

EC 909  
Revised  
Annually

# Sunflower

2002 South Dakota Hybrid Performance Trials

Oilseed  
Confection

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680 copies printed by CES at a cost of \$ .93 each. EC909. January 2003.

# Sunflower

## 2002 South Dakota Hybrid Performance Trials Oilseed and Confection

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

### Yield

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

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

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

For example, if the Ipswich test (Table 3) could be repeated in 2003 exactly as it was in 2002, the yield ranking of a hybrid that yielded 2018 lbs/A and one that yielded 1677 lbs/A might change places since their yield difference (341 lbs/A) is less than the indicated yield LSD value of 346 lbs/A. Within the accuracy level of the equipment used, there was no statistical difference in yield between the two hybrids when grown under the conditions that existed at Ipswich in 2002.

In contrast, if grown again under similar conditions, a hybrid yielding 1606 lbs/A at Ipswich in 2002 would likely be lower yielding than one that yielded 2018

lbs/A, because the difference between them in 2002 ( $2018 - 1606 = 412$  lbs/A) exceeded the LSD value (346 lbs/A).

In this publication, the LSD value was used to compute a minimum or maximum value for a hybrid to achieve to be in the 'top group' for the trait measured. For example, at Ipswich (Table 3) the highest yielding hybrid in 2002 was Legend LSF142N (2018 lbs/A). To determine if any other hybrids were in the top yielding group at Ipswich, the LSD 5% value of 346 lbs/A is subtracted from the highest yield to produce a top group minimum of 1672 lbs/A ( $2018 - 346 = 1672$ ). Any hybrids yielding 1672 lbs/A or more were in the top yield group at Ipswich in 2002. The top group values are computed similarly for other traits.

Note that for factors such as lodging or moisture where a low value is desirable, the top group value is expressed as a maximum value. To qualify for the top group, hybrids must not exceed the maximum top group value listed at the bottom of the column.

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

Oil type may also be important. Hybrids are available with 'traditional,' high-oleic, and mid-oleic (NuSun) oil

composition. Markets may pay a premium based on the composition of the oil produced by a particular hybrid. Some companies offer guarantees for NuSun oleic levels. Consistency of oleic levels for particular hybrids will be an important trait to evaluate, as data become available.

#### Maturity

Full-season hybrids generally yield higher than early hybrids. Maturity is especially important if planting is delayed. Often, with delayed planting, only an early hybrid will mature and exhibit its full yield potential. Yield, oil content, and test weight are often reduced when a hybrid is damaged by frost before it is fully mature. An earlier hybrid will likely be drier at harvest than a later hybrid, thus reducing drying costs. To spread risk and workload, consider planting several hybrids with different maturity dates.

#### Moisture Content

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

#### Disease Resistance

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

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

## 2002 Trials

#### Locations and Hybrids

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

Also included in this publication are the results of the National Sunflower Association (NSA) NuSun and confection hybrid sunflower trials conducted at Agar and Selby, S.D. (Tables 11-14). These trials were planted and harvested by Dakota Crop Services, Fargo, N.D. SDSU personnel took notes on the plots during the growing season.

#### Climatic Conditions

The 2002 growing season was very dry. The season began with approximately 40% of the state rating short to very short in topsoil and subsoil moisture. By mid-September, 50% of the state was short or very short in topsoil moisture and 65% was short to very short in subsoil moisture (South Dakota Ag Statistics Service).

A summary of 2002 climatic conditions near the sunflower test sites is presented in Table 1. All stations received below-normal growing season precipitation. Dakota Lakes received 6.34 inches less moisture than

normal for the months of May through September. Plots at Dakota Lakes were not harvested due to excessive drought, lodging, and bird damage.

Temperatures were generally below normal in May and August, but above normal in June, July, and September. Most of the state received a killing frost during the second week of October.

#### Experimental Methods

Plots at all locations consisted of two rows 23 feet long, spaced 30 inches apart. Plot layout was a randomized complete block design with four replications at each location. The experiments were randomized for a nearest neighbors statistical analysis, which removes effects of field trends (see Crop Science 34:62-66).

All plots were overseeded and thinned. Stands were spotty at Ipswich due to patches of Canadian thistles. Where excess plants were present, oilseed plots at Ipswich and Miller were thinned to a plant population of approximately 17,000 plants/A. Stands were fair to good at Pukwana and Miller. Oilseed plots at Pukwana were thinned to approximately 18,000 plants/A. Confection plots at all locations were thinned to 16,000 plants/A.

The Dakota Lakes trial was seeded no-till. All other trials were planted with conventional tillage practices. Spartan and Prowl herbicides were applied for weed control at Dakota Lakes. Sonalan or Treflan were applied at all other locations.

Flowering was recorded at Ipswich as the number of days from planting to 50% ray petals extended. Plant height and lodging notes were taken at all locations immediately before harvest. Lodging was lowest at Ipswich, ranging from 0% to 19%. There was heavy lodging at Pukwana and Miller, especially in the first replication of the oilseed trial at each location, which was therefore excluded from all data analyses. Plots at Dakota Lakes were excessively damaged by drought, lodging, and birds; they were not harvested.

