EC 909
Revised
Annually

# SUNFLOWER

## 2008 South Dakota Hybrid Performance Trials

Oilseed

Confection

COOPERATIVE EXTENSION SERVICE • SOUTH DAKOTA STATE UNIVERSITY • U.S. DEPARTMENT OF AGRICULTURE

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SDSU

# SUNFLOWER

# 2008 South Dakota Hybrid Performance Trials
# Oilseed and Confection

Kathleen Grady, oilseed breeder and Extension specialist
Thandiwe Nleya, Extension agronomist (WRAC)
John Rickertsen, research associate (WRAC)
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, while a hybrid may or may not be the best yielder at all locations, 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 method of indicating 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 Eureka oilseed test (table 6) could be repeated in 2009 exactly as it was in 2008, the yield ranking of a hybrid that yielded 2672 lbs/A and one that yielded 2486 lbs/A might change places since their yield difference (186 lbs/A) is less than the indicated yield LSD value of 358 lbs/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 Eureka in 2008. In contrast, a hybrid that yielded 2279 lbs/A at Eureka in 2008 would likely be lower yielding than one that yielded 2672 lbs/A if the two hybrids were grown again under similar conditions, because the difference between them in 2008 (2672 – 2279 = 393 lbs/A) exceeded the LSD value of 358 lbs/A.

The coefficient of variability (CV) listed at the bottom of each data column 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 CV rates are more reliable for making hybrid choices than trials with higher CV rates. Trials with CV rates not exceeding 15 to 20% may be considered reliable.

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

## Oil Content and Composition

Among similar-yielding oilseed hybrids, select the one with the highest oil content. The oilseed crushing 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 or high oleic levels. Consistency of oleic levels for particular hybrids is an important trait to consider.

## 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 several hybrids with different maturity dates.

## Moisture Content

Harvesting sunflower at moisture contents as high as 20 to 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 and insect control is the planting of resistant or tolerant hybrids and a minimum of four years rotation between successive sunflower crops.

Most sunflower hybrids in the United States have resistance to Verticillium wilt, to races 1 and 2 of downy mildew, and to two or more races of rust. Some hybrids may also exhibit tolerance to sclerotinia head rot, to Phomopsis, or to sunflower midge. Clearfield® and ExpressSun™ hybrids are resistant to Beyond® and Express® herbicides, respectively. Consult the seed company for information on the reaction of a particular hybrid to the aforementioned and other pests that may pose risks in your growing area.

## Other Factors

Consider your contracting and marketing opportunities when selecting hybrids. Some hybrids may fit more than one market. For example, many oilseed hybrids may be equally suitable for crushing, for hulling, or for birdfeed.

# 2008 Trial Procedures

## Locations and Hybrids

Oilseed hybrid sunflower trials were planted at five locations in South Dakota (Bison, Eureka, Miller, Onida, and Reliance). Entries in the oilseed sunflower trials included traditional linoleic oil hybrids, NuSun (mid-oleic) hybrids, and high oleic hybrids. Non-oilseed (confection) sunflower trials were conducted at Miller and Onida. Trial sites are indicated on the map in figure 1. Lists of hybrids planted at each site appear in tables 2 and 3

## Climate

The 2008 growing season began with below normal temperatures in May and June. May precipitation was below average at Eureka, Miller, and Onida, but above average at Bison and Reliance. Areas of western South Dakota that had been consistently dry over the last 5 to 7 years saw large improvements in soil moisture conditions. June precipitation was close to 2 inches above normal at most locations, which delayed sunflower planting in the major sunflower growing regions of South Dakota. A summary of climate conditions near the sunflower test sites is presented in table 1. Average temperatures were near normal in July through October at all locations except Reliance, which had cooler than normal temperatures in September and October. Moisture conditions varied across locations in July through October. Bison was drier than normal in July and September, but wetter than normal in August and October. Eureka started off dry in May but then was wetter than normal throughout the remainder of the growing season. Miller had above average precipitation in June and July, but below average rainfall August through October. Onida had near or slightly above normal precipitation in July, September, and October, but below normal rainfall in August. Reliance was drier than normal in July and August, and wetter than normal in September and October. Winds behind a cold front in late October gusted to 50 to 60+ mph across the state, causing considerable seed shatter in the sunflower plots, especially in the confections. The first killing frost (<24°F) occurred on October 23 at Bison and on October 27 at the other test sites, 8 to 18 days later than normal.

## Experimental Methods

Plots at all locations consisted of four rows 30-feet long, spaced 30-inches apart. The center two rows of each plot were harvested. The plot layout was in a randomized complete block design with four replications at each location. The experiments were randomized for a nearest neighbor statistical analysis, which removes the effects of field trends (see Crop Science 34:62-66).

Seed of most of the hybrids entered in the trials was pretreated with Cruiser insecticide, and most was also treated with fungicide. Seed treatments used on individual hybrids are listed in tables 2 and 3. All trials except Bison were seeded no-till. The previous crop at Eureka was barley, at Miller it was corn, at Reliance and Onida it was milo, and at Bison it was wheat. Spartan herbicide was applied for weed control at all locations.

Plots were overseeded and thinned to a plant population of approximately 17,400 plants/acre. Stands were good everywhere except Bison.

Flowering was recorded at Onida as the number of days from planting to 50% ray petals extended. Days from planting to physiological maturity (rated visually) was also recorded at Onida. Plant height and lodging notes were taken at all locations immediately before harvest. Lodging was low at all locations for most hybrids. Some plots had a lot of heads broken off due to the high winds. These were counted as lodged plants. There was considerable seed shattering in the confections, particularly at Onida. The Onida confections were not harvested.

Plots at Onida, Miller, Eureka, and Reliance were harvested with a Gleaner Model K combine fitted with a two-row all row crop header. Plots at Bison were harvested with a Massey-Ferguson plot combine fitted with sunflower pans. Seed yields were adjusted to a 10% moisture basis. Oil content was determined by NMR analysis. Oil values for NuSun and high oleic hybrids were adjusted for oleic acid content. Hulling quality was measured at Onida on selected hybrids by passing a one-pint seed sample over 14/64 and 13/64 round-hole screens.

A one-pint subsample of seed from each plot of the confection trials 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 them, and then weighing the 20 dehulled kernels.

## Results

Data from each location and combined over locations are contained in tables 4 through 11. Yields of oilseed hybrids were highest at Reliance, averaging 2383 lbs/acre over all hybrids tested, with an average oil content of 47.4%. The lowest yield and oil was measured at Bison, which averaged 1,727 lbs/acre and 42.4% oil. Confection seed yield averaged 1,360 lbs/acre at Miller. In the tables that follow, hybrids are listed alphabetically by 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.**

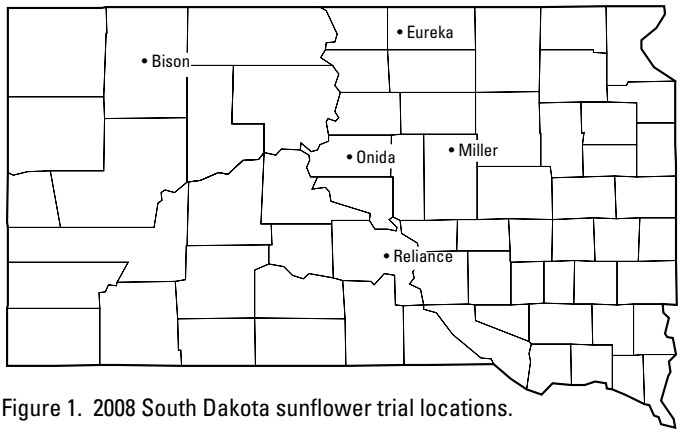

Figure 1. 2008 South Dakota sunflower trial locations.

**Table 1. Climate summary for nearest weather stations to 2008 South Dakota sunflower test sites and departures from normal.**

| LOCATION-MONTH | 2008 TEMPERATURE AVG MAX. | AVG MIN. | MEAN | TOTAL PRECIP IN. | DEPARTURE FROM NORMAL^ MAX TEMP | MIN TEMP | AVG TEMP | PRECIP IN. |
|---|---|---|---|---|---|---|---|---|
| | ----------°F---------- | | | | ----------°F---------- | | | |
| Bison* | | | | | | | | |
| May | 65 | 41 | 53 | 4.07 | -5 | -3 | -4 | 1.35 |
| June | 74 | 50 | 62 | 4.91 | -5 | -3 | -4 | 2.09 |
| July | 88 | 58 | 73 | 0.66 | 2 | 0 | 1 | -1.61 |
| August | 87 | 58 | 72 | 2.47 | 1 | 1 | 1 | 1.00 |
| September | 75 | 46 | 60 | 0.63 | 0 | -1 | 0 | -0.57 |
| October | 60 | 35 | 47 | 2.55 | -1 | 0 | -1 | 1.09 |
| Eureka* | | | | | | | | |
| May | 65 | 40 | 53 | 1.33 | -4 | -3 | -4 | -1.30 |
| June | 74 | 51 | 63 | 5.73 | -4 | -2 | -3 | 2.56 |
| July | 85 | 59 | 72 | 3.68 | 0 | 1 | 1 | 0.90 |
| August | 83 | 58 | 70 | 2.73 | -1 | 2 | 0 | 0.43 |
| September | 72 | 47 | 60 | 2.47 | -1 | 2 | 0 | 1.04 |
| October | 58 | 35 | 47 | 2.64 | -1 | 2 | 0 | 0.98 |
| Miller* | | | | | | | | |
| May | 65 | 42 | 54 | 2.51 | -3 | -4 | -3 | -0.63 |
| June | 76 | 53 | 64 | 3.95 | -2 | -2 | -3 | 1.05 |
| July | 84 | 60 | 72 | 4.61 | -1 | -1 | -1 | 2.01 |
| August | 83 | 59 | 71 | 1.16 | 0 | 1 | 0 | -0.85 |
| September | 74 | 46 | 60 | 1.43 | 0 | -1 | -1 | -0.37 |
| October | 58 | 35 | 46 | 0.37 | -3 | 0 | -1 | -1.40 |
| Onida* | | | | | | | | |
| May | 66 | 41 | 53 | 2.00 | -4 | -3 | -4 | -0.85 |
| June | 76 | 52 | 64 | 5.02 | -4 | -2 | -3 | 1.91 |
| July | 87 | 59 | 73 | 2.66 | -1 | 0 | 0 | -0.03 |
| August | 87 | 59 | 73 | 0.68 | 1 | 2 | 1 | -1.46 |
| September | 75 | 47 | 61 | 1.89 | -1 | 0 | 0 | 0.35 |
| October | 59 | 36 | 47 | 1.59 | -3 | 2 | -1 | 0.01 |
| Reliance* | | | | | | | | |
| May | 69 | 42 | 55 | 4.30 | -5 | -4 | -5 | 1.28 |
| June | 79 | 53 | 66 | 4.68 | -5 | -3 | -4 | 1.70 |
| July | 90 | 62 | 76 | 2.07 | -1 | 0 | 0 | -0.71 |
| August | 88 | 59 | 74 | 0.98 | -2 | 0 | -1 | -1.04 |
| September | 78 | 46 | 62 | 1.84 | -2 | -3 | -3 | 0.41 |
| October | 63 | 35 | 49 | 2.52 | -2 | -1 | -2 | 1.04 |

* 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 2008 observations to 30-yr averages (1971–2000) for each site.

