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Sunflower: 2007 South Dakota Hybrid Performance Trials

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SUNFLOWER

2007 South Dakota Hybrid Performance Trials

Oilseed

Confection

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SUNFLOWER

2007 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, 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 5) could be repeated in 2008 exactly as it was in 2007, the yield ranking of a hybrid that yielded 2942 lbs/A and one that yielded 2577 lbs/A might change places, since their yield difference (365 lbs/A) is less than the indicated yield LSD value of 416 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 2007. In contrast, a hybrid that yielded 2421 lbs/A at Eureka in 2007 would likely be lower yielding than one that yielded 2942 lbs/A if the two hybrids were grown again under similar conditions, because the difference between them in 2007 (2942 – 2421 = 521 lbs/A) exceeded the LSD value of 416 lbs/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 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 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 20-25% 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, races 1 and 2 of downy mildew, and two or more races of rust. Some hybrids may also exhibit tolerance to sclerotinia head rot, Phomopsis, or 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, hulling, or birdfeed.

2007 Trial Procedures

Locations and Hybrids

Oilseed hybrid sunflower trials were planted at four locations in South Dakota (Eureka, Presho, Miller, and Bison). An additional site at Onida was lost shortly after emergence due to deer and cutworm damage. Entries in the oilseed sunflower trials included traditional oil hybrids, NuSun (mid-oleic) hybrids, and high oleic hybrids. Non-oilseed (confection) sunflower trials were conducted at Miller. 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 2007 growing season began with above-normal temperatures and precipitation in May and early June, 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. Temperatures were warmer than normal at all locations throughout the growing season, except for August, which was cooler. All locations had below normal precipitation in July but above normal precipitation in August. Eureka and Miller were also wetter than normal in June. Storms in August at Miller were accompanied by high winds that caused considerable lodging and leaning of plants in the sunflower plots. October was dry everywhere except Kennebec (Presho). The first killing frost did not occur until the last week of October at all sites.

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 neighbors statistical analysis, which removes effects of field trends (see Crop Science 34:62–66).

Seed of all of the hybrids entered in the trials was pre-treated with Cruiser insecticide, and most were also treated with fungicide. Seed treatments used on individual hybrids are listed in Tables 2 and 3. All trials were seeded no-till. The previous crop at Eureka and Miller was corn, at Presho it was sorghum, 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 17,400 plants/acre. Stands were good everywhere except Bison. The fourth replication at Bison was not harvested due to antelope damage, and stands were variable in the other three reps, especially the first. The fourth and first reps were therefore excluded from the statistical analyses and means. The first replication at Miller was also excluded due to excessive lodging and a wet spot.

Flowering was recorded at Miller as the number of days from planting to 50% ray petals extended. Days from planting to physiological maturity (rated visually) was also recorded at Miller. Plant height and lodging notes were taken at all locations

immediately before harvest. Lodging was negligible at Eureka and Presho and very low at Bison. Miller had many lodged and leaning plants due to wind damage. There were significant differences in lodging among hybrids, ranging from 0% to 54% lodged plants. Percent incidence of sclerotinia head rot was recorded at Eureka.

Plots at Miller, Eureka, and Presho were harvested with a Gleaner Model K combine fitted with a two-row all row crop header, and seed yields were adjusted to a 10% moisture basis. Plots at Bison were harvested with a Massey-Ferguson plot combine fitted with sunflower pans. Yields at Bison were not adjusted for moisture content because of a malfunctioning moisture blade on the combine. 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 Miller on selected hybrids by passing a one-pint seed sample over 14/64 and 13/64 round-hole screens.

A one-pint sub-sample 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, and weighing the 20 dehulled kernels.

Results

Data from each location and combined over locations are contained in Tables 4–9. Yields of oilseed hybrids were highest at Eureka, averaging 2065 lbs/acre over all hybrids tested, with an average oil content of 46.7%. The lowest yield and oil was measured at Bison, which averaged 1385 lbs/acre and 40.9% oil. Confection seed yields averaged 1460 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.

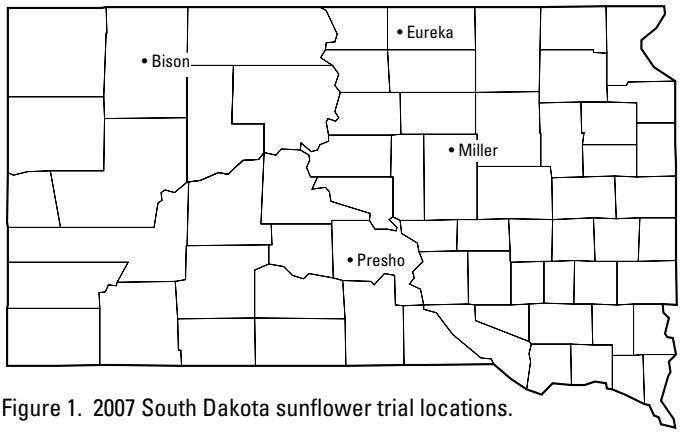

Figure 1. 2007 South Dakota sunflower trial locations.

Table 1. Climate summary for nearest weather stations to 2007 South Dakota sunflower test sites and departures from normal.

LOCATION-MONTH	2007 TEMPERATURE			TOTAL PRECIP IN.	DEPARTURE FROM NORMAL^			
	AVG MAX.	AVG MIN.	MEAN		MAX TEMP	MIN TEMP	AVG TEMP	PRECIP IN.
	----------°F----------				----------°F----------			
Bison*								
May	72	45	58	6.73	3	1	1	4.01
June	81	55	68	2.24	2	2	2	-0.58
July	94	63	79	0.94	8	5	7	-1.33
August	86	59	73	2.03	0	2	1	0.56
September	79	48	64	0.17	5	1	3	-1.03
October	63	37	50	0.44	2	2	2	-1.02
Eureka*								
May	74	47	60	5.77	4	3	3	3.14
June	79	57	68	9.16	1	4	2	5.99
July	87	62	75	1.11	2	4	4	-1.67
August	81	57	69	3.14	-3	1	-1	0.84
September	77	47	62	1.34	3	2	2	-0.09
October	61	37	49	0.76	2	3	3	-0.90
Miller*								
May	72	48	60	5.51	4	3	3	2.37
June	79	56	68	3.29	1	1	1	0.39
July	89	62	75	0.21	4	1	2	-2.39
August	81	59	70	8.55	-3	1	-1	6.54
September	75	49	62	2.44	1	2	2	0.64
October	63	38	50	0.66	2	3	3	-1.11
Kenebec*								
May	78	51	65	4.72	4	5	5	1.70
June	84	58	71	2.50	0	2	1	-0.48
July	94	65	80	0.12	3	4	4	-2.66
August	87	64	75	3.80	-3	4	0	1.78
September	83	52	68	0.80	3	3	3	-0.63
October	68	38	53	3.92	3	2	2	2.44

* 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 2007 observations to 30-yr averages (1971–2000) for each site.

Table 2. Hybrids tested in the 2007 South Dakota oilseed hybrid sunflower trials.