Plots were harvested with a Gleaner Model K combine fitted with a two-row all row crop header. All oilseed trial seed yields were adjusted to 10% moisture. Oil content was determined by NMR analysis of oven-dry samples and converted to 10% moisture. Oil values for NuSun hybrids were adjusted according to the formula:  $(\text{original NMR \%} \times 0.953) + 0.7148 = \text{true NuSun oil \%}$ .

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

## Results

Data from each location and combined over locations are contained in Tables 3-6 (oilseed) and 8-10 (confection). The highest average seed yield across oilseed hybrids was 1609 lbs/A at Ipswich, and the lowest was 1095 lbs/A at Pukwana. Non-oilseed seed yields averaged 1324 lbs/A at Miller and 1112 lbs/A at Pukwana. In the tables that follow, hybrids are listed according to 2002 seed yields.

Results from the NSA NuSun and confection trials are presented in Tables 11-14. Yields from the Selby NuSun trial are not reported because the C.V. % was too high for reliable hybrid comparisons. Average yield over all hybrids at Agar was 3042 lbs/A in the NuSun trial (Table 11) and 2916 lbs/A in the confection trial (Table 13). Confection hybrids at Selby averaged 1043 lbs/A seed yield (Table 14).

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.

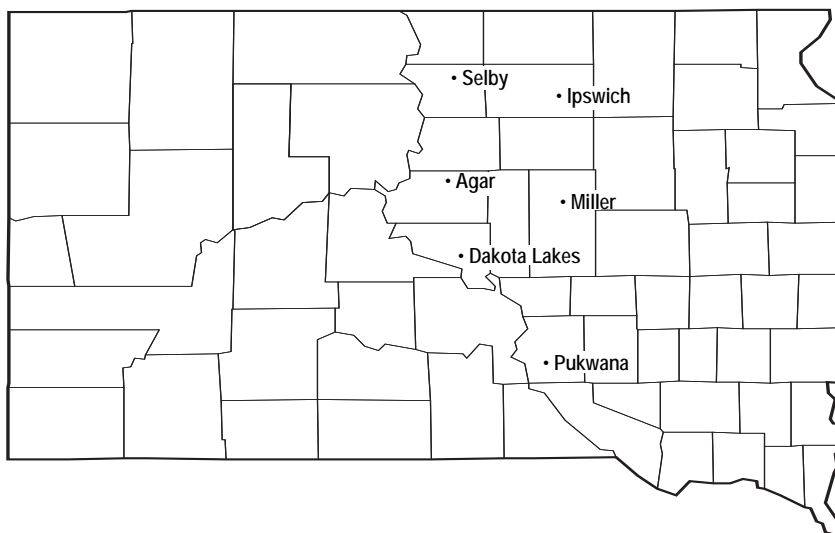


Figure 1. 2002 South Dakota sunflower test sites.

**Table 1. Climate summary for nearest weather stations to 2002 South Dakota sunflower test sites and departures from normal.**

LOCATION- MONTH	2002 TEMPERATURE (°F)			TOTAL PRECIP IN.	DEPARTURE FROM NORMAL <sup>^</sup>			
	AVG MAX.	AVG MIN.	AVG MEAN		MAX TEMP	MIN TEMP	AVG TEMP	PRECIP IN.
<u>Dakota Lakes*</u>								
May	68.9	40.8	54.9	0.63	-2.0	-4.8	-3.4	-2.24
June	87.6	60.6	74.1	1.11	6.1	4.8	5.4	-2.41
July	93.2	67.5	80.4	1.28	3.3	5.5	4.5	-1.34
August	86.3	62.2	74.3	1.36	-1.7	2.3	0.3	-0.33
September	81.3	57.2	69.3	1.54	5.1	8.7	7.0	-0.02
<u>Academy 2NE (Pukwana)*</u>								
May	67.3	39.9	53.6	2.54	-4.8	-5.3	-5.1	-0.99
June	86.5	59.8	73.2	1.36	4.4	4.7	4.6	-2.22
July	94.7	65.2	80.0	1.08	5.3	4.3	4.8	-1.86
August	86.8	58.9	72.9	3.14	-0.4	1.5	0.6	1.09
September	78.4	50.7	64.6	1.37	1.4	3.5	2.5	-0.72
<u>Ipswich*</u>								
May	65.4	37.3	51.3	1.08	-5.5	-5.3	-5.5	-1.55
June	83.9	55.8	69.8	0.76	3.8	3.1	3.4	-2.78
July	87.3	62.0	74.7	3.14	0.3	4.4	2.4	0.52
August	79.4	57.2	68.3	4.67	-6.6	2.1	-2.3	2.62
September	74.7	47.3	61.0	0.72	0.2	3.1	1.7	-0.82
<u>Miller*</u>								
May	67.7	39.7	53.7	0.72	-2.9	-5.5	-4.2	-2.02
June	84.1	59.0	71.6	1.62	3.9	3.6	3.8	-1.29
July	91.3	64.0	77.6	2.39	3.9	3.0	3.4	0.01
August	82.3	58.6	70.4	3.06	-3.0	1.0	-1.1	1.10
September	76.1	51.9	64.0	1.04	1.5	5.0	3.3	-0.68

\* The data in this table are for 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.