**Table 2. Hybrids tested in the 2008 South Dakota oilseed hybrid sunflower trials.**

| Brand | Hybrid | Hybrid Type[1] | Seed[2] Treatmnt | Bison | Eureka | Miller | Onida | Reliance |
|---|---|---|---|---|---|---|---|---|
| Advanta Pacific LLC | F30008NS,CL | NS/CL | CMAX | X | | X | X | X |
| Advanta Pacific LLC | F30294NS,Rust | NS | CMAX | | X | X | | |
| Advanta Pacific LLC | F51132NS,CL | NS/CL | CMAX | | | X | | |
| Advanta Pacific LLC | F51137NS,CL | NS/CL | CMAX | | X | X | X | |
| Advanta Pacific LLC | F51139NS,DM,CL | NS/CL | CMAX | | X | X | X | |
| Croplan Genetics | CG 306 DMR NS | NS | | X | X | X | X | X |
| Croplan Genetics | CG 3080 DMR NS | NS | | X | X | X | X | X |
| Croplan Genetics | CG 325 DMR NS | NS | | X | X | X | X | X |
| Croplan Genetics | CG 356 NS | NS | | X | X | X | X | X |
| Croplan Genetics | CG 369 DMR NS | NS | | X | X | X | X | X |
| Croplan Genetics | CG 378 DMR NS | NS | | X | X | X | X | X |
| Croplan Genetics | CG 528 CL NS | NS/CL | | X | X | X | X | X |
| Croplan Genetics | CG 551 CL NS | NS/CL | | X | X | X | X | X |
| Croplan Genetics | CG 564 CL NS | NS | | X | X | X | X | X |
| Dahlgren & Co. | 4421 | NS | CR | | | X | X | |
| Dahlgren & Co. | 4455 | NS | CR | | | X | X | |
| Dahlgren & Co. | 4370NS | NS | CR | | | X | X | |
| Dahlgren & Co. | 4500CL | NS/CL | CR | | | X | X | |
| Dekalb | DKF 29-30 | NS | CMAX | X | X | X | X | X |
| Dekalb | DKF 34-33 | NS | CMAX | X | X | X | X | X |
| Dekalb | DKF 34-80CL | NS/CL | CMAX | X | X | X | X | X |
| Dekalb | DKF 37-31 | NS | CMAX | X | X | X | X | X |
| Dekalb | DKF 38-45 | NS | CMAX | X | X | X | X | X |
| Dekalb | DKF 3875 | Trad. | CMAX | X | X | X | X | X |
| Dekalb | DKF 39-80CL | NS/CL | CMAX | X | X | X | X | X |
| Dekalb | IS 7120 | HO | CMAX | X | X | X | X | X |
| Garst Seed Co. | 4651NS | NS | CR | X | X | | X | X |
| Garst Seed Co. | NX43489 | NS | CR | X | X | | X | X |
| Garst Seed Co. | NX44166 | HO | CR | X | X | | X | X |
| King Seed Inc. | SunKing 4404 NSCL | NS/CL | CR | X | X | X | X | X |
| King Seed Inc. | SunKing 4505 | Trad. | CR | X | X | X | X | X |
| Legend Seeds | LSF 318NCL | NS/CL | | | X | X | X | X |
| Monsanto | MH6640 | NS | CMAX | X | X | X | X | X |
| Monsanto | MH6643 | NS | CMAX | X | X | X | X | X |
| Monsanto | MH7632 | NS | CMAX | X | X | X | X | X |
| Monsanto | MH7633 | NS | CMAX | X | X | X | X | X |
| Mycogen Seeds | 8D481 | NS | CMAX | X | X | X | X | X |
| Mycogen Seeds | 8H449DM | HO | CMAX | X | X | X | X | X |
| Mycogen Seeds | 8N187 | NS | CMAX | X | X | X | X | X |
| Mycogen Seeds | 8N270 | NS | CMAX | X | X | X | X | X |
| Mycogen Seeds | 8N358CL | NS/CL | CMAX | X | X | X | X | X |
| Mycogen Seeds | 8N453DM | NS | CMAX | X | X | X | X | X |
| Mycogen Seeds | 8N510 | NS | CMAX | X | X | X | X | X |
| Pannar | Pan 7813 | NS | | X | X | X | X | X |
| Pannar | Pan 7924 | NS | | X | X | X | X | X |
| Pannar | Pan 7986 | NS | | X | X | X | X | X |
| Pannar | Pan 9501 | Trad. | | X | X | X | X | X |
| Pioneer Hi-Bred | Pioneer Brand 63M91 | NS | | | | X | X | X |

**Table 2 (cont.).**

| Brand | Hybrid | Hybrid Type[1] | Seed[2] Treatmnt | Bison | Eureka | Miller | Onida | Reliance |
|---|---|---|---|---|---|---|---|---|
| Pioneer Hi-Bred | Pioneer Brand 63N82 | NS/SU | | | | X | X | X |
| Pioneer Hi-Bred | Pioneer Brand 64H41 | HO | | | | X | X | X |
| Seeds 2000 | Barracuda CL-NS | NS/CL | CMAX | | X | X | X | X |
| Seeds 2000 | Blazer CL-NS | NS/CL | CMAX | | X | X | X | X |
| Seeds 2000 | Firebird-Expsun-NS | NS/SU | CMAX | | X | X | X | X |
| Seeds 2000 | Sierra HO | HO | CMAX | | X | X | X | X |
| Technology Crops Int'l | Olimax | HO | | | X | | | |
| Technology Crops Int'l | Olex | HO | | | X | | | |
| Triumph Seed Co. | 660CL | NS/CL | | | | X | | X |
| Triumph Seed Co. | 845HO | HO | | | X | | X | |
| Triumph Seed Co. | R859HOCL | HO/CL | | | X | X | | |
| Triumph Seed Co. | s672 | NS | | | | X | | |
| Triumph Seed Co. | s675 | NS | | | X | X | X | X |
| Triumph Seed Co. | s678 | NS | | X | X | X | X | X |
| Triumph Seed Co. | 630CL | NS/CL | | | | X | X | |
| Triumph Seed Co. | TRXs5423 | NS | | | | X | | |
| Triumph Seed Co. | TRXs7322 | NS | | | X | X | X | X |
| Triumph Seed Co. | s671 | NS | | X | X | X | X | X |
| Triumph Seed Co. | s880CL | HO/CL | | | X | X | X | X |
| Triumph Seed Co. | s878 | HO | | | X | X | X | X |
| Triumph Seed Co. | TRX7435HO | HO | | | X | X | | |
| Triumph Seed Co. | TRXs8325 | NS | | | | | X | |
| USDA | USDA 894 (check) | Trad. | | X | X | X | X | X |
| USDA | cms HA412/RHA 377(chk) | Trad. | | X | | | X | |
| USDA | Hyb. 894 (check) | Trad. | | X | X | X | X | X |
| USDA | cmsHA412/RHA409(chk) | Trad. | | X | X | X | X | X |
| | Total hybrids | | | 42 | 57 | 64 | 63 | 54 |

[1]NS = NuSun, HO = High oleic, Trad. = Traditional linoleic, CL = Clearfield, SU = Express-resistant.

[2]CR = Cruiser, CDM = Cruiser DM Pak, CMAX = CruiserMaxx Sunflower.

**Table 3. Hybrids tested in the 2008 South Dakota confection hybrid sunflower trials.**

| Brand | Hybrid | Herb. Resist. | Seed* Treatmnt | Miller | Onida |
|---|---|---|---|---|---|
| CHS | 07EXP02 | | Yes | X | X |
| CHS | 08EXP01[1] | | Yes | X | X |
| CHS | Royal Hyb. RH1121 | | Yes | X | X |
| Croplan Genetics | CG 135 | | | X | X |
| Croplan Genetics | CG 139 | | | X | X |
| Dahlgren & Co. | 9530 | | CR | X | X |
| Dahlgren & Co. | 9531 | | CR | X | X |
| Dahlgren & Co. | 9592 | | CR | X | X |
| Dahlgren & Co. | 95EXPCL | CL | CR | X | X |
| Monsanto | IS 8048 | | CMAX | X | X |
| Mycogen Seeds | 8C451 | | CMAX | X | X |
| Red River Commodities | 2215 | | CDM | X | X |
| Red River Commodities | 2216 | | CDM | X | X |
| Red River Commodities | 2419 | | CDM | X | X |
| Seeds 2000 | Jaguar-CL | CL | CMAX | X | X |
| Seeds 2000 | Panther II | | CMAX | X | X |
| SunOpta Sunflower | SS38A | | CDM | X | X |
| Triumph Seed Co. | 747C | | | X | |
| Triumph Seed Co. | 777C | | | X | |
| USDA | Hybrid 924 (check) | | | X | X |
| | | | Total | 20 | 18 |

* CR = Cruiser, CDM = Cruiser DM Pak, CMAX = CruiserMaxx Sunflower.
[1]CHS 08EXP01 was mistakenly entered in the confection trials instead of the oil trials. Performance information for this hybrid is footnoted at the bottom of the Miller oilseed table.