Brand	Hybrid	Hybrid Type	Herb. Resist.	Seed* Treatmnt	Bison	Eureka	Miller	Presho
Advanta Pacific, LLC	AP534 NS/CL	NS	CL	CMAX		X		
Advanta Pacific, LLC	AP561 NS	NS		CMAX		X		
Advanta Pacific, LLC	F41269 DM3	NS		CMAX				
Advanta Pacific, LLC	F51132NS/CL/DM	NS	CL	CMAX		X		
Advanta Pacific, LLC	F51311 NS/DM	NS		CMAX		X		
Dahlgren & Co.	4421ND	NS		CDM			X	
Dahlgren & Co.	EX4370	Trad.		CDM			X	
Dahlgren & Co.	EX4377NS	NS		CDM			X	
Dahlgren & Co.	EX4455NS	NS		CDM			X	
Dekalb	DKF29-30	NS/DM		CMAX	X	X	X	X
Dekalb	DKF34-33	NS/DM		CMAX	X	X	X	X
Dekalb	DKF34-80CL	NS/DM	CL	CMAX	X	X	X	X
Dekalb	DKF37-31	NS		CMAX	X	X	X	X
Dekalb	DKF38-45	NS		CMAX	X	X	X	X
Dekalb	DKF38-75	Trad.		CMAX	X	X	X	X
Garst Seed	XF06NS16	NS		CR	X	X	X	X
Garst Seed	XF07NC82	NS	CL	CR	X	X	X	X
Garst Seed	XF07NS75	NS		CR	X	X	X	X
Garst Seed	XF07NC68			CR	X	X	X	X
Interstate Seed	IS4668 NS/CL	NS/CL	CL	CMAX	X	X	X	X
Interstate Seed	IS5770 NS	NS		CMAX	X	X	X	X
Interstate Seed	IS5880 NS/CL	NS/CL	CL	CMAX	X	X	X	X
Interstate Seed	IS6131 NS/DM	NS/DM		CMAX	X	X	X	X
Interstate Seed	IS7120 HO/DM	HO/DM		CMAX	X	X	X	X
King Seed Inc.	SunKing 4404NS/CL	NS	CL	CDM		X	X	X
King Seed Inc.	SunKing 4500NS	NS		CDM		X	X	X
King Seed Inc.	SunKing 4505	Trad.		CDM		X	X	X
Legend Seeds	LSF 121N	NS		CDM		X	X	X
Legend Seeds	LSF 142N	NS		CDM		X	X	X
Legend Seeds	LSF 223NCL	NS	CL	CDM		X	X	X
Monsanto	MH6641	NS/DM		CMAX	X	X	X	X
Mycogen Seeds	8D480	NS		CMAX		X	X	
Mycogen Seeds	8H350DM	HO		CMAX		X		
Mycogen Seeds	8H449DM	HO		CMAX	X	X	X	X
Mycogen Seeds	8N270	NS		CMAX	X	X		
Mycogen Seeds	8N358CL	NS	CL	CMAX	X	X	X	X
Mycogen Seeds	8N386CL	NS	CL	CMAX	X	X	X	X
Mycogen Seeds	8N453DM	NS		CMAX	X	X	X	X
Mycogen Seeds	8N510	NS		CMAX	X	X	X	X
Pannar Seed Inc.	PANNAR 8330NS	NS		CDM	X	X	X	X
Pannar Seed Inc.	PANNAR 7813NS	NS		CDM	X	X	X	X
Pannar Seed Inc.	PANNAR 7924NS	NS		CDM	X	X	X	X
Pannar Seed Inc.	PANNAR 9501	Trad.		CDM	X	X	X	X
Pannar Seed Inc.	PANNAR EX2453NS	NS		CDM	X	X	X	X
Pannar Seed Inc.	PANNAR 9501DM	NS		CDM	X	X	X	X
Producers Hybrids	SF7105NS	NS		CR		X	X	X
Producers Hybrids	SF7203	Trad.		CR		X	X	X
Producers Hybrids	SF7303	NS		CR		X	X	X
Proseed	Proseed 6004	NS		CDM	X	X	X	X
Proseed	Proseed 6294	NS	CL	CDM	X	X	X	X
Proseed	Proseed 6481	NS		CDM	X	X	X	X
Proseed	Proseed E-3	NS		CDM	X	X	X	X
Proseed	Proseed E-4	NS		CDM	X	X	X	X

Table 2 (cont.).

Brand	Hybrid	Hybrid Type	Herb. Resist.	Seed* Treatmnt	Bison	Eureka	Miller	Presho
Proseed	Proseed E-5	NS		CDM	X	X	X	X
Proseed	Proseed E-85	HO		CDM		X		X
Proseed	Proseed EE-1	NS		CDM	X	X	X	X
Proseed	Proseed EE-2	NS		CDM	X	X	X	X
Seeds 2000	Barracuda	NS	CL	CDM		X	X	X
Seeds 2000	Blazer	NS		CDM		X	X	X
Seeds 2000	Sierra	HO		CDM		X	X	X
Seeds 2000	Firebird NS-SU	NS	SU	CDM		X	X	X
Triumph Seed	645	NS		CDM		X		
Triumph Seed	660CL	NS	CL	CDM			X	X
Triumph Seed	845HO	HO		CDM			X	
Triumph Seed	R859HOCL	HO	CL	CDM			X	
Triumph Seed	s672	NS		CDM		X		
Triumph Seed	s675	NS		CDM	X	X	X	X
Triumph Seed	s678	NS		CDM	X	X	X	X
Triumph Seed	TRX7434HOCL	HO	CL	CDM			X	X
Triumph Seed	TRX7442	NS		CDM		X		
Triumph Seed	R664	NS		CDM			X	
Triumph Seed	R657	NS		CDM			X	
Triumph Seed	TRX7449	NS		CDM			X	X
Triumph Seed	TRXs5423	NS		CDM			X	
Triumph Seed	TRXs7424	NS		CDM			X	
Triumph Seed	TRXs7425HOCL	HO	CL	CDM		X	X	X
Triumph Seed	TRXs7426HO	HO		CDM			X	X
USDA	Hyb. 894 (check)	Trad.			X	X	X	X
USDA	cmsHA412/ RHA409(chk)	Trad.			X	X	X	X

* CR = Cruiser, CDM = Cruiser DM Pak, CMAX = CruiserMaxx Sunflower.

Table 3. Hybrids tested in the 2007 South Dakota confection hybrid sunflower trials.

Brand	Hybrid		Seed* Treatmnt	Miller
CHS Inc.	06EXP02			X
CHS Inc.	07EXP01			X
CHS Inc.	RH1121			X
CHS Inc.	RH1122			X
Dahlgren & Co.	9519		CDM	X
Dahlgren & Co.	9530		CDM	X
Dahlgren & Co.	9569		CDM	X
Dahlgren & Co.	9579		CDM	X
Dahlgren & Co.	9583CL	CL	CDM	X
Mycogen Seeds	8C482		CMAX	X
Red River Commodities	2215		CDM	X
Red River Commodities	2216		CDM	X
Red River Commodities	EX41		CDM	X
Seeds 2000	Panther			X
SunOpta Sunflower	SS38A		Maxim/Dyn/Apron	X
Triumph Seed	777C			X
Triumph Seed	TRX7352C			X
USDA	924 (check)			X

* CR = Cruiser, CDM = Cruiser DM Pak, CMAX = CruiserMaxx Sunflower.

