | 25.3 | 15.6 | 52.3 | 78.7 | 90.3 | 48.3 |
| Garst/Interstate 8048 | 1558 | 1698 | 1614 | 170 | 4 | 25.5 | 15.3 | 55.1 | 74.8 | 85.4 | 50.2 |
| Garst/Interstate 8089 | 1915 | -- | -- | 173 | 9 | 25.3 | 13.3 | 49.2 | 73.1 | 84.1 | 50.5 |
| Mycogen Seeds 8C416 | 1624 | -- | -- | 170 | 9 | 23.8 | 14.3 | 54.7 | 78.0 | 87.7 | 50.6 |
| Producers Hybrids SF7203** | 2019 | -- | -- | 175 | 4 | 28.2 | 15.4 | -- | -- | -- | -- |
| Sigco Sun Prod. Goliath RT | 1626 | 1660 | 1640 | 166 | 1 | 23.9 | 14.8 | 58.2 | 76.6 | 87.9 | 48.2 |
| USDA 924 (check) | 1552 | 1747 | 1630 | 174 | 6 | 24.8 | 15.4 | 31.2 | 57.5 | 78.8 | 53.4 |
| Grand mean | 1705 | 1700 | 1703 | 171 | 6 | 25.0 | 14.8 | 50.6 | 71.4 | 82.6 | 50.0 |
| LSD 5% | ns | 597 | | 6 | 6 | 1.9 | ns | 12.4 | 13.3 | 13.3 | ns |
| C.V. | 13.9 | 15.1 | | 3.4 | 87.6 | 6.6 | 13.5 | 20.5 | 13.5 | 10.8 | 8.2 |

**Producers Hybrids SF7203 is an oilseed hybrid that was mistakenly entered into the confection trial.

Table 13. Fatty acid percentages for oilseed sunflower, Onida, SD - 2004.

| Sunflower Brand-Hybrid | Type | Fatty Acids (%) | | | |
|---------------------------|-------|-----------------|----------|----------|---------|
| | | Oleic | Linoleic | Palmitic | Stearic |
| Dekalb DKF30-33NS | NuSun | 51.8 | 37.2 | 4.52 | 4.10 |
| Dekalb DKF33-33NS | NuSun | 63.6 | 25.4 | 4.12 | 4.28 |
| Dekalb DKF38-30NS | NuSun | 77.8 | 12.6 | 3.56 | 3.64 |
| Dekalb EXP35-10NS | NuSun | 81.5 | 7.9 | 3.46 | 4.17 |
| Dekalb MH4231 | NuSun | 34.8 | 53.4 | 5.27 | 4.09 |
| Dekalb MH4233 | NuSun | 32.8 | 55.1 | 5.34 | 4.18 |
| Dekalb MH4433 | NuSun | 60.4 | 28.6 | 4.45 | 4.16 |
| Legend Seeds LSF 119N | NuSun | 71.6 | 18.2 | 4.13 | 3.73 |
| Legend Seeds LSF 121N | NuSun | 47.4 | 38.8 | 5.29 | 4.66 |
| Legend Seeds LSF 126N | NuSun | 58.0 | 31.0 | 4.94 | 3.58 |
| Legend Seeds LSF 142N | NuSun | 59.8 | 26.6 | 4.09 | 6.44 |
| Mycogen Seeds 8377NS | NuSun | 59.0 | 30.3 | 4.50 | 3.02 |
| Mycogen Seeds 8488NS | NuSun | 61.3 | 28.2 | 4.48 | 3.88 |
| Mycogen Seeds 8D310 | NuSun | 72.7 | 18.8 | 3.77 | 2.61 |
| Mycogen Seeds 8N352 | NuSun | 67.0 | 23.0 | 4.25 | 3.66 |
| Mycogen Seeds 8N421 | NuSun | 60.7 | 29.2 | 4.34 | 3.65 |
| Mycogen Seeds 8N510 | NuSun | 62.1 | 27.0 | 4.31 | 3.50 |
| Triumph Seed 636 | NuSun | 68.2 | 22.0 | 3.92 | 3.84 |
| Triumph Seed 645 | NuSun | 69.6 | 20.4 | 3.58 | 3.99 |
| Triumph Seed 658 | NuSun | 67.0 | 23.0 | 3.82 | 3.88 |
| Triumph Seed 665 | NuSun | 67.0 | 23.2 | 4.18 | 3.17 |
| Triumph Seed 667 | NuSun | 64.2 | 26.2 | 4.82 | 2.78 |
| Triumph Seed s675 | NuSun | 64.0 | 26.2 | 4.30 | 3.37 |