**Table 4. Oilseed sunflower hybrid trial, Bison, SD - 2008.**

| Brand | Hybrid | Type[1] | Seed Yield (lbs/A) 2008 | 2007 | 2-yr Avg. | Oil % | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000 pl/A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Advanta Pacific LLC | F30008NS,CL | NS/CL | 1858 | -- | -- | 39.8 | 156 | 0.0 | 15.1 | 25.7 | 15.0 |
| Croplan Genetics | CG 306 DMR NS | NS | 1868 | -- | -- | 42.6 | 145 | 1.6 | 14.0 | 27.6 | 11.8 |
| Croplan Genetics | CG 3080 DMR NS | NS | 2006 | -- | -- | 47.2 | 136 | 0.0 | 10.0 | 27.5 | 15.3 |
| Croplan Genetics | CG 325 DMR NS | NS | 1448 | -- | -- | 42.4 | 138 | 0.0 | 10.2 | 26.9 | 11.0 |
| Croplan Genetics | CG 356 NS | NS | 1931 | -- | -- | 43.1 | 144 | 0.0 | 16.6 | 28.4 | 13.7 |
| Croplan Genetics | CG 369 DMR NS | NS | 1512 | -- | -- | 42.6 | 156 | 0.6 | 15.4 | 26.6 | 10.6 |
| Croplan Genetics | CG 378 DMR NS | NS | 1878 | -- | -- | 41.1 | 152 | 0.0 | 15.3 | 25.8 | 10.4 |
| Croplan Genetics | CG 528 CL NS | NS/CL | 1912 | -- | -- | 42.7 | 146 | 0.8 | 11.5 | 28.1 | 13.2 |
| Croplan Genetics | CG 551 CL NS | NS/CL | 1317 | -- | -- | 40.3 | 157 | 0.0 | 14.5 | 24.8 | 12.1 |
| Croplan Genetics | CG 564 CL NS | NS | 1531 | -- | -- | 41.0 | 148 | 7.6 | 23.2 | 27.2 | 11.1 |
| Dekalb | DKF 29-30 | NS | 1059 | 1235 | 1147 | 43.6 | 139 | 0.0 | 7.1 | 29.0 | 12.7 |
| Dekalb | DKF 34-33 | NS | 1577 | 850 | 1213 | 42.9 | 136 | 4.3 | 13.8 | 26.8 | 8.5 |
| Dekalb | DKF 34-80CL | NS/CL | 1630 | 1345 | 1487 | 42.6 | 140 | 0.0 | 11.2 | 26.6 | 11.8 |
| Dekalb | DKF 37-31 | NS | 1256 | 1411 | 1333 | 44.7 | 134 | 0.0 | 14.9 | 28.7 | 10.0 |
| Dekalb | DKF 38-45 | NS | 1963 | 1865 | 1914 | 45.5 | 146 | 0.0 | 7.8 | 28.2 | 14.4 |
| Dekalb | DKF 3875 | Trad. | 2012 | 1679 | 1845 | 42.8 | 145 | 0.0 | 13.5 | 29.7 | 12.5 |
| Dekalb | DKF 39-80CL | NS/CL | 1666 | -- | -- | 38.9 | 169 | 0.0 | 14.3 | 25.4 | 10.2 |
| Dekalb | IS 7120 | HO | 1671 | 1255 | 1463 | 43.1 | 133 | 0.0 | 11.7 | 27.2 | 12.2 |
| Garst Seed Co. | 4651NS | NS | 1846 | -- | -- | 40.7 | 161 | 2.0 | 15.8 | 25.9 | 10.1 |
| Garst Seed Co. | NX43489 | NS | 1799 | -- | -- | 42.2 | 148 | 0.0 | 12.7 | 29.7 | 12.5 |
| Garst Seed Co. | NX44166 | HO | 1790 | -- | -- | 43.4 | 152 | 1.1 | 14.6 | 29.9 | 10.6 |
| King Seed Inc. | SunKing 4404 NSCL | NS/CL | 2246 | -- | -- | 37.8 | 153 | 0.4 | 16.3 | 26.1 | 15.2 |
| King Seed Inc. | SunKing 4505 | Trad. | 1754 | -- | -- | 44.4 | 161 | 0.7 | 9.9 | 28.6 | 10.8 |
| Monsanto | MH6640 | NS | 1604 | -- | -- | 44.0 | 140 | 2.1 | 13.6 | 29.7 | 11.0 |
| Monsanto | MH6643 | NS | 1414 | -- | -- | 44.5 | 143 | 0.0 | 11.7 | 27.6 | 10.9 |
| Monsanto | MH7632 | NS | 2008 | -- | -- | 43.3 | 141 | 0.0 | 14.9 | 28.9 | 14.0 |
| Monsanto | MH7633 | NS | 1550 | -- | -- | 40.5 | 150 | 2.9 | 15.1 | 28.3 | 9.2 |
| Mycogen Seeds | 8D481 | NS | 1803 | -- | -- | 39.9 | 146 | 0.0 | 13.1 | 30.5 | 10.5 |
| Mycogen Seeds | 8H449DM | HO | 2129 | 1273 | 1701 | 45.6 | 142 | 3.0 | 20.2 | 27.7 | 12.7 |
| Mycogen Seeds | 8N187 | NS | 1811 | -- | -- | 39.3 | 119 | 0.7 | 17.9 | 27.0 | 12.1 |
| Mycogen Seeds | 8N270 | NS | 1722 | 1454 | 1588 | 40.8 | 123 | 0.0 | 11.4 | 27.9 | 13.7 |
| Mycogen Seeds | 8N358CL | NS/CL | 1881 | 666 | 1273 | 43.7 | 141 | 0.0 | 15.6 | 27.2 | 13.5 |
| Mycogen Seeds | 8N453DM | NS | 1766 | 1815 | 1790 | 46.9 | 137 | 0.0 | 18.9 | 27.4 | 13.4 |
| Mycogen Seeds | 8N510 | NS | 1587 | 1630 | 1609 | 41.2 | 140 | 0.0 | 17.6 | 27.3 | 11.6 |
| Pannar | Pan 7813 | NS | 1844 | 2008 | 1926 | 41.2 | 146 | 0.9 | 21.0 | 27.6 | 10.7 |
| Pannar | Pan 7924 | NS | 1820 | 1704 | 1762 | 38.7 | 159 | 4.1 | 23.8 | 24.9 | 10.5 |
| Pannar | Pan 7986 | NS | 1911 | -- | -- | 40.2 | 154 | 0.5 | 15.0 | 28.5 | 15.1 |
| Pannar | Pan 9501 | Trad. | 1680 | 1525 | 1602 | 38.4 | 158 | 1.2 | 14.0 | 27.5 | 14.8 |
| Triumph Seed Co. | s678 | NS | 1783 | 1650 | 1717 | 42.7 | 140 | 0.0 | 21.4 | 26.3 | 14.7 |
| Triumph Seed Co. | s671 | NS | 1978 | -- | -- | 43.5 | 118 | 0.0 | 21.2 | 26.7 | 15.9 |
| USDA | USDA 894 (check) | Trad. | 1094 | 867 | 980 | 44.0 | 141 | 0.0 | 16.7 | 26.8 | 10.9 |
| USDA | cms HA412/RHA 377(chk) | Trad. | 1610 | -- | -- | 48.2 | 145 | 2.1 | 12.7 | 27.7 | 12.8 |
| Grand Mean | | | 1727 | 1385 | 1550 | 42.4 | 145 | 0.9 | 14.9 | 27.5 | 12.2 |
| LSD 5% | | | 484 | 574 | 395 | 1.7 | 12 | ns | 3.4 | 2.3 | ns |
| C.V. | | | 20.0 | 20.4 | 19.9 | 2.9 | 6.1 | 298 | 16.3 | 5.9 | 25.6 |

[1]NS=NuSun, HO=High Oleic, Trad.=Traditional linoleic, CL=Clearfield, DM=downy mildew resistant, SU=Express-resistant.
Planted June 16, 2008.
Yield is reported at 10% moisture. Oil % is adjusted for oleic acid content.

**Table 5. Oilseed sunflower hybrid trial, Miller, SD - 2008.**

| Brand | Hybrid | Type[1] | Seed Yield (lbs/A) 2008 | 2007 | 2-yr Avg. | Oil % | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000 pl/A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Advanta Pacific LLC | F30008NS,CL | NS/CL | 1859 | -- | -- | 45.9 | 184 | 3.3 | 13.0 | 30.9 | 17.4 |
| Advanta Pacific LLC | F30294NS,Rust | NS | 1904 | -- | -- | 46.6 | 169 | 2.1 | 14.2 | 31.1 | 17.4 |
| Advanta Pacific LLC | F51132NS,CL | NS/CL | 1796 | -- | -- | 48.2 | 171 | 2.9 | 13.3 | 30.5 | 17.4 |
| Advanta Pacific LLC | F51137NS,CL | NS/CL | 1587 | -- | -- | 47.4 | 160 | 0.8 | 13.5 | 31.0 | 17.4 |
| Advanta Pacific LLC | F51139NS,DM,CL | NS/CL | 1766 | -- | -- | 47.0 | 170 | 0.4 | 13.1 | 32.1 | 17.4 |
| Croplan Genetics | CG 306 DMR NS | NS | 1826 | -- | -- | 47.8 | 166 | 0.0 | 12.7 | 31.8 | 17.4 |
| Croplan Genetics | CG 3080 DMR NS | NS | 2028 | -- | -- | 49.8 | 164 | 2.1 | 12.5 | 30.9 | 17.4 |
| Croplan Genetics | CG 325 DMR NS | NS | 2041 | -- | -- | 48.3 | 173 | 0.8 | 13.1 | 31.4 | 17.4 |
| Croplan Genetics | CG 356 NS | NS | 2584 | -- | -- | 47.3 | 164 | 2.5 | 15.3 | 33.3 | 17.4 |
| Croplan Genetics | CG 369 DMR NS | NS | 2349 | -- | -- | 47.8 | 181 | 3.3 | 14.6 | 30.9 | 17.4 |
| Croplan Genetics | CG 378 DMR NS | NS | 2108 | -- | -- | 47.1 | 185 | 7.5 | 14.1 | 32.0 | 17.4 |
| Croplan Genetics | CG 528 CL NS | NS/CL | 1929 | -- | -- | 47.2 | 172 | 1.4 | 12.1 | 32.6 | 17.0 |
| Croplan Genetics | CG 551 CL NS | NS/CL | 2069 | -- | -- | 48.1 | 183 | 0.0 | 13.9 | 29.9 | 17.4 |
| Croplan Genetics | CG 564 CL NS | NS | 1948 | -- | -- | 49.2 | 182 | 1.7 | 14.3 | 32.2 | 17.4 |
| Dahlgren & Co. | 4421 | NS | 1937 | 2024 | 1981 | 45.4 | 173 | 2.9 | 12.5 | 30.4 | 17.4 |
| Dahlgren & Co. | 4455 | NS | 2060 | 1884 | 1972 | 46.2 | 173 | 3.3 | 12.5 | 31.5 | 17.4 |
| Dahlgren & Co. | 4370NS | NS | 1895 | -- | -- | 47.2 | 163 | 0.5 | 12.9 | 32.2 | 17.0 |
| Dahlgren & Co. | 4500CL | NS/CL | 2051 | -- | -- | 47.6 | 174 | 2.1 | 12.9 | 31.4 | 17.4 |
| Dekalb | DKF 29-30 | NS | 2033 | 1234 | 1633 | 48.2 | 165 | 1.3 | 12.3 | 31.7 | 17.0 |
| Dekalb | DKF 34-33 | NS | 2339 | 1190 | 1764 | 49.5 | 168 | 0.8 | 13.3 | 33.1 | 17.4 |
| Dekalb | DKF 34-80CL | NS/CL | 1534 | 1142 | 1338 | 48.1 | 168 | 3.5 | 12.8 | 32.7 | 16.7 |
| Dekalb | DKF 37-31 | NS | 2346 | 2200 | 2273 | 48.9 | 168 | 2.1 | 13.9 | 32.9 | 17.4 |
| Dekalb | DKF 38-45 | NS | 2460 | 1758 | 2109 | 49.2 | 174 | 2.1 | 13.5 | 31.8 | 17.4 |
| Dekalb | DKF 3875 | Trad. | 2650 | 1841 | 2246 | 49.3 | 171 | 1.7 | 13.6 | 33.0 | 16.8 |
| Dekalb | DKF 39-80CL | NS/CL | 1646 | -- | -- | 45.8 | 186 | 5.8 | 12.8 | 31.4 | 17.4 |
| Dekalb | IS 7120 | HO | 1615 | 2164 | 1890 | 47.6 | 158 | 1.9 | 12.8 | 31.3 | 17.0 |
| King Seed Inc. | SunKing 4404 NSCL | NS/CL | 2126 | 2272 | 2199 | 47.0 | 180 | 6.7 | 13.7 | 31.0 | 17.4 |
| King Seed Inc. | SunKing 4505 | Trad. | 1833 | 1670 | 1751 | 48.7 | 184 | 1.7 | 12.2 | 31.2 | 17.4 |
| Legend Seeds | LSF 318NCL | NS/CL | 1551 | -- | -- | 46.0 | 160 | 1.3 | 12.6 | 32.4 | 17.4 |
| Monsanto | MH6640 | NS | 2494 | -- | -- | 50.0 | 162 | 0.0 | 14.0 | 32.2 | 17.4 |
| Monsanto | MH6643 | NS | 1881 | -- | -- | 48.3 | 167 | 2.9 | 13.0 | 31.6 | 17.4 |
| Monsanto | MH7632 | NS | 2699 | -- | -- | 48.7 | 172 | 0.0 | 13.7 | 32.3 | 17.4 |
| Monsanto | MH7633 | NS | 2483 | -- | -- | 47.2 | 172 | 2.5 | 13.1 | 31.8 | 17.4 |
| Mycogen Seeds | 8D481 | NS | 1981 | -- | -- | 45.7 | 172 | 2.9 | 13.0 | 31.2 | 17.4 |
| Mycogen Seeds | 8H449DM | HO | 2556 | 2030 | 2293 | 50.5 | 182 | 2.9 | 15.6 | 32.4 | 17.4 |
| Mycogen Seeds | 8N187 | NS | 1424 | -- | -- | 45.8 | 162 | 4.2 | 12.7 | 30.5 | 17.4 |
| Mycogen Seeds | 8N270 | NS | 1779 | -- | -- | 48.2 | 157 | 0.4 | 12.9 | 31.3 | 17.4 |
| Mycogen Seeds | 8N358CL | NS/CL | 1866 | 1869 | 1868 | 48.9 | 170 | 1.7 | 13.8 | 31.4 | 17.4 |
| Mycogen Seeds | 8N453DM | NS | 2176 | 1855 | 2015 | 50.5 | 180 | 3.3 | 14.2 | 31.9 | 17.4 |
| Mycogen Seeds | 8N510 | NS | 2117 | 2205 | 2161 | 46.8 | 166 | 2.9 | 13.6 | 31.3 | 17.4 |
| Pannar | Pan 7813 | NS | 2403 | 2686 | 2544 | 47.8 | 171 | 2.2 | 15.3 | 32.6 | 16.8 |
| Pannar | Pan 7924 | NS | 2302 | 2217 | 2259 | 46.3 | 168 | 3.8 | 15.1 | 30.8 | 17.4 |
| Pannar | Pan 7986 | NS | 1916 | -- | -- | 46.2 | 175 | 2.9 | 13.8 | 31.3 | 17.4 |
| Pannar | Pan 9501 | Trad. | 1937 | 2027 | 1982 | 47.6 | 178 | 2.1 | 14.2 | 31.4 | 17.4 |
| Pioneer Hi-Bred | Pioneer Brand 63M91 | NS | 1725 | -- | -- | 48.8 | 180 | 2.1 | 12.6 | 31.1 | 17.4 |
| Pioneer Hi-Bred | Pioneer Brand 63N82 | NS/SU | 2194 | -- | -- | 48.0 | 164 | 0.4 | 14.1 | 32.6 | 17.2 |
| Pioneer Hi-Bred | Pioneer Brand 64H41 | HO | 1717 | -- | -- | 47.0 | 193 | 3.3 | 14.2 | 32.6 | 17.4 |
| Seeds 2000 | Barracuda CL-NS | NS/CL | 1910 | 1337 | 1623 | 46.6 | 176 | 0.8 | 15.4 | 31.3 | 17.4 |
| Seeds 2000 | Blazer CL-NS | NS/CL | 2059 | 1994 | 2027 | 48.3 | 189 | 4.2 | 15.7 | 30.4 | 17.4 |