Table 4. Oilseed sunflower hybrid trial - Bison, SD 2007.

Brand	Hybrid	Type*	Seed Yield lbs/A	Oil %	Plant Hght cm	Lodg %	Test Wt. lb/bu	Pop. 1000 pl/A
Dekalb	DKF29-30	NS/DM	1235	42.5	120	10	23.9	13.2
Dekalb	DKF34-33	NS/DM	850	43.2	119	0	29.1	10.8
Dekalb	DKF34-80CL	NS/DM/CL	1345	41.5	125	0	22.8	12.2
Dekalb	DKF37-31	NS	1411	42.0	118	0	24.4	12.4
Dekalb	DKF38-45	NS	1865	42.9	126	1	24.8	10.2
Dekalb	DKF38-75	Trad.	1679	40.4	107	0	24.5	13.8
Garst Seed	XF06NS16	NS	1096	38.8	122	0	19.8	15.3
Garst Seed	XF07NC82	NS/CL	1319	39.0	128	11	24.7	14.7
Garst Seed	XF07NS75	NS	1254	42.0	144	4	27.6	14.4
Garst Seed	XF07NC68	NS/CL	2064	40.3	125	1	22.1	14.8
Interstate Seed	IS4668 NS/CL	NS/CL	1407	39.0	138	0	22.4	15.4
Interstate Seed	IS5770 NS	NS	1160	39.4	135	1	25.7	14.0
Interstate Seed	IS5880 NS/CL	NS/CL	928	39.1	133	2	20.3	13.8
Interstate Seed	IS6131 NS/DM	NS/DM	1323	44.6	118	0	27.2	10.5
Interstate Seed	IS7120 HO/DM	HO/DM	1255	41.9	126	0	22.9	12.9
Monsanto	MH6641	NS/DM	2312	41.5	109	0	22.7	15.1
Mycogen Seeds	8H449DM	HO	1273	46.1	133	0	24.8	12.8
Mycogen Seeds	8N270	NS	1454	40.3	105	1	23.9	15.1
Mycogen Seeds	8N358CL	NS/CL	666	41.4	126	0	25.6	13.1
Mycogen Seeds	8N386CL	NS/CL	1481	40.9	139	0	21.5	15.1
Mycogen Seeds	8N453DM	NS	1815	44.5	132	1	24.8	14.4
Mycogen Seeds	8N510	NS	1630	40.3	122	0	22.2	16.0
Pannar Seed Inc.	PANNAR 8330NS	NS	1669	38.3	115	0	22.4	13.7
Pannar Seed Inc.	PANNAR 7813NS	NS	2008	38.7	134	0	20.9	11.3
Pannar Seed Inc.	PANNAR 7924NS	NS	1704	38.4	137	3	22.4	12.7
Pannar Seed Inc.	PANNAR 9501	Trad.	1525	36.5	149	1	21.9	14.7
Pannar Seed Inc.	PANNAR EX2453NS	NS	1476	41.3	131	0	22.6	15.4
Pannar Seed Inc.	PANNAR 9501DM	NS	1085	37.6	143	0	24.1	16.1
Proseed	Proseed 6004	NS	1030	40.1	148	0	27.6	15.9
Proseed	Proseed 6294	NS/CL	1160	43.0	131	1	28.1	15.1
Proseed	Proseed 6481	NS	1132	40.5	139	0	22.5	12.8
Proseed	Proseed E-3	NS	1388	40.9	127	1	24.0	15.0
Proseed	Proseed E-4	NS	919	42.4	135	2	24.1	10.9
Proseed	Proseed E-5	NS	1393	37.8	138	1	20.9	14.9
Proseed	Proseed EE-1	NS	1560	35.6	137	0	23.1	9.8
Proseed	Proseed EE-2	NS	1413	34.8	148	3	25.1	13.8
Triumph Seed	s675	NS	964	43.6	94	0	23.4	15.3
Triumph Seed	s678	NS	1650	43.0	110	0	21.5	14.5
USDA	Hyb. 894 (check)	Trad.	867	42.4	127	0	25.4	13.1
USDA	cmsHA412/RHA409(chk)	Trad.	986	44.5	132	1	24.3	8.7
	Grand mean		1385	40.9	126	1	23.6	13.5
	LSD 5%		574	1.6	15	4	2.6	4.0
	C.V.		20.4	2.4	7.1	161.8	6.7	14.7

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

Planted June 11, 2007.

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

Cooperator: Duane Shea, Bison, SD.

Table 5. Oilseed sunflower hybrid trial, Eureka, SD - 2007.