**Table 5 (continued).**

| Brand | Hybrid | Type1 | Seed Yield (lbs/A) 2008 | 2007 | 2-yr Avg. | Oil % | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000 pl/A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Seeds 2000 | Firebird-Expsun-NS | NS/SU | 2342 | 2265 | 2303 | 47.3 | 166 | 1.7 | 16.3 | 31.6 | 17.4 |
| Seeds 2000 | Sierra HO | HO | 2028 | 2076 | 2052 | 46.4 | 178 | 2.1 | 13.5 | 29.2 | 17.4 |
| Triumph Seed Co. | 660CL | NS/CL | 2195 | 2215 | 2205 | 47.8 | 175 | 1.7 | 14.8 | 31.8 | 17.4 |
| Triumph Seed Co. | R859HOCL | HO/CL | 2511 | 2089 | 2300 | 47.0 | 184 | 1.3 | 14.1 | 31.4 | 17.4 |
| Triumph Seed Co. | s672 | NS | 2523 | -- | -- | 49.6 | 113 | 0.0 | 16.0 | 31.2 | 17.4 |
| Triumph Seed Co. | s675 | NS | 2672 | 2323 | 2498 | 49.4 | 102 | 0.0 | 16.5 | 30.8 | 17.4 |
| Triumph Seed Co. | s678 | NS | 2439 | 2443 | 2441 | 48.8 | 144 | 0.0 | 15.9 | 32.4 | 17.4 |
| Triumph Seed Co. | 630CL | NS/CL | 1741 | -- | -- | 47.7 | 172 | 5.4 | 12.7 | 30.4 | 17.4 |
| Triumph Seed Co. | TRXs5423 | NS | 1789 | 2343 | 2066 | 49.4 | 104 | 0.0 | 13.6 | 31.2 | 17.4 |
| Triumph Seed Co. | TRXs7322 | NS | 2026 | -- | -- | 49.8 | 117 | 0.0 | 15.3 | 31.1 | 17.4 |
| Triumph Seed Co. | s671 | NS | 2080 | 2345 | 2213 | 48.9 | 136 | 0.0 | 15.5 | 31.4 | 17.4 |
| Triumph Seed Co. | s880CL | HO/CL | 2280 | 2714 | 2497 | 48.0 | 98 | 0.4 | 14.0 | 31.0 | 17.4 |
| Triumph Seed Co. | s878 | HO | 2372 | 2059 | 2215 | 48.9 | 149 | 0.8 | 16.3 | 32.4 | 17.4 |
| Triumph Seed Co. | TRX7435HO | HO | 1981 | -- | -- | 49.4 | 175 | 1.7 | 13.6 | 30.2 | 17.4 |
| USDA | USDA 894 (check) | Trad. | 1489 | 1606 | 1548 | 51.3 | 154 | 2.7 | 13.2 | 31.8 | 16.3 |
| (CHS | 08EXP01** | | 1543 | -- | -- | 39.8 | 181 | 5 | -- | 24.0 | 16.5) |
| Grand Mean | | | 2062 | 1879 | 2062 | 48.0 | 166 | 2.0 | 13.8 | 31.5 | 17.3 |
| LSD 5% | | | 402 | 502 | 317 | 1.2 | 9 | 3.5 | 0.9 | 1.4 | 0.5 |
| C.V. | | | 14.0 | 16.6 | 14.6 | 1.8 | 3.7 | 124.2 | 4.6 | 3.1 | 2.1 |

**CHS 08EXP01 was mistakenly entered into the confection trial. The data presented are from that trial and are not included in the oilseed trial statistics.

[1]NS=NuSun, HO=High Oleic, Trad.=Traditional linoleic, CL=Clearfield, DM=downy mildew resistant, SU=Express-resistant.

Planted June 10, 2008. Harvested October 31, 2008.

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

**Table 6. Oilseed sunflower hybrid trial, Eureka, SD - 2008.**

| Brand | Hybrid | Type[1] | Seed Yield (lbs/A) 2008 | 2007 | 2-yr Avg. | Oil % | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000 pl/A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Advanta Pacific LLC | F30294NS,Rust | NS | 1648 | -- | -- | 44.6 | 181 | 4 | 17.8 | 30.7 | 17.4 |
| Advanta Pacific LLC | F51137NS,CL | NS/CL | 1598 | -- | -- | 45.9 | 175 | 0 | 16.6 | 32.8 | 17.4 |
| Advanta Pacific LLC | F51139NS,DM,CL | NS/CL | 1519 | -- | -- | 45.5 | 185 | 4 | 17.0 | 31.7 | 17.4 |
| Croplan Genetics | CG 306 DMR NS | NS | 2103 | -- | -- | 46.9 | 177 | 2 | 16.6 | 30.2 | 17.4 |
| Croplan Genetics | CG 3080 DMR NS | NS | 1832 | -- | -- | 47.2 | 177 | 6 | 16.3 | 30.7 | 17.4 |
| Croplan Genetics | CG 325 DMR NS | NS | 2261 | -- | -- | 46.4 | 175 | 3 | 17.8 | 30.6 | 17.4 |
| Croplan Genetics | CG 356 NS | NS | 2672 | -- | -- | 45.5 | 176 | 3 | 17.6 | 32.4 | 17.4 |
| Croplan Genetics | CG 369 DMR NS | NS | 2036 | -- | -- | 46.0 | 185 | 5 | 16.7 | 31.1 | 17.4 |
| Croplan Genetics | CG 378 DMR NS | NS | 1838 | -- | -- | 45.0 | 181 | 7 | 17.8 | 30.4 | 17.4 |
| Croplan Genetics | CG 528 CL NS | NS/CL | 1526 | -- | -- | 44.8 | 179 | 3 | 16.4 | 32.5 | 17.4 |
| Croplan Genetics | CG 551 CL NS | NS/CL | 1791 | -- | -- | 45.8 | 194 | 2 | 17.2 | 30.9 | 17.4 |
| Croplan Genetics | CG 564 CL NS | NS | 1912 | -- | -- | 47.0 | 181 | 2 | 17.5 | 31.0 | 17.4 |
| Dekalb | DKF 29-30 | NS | 1897 | 1941 | 1919 | 46.4 | 181 | 4 | 15.9 | 32.4 | 17.4 |
| Dekalb | DKF 34-33 | NS | 2136 | 2277 | 2207 | 46.8 | 185 | 5 | 16.3 | 32.3 | 17.4 |
| Dekalb | DKF 34-80CL | NS/CL | 1786 | 1764 | 1775 | 45.2 | 177 | 3 | 17.0 | 31.8 | 17.4 |
| Dekalb | DKF 37-31 | NS | 2426 | 2138 | 2282 | 45.2 | 170 | 2 | 17.0 | 31.5 | 17.4 |
| Dekalb | DKF 38-45 | NS | 2404 | 2577 | 2490 | 47.5 | 170 | 3 | 16.6 | 33.3 | 17.0 |
| Dekalb | DKF 3875 | Trad. | 2084 | 2365 | 2225 | 47.4 | 178 | 5 | 16.3 | 31.2 | 16.3 |
| Dekalb | DKF 39-80CL | NS/CL | 1881 | -- | -- | 44.5 | 197 | 7 | 16.4 | 31.6 | 17.4 |
| Dekalb | IS 7120 | HO | 1876 | 2254 | 2065 | 47.9 | 172 | 3 | 17.5 | 31.4 | 17.4 |
| Garst Seed Co. | 4651NS | NS | 1830 | -- | -- | 44.4 | 190 | 8 | 17.5 | 29.8 | 17.4 |
| Garst Seed Co. | NX43489 | NS | 1754 | -- | -- | 45.2 | 185 | 11 | 17.2 | 31.5 | 16.5 |
| Garst Seed Co. | NX44166 | HO | 1869 | -- | -- | 45.6 | 177 | 7 | 17.0 | 32.7 | 17.4 |
| King Seed Inc. | SunKing 4404 NSCL | NS/CL | 2149 | 2082 | 2116 | 44.2 | 187 | 6 | 17.4 | 30.1 | 16.8 |
| King Seed Inc. | SunKing 4505 | Trad. | 1821 | 1758 | 1790 | 47.3 | 202 | 5 | 16.7 | 30.4 | 17.4 |
| Legend Seeds | LSF 318NCL | NS/CL | 1544 | -- | -- | 44.6 | 165 | 3 | 16.2 | 31.5 | 17.4 |
| Monsanto | MH6640 | NS | 2353 | -- | -- | 45.8 | 172 | 5 | 17.1 | 32.7 | 17.4 |
| Monsanto | MH6643 | NS | 1767 | -- | -- | 46.0 | 170 | 5 | 17.4 | 30.9 | 17.4 |
| Monsanto | MH7632 | NS | 2486 | -- | -- | 45.7 | 173 | 2 | 17.5 | 32.7 | 17.4 |
| Monsanto | MH7633 | NS | 2268 | -- | -- | 46.4 | 183 | 6 | 16.3 | 31.8 | 17.4 |
| Mycogen Seeds | 8D481 | NS | 2344 | -- | -- | 44.0 | 184 | 4 | 16.7 | 31.4 | 17.4 |
| Mycogen Seeds | 8H449DM | HO | 2086 | 2565 | 2326 | 46.9 | 191 | 6 | 17.4 | 31.4 | 17.4 |
| Mycogen Seeds | 8N187 | NS | 1784 | -- | -- | 45.5 | 169 | 4 | 16.4 | 31.4 | 17.4 |
| Mycogen Seeds | 8N270 | NS | 2030 | 2143 | 2087 | 45.9 | 167 | 2 | 16.4 | 30.9 | 17.4 |
| Mycogen Seeds | 8N358CL | NS/CL | 2054 | 2544 | 2299 | 46.2 | 182 | 4 | 17.1 | 30.7 | 17.4 |
| Mycogen Seeds | 8N453DM | NS | 2371 | 2055 | 2213 | 47.1 | 186 | 4 | 17.3 | 32.3 | 17.4 |
| Mycogen Seeds | 8N510 | NS | 2210 | 2942 | 2576 | 44.9 | 176 | 2 | 17.4 | 29.6 | 17.4 |
| Pannar | Pan 7813 | NS | 2032 | 2340 | 2186 | 45.1 | 178 | 3 | 18.2 | 30.9 | 17.4 |
| Pannar | Pan 7924 | NS | 1790 | 2381 | 2085 | 45.1 | 186 | 12 | 17.7 | 31.0 | 17.4 |
| Pannar | Pan 7986 | NS | 2221 | -- | -- | 43.6 | 186 | 9 | 18.2 | 32.8 | 17.0 |
| Pannar | Pan 9501 | Trad. | 1795 | 2518 | 2157 | 43.8 | 199 | 8 | 17.1 | 33.3 | 17.4 |
| Technology Crops Int'l | Olimax | HO | 1722 | -- | -- | 46.7 | 189 | 5 | 16.7 | 29.6 | 17.4 |
| Technology Crops Int'l | Olex | HO | 1340 | -- | -- | 44.9 | 188 | 9 | 17.1 | 30.2 | 17.4 |
| Seeds 2000 | Barracuda CL-NS | NS/CL | 1928 | 2170 | 2049 | 45.3 | 185 | 1 | 18.3 | 32.0 | 17.4 |
| Seeds 2000 | Blazer CL-NS | NS/CL | 1947 | 1985 | 1966 | 45.5 | 193 | 14 | 17.9 | 30.6 | 17.4 |
| Seeds 2000 | Firebird-Expsun-NS | NS/SU | 2276 | 2750 | 2513 | 44.6 | 169 | 0 | 18.1 | 30.5 | 17.4 |
| Seeds 2000 | Sierra HO | HO | 1808 | 2215 | 2011 | 44.9 | 178 | 17 | 16.2 | 29.9 | 17.4 |
| Triumph Seed Co. | 845HO | HO | 2053 | -- | -- | 46.2 | 182 | 7 | 17.9 | 29.8 | 17.4 |

**Table 6 (continued).**

| Brand | Hybrid | Type[1] | Seed Yield (lbs/A) 2008 | 2007 | 2-yr Avg. | Oil % | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000 pl/A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Triumph Seed Co. | R859HOCL | HO/CL | 1942 | -- | -- | 45.3 | 185 | 3 | 17.1 | 31.1 | 17.4 |
| Triumph Seed Co. | s675 | NS | 1948 | 2186 | 2067 | 47.1 | 100 | 0 | 17.4 | 29.9 | 17.4 |
| Triumph Seed Co. | s678 | NS | 2279 | 2047 | 2163 | 48.0 | 139 | 2 | 17.0 | 32.1 | 17.4 |
| Triumph Seed Co. | TRXs7322 | NS | 2256 | -- | -- | 46.2 | 100 | 0 | 17.2 | 31.4 | 17.4 |
| Triumph Seed Co. | s671 | NS | 2185 | -- | -- | 47.3 | 124 | 0 | 17.2 | 31.0 | 17.4 |
| Triumph Seed Co. | s880CL | HO/CL | 2332 | 2132 | 2232 | 46.3 | 104 | 0 | 18.1 | 29.8 | 17.4 |
| Triumph Seed Co. | s878 | HO | 2297 | -- | -- | 46.3 | 150 | 2 | 17.5 | 30.9 | 17.4 |
| Triumph Seed Co. | TRX7435HO | HO | 2027 | -- | -- | 46.3 | 184 | 5 | 17.5 | 29.8 | 17.4 |
| USDA | USDA 894 (check) | Trad. | 1654 | 1638 | 1646 | 48.4 | 156 | 5 | 15.9 | 31.7 | 17.4 |
| Grand Mean | | | 2003 | 2065 | 2146 | 45.9 | 170 | 4 | 17.1 | 31.2 | 17.3 |
| LSD 5% | | | 358 | 416 | 273 | 1.6 | 10 | 6 | 0.8 | 1.4 | ns |
| C.V. | | | 12.8 | 14.4 | 13.4 | 2.5 | 4.0 | 100 | 3.3 | 3.1 | 3.6 |

[1]NS=NuSun, HO=High Oleic, Trad.=Traditional linoleic, CL=Clearfield, DM=downy mildew resistant, SU=Express-resistant.
Replanted on June 17, 2008 after being hailed out. Harvested Novenber 24, 2008.
Yield and oil % are reported at 10% moisture. Oil % is adjusted for oleic acid content.