Brand	Hybrid	Type*	Seed Yield (lbs/A) 2007	2006	2-yr Avg.	Oil %	Plant Hght cm	Lodg %	Scler Hd Rot %	Harv. Moist. %	Test Wt. lb/bu	Pop. 1000 pl/A
Advanta Pacific, LLC	AP534 NS/CL	NS/CL	2161	1223	1692	45.2	171	0	0.0	11.6	28.6	17.4
Advanta Pacific, LLC	AP561 NS	NS	2136	--	--	46.4	169	0	0.4	12.2	28.8	16.3
Advanta Pacific, LLC	F51132NS/CL/DM	NS/CL	1652	--	--	47.7	164	0	0.4	12.1	27.9	17.4
Advanta Pacific, LLC	F51311 NS/DM	NS	2290	--	--	46.0	169	0	0.0	12.9	28.7	17.4
Dekalb	DKF29-30	NS/DM	1941	--	--	47.1	164	0	0.0	10.9	30.2	17.4
Dekalb	DKF34-33	NS/DM	2277	--	--	48.0	162	0	0.4	11.6	30.0	17.4
Dekalb	DKF34-80CL	NS/DM/CL	1764	--	--	47.7	166	0	2.5	11.5	28.9	17.4
Dekalb	DKF37-31	NS	2138	1269	1704	47.0	175	0	1.7	11.5	30.3	17.4
Dekalb	DKF38-45	NS	2577	1172	1874	48.3	174	0	0.0	11.7	29.9	17.4
Dekalb	DKF38-75	Trad.	2365	--	--	49.0	177	0	4.2	11.9	31.1	17.4
Garst Seed	XF06NS16	NS	2331	--	--	45.3	157	0	0.0	12.7	29.1	17.4
Garst Seed	XF07NC82	NS/CL	1690	--	--	48.1	161	0	0.0	10.3	27.8	17.4
Garst Seed	XF07NS75	NS	2075	--	--	47.1	166	0	2.1	12.4	30.2	17.4
Garst Seed	XF07NC68	NS/CL	1864	--	--	48.9	156	0	1.7	12.3	28.1	17.4
Interstate Seed	IS4668 NS/CL	NS/CL	2213	1403	1808	43.7	175	0	0.0	12.4	27.6	17.4
Interstate Seed	IS5770 NS	NS	2093	1466	1780	46.0	179	0	0.0	12.2	29.6	17.4
Interstate Seed	IS5880 NS/CL	NS/CL	1561	954	1257	45.7	168	0	0.0	12.0	27.2	17.4
Interstate Seed	IS6131 NS/DM	NS/DM	1812	--	--	48.9	158	1	0.8	10.9	30.3	17.4
Interstate Seed	IS7120 HO/DM	HO/DM	2254	--	--	47.6	160	0	0.4	11.8	29.4	16.3
King Seed Inc.	SunKing 4404NS/CL	NS/CL	2082	1326	1704	45.3	177	0	2.1	12.0	27.8	16.1
King Seed Inc.	SunKing 4500NS	NS	2129	1296	1712	46.6	177	1	1.3	12.9	29.0	17.4
King Seed Inc.	SunKing 4505	Trad.	1758	1321	1540	47.8	177	0	1.7	10.6	28.0	17.4
Legend Seeds	LSF 121N	NS	1785	979	1382	45.8	151	0	0.0	12.4	29.0	17.4
Legend Seeds	LSF 142N	NS	2421	1232	1826	46.3	170	0	0.0	13.2	28.5	17.4
Legend Seeds	LSF 223NCL	NS/CL	2280	1548	1914	45.2	173	0	0.8	12.5	28.7	17.4
Monsanto	MH6641	NS/DM	2851	--	--	47.6	169	0	0.8	12.4	30.4	17.4
Mycogen Seeds	8D480	NS	2153	--	--	45.0	170	0	0.8	12.3	29.6	17.4
Mycogen Seeds	8H350DM	HO	1955	828	1391	47.9	172	0	1.7	11.9	29.0	17.4
Mycogen Seeds	8H449DM	HO	2565	--	--	49.6	174	0	0.8	12.8	29.9	17.4
Mycogen Seeds	8N270	NS	2143	--	--	45.3	156	1	2.1	11.3	29.1	17.4
Mycogen Seeds	8N358CL	NS/CL	2544	--	--	46.4	164	0	2.5	12.0	30.2	17.4
Mycogen Seeds	8N386CL	NS/CL	1989	784	1387	45.1	177	0	4.6	11.9	27.7	17.4
Mycogen Seeds	8N453DM	NS	2055	916	1486	50.1	162	0	1.3	12.7	29.9	17.4
Mycogen Seeds	8N510	NS	2942	1541	2241	45.1	175	0	1.3	12.4	28.3	17.4
Pannar Seed Inc.	PANNAR 8330NS	NS	2091	--	--	45.6	160	0	0.0	12.7	30.1	17.4
Pannar Seed Inc.	PANNAR 7813NS	NS	2340	1406	1873	45.3	165	0	0.8	12.9	28.7	17.4
Pannar Seed Inc.	PANNAR 7924NS	NS	2381	1333	1857	46.0	162	0	0.4	12.9	28.7	17.4
Pannar Seed Inc.	PANNAR 9501	Trad.	2518	--	--	45.4	183	0	0.8	12.2	29.8	17.4
Pannar Seed Inc.	PANNAR EX2453NS	NS	1946	956	1451	46.7	166	2	0.0	12.5	29.6	17.4
Pannar Seed Inc.	PANNAR 9501DM	NS	1502	--	--	45.2	189	0	2.5	10.9	28.7	17.4
Producers Hybrids	SF7105NS	NS	1599	--	--	46.1	158	0	0.0	12.2	30.2	17.4
Producers Hybrids	SF7203	Trad.	1710	--	--	46.3	180	0	0.4	10.7	28.1	17.4
Producers Hybrids	SF7303	NS	2483	--	--	46.9	166	0	0.0	12.5	29.3	17.4
Proseed	Proseed 6004	NS	1723	--	--	44.7	187	0	0.0	12.2	30.2	17.4
Proseed	Proseed 6294	NS/CL	1280	--	--	46.1	181	2	0.8	9.2	29.8	17.4
Proseed	Proseed 6481	NS	1731	--	--	45.5	189	1	0.0	10.1	28.3	17.4
Proseed	Proseed E-3	NS	1599	--	--	46.4	159	0	1.3	11.7	28.1	17.4
Proseed	Proseed E-4	NS	1744	--	--	45.4	166	0	1.7	11.6	27.3	17.4

Table 5. (cont.).

Brand	Hybrid	Type*	Seed Yield (lbs/A) 2007	2006	2-yr Avg.	Oil %	Plant Hght cm	Lodg %	Scler Hd Rot %	Harv. Moist. %	Test Wt. lb/bu	Pop. 1000 pl/A
Proseed	Proseed E-5	NS	2003	--	--	44.9	176	0	0.8	12.7	28.3	17.4
Proseed	Proseed E-85	HO	1985	--	--	46.3	174	0	0.0	11.7	27.2	17.4
Proseed	Proseed EE-1	NS	1947	--	--	44.2	175	0	1.7	11.1	28.7	17.4
Proseed	Proseed EE-2	NS	1889	--	--	43.5	171	0	1.3	10.8	29.7	17.4
Seeds 2000	Barracuda	NS/CL	2170	1124	1647	47.1	176	0	0.0	13.1	29.5	17.4
Seeds 2000	Blazer	NS	1985	1253	1619	48.8	157	0	0.4	13.6	29.1	17.4
Seeds 2000	Sierra	HO	2215	1022	1618	46.2	176	0	0.0	12.1	26.5	17.4
Seeds 2000	Firebird NS-SU	NS/SU	2750	--	--	46.1	149	0	0.0	13.2	28.7	17.4
Triumph Seed	645	NS	2182	1616	1899	49.3	170	1	1.3	12.6	28.1	17.4
Triumph Seed	s672	NS	1668	1031	1350	48.0	110	0	3.8	12.5	28.5	17.4
Triumph Seed	s675	NS	2186	1324	1755	47.4	132	0	1.7	13.5	28.1	17.4
Triumph Seed	s678	NS	2047	1328	1687	47.9	135	0	0.8	13.3	29.1	17.4
Triumph Seed	TRX7442	NS	2692	--	--	46.5	171	0	0.8	11.9	27.7	17.4
Triumph Seed	TRXs7425HOCL	HO/CL	2132	--	--	46.7	128	0	0.8	11.9	29.2	17.4
USDA	Hyb. 894 (check)	Trad.	1638	977	1308	49.4	148	0	2.9	10.7	28.4	17.4
USDA	cmsHA412/RHA409(chk)	Trad.	1724	--	--	49.8	172	0	3.3	10.6	28.5	17.4
	Grand mean		2065	1144	1605	46.7	165	0	1.1	12.0	28.9	17.4
	LSD 5%		416	299		2.0	10	ns	2.0	0.9	1.2	ns
	C.V.		14.4	18.8		3.1	4.3	399.6	127.8	5.4	3.0	2.8

* NS=NuSun, HO=High Oleic, Trad.=Traditional linoleic, CL=Clearfield, DM=downy mildew resistant, SU=Express-resistant.
Planted June 5, 2007. Harvested November 1, 2007.
Yield is reported at 10% moisture. Oil % is adjusted for oleic acid content.

Table 6. Oilseed sunflower hybrid trial, Miller, SD - 2007.

Brand	Hybrid	Type*	Seed Yield (lbs/A) 2007	2006	2-yr Avg.	Oil %	Days to Flwr	Days to Mat	Plant Hght cm	Lodg %	Harv. Moist. %	Test Wt. lb/bu	Hulling Quality Test
Dahlgren & Co.	4421ND	NS	2024	1364	1694	43.0	57	101	174	14	12.9	27.4	Excel
Dahlgren & Co.	EX4370	Trad.	1544	--	--	46.5	54	95	142	10	10.8	29.7	Poor
Dahlgren & Co.	EX4377NS	NS	1639	--	--	45.9	54	97	138	7	11.1	28.6	Poor
Dahlgren & Co.	EX4455NS	NS	1884	--	--	43.9	58	109	159	3	10.5	29.0	Excel
Dekalb	DKF29-30	NS/DM	1234	--	--	46.1	57	97	165	38	11.7	28.3	
Dekalb	DKF34-33	NS/DM	1190	--	--	46.2	57	99	160	53	10.9	30.3	
Dekalb	DKF34-80CL	NS/DM/CL	1142	--	--	46.3	59	100	162	2	11.6	28.8	
Dekalb	DKF37-31	NS	2200	--	--	45.8	59	104	168	11	11.5	29.0	
Dekalb	DKF38-45	NS	1758	--	--	47.5	58	102	137	19	12.2	29.7	
Dekalb	DKF38-75	Trad.	1841	--	--	47.4	60	102	173	13	12.2	29.5	
Garst Seed	XF06NS16	NS	1043	--	--	46.2	56	102	153	54	12.2	29.1	
Garst Seed	XF07NC82	NS/CL	2051	--	--	46.9	57	96	145	4	10.9	28.2	
Garst Seed	XF07NS75	NS	1833	--	--	45.7	59	107	162	12	12.2	28.8	
Garst Seed	XF07NC68	NS/CL	2199	--	--	48.8	60	103	164	3	10.9	28.3	
Interstate Seed	IS4668 NS/CL	NS/CL	1982	1706	1844	45.6	61	109	181	6	11.7	28.7	
Interstate Seed	IS5770 NS	NS	1313	1342	1327	44.5	58	101	166	8	11.5	28.8	
Interstate Seed	IS5880 NS/CL	NS/CL	1817	924	1371	44.8	60	101	155	12	10.1	28.1	
Interstate Seed	IS6131 NS/DM	NS/DM	2028	--	--	47.3	58	99	171	7	11.0	29.9	
Interstate Seed	IS7120 HO/DM	HO/DM	2164	--	--	46.5	57	99	153	2	11.4	28.6	
King Seed Inc.	SunKing 4404NS/CL	NS/CL	2272	1759	2016	44.3	61	106	166	10	13.4	28.4	
King Seed Inc.	SunKing 4500NS	NS	2134	1653	1894	46.5	60	106	162	11	11.9	28.2	
King Seed Inc.	SunKing 4505	Trad.	1670	911	1290	49.0	60	102	158	7	11.2	28.1	
Legend Seeds	LSF 121N	NS	997	1214	1105	45.4	57	103	152	22	11.9	29.1	
Legend Seeds	LSF 142N	NS	2449	1852	2151	45.3	61	104	150	8	12.9	28.5	
Legend Seeds	LSF 223NCL	NS/CL	1748	1540	1644	44.9	60	107	169	19	11.6	28.0	
Monsanto	MH6641	NS/DM	2304	--	--	47.5	60	101	153	6	12.4	28.4	
Mycogen Seeds	8D480	NS	2784	--	--	43.2	59	110	173	4	11.9	28.8	Excel
Mycogen Seeds	8H449DM	HO	2030	--	--	47.0	59	104	159	13	11.7	29.2	
Mycogen Seeds	8N358CL	NS/CL	1869	--	--	45.4	58	103	145	11	9.8	28.0	
Mycogen Seeds	8N386CL	NS/CL	1746	1453	1600	45.4	59	105	176	3	10.9	28.6	
Mycogen Seeds	8N453DM	NS	1855	1498	1677	48.6	59	108	147	28	12.5	29.5	
Mycogen Seeds	8N510	NS	2205	1605	1905	46.0	60	104	149	9	11.4	28.3	
Pannar Seed Inc.	PANNAR 8330NS	NS	1894	--	--	44.9	59	98	160	3	11.5	29.1	
Pannar Seed Inc.	PANNAR 7813NS	NS	2686	1430	2058	46.1	59	103	159	8	11.9	30.5	
Pannar Seed Inc.	PANNAR 7924NS	NS	2217	1560	1888	44.9	61	106	179	11	11.7	27.5	Poor
Pannar Seed Inc.	PANNAR 9501	Trad.	2027	1542	1785	45.7	62	110	174	10	12.5	28.0	
Pannar Seed Inc.	PANNAR EX2453NS	NS	1667	1490	1578	46.2	60	103	169	36	12.5	29.0	
Pannar Seed Inc.	PANNAR 9501DM	NS	1283	--	--	44.9	60	104	163	9	12.5	28.2	
Producers Hybrids	SF7105NS	NS	865	--	--	44.9	54	102	141	48	12.5	28.9	
Producers Hybrids	SF7203	Trad.	1761	1420	1590	46.6	60	99	164	8	11.2	29.2	
Producers Hybrids	SF7303	NS	2088	2099	2093	45.0	62	102	136	2	11.5	28.6	
Proseed	Proseed 6004	NS	1462	--	--	46.8	61	103	197	23	11.6	29.8	
Proseed	Proseed 6294	NS/CL	1297	--	--	46.6	60	98	171	40	12.0	28.9	
Proseed	Proseed 6481	NS	1460	--	--	44.7	60	99	174	42	12.6	27.5	
Proseed	Proseed E-3	NS	1666	--	--	45.7	59	98	147	16	11.7	28.4	
Proseed	Proseed E-4	NS	1842	--	--	45.9	58	98	164	12	9.8	28.7	
Proseed	Proseed E-5	NS	1759	--	--	44.3	60	106	169	37	12.1	28.2	
Proseed	Proseed EE-1	NS	1512	--	--	44.1	58	96	160	17	10.7	28.4	
Proseed	Proseed EE-2	NS	1497	--	--	44.2	60	101	178	29	12.0	27.4	

Table 6. (cont.).