**Table 7. Oilseed sunflower hybrid trial, Onida, SD - 2008.**

| Brand | Hybrid | Type[1] | Seed Yield lbs/A | Oil % | Days to Flwr | Mat. | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000 pl/A | Hulling Quality |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Advanta Pacific LLC | F30008NS,CL | NS/CL | 1831 | 41.9 | 65 | 113 | 177 | 14.6 | 13.0 | 29.8 | 17.4 | |
| Advanta Pacific LLC | F51137NS,CL | NS/CL | 1495 | 42.9 | 64 | 106 | 157 | 2.1 | 11.9 | 29.8 | 17.4 | |
| Advanta Pacific LLC | F51139NS,DM,CL | NS/CL | 1625 | 45.1 | 63 | 106 | 168 | 2.1 | 12.7 | 29.8 | 17.4 | |
| Croplan Genetics | CG 306 DMR NS | NS | 1809 | 45.2 | 61 | 105 | 152 | 0.4 | 12.9 | 29.5 | 17.4 | |
| Croplan Genetics | CG 3080 DMR NS | NS | 1603 | 46.2 | 60 | 106 | 158 | 2.9 | 12.5 | 30.0 | 17.4 | |
| Croplan Genetics | CG 325 DMR NS | NS | 1845 | 44.7 | 62 | 101 | 171 | 1.3 | 12.3 | 29.3 | 17.4 | |
| Croplan Genetics | CG 356 NS | NS | 2176 | 44.7 | 63 | 104 | 161 | 2.1 | 13.7 | 30.3 | 17.4 | |
| Croplan Genetics | CG 369 DMR NS | NS | 1859 | 45.6 | 64 | 106 | 167 | 2.1 | 12.3 | 29.7 | 17.4 | |
| Croplan Genetics | CG 378 DMR NS | NS | 1400 | 44.4 | 63 | 99 | 178 | 10.4 | 13.3 | 28.8 | 17.4 | |
| Croplan Genetics | CG 528 CL NS | NS/CL | 1409 | 43.8 | 60 | 104 | 172 | 2.5 | 12.1 | 29.9 | 17.4 | |
| Croplan Genetics | CG 551 CL NS | NS/CL | 1510 | 44.2 | 64 | 103 | 170 | 2.1 | 12.9 | 29.6 | 17.4 | |
| Croplan Genetics | CG 564 CL NS | NS | 1706 | 45.3 | 66 | 107 | 172 | 0.8 | 13.2 | 30.3 | 17.4 | |
| Dahlgren & Co. | 4421 | NS | 1722 | 42.1 | 61 | 97 | 168 | 1.3 | 12.3 | 28.8 | 17.4 | |
| Dahlgren & Co. | 4455 | NS | 1991 | 42.0 | 64 | 102 | 165 | 2.1 | 13.0 | 29.4 | 17.4 | |
| Dahlgren & Co. | 4370NS | NS | 1737 | 44.3 | 59 | 97 | 153 | 3.0 | 11.2 | 29.8 | 16.5 | |
| Dahlgren & Co. | 4500CL | NS/CL | 1674 | 45.9 | 64 | 101 | 167 | 2.9 | 12.2 | 30.2 | 17.4 | |
| Dekalb | DKF 29-30 | NS | 1684 | 44.9 | 60 | 95 | 165 | 1.3 | 12.2 | 30.3 | 17.4 | |
| Dekalb | DKF 34-33 | NS | 1718 | 45.8 | 63 | 97 | 163 | 4.4 | 12.7 | 30.5 | 16.1 | |
| Dekalb | DKF 34-80CL | NS/CL | 1910 | 45.5 | 62 | 97 | 167 | 0.0 | 12.3 | 29.7 | 17.4 | |
| Dekalb | DKF 37-31 | NS | 2002 | 43.7 | 63 | 101 | 167 | 1.3 | 12.9 | 29.6 | 17.4 | |
| Dekalb | DKF 38-45 | NS | 1916 | 44.9 | 63 | 102 | 168 | 2.1 | 12.0 | 29.1 | 17.4 | |
| Dekalb | DKF 3875 | Trad. | 2020 | 47.0 | 64 | 104 | 167 | 9.2 | 13.0 | 29.8 | 17.4 | |
| Dekalb | DKF 39-80CL | NS/CL | 1216 | 42.2 | 64 | 105 | 186 | 25.0 | 12.8 | 29.3 | 13.9 | Excel |
| Dekalb | IS 7120 | HO | 1722 | 45.4 | 61 | 106 | 150 | 0.4 | 12.6 | 29.7 | 17.4 | |
| Garst Seed Co. | 4651NS | NS | 1291 | 45.3 | 63 | 104 | 177 | 9.6 | 13.2 | 28.9 | 16.3 | |
| Garst Seed Co. | NX43489 | NS | 1359 | 45.3 | 64 | 104 | 169 | 10.5 | 13.3 | 29.6 | 15.9 | |
| Garst Seed Co. | NX44166 | HO | 1861 | 44.5 | 63 | 106 | 174 | 2.9 | 12.5 | 30.9 | 17.4 | |
| King Seed Inc. | SunKing 4404 NSCL | NS/CL | 1554 | 43.4 | 65 | 104 | 180 | 18.3 | 12.8 | 30.8 | 16.5 | |
| King Seed Inc. | SunKing 4505 | Trad. | 1606 | 47.4 | 66 | 99 | 176 | 2.1 | 12.0 | 29.8 | 17.4 | Excel |
| Legend Seeds | LSF 318NCL | NS/CL | 1483 | 43.7 | 61 | 99 | 148 | 5.0 | 11.3 | 29.8 | 17.4 | Excel |
| Monsanto | MH6640 | NS | 1617 | 45.3 | 62 | 107 | 159 | 2.5 | 12.8 | 30.5 | 17.4 | |
| Monsanto | MH6643 | NS | 1611 | 44.2 | 61 | 104 | 157 | 0.7 | 13.2 | 28.9 | 15.7 | |
| Monsanto | MH7632 | NS | 1907 | 45.8 | 65 | 104 | 164 | 0.4 | 13.5 | 31.2 | 17.4 | |
| Monsanto | MH7633 | NS | 1853 | 45.3 | 65 | 112 | 170 | 30.0 | 12.4 | 30.8 | 17.4 | |
| Mycogen Seeds | 8D481 | NS | 2091 | 42.8 | 65 | 95 | 174 | 1.3 | 13.7 | 29.7 | 17.4 | Excel |
| Mycogen Seeds | 8H449DM | HO | 1967 | 46.8 | 65 | 104 | 170 | 2.1 | 13.2 | 30.5 | 16.3 | |
| Mycogen Seeds | 8N187 | NS | 1619 | 44.1 | 62 | 104 | 151 | 1.3 | 12.4 | 29.6 | 17.4 | Good |
| Mycogen Seeds | 8N270 | NS | 1572 | 43.4 | 58 | 102 | 148 | 4.6 | 11.5 | 29.9 | 17.4 | Good |
| Mycogen Seeds | 8N358CL | NS/CL | 1631 | 45.3 | 63 | 97 | 165 | 3.8 | 13.3 | 29.0 | 17.4 | |
| Mycogen Seeds | 8N453DM | NS | 1973 | 48.3 | 63 | 104 | 167 | 1.3 | 13.4 | 31.3 | 17.4 | |
| Mycogen Seeds | 8N510 | NS | 2075 | 45.3 | 64 | 103 | 171 | 6.7 | 13.0 | 30.0 | 17.4 | Excel |
| Pannar | Pan 7813 | NS | 1665 | 44.8 | 64 | 112 | 150 | 0.8 | 13.7 | 30.0 | 17.4 | |
| Pannar | Pan 7924 | NS | 2113 | 44.7 | 64 | 106 | 167 | 5.8 | 13.8 | 29.3 | 17.4 | |
| Pannar | Pan 7986 | NS | 1955 | 42.3 | 65 | 115 | 169 | 0.8 | 13.4 | 30.3 | 17.4 | |
| Pannar | Pan 9501 | Trad. | 1609 | 42.9 | 66 | 110 | 171 | 7.9 | 12.8 | 29.6 | 17.4 | |
| Pioneer Hi-Bred | Pioneer Brand 63M91 | NS | 1524 | 46.1 | 60 | 99 | 176 | 4.2 | 12.7 | 30.4 | 17.4 | |
| Pioneer Hi-Bred | Pioneer Brand 63N82 | NS/SU | 1793 | 44.1 | 62 | 99 | 161 | 0.0 | 13.1 | 29.6 | 17.4 | Excel |
| Pioneer Hi-Bred | Pioneer Brand 64H41 | HO | 1653 | 42.8 | 64 | 99 | 170 | 5.4 | 12.9 | 30.9 | 17.4 | |

**Table 7 (continued).**

| Brand | Hybrid | Type[1] | Seed Yield lbs/A | Oil % | Days to Flwr | Mat. | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000 pl/A | Hulling Quality |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seeds 2000 | Barracuda CL-NS | NS/CL | 1972 | 45.3 | 66 | 104 | 169 | 1.7 | 13.7 | 30.6 | 17.4 | |
| Seeds 2000 | Blazer CL-NS | NS/CL | 1701 | 44.3 | 67 | 102 | 175 | 6.3 | 13.6 | 30.9 | 17.4 | |
| Seeds 2000 | Firebird-Expsun-NS | NS/SU | 2072 | 43.7 | 67 | 104 | 160 | 0.8 | 13.4 | 28.6 | 17.4 | |
| Seeds 2000 | Sierra HO | HO | 1588 | 43.2 | 68 | 115 | 165 | 1.3 | 13.1 | 27.9 | 17.4 | |
| Triumph Seed Co. | 845HO | HO | 2163 | 46.2 | 64 | 104 | 160 | 1.3 | 13.4 | 29.0 | 17.4 | |
| Triumph Seed Co. | s675 | NS | 1956 | 46.3 | 68 | 105 | 113 | 0.0 | 13.7 | 29.9 | 17.4 | |
| Triumph Seed Co. | s678 | NS | 1985 | 46.1 | 67 | 115 | 141 | 1.3 | 13.5 | 29.6 | 17.4 | |
| Triumph Seed Co. | 630CL | NS/CL | 1796 | 43.3 | 64 | 102 | 170 | 7.5 | 12.8 | 29.2 | 17.4 | |
| Triumph Seed Co. | TRXs7322 | NS | 2101 | 46.2 | 66 | 113 | 116 | 0.0 | 12.7 | 30.3 | 17.4 | |
| Triumph Seed Co. | s671 | NS | 1711 | 45.6 | 66 | 111 | 136 | 0.4 | 13.4 | 29.8 | 17.4 | |
| Triumph Seed Co. | s880CL | HO/CL | 1663 | 44.9 | 68 | 111 | 102 | 0.0 | 13.2 | 28.3 | 17.4 | |
| Triumph Seed Co. | s878 | HO | 1758 | 46.9 | 66 | 115 | 143 | 2.1 | 12.1 | 31.2 | 17.4 | |
| Triumph Seed Co. | TRXs8325 | NS | 1721 | 46.5 | 66 | 101 | 132 | 1.3 | 14.0 | 29.1 | 17.4 | |
| USDA (check) | USDA 894 | Trad. | 1693 | 47.0 | 62 | 100 | 152 | 2.9 | 12.0 | 30.2 | 17.4 | |
| USDA (check) | cms HA412/RHA 377 | Trad. | 1397 | 48.3 | 60 | 97 | 159 | 12.1 | 12.5 | 30.2 | 17.4 | |
| Grand Mean | | | 1750 | 44.8 | 64 | | 161 | 4.2 | 12.8 | 29.8 | 17.2 | |
| LSD 5% | | | 389 | 1.4 | 1 | | 9 | 8.4 | 1.0 | 1.3 | 1.4 | |
| C.V. | | | 16.0 | 2.2 | 1.0 | | 3.9 | 143.9 | 5.3 | 3.1 | 5.7 | |

[1]NS=NuSun, HO=High Oleic, Trad.=Traditional linoleic, CL=Clearfield, DM=downy mildew resistant, SU=Express-resistant.
Planted June 12, 2008. Harvested November 2, 2008.
Yield is reported at 10% moisture. Oil % is adjusted for oleic acid content.
Hulling quality: Excel = >65% of seed passes over a 14/64 screen; Good = >75% of seed passes over a 13/64 screen.