Brand	Hybrid	Type*	Seed Yield (lbs/A) 2007	2006	2-yr Avg.	Oil %	Days to Flwr	Days to Mat	Plant Hght cm	Lodg %	Harv. Moist. %	Test Wt. lb/bu	Hulling Quality Test
Seeds 2000	Barracuda	NS/CL	1337	1483	1410	45.4	60	104	157	21	14.5	28.4	
Seeds 2000	Blazer	NS	1994	1821	1908	47.0	59	104	146	4	11.4	29.8	
Seeds 2000	Sierra	HO	2076	1667	1871	46.8	62	105	156	6	10.9	27.2	
Seeds 2000	Firebird NS-SU	NS/SU	2265	--	--	43.6	62	105	161	3	11.9	28.0	
Triumph Seed	660CL	NS/CL	2215	1893	2054	46.2	61	106	172	11	13.0	29.4	
Triumph Seed	845HO	HO	1707	1894	1800	47.7	61	107	163	24	11.5	26.1	
Triumph Seed	R859HOCL	HO/CL	2089	--	--	47.3	62	110	167	4	11.0	28.8	
Triumph Seed	s675	NS	2323	2274	2299	47.5	64	113	119	0	11.9	28.9	
Triumph Seed	s678	NS	2443	2091	2267	49.3	63	108	137	0	11.3	29.4	
Triumph Seed	TRX7434HOCL	HO/CL	2313	--	--	47.0	63	108	168	5	11.7	30.9	
Triumph Seed	R664	NS	1832	--	--	48.4	61	108	176	12	12.8	28.9	
Triumph Seed	R657	NS	1166	--	--	45.1	60	107	170	23	12.3	28.3	
Triumph Seed	TRX7449	NS	1927	--	--	46.8	63	108	162	7	12.8	28.2	
Triumph Seed	TRXs5423	NS	2343	1966	2155	46.4	61	104	102	0	10.0	28.2	
Triumph Seed	TRXs7424	NS	2345	--	--	47.5	62	108	123	3	10.9	27.9	
Triumph Seed	TRXs7425HOCL	HO/CL	2714	--	--	46.9	64	110	102	0	11.7	28.7	
Triumph Seed	TRXs7426HO	HO	2059	--	--	48.4	62	108	139	1	11.8	29.5	
USDA	Hyb. 894 (check)	Trad.	1606	1323	1464	47.7	58	100	167	36	11.5	28.2	
USDA	cmsHA412/ RHA409(chk)	Trad.	1493	--	--	48.5	57	95	151	38	12.6	27.1	
	Grand mean		1879	1446	1662	46.2	60	104	155	14	11.7	28.7	
	LSD 5%		502	392		2.3	1	4	22	22	1.4	1.6	
	C.V.		16.6	19.5		3.6	1.2	2.6	8.8	98.6	7.6	3.4	

* NS=NuSun, HO=High Oleic, Trad.=Traditional linoleic, CL=Clearfield, DM=downy mildew resistant, SU=Express-resistant.
Planted June 6, 2007. Harvested October 25, 2007.
Yield is reported at 10% moisture. Oil % is adjusted for oleic acid content.

Table 7. Oilseed sunflower hybrid trial, Presho, SD - 2007.

Brand	Hybrid	Type*	Seed Yield lbs/A	Oil %	Plant Hght cm	Lodg %	Harv. Moist. %	Test Wt. lb/bu	Pop. 1000 pl/A
Dekalb	DKF29-30	NS/DM	1738	43.5	155	0	9.5	25.0	17.4
Dekalb	DKF34-33	NS/DM	1413	44.0	142	2	11.2	26.3	16.3
Dekalb	DKF34-80CL	NS/DM/CL	1716	43.4	141	0	10.6	25.2	17.4
Dekalb	DKF37-31	NS	1899	42.5	149	0	12.2	26.1	17.0
Dekalb	DKF38-45	NS	2117	41.7	140	0	10.5	25.4	17.4
Dekalb	DKF38-75	Trad.	2334	42.7	146	0	11.0	27.2	17.4
Garst Seed	XF06NS16	NS	2058	41.0	135	0	13.4	25.5	17.4
Garst Seed	XF07NC82	NS/CL	1846	39.3	130	0	9.6	23.9	17.4
Garst Seed	XF07NS75	NS	2048	44.9	153	2	10.6	27.0	16.3
Garst Seed	XF07NC68	NS/CL	1524	42.5	141	0	11.0	25.0	17.4
Interstate Seed	IS4668 NS/CL	NS/CL	2047	41.9	153	0	12.1	25.5	17.4
Interstate Seed	IS5770 NS	NS	1831	42.1	150	0	13.2	26.0	17.4
Interstate Seed	IS5880 NS/CL	NS/CL	1738	40.9	148	0	11.4	24.3	17.2
Interstate Seed	IS6131 NS/DM	NS/DM	1670	43.3	140	1	10.1	25.1	17.4
Interstate Seed	IS7120 HO/DM	HO/DM	1818	42.8	135	0	10.5	25.6	17.4
King Seed Inc.	SunKing 4404NS/CL	NS/CL	2257	42.3	148	0	11.9	25.2	17.4
King Seed Inc.	SunKing 4500NS	NS	2014	42.9	151	0	12.3	25.7	17.4
King Seed Inc.	SunKing 4505	Trad.	1890	45.2	148	0	11.8	25.3	16.3
Legend Seeds	LSF 121N	NS	1443	41.4	136	0	10.9	25.5	17.4
Legend Seeds	LSF 142N	NS	1575	42.9	144	0	10.9	26.0	17.4
Legend Seeds	LSF 223NCL	NS/CL	2088	41.5	155	0	11.8	25.7	17.4
Monsanto	MH6641	NS/DM	1772	42.2	138	0	10.9	26.7	17.4
Mycogen Seeds	8H449DM	HO	1811	43.8	154	0	12.3	26.1	17.4
Mycogen Seeds	8N358CL	NS/CL	2005	42.7	149	0	9.0	25.0	17.4
Mycogen Seeds	8N386CL	NS/CL	1968	42.4	151	0	11.8	25.5	17.4
Mycogen Seeds	8N453DM	NS	1962	43.5	149	0	11.5	27.1	17.4
Mycogen Seeds	8N510	NS	2315	43.6	154	0	11.2	25.5	17.4
Pannar Seed Inc.	PANNAR 8330NS	NS	1620	41.8	136	0	10.9	25.5	17.0
Pannar Seed Inc.	PANNAR 7813NS	NS	2080	42.6	134	0	10.7	25.7	17.0
Pannar Seed Inc.	PANNAR 7924NS	NS	1952	41.5	142	0	12.0	24.8	17.4
Pannar Seed Inc.	PANNAR 9501	Trad.	1753	42.0	147	0	10.2	26.2	17.4
Pannar Seed Inc.	PANNAR EX2453NS	NS	1833	42.5	140	1	11.3	25.7	17.4
Pannar Seed Inc.	PANNAR 9501DM	NS	1718	42.2	147	0	11.3	27.0	17.4
Producers Hybrids	SF7105NS	NS	1806	41.8	133	1	12.4	27.1	17.4
Producers Hybrids	SF7203	Trad.	1838	44.8	154	0	9.7	25.9	17.0
Producers Hybrids	SF7303	NS	2110	41.4	144	0	11.1	26.0	17.4
Proseed	Proseed 6004	NS	1470	42.3	161	0	12.0	25.7	16.8
Proseed	Proseed 6294	NS/CL	1466	42.4	152	0	9.7	26.7	17.4
Proseed	Proseed 6481	NS	1846	41.3	160	0	9.4	24.4	17.4
Proseed	Proseed E-3	NS	1919	42.1	142	0	10.1	25.9	17.4
Proseed	Proseed E-4	NS	2020	42.9	143	0	10.2	25.8	15.9
Proseed	Proseed E-5	NS	1693	41.6	161	0	11.8	25.6	17.4
Proseed	Proseed E-85	HO	1838	42.3	153	1	10.8	25.0	17.4
Proseed	Proseed EE-1	NS	1751	40.8	146	0	12.2	25.2	17.4
Proseed	Proseed EE-2	NS	1898	40.2	150	0	9.9	25.0	17.4

Table 7. (cont.).