**Table 8. Oilseed sunflower hybrid trial, Reliance, SD - 2008.**

| Brand | Hybrid | Type[1] | Seed Yield (lbs/A) 2008 | 2007 | 2-yr Avg. | Oil % | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000 pl/A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Advanta Pacific LLC | F30008NS,CL | NS/CL | 2180 | -- | -- | 45.5 | 177 | 3 | 12.7 | 30.4 | 17.4 |
| Croplan Genetics | CG 306 DMR NS | NS | 2345 | -- | -- | 48.1 | 154 | 2 | 11.2 | 31.5 | 17.4 |
| Croplan Genetics | CG 3080 DMR NS | NS | 2374 | -- | -- | 48.5 | 156 | 3 | 11.3 | 31.0 | 17.4 |
| Croplan Genetics | CG 325 DMR NS | NS | 2467 | -- | -- | 47.0 | 167 | 2 | 11.6 | 30.6 | 17.4 |
| Croplan Genetics | CG 356 NS | NS | 2731 | -- | -- | 47.7 | 166 | 1 | 12.8 | 32.7 | 17.4 |
| Croplan Genetics | CG 369 DMR NS | NS | 1957 | -- | -- | 46.7 | 170 | 2 | 12.1 | 30.3 | 17.4 |
| Croplan Genetics | CG 378 DMR NS | NS | 2111 | -- | -- | 47.7 | 167 | 5 | 12.9 | 31.7 | 17.4 |
| Croplan Genetics | CG 528 CL NS | NS/CL | 1909 | -- | -- | 46.8 | 166 | 1 | 11.5 | 31.7 | 17.4 |
| Croplan Genetics | CG 551 CL NS | NS/CL | 2232 | -- | -- | 45.7 | 171 | 1 | 12.2 | 30.8 | 17.4 |
| Croplan Genetics | CG 564 CL NS | NS | 1981 | -- | -- | 47.3 | 171 | 0 | 12.8 | 32.9 | 17.4 |
| Dekalb | DKF 29-30 | NS | 2034 | 1738 | 1885.855 | 48.4 | 166 | 3 | 11.5 | 32.4 | 17.4 |
| Dekalb | DKF 34-33 | NS | 2504 | 1413 | 1958.78 | 48.9 | 166 | 3 | 12.0 | 32.1 | 17.4 |
| Dekalb | DKF 34-80CL | NS/CL | 2426 | 1716 | 2070.9 | 46.7 | 163 | 3 | 11.9 | 31.3 | 17.4 |
| Dekalb | DKF 37-31 | NS | 3080 | 1899 | 2489.31 | 47.6 | 166 | 4 | 11.6 | 32.4 | 16.3 |
| Dekalb | DKF 38-45 | NS | 2614 | 2117 | 2365.205 | 47.9 | 156 | 2 | 11.8 | 30.7 | 17.4 |
| Dekalb | DKF 3875 | Trad. | 2927 | 2334 | 2630.79 | 48.0 | 173 | 6 | 12.3 | 31.3 | 16.3 |
| Dekalb | DKF 39-80CL | NS/CL | 2274 | -- | -- | 46.8 | 195 | 3 | 12.1 | 30.7 | 17.4 |
| Dekalb | IS 7120 | HO | 2522 | 1818 | 2170.26 | 48.1 | 148 | 1 | 11.6 | 30.7 | 17.4 |
| Garst Seed Co. | 4651NS | NS | 2104 | -- | -- | 47.5 | 163 | 3 | 12.9 | 30.7 | 14.2 |
| Garst Seed Co. | NX43489 | NS | 2224 | -- | -- | 46.5 | 168 | 8 | 12.1 | 32.9 | 17.4 |
| Garst Seed Co. | NX44166 | HO | 2371 | -- | -- | 47.3 | 177 | 3 | 12.0 | 33.1 | 17.4 |
| King Seed Inc. | SunKing 4404 NSCL | NS/CL | 2386 | 2257 | 2321.295 | 46.0 | 175 | 1 | 11.8 | 31.0 | 17.4 |
| King Seed Inc. | SunKing 4505 | Trad. | 2034 | 1890 | 1961.985 | 48.8 | 178 | 5 | 11.8 | 32.1 | 17.4 |
| Legend Seeds | LSF 318NCL | NS/CL | 2175 | -- | -- | 46.5 | 151 | 4 | 11.4 | 30.1 | 17.4 |
| Monsanto | MH6640 | NS | 2695 | -- | -- | 48.1 | 166 | 3 | 12.6 | 32.4 | 17.4 |
| Monsanto | MH6643 | NS | 2384 | -- | -- | 47.5 | 161 | 1 | 12.5 | 31.7 | 17.4 |
| Monsanto | MH7632 | NS | 2827 | -- | -- | 49.1 | 160 | 3 | 12.3 | 32.3 | 17.4 |
| Monsanto | MH7633 | NS | 2402 | -- | -- | 46.8 | 179 | 3 | 12.0 | 31.4 | 17.4 |
| Mycogen Seeds | 8D481 | NS | 2502 | -- | -- | 45.4 | 164 | 0 | 12.1 | 31.0 | 17.4 |
| Mycogen Seeds | 8H449DM | HO | 2224 | 1811 | 2017.53 | 48.7 | 175 | 2 | 13.1 | 31.5 | 17.4 |
| Mycogen Seeds | 8N187 | NS | 2374 | -- | -- | 46.6 | 154 | 1 | 11.6 | 30.8 | 17.4 |
| Mycogen Seeds | 8N270 | NS | 1891 | -- | -- | 46.0 | 141 | 0 | 12.0 | 31.8 | 16.3 |
| Mycogen Seeds | 8N358CL | NS/CL | 2194 | 2005 | 2099.48 | 48.3 | 165 | 2 | 10.6 | 30.9 | 17.4 |
| Mycogen Seeds | 8N453DM | NS | 2562 | 1962 | 2262.135 | 49.4 | 169 | 3 | 13.1 | 32.3 | 17.4 |
| Mycogen Seeds | 8N510 | NS | 2887 | 2315 | 2600.575 | 46.8 | 165 | 2 | 12.1 | 30.9 | 16.3 |
| Pannar | Pan 7813 | NS | 2443 | 2080 | 2261.3 | 47.6 | 160 | 2 | 13.2 | 31.6 | 17.4 |
| Pannar | Pan 7924 | NS | 2535 | 1952 | 2243.805 | 46.4 | 172 | 0 | 12.6 | 31.4 | 17.4 |
| Pannar | Pan 7986 | NS | 2481 | -- | -- | 45.1 | 174 | 1 | 13.3 | 32.3 | 16.3 |
| Pannar | Pan 9501 | Trad. | 1989 | 1753 | 1870.93 | 45.0 | 183 | 1 | 12.2 | 31.5 | 17.4 |
| Pioneer Hi-Bred | Pioneer Brand 63M91 | NS | 2197 | -- | -- | 48.3 | 177 | 3 | 12.2 | 32.8 | 17.4 |
| Pioneer Hi-Bred | Pioneer Brand 63N82 | NS/SU | 2575 | -- | -- | 46.4 | 164 | 3 | 12.8 | 31.9 | 17.4 |
| Pioneer Hi-Bred | Pioneer Brand 64H41 | HO | 2258 | -- | -- | 46.3 | 176 | 1 | 13.8 | 32.2 | 17.4 |
| Seeds 2000 | Barracuda CL-NS | NS/CL | 2093 | 1832 | 1962.345 | 47.5 | 166 | 1 | 13.4 | 32.8 | 17.4 |
| Seeds 2000 | Blazer CL-NS | NS/CL | 1912 | 2109 | 2010.64 | 47.1 | 179 | 4 | 12.8 | 30.5 | 17.4 |
| Seeds 2000 | Firebird-Expsun-NS | NS/SU | 2545 | 2026 | 2285.43 | 47.1 | 153 | 0 | 13.8 | 29.9 | 17.4 |
| Seeds 2000 | Sierra HO | HO | 2434 | 1992 | 2213 | 45.8 | 170 | 7 | 11.9 | 30.4 | 17.4 |
| Triumph Seed Co. | 660CL | NS/CL | 2108 | 1750 | 1929.06 | 47.2 | 164 | 2 | 13.0 | 31.9 | 17.4 |
| Triumph Seed Co. | s675 | NS | 2642 | 1537 | 2089.515 | 49.3 | 115 | 0 | 14.0 | 31.8 | 17.4 |
| Triumph Seed Co. | s678 | NS | 2585 | 1777 | 2181.04 | 49.0 | 134 | 0 | 14.2 | 32.1 | 17.4 |
| Triumph Seed Co. | TRXs7322 | NS | 3091 | -- | -- | 48.0 | 102 | 0 | 13.1 | 32.5 | 17.4 |
| Triumph Seed Co. | s671 | NS | 2640 | -- | -- | 48.3 | 128 | 0 | 14.0 | 31.5 | 17.4 |
| Triumph Seed Co. | s880CL | HO/CL | 2958 | 1922 | 2439.79 | 47.9 | 94 | 0 | 12.9 | 30.5 | 17.4 |
| Triumph Seed Co. | s878 | HO | 2594 | 1996 | 2295.21 | 48.3 | 133 | 0 | 13.9 | 32.1 | 17.4 |
| USDA | USDA 894 (check) | Trad. | 1722 | 1997 | 1859.395 | 47.7 | 141 | 2 | 12.4 | 31.0 | 15.5 |
| Grand Mean | | | 2383 | 1847 | 2172 | 47.4 | 161 | 2 | 12.4 | 31.5 | 17.2 |
| LSD 5% | | | 388 | 361 | 264 | 1.5 | 9 | 3 | 0.8 | 1.2 | 1.1 |
| C.V. | | | 11.7 | 14.0 | 12.0 | 2.2 | 4.2 | 109.9 | 4.7 | 2.7 | 4.5 |

[1]NS=NuSun, HO=High Oleic, Trad.=Traditional linoleic, CL=Clearfield, DM=downy mildew resistant, SU=Express-resistant.
Planted June 11, 2008. Harvested Oct. 30, 2008.
Yield is reported at 10% moisture. Oil % is adjusted for oleic acid content.

**Table 9. Oilseed sunflower hybrid trial averaged over 5 South Dakota locations - 2008.**

| Brand | Hybrid | Type[1] | Seed Yield lbs/A | Oil % | Plant Hght cm | Lodg % | Harv. Moist. % | Test Wt. lb/bu | Pop. 1000 pl/A |
|---|---|---|---|---|---|---|---|---|---|
| Croplan Genetics | CG 306 DMR NS | NS | 1990 | 46.1 | 159 | 1 | 13.5 | 30.1 | 16.3 |
| Croplan Genetics | CG 3080 DMR NS | NS | 1969 | 47.8 | 158 | 3 | 12.5 | 30.0 | 17.0 |
| Croplan Genetics | CG 325 DMR NS | NS | 2012 | 45.8 | 165 | 1 | 13.0 | 29.8 | 16.1 |
| Croplan Genetics | CG 356 NS | NS | 2419 | 45.7 | 162 | 2 | 15.2 | 31.4 | 16.7 |
| Croplan Genetics | CG 369 DMR NS | NS | 1942 | 45.8 | 172 | 3 | 14.2 | 29.7 | 16.0 |
| Croplan Genetics | CG 378 DMR NS | NS | 1867 | 45.1 | 173 | 6 | 14.7 | 29.7 | 16.0 |
| Croplan Genetics | CG 528 CL NS | NS/CL | 1737 | 45.0 | 167 | 2 | 12.7 | 30.9 | 16.5 |
| Croplan Genetics | CG 551 CL NS | NS/CL | 1784 | 44.8 | 175 | 1 | 14.2 | 29.2 | 16.4 |
| Croplan Genetics | CG 564 CL NS | NS | 1815 | 46.0 | 171 | 2 | 16.2 | 30.7 | 16.1 |
| Dekalb | DKF 29-30 | NS | 1741 | 46.3 | 163 | 2 | 11.8 | 31.2 | 16.4 |
| Dekalb | DKF 34-33 | NS | 2055 | 46.8 | 163 | 3 | 13.6 | 30.9 | 15.4 |
| Dekalb | DKF 34-80CL | NS/CL | 1857 | 45.6 | 163 | 2 | 13.1 | 30.4 | 16.1 |
| Dekalb | DKF 37-31 | NS | 2222 | 46.0 | 161 | 2 | 14.0 | 31.0 | 15.7 |
| Dekalb | DKF 38-45 | NS | 2271 | 47.0 | 163 | 2 | 12.3 | 30.6 | 16.7 |
| Dekalb | DKF 3875 | Trad. | 2339 | 46.9 | 167 | 4 | 13.8 | 31.0 | 15.9 |
| Dekalb | DKF 39-80CL | NS/CL | 1737 | 43.6 | 187 | 8 | 13.7 | 29.7 | 15.3 |
| Dekalb | IS 7120 | HO | 1881 | 46.4 | 152 | 1 | 13.2 | 30.0 | 16.3 |
| King Seed Inc. | SunKing 4404 NSCL | NS/CL | 2092 | 43.7 | 175 | 6 | 14.4 | 29.8 | 16.7 |
| King Seed Inc. | SunKing 4505 | Trad. | 1810 | 47.3 | 180 | 3 | 12.5 | 30.4 | 16.1 |
| Monsanto | MH6640 | NS | 2153 | 46.6 | 160 | 3 | 14.0 | 31.5 | 16.1 |
| Monsanto | MH6643 | NS | 1811 | 46.1 | 160 | 2 | 13.6 | 30.1 | 15.8 |
| Monsanto | MH7632 | NS | 2385 | 46.5 | 162 | 1 | 14.4 | 31.5 | 16.7 |
| Monsanto | MH7633 | NS | 2111 | 45.3 | 171 | 9 | 13.8 | 30.8 | 15.8 |
| Mycogen Seeds | 8D481 | NS | 2144 | 43.6 | 168 | 2 | 13.7 | 30.7 | 16.0 |
| Mycogen Seeds | 8H449DM | HO | 2192 | 47.7 | 172 | 3 | 15.9 | 30.7 | 16.3 |
| Mycogen Seeds | 8N187 | NS | 1803 | 44.3 | 151 | 2 | 14.2 | 29.8 | 16.4 |
| Mycogen Seeds | 8N270 | NS | 1799 | 44.9 | 147 | 1 | 12.8 | 30.4 | 16.5 |
| Mycogen Seeds | 8N358CL | NS/CL | 1925 | 46.5 | 165 | 2 | 14.1 | 29.8 | 16.6 |
| Mycogen Seeds | 8N453DM | NS | 2170 | 48.4 | 168 | 2 | 15.4 | 31.0 | 16.6 |
| Mycogen Seeds | 8N510 | NS | 2175 | 45.0 | 164 | 3 | 14.8 | 29.8 | 16.0 |
| Pannar | Pan 7813 | NS | 2077 | 45.3 | 161 | 2 | 16.3 | 30.5 | 15.9 |
| Pannar | Pan 7924 | NS | 2112 | 44.3 | 170 | 5 | 16.6 | 29.5 | 16.0 |
| Pannar | Pan 7986 | NS | 2096 | 43.5 | 171 | 3 | 14.7 | 31.0 | 16.6 |
| Pannar | Pan 9501 | Trad. | 1802 | 43.5 | 178 | 4 | 14.1 | 30.7 | 16.9 |
| Triumph Seed Co. | s671 | NS | 2119 | 46.7 | 128 | 0 | 16.3 | 30.1 | 17.1 |
| Triumph Seed Co. | s678 | NS | 2214 | 46.9 | 140 | 1 | 16.4 | 30.5 | 16.9 |
| USDA | 894 (check) | Trad. | 1530 | 47.7 | 149 | 3 | 14.0 | 30.3 | 15.5 |
| Average | | | 2002 | 45.7 | 164 | 3 | 14.1 | 30.4 | 16.3 |
| LSD | | | 181 | 0.7 | 4 | 2 | 0.8 | 0.7 | 1.0 |
| C.V. | | | 14.5 | 2.3 | 4.3 | 143 | 8.6 | 3.6 | 9.3 |

[1]NS=NuSun, HO=High Oleic, Trad.=Traditional linoleic, CL=Clearfield, DM=downy mildew resistant, SU=Express-resistant.

**Table 10. Confection hybrid sunflower trial - Onida, SD 2008.**

| Brand | Hybrid | Type* | Days to Flwr | Mat. | Plant Hght cm | Lodg % | Pop. 1000 pl/A |
|---|---|---|---|---|---|---|---|
| CHS | 07EXP02 | Conf. | 64 | 103 | 179 | 4 | 14.7 |
| CHS | Royal Hyb. RH1121 | Conf. | 67 | 104 | 182 | 13 | 17.4 |
| Croplan Genetics | CG 135 | Conf. | 58 | 90 | 165 | 10 | 16.3 |
| Croplan Genetics | CG 139 | Conf. | 60 | 96 | 168 | 4 | 13.5 |
| Dahlgren & Co. | 9530 | Conf. | 65 | 104 | 182 | 9 | 17.4 |
| Dahlgren & Co. | 9531 | Conf. | 67 | 104 | 184 | 7 | 17.4 |
| Dahlgren & Co. | 9592 | Conf. | 66 | 104 | 180 | 3 | 17.4 |
| Dahlgren & Co. | 95EXPCL | Conf/CL | 72 | 108 | 193 | 4 | 17.4 |
| Monsanto | IS 8048 | Conf. | 61 | 100 | 172 | 1 | 17.4 |
| Mycogen Seeds | 8C451 | Conf. | 66 | 101 | 175 | 4 | 17.4 |
| Red River Commodities | 2215 | Conf. | 65 | 102 | 191 | 4 | 17.4 |
| Red River Commodities | 2216 | Conf. | 67 | 104 | 187 | 8 | 17.4 |
| Red River Commodities | 2419 | Conf. | 67 | 106 | 175 | 5 | 17.4 |
| Seeds 2000 | Jaguar-CL | Conf/CL | 61 | 101 | 164 | 4 | 16.8 |
| Seeds 2000 | Panther II | Conf. | 62 | 102 | 175 | 11 | 17.4 |
| SunOpta Sunflower | SS38A | Conf. | 62 | 94 | 175 | 3 | 17.4 |
| USDA | Hybrid 924 (check) | Conf. | 62 | 98 | 178 | 41 | 15.2 |
| Grand Mean | | | 64 | | 177 | 9 | 16.6 |
| LSD 5% | | | 2 | | 9 | 12 | ns |
| C.V. | | | 1.8 | | 3.8 | 96.7 | 12.7 |

* Conf.=Confection, CL=Clearfield.
Planted June 12, 2008. Not harvested due to excessive seed shatter.

**Table 11. Confection hybrid sunflower trial - Miller, SD 2008.**

| Brand | Hybrid | Type* | Seed Yield (lbs/A) 2008 | 2007 | 2-yr | Plant Hght cm | Lodg-ing % | Test Wt. lb/bu | Pop. 1000 pl/A | % Over Screen 22/64 | 20/64 | 18/64 | Nut-meat % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHS | 07EXP02 | Conf. | 1251 | -- | -- | 194 | 6 | 22.2 | 16.6 | 45 | 73 | 87 | 49 |
| CHS | Royal Hyb. RH1121 | Conf. | 1296 | 1501 | 1398.545 | 192 | 4 | 24.4 | 13.5 | 57 | 76 | 88 | 51 |
| Croplan Genetics | CG 135 | Conf. | 1266 | -- | -- | 174 | 13 | 24.0 | 16.5 | 48 | 70 | 85 | 52 |
| Croplan Genetics | CG 139 | Conf. | 1308 | -- | -- | 172 | 7 | 23.2 | 14.4 | 59 | 79 | 90 | 51 |
| Dahlgren & Co. | 9530 | Conf. | 1405 | 1882 | 1643.56 | 193 | 5 | 25.3 | 16.6 | 52 | 71 | 86 | 49 |
| Dahlgren & Co. | 9531 | Conf. | 1117 | -- | -- | 200 | 4 | 23.6 | 17.4 | 55 | 77 | 89 | 50 |
| Dahlgren & Co. | 9592 | Conf. | 1076 | -- | -- | 189 | 7 | 23.7 | 17.0 | 49 | 73 | 86 | 49 |
| Dahlgren & Co. | 95EXPCL | Conf/CL | 1602 | -- | -- | 209 | 3 | 23.2 | 14.6 | 63 | 81 | 90 | 41 |
| Monsanto | IS 8048 | Conf. | 1283 | -- | -- | 177 | 3 | 26.2 | 16.5 | 48 | 68 | 82 | 51 |
| Mycogen Seeds | 8C451 | Conf. | 1214 | -- | -- | 192 | 3 | 22.2 | 17.4 | 52 | 76 | 88 | 50 |
| Red River Commodities | 2215 | Conf. | 1363 | 1659 | 1511.15 | 195 | 3 | 25.7 | 16.3 | 53 | 75 | 88 | 62 |
| Red River Commodities | 2216 | Conf. | 1136 | 1779 | 1457.19 | 209 | 2 | 22.5 | 17.4 | 48 | 74 | 90 | 51 |
| Red River Commodities | 2419 | Conf. | 1993 | -- | -- | 186 | 4 | 23.4 | 14.8 | 63 | 82 | 90 | 46 |
| Seeds 2000 | Jaguar-CL | Conf/CL | 1113 | -- | -- | 176 | 5 | 23.8 | 17.4 | 44 | 72 | 88 | 54 |
| Seeds 2000 | Panther II | Conf. | 1543 | -- | -- | 181 | 9 | 24.6 | 15.9 | 59 | 80 | 91 | 51 |
| SunOpta Sunflower | SS38A | Conf. | 1826 | 1486 | 1656.01 | 178 | 5 | 24.9 | 17.4 | 42 | 66 | 82 | 56 |
| Triumph Seed Co. | 747C | Conf. | 1367 | -- | -- | 180 | 8 | 20.9 | 14.6 | 47 | 75 | 87 | 51 |
| Triumph Seed Co. | 777C | Conf. | 1456 | 1324 | 1390.15 | 200 | 6 | 23.9 | 17.4 | 48 | 71 | 84 | 48 |
| USDA | Hybrid 924 (check) | Conf. | 1048 | 1305 | 1176.79 | 189 | 13 | 24.7 | 16.3 | 37 | 56 | 74 | 52 |
| Grand Mean | | | 1360 | 1460 | 1462 | 188 | 6 | 23.8 | 16.2 | 51 | 73 | 86 | 51 |
| LSD 5% | | | 346 | 381 | 254 | 12 | ns | ns | ns | ns | 10 | 6 | ns |
| C.V. | | | 18.0 | 18.4 | 18.2 | 4.6 | 116.3 | 7.8 | 13.1 | 22.3 | 9.5 | 5.0 | 10.7 |

* Conf.=Confection, CL=Clearfield.

Planted June 10, 2008. Harvested November 1, 2008.

**Table 12. Oilseed sunflower fatty acid profiles of selected hybrids - Onida, SD 2008.**

| Sunflower Brand | Hybrid | Type* | Palmitic (%) | Stearic (%) | Oleic (%) | Linoleic (%) |
|---|---|---|---|---|---|---|
| Dekalb | IS 7120 | HO | 3.2 | 3.4 | 86.5 | 4.7 |
| Garst Seed Co. | 4651NS | NS | 4.7 | 4.2 | 59.1 | 29.5 |
| Garst Seed Co. | NX43489 | NS | 4.7 | 4.3 | 54.5 | 34.2 |
| Garst Seed Co. | NX44166 | HO | 3.4 | 3.8 | 86.2 | 4.0 |
| Legend Seeds | LSF 318NCL | NS/CL | 5.0 | 4.5 | 54.0 | 33.8 |
| Pannar | Pan 7813 | NS | 4.6 | 4.3 | 53.5 | 35.7 |
| Pannar | Pan 7924 | NS | 4.7 | 4.4 | 48.0 | 40.8 |
| Pannar | Pan 7986 | NS | 3.1 | 5.4 | 77.6 | 11.6 |
| Pioneer Hi-Bred | Pioneer Brand 64H41 | HO | 3.0 | 3.3 | 88.8 | 2.9 |

* NS=NuSun, HO=High Oleic, Trad.=Traditional linoleic, CL=Clearfield.