Brand	Hybrid	Type*	Seed Yield lbs/A	Oil %	Plant Hght cm	Lodg %	Harv. Moist. %	Test Wt. lb/bu	Pop. 1000 pl/A
Seeds 2000	Barracuda	NS/CL	1832	42.8	144	0	12.6	26.8	17.4
Seeds 2000	Blazer	NS	2109	43.9	129	0	11.9	27.0	17.4
Seeds 2000	Sierra	HO	1992	42.1	148	0	10.2	24.0	17.4
Seeds 2000	Firebird NS-SU	NS/SU	2026	41.6	135	1	12.3	25.7	17.4
Triumph Seed	660CL	NS/CL	1750	43.3	143	0	12.6	26.3	17.4
Triumph Seed	s675	NS	1537	43.6	103	0	13.4	25.7	17.4
Triumph Seed	s678	NS	1777	43.0	129	0	12.2	24.6	17.4
Triumph Seed	TRX7434HOCL	HO/CL	1769	42.1	153	0	12.0	27.2	16.3
Triumph Seed	TRX7449	NS	1811	43.3	149	0	11.5	25.8	17.4
Triumph Seed	TRXs7425HOCL	HO/CL	1922	44.1	99	0	13.2	25.5	17.4
Triumph Seed	TRXs7426HO	HO	1996	43.8	136	0	12.7	26.1	17.4
USDA	Hyb. 894 (check)	Trad.	1997	44.2	136	0	10.4	24.6	17.4
USDA	cmsHA412/RHA409(chk)	Trad.	1700	44.0	141	0	11.3	25.8	16.1
	Grand mean		1847	42.6	142	0	11.3	25.7	17.2
	LSD 5%		361	1.8	8	ns	1.4	1.3	ns
	C.V.		14.0	3.0	4.1	383.1	8.8	3.6	4.7

* NS=NuSun, HO=High Oleic, Trad.=Traditional linoleic, CL=Clearfield, DM=downy mildew resistant, SU=Express-resistant.
Planted June 20, 2007. Harvested October 27, 2007.
Yield is reported at 10% moisture. Oil % is adjusted for oleic acid content.
Cooperator: Dennis Stanley, Presho, SD.

Table 8. Oilseed sunflower hybrid trial averaged over Miller, Eureka, and Presho, SD - 2007.

Brand	Hybrid	Type*	Seed Yield lbs/A	Oil %	Plant Height cm	Lodg-ing %	Harv. Moist. %	Test Wt. lb/bu
Dekalb	DKF29-30	NS/DM	1636	45.5	161	13	10.7	27.8
Dekalb	DKF34-33	NS/DM	1625	46.1	155	18	11.2	28.9
Dekalb	DKF34-80CL	NS/DM/CL	1539	45.8	156	1	11.2	27.6
Dekalb	DKF37-31	NS	2078	45.4	164	4	11.7	28.5
Dekalb	DKF38-45	NS	2149	45.7	150	6	11.5	28.3
Dekalb	DKF38-75	Trad.	2179	46.3	165	4	11.7	29.3
Garst Seed	XF06NS16	NS	1810	44.4	148	18	12.8	27.9
Garst Seed	XF07NC68	NS/CL	1861	46.1	154	1	11.4	27.1
Garst Seed	XF07NC82	NS/CL	1861	44.9	145	1	10.3	26.6
Garst Seed	XF07NS75	NS	1984	45.8	160	5	11.7	28.6
Interstate Seed	IS4668 NS/CL	NS/CL	2079	43.8	170	2	12.1	27.3
Interstate Seed	IS5770 NS	NS	1744	44.2	165	3	12.3	28.1
Interstate Seed	IS5880 NS/CL	NS/CL	1704	43.9	157	4	11.1	26.5
Interstate Seed	IS6131 NS/DM	NS/DM	1836	46.4	157	3	10.7	28.4
Interstate Seed	IS7120 HO/DM	HO/DM	2077	46.0	149	1	11.3	27.9
King Seed Inc.	SunKing 4404NS/CL	NS/CL	2202	43.8	163	3	12.4	27.1
King Seed Inc.	SunKing 4500NS	NS	2091	45.5	163	4	12.4	27.6
King Seed Inc.	SunKing 4505	Trad.	1771	46.9	161	2	11.1	27.1
Legend Seeds	LSF 121N	NS	1407	43.9	146	7	11.7	27.9
Legend Seeds	LSF 142N	NS	2147	44.8	154	3	12.3	27.7
Legend Seeds	LSF 223NCL	NS/CL	2037	43.8	166	7	12.0	27.5
Monsanto	MH6641	NS/DM	2308	45.8	154	2	11.9	28.5
Mycogen Seeds	8H449DM	HO	2135	46.7	162	4	12.3	28.4
Mycogen Seeds	8N358CL	NS/CL	2138	44.7	153	4	10.3	27.7
Mycogen Seeds	8N386CL	NS/CL	1900	44.3	168	1	11.5	27.2
Mycogen Seeds	8N453DM	NS	1956	47.4	153	10	12.3	28.8
Mycogen Seeds	8N510	NS	2486	44.7	159	3	11.7	27.3
Pannar Seed Inc.	PANNAR 7813NS	NS	2367	44.8	153	3	11.8	28.3
Pannar Seed Inc.	PANNAR 7924NS	NS	2182	44.1	161	4	12.2	27.0
Pannar Seed Inc.	PANNAR 8330NS	NS	1867	44.3	152	1	11.7	28.3
Pannar Seed Inc.	PANNAR 9501	Trad.	2098	44.3	168	3	11.6	28.0
Pannar Seed Inc.	PANNAR 9501DM	NS	1500	44.3	166	3	11.6	28.0
Pannar Seed Inc.	PANNAR EX2453NS	NS	1814	45.3	158	13	12.1	28.1
Producers Hybrids	SF7105NS	NS	1422	44.4	144	16	12.4	28.7
Producers Hybrids	SF7203	Trad.	1768	46.2	166	3	10.6	27.7
Producers Hybrids	SF7303	NS	2226	44.4	149	1	11.7	27.9
Proseed	Proseed 6004	NS	1551	44.7	182	8	11.9	28.6
Proseed	Proseed 6294	NS/CL	1347	45.0	168	14	10.3	28.5
Proseed	Proseed 6481	NS	1678	43.7	175	14	10.7	26.7
Proseed	Proseed E-3	NS	1727	44.7	149	6	11.2	27.5

Table 8. (cont.).

Brand	Hybrid	Type*	Seed Yield lbs/A	Oil %	Plant Height cm	Lodg-ing %	Harv. Moist. %	Test Wt. lb/bu
Proseed	Proseed E-4	NS	1868	44.8	158	4	10.5	27.2
Proseed	Proseed E-5	NS	1817	43.5	168	12	12.2	27.4
Proseed	Proseed EE-1	NS	1735	43.2	160	6	11.3	27.4
Proseed	Proseed EE-2	NS	1760	42.2	166	10	10.9	27.4
Seeds 2000	Barracuda	NS/CL	1778	45.0	159	7	13.4	28.2
Seeds 2000	Blazer	NS	2028	46.6	144	1	12.3	28.6
Seeds 2000	Sierra	HO	2093	45.0	160	2	11.1	25.9
Seeds 2000	Firebird NS-SU	NS/SU	2346	43.7	148	1	12.5	27.5
Triumph Seed	s675	NS	2014	46.3	118	0	12.9	27.6
Triumph Seed	s678	NS	2088	46.7	134	0	12.3	27.7
Triumph Seed	TRXs7425HOCL	HO/CL	2255	46.0	110	0	12.3	27.8
USDA	Hyb. 894 (check)	Trad.	1746	47.2	150	12	10.9	27.0
USDA	cmsHA412/ RHA409(chk)	Trad.	1638	47.6	155	13	11.5	27.1
Grand mean			1914	45.1	156	5	11.7	27.8
LSD 5%			415	1.4	11	ns	1.2	1.0
C.V.			15.4	3.1	5.8	140.8	7.4	3.4

* NS=NuSun, HO=High Oleic, Trad.=Traditional linoleic, CL=Clearfield, DM=downy mildew resistant, SU=Express-resistant.
Yield is reported at 10% moisture.

Table 9. Confection hybrid sunflower trial - Miller, SD 2007.

Brand	Hybrid	Type*	Seed Yield (lbs/A) 2007	2006	2-yr	Days to Flwr	Days to Mat.	Plant Hght cm	Lodging %	Test Wt. lb/bu	% Seed Over Screen 22/64	20/64	18/64	Nutmeat %	Red Rust^ %
CHS Inc.	06EXP02	Conf.	1712	--	--	61	109	184	8	21.7	60.0	80.2	90.1	49.5	2.0
CHS Inc.	07EXP01	Conf.	1090	--	--	60	101	188	19	22.1	39.3	61.8	80.8	49.8	1.0
CHS Inc.	RH1121	Conf.	1501	--	--	63	111	182	7	23.1	52.5	76.1	89.6	49.8	0.5
CHS Inc.	RH1122	Conf.	1299	1195	1247	60	101	182	4	23.2	47.5	71.2	84.3	49.2	5.0
Dahlgren & Co.	9519	Conf.	1461	--	--	61	110	191	0	25.1	45.2	71.9	85.9	48.3	0.5
Dahlgren & Co.	9530	Conf.	1882	--	--	60	102	185	9	22.2	52.7	76.2	87.8	52.4	0.2
Dahlgren & Co.	9569	Conf.	1341	--	--	61	107	193	24	21.7	64.1	82.0	90.7	52.4	0.5
Dahlgren & Co.	9579	Conf.	1475	--	--	60	103	175	10	20.3	53.3	77.4	90.5	49.3	0.0
Dahlgren & Co.	9583CL	Conf/CL	1480	--	--	61	106	198	9	22.3	47.9	72.9	86.4	51.8	1.5
Mycogen Seeds	8C482	Conf.	1487	1539	1513	60	109	203	4	22.3	47.7	72.1	86.8	47.5	0.7
Red River Commodities	2215	Conf.	1659	1398	1528	61	106	187	5	22.2	46.9	74.1	89.4	51.6	0.5
Red River Commodities	2216	Conf.	1779	1430	1604	61	102	199	10	23.1	54.9	77.3	91.0	49.9	1.0
Red River Commodities	EX41	Conf.	1365	--	--	62	108	201	17	22.3	44.6	68.8	85.7	52.9	1.0
Seeds 2000	Panther	Conf.	1439	--	--	54	100	167	12	23.0	45.5	71.0	87.7	49.1	5.0
SunOpta Sunflower	SS38A	Conf.	1486	--	--	57	105	182	6	24.3	25.5	52.8	76.4	53.9	0.1
Triumph Seed	777C	Conf.	1324	1549	1437	63	108	177	30	21.8	49.2	72.9	86.1	52.5	0.6
Triumph Seed	TRX7352C	Conf.	1198	--	--	62	115	175	12	24.6	36.4	64.1	80.4	51.3	0.2
USDA	924 (check)	Conf.	1305	846	1076	60	101	189	11	22.7	30.6	52.1	74.0	52.0	3.0
Grand mean			1460	1330	1395	60	106	187	11	22.7	46.9	70.8	85.8	50.7	1.3
LSD 5%			381	335		1	4	16	8	1.6	10.7	8.0	5.8	ns	
C.V.			18.4	17.7		1.6	2.6	6.1	54.9	4.8	16.0	8.0	4.8	6.2	

* Conf.=Confection, CL=Clearfield.
^ Rust severity was estimated as the average percent leaf area affected on the upper 4 leaves of 5 consecutive plants.
Planted June 6, 2007. Harvested October 26, 2007.
Cooperator: Roger Bertsch, St. Lawrence, SD.

Table 10. Oilseed sunflower fatty acid profiles of selected hybrids -- Miller, SD 2007.

Sunflower Brand	Hybrid	Type*	Palmitic %	Stearic %	Oleic %	Linoleic %	Linolenic %	Saturated %
Dahlgren & Co.	4421ND	NS	3.0	3.1	81.0	10.0	0.0	8.8
Dahlgren & Co.	EX4370	Trad.	5.3	5.7	28.6	58.4	0.2	12.8
Dahlgren & Co.	EX4377NS	NS	3.9	4.8	70.0	18.7	0.0	10.9
Dahlgren & Co.	EX4455NS	NS	4.3	5.6	54.4	33.2	0.1	11.8
Pannar Seed Inc.	PANNAR 8330NS	NS	4.0	4.5	60.0	29.4	0.1	10.4
Pannar Seed Inc.	PANNAR 7813NS	NS	4.2	5.0	52.2	36.3	0.1	11.1
Pannar Seed Inc.	PANNAR 7924NS	NS	4.1	5.2	60.8	27.2	0.1	11.5
Pannar Seed Inc.	PANNAR EX2453NS	NS	4.3	5.1	64.4	23.6	0.0	11.4
Pannar Seed Inc.	PANNAR 9501DM	Trad.	4.3	7.8	25.2	60.9	0.1	13.7
Proseed	Proseed 6004	NS	3.5	5.0	74.8	14.2	0.1	10.8
Proseed	Proseed 6294	NS/CL	3.8	3.2	79.4	11.3	0.1	9.0
Proseed	Proseed EE-1	NS	3.0	3.9	87.8	3.0	0.1	8.9
Proseed	Proseed EE-2	NS	3.0	4.8	82.8	7.1	0.1	9.9
Triumph Seed	845HO	HO	2.8	2.7	89.2	3.2	0.1	7.3

* NS=NuSun, HO=High Oleic, Trad.=Traditional linoleic, CL=Clearfield, DM=downy mildew resistant.