<sup>^</sup> Departures from normal were determined by comparing 2002 observations to 30-yr averages for each site.

**Table 2. Hybrids and test sites for the 2002 South Dakota oilseed hybrid sunflower trials.**

SUNFLOWER BRAND-HYBRID	HYBRID TYPE	DAKOTA* LAKES	IPSWICH	MILLER	PUKWANA
Croplan CL308	NuSun	X	X	X	
Croplan CL322	NuSun	X			
Croplan CL345	NuSun	X	X		
Croplan CL380	NuSun	X	X	X	X
Croplan CL385	NuSun	X	X	X	X
Dekalb DK3868	Trad.	X	X	X	X
Dekalb DK3875	Trad.	X	X	X	X
Dekalb DK3900	Trad.	X	X	X	X
Dekalb DKF33-33NS	NuSun	X	X	X	X
Den Beston DB 727	Trad.	X			
Interstate F00001	Trad.	X	X	X	X
Interstate F90039HO	High Oleic	X		X	
Interstate Hysun 450	NuSun	X	X	X	X
Interstate Hysun 521	NuSun	X	X	X	X
Interstate IS 4049	Trad.	X	X	X	X
Interstate IS 5331	Trad.	X	X	X	X
Interstate IS 6039	Trad.	X	X	X	X
Interstate IS 6767	Trad.	X	X	X	X
Kaystar 2020NS	NuSun		X	X	
Kaystar 8300	Trad.		X		
Kaystar 9404	Trad.	X	X	X	X
Kaystar 9501	Trad.	X	X	X	X
Legend LSF124N	NuSun	X	X	X	
Legend LSF126N	NuSun			X	
Legend LSF142N	NuSun	X	X	X	X
Mycogen 8377NS	NuSun		X	X	
Mycogen 8488NS	NuSun	X	X	X	X
Mycogen 8N327	NuSun	X	X	X	X
Mycogen 8N421	NuSun	X	X	X	X
Mycogen Cavalry	Trad.	X			X
Mycogen SF187	Trad.	X		X	X
Mycogen SF260	Trad.	X	X	X	X
Mycogen SF270	Trad.		X		
Pioneer hybrid P63A70	Trad.	X	X	X	X
Pioneer hybrid P63A84	Trad.	X	X	X	X
Pioneer hybrid P63M02	NuSun	X	X	X	X
Pioneer hybrid P63M52	NuSun	X	X	X	X
Pioneer hybrid P63M80	NuSun	X	X	X	X
Pioneer hybrid P63M91	NuSun	X	X	X	X
Pioneer hybrid XF3119	NuSun	X	X	X	X
Pioneer hybrid XF3120	NuSun	X	X	X	X
Proseed 9405	NuSun	X	X	X	X
Proseed 9612	Trad.	X	X	X	X
Proseed K-405	NuSun	X	X	X	X
Proseed K-441	NuSun	X	X	X	X
Proseed K-653	NuSun	X	X	X	X
Seeds 2000 Blazer	NuSun		X	X	X
Seeds 2000 Bronco	NuSun		X	X	X
Seeds 2000 Colonel	NuSun			X	
Seeds 2000 Ranger	NuSun		X	X	
Triumph 636	NuSun				X
Triumph 658	NuSun				X
USDA 894 (check)	Trad.	X	X	X	X
Total Hybrids		42	44	46	40

\* Dakota Lakes was not harvested due to excessive drought, lodging, and bird damage.

**Table 3. Results of the commercial oilseed sunflower trial grown at Ipswich, S.D., in 2002.**

SUNFLOWER BRAND-HYBRID	HYBRID TYPE	SEED YIELD (LB/AC)			2002	HARV	TEST	DAYS	HGHT	LODGE	POP
		2002	2001	2-YR	OIL %	MOIST %	WT LB/BU	TO FLWR	CM	%	PLNT/A
Legend LSF142N	NuSun	2018	1927	1972	41.3	15.1	29.0	76	112	8	15600
Dekalb DK3875	Trad.	1998	--	--	40.9	15.2	29.0	75	112	10	15200
Interstate Hysun 450	NuSun	1982	--	--	41.9	14.9	27.6	77	113	9	15800
Pioneer hybrid P63A84	Trad.	1979	--	--	44.6	14.4	29.5	73	110	5	15800
Kaystar 2020NS	NuSun	1873	--	--	40.1	15.8	28.1	77	110	2	15900
Proseed 9405	NuSun	1836	1838	1837	40.2	15.2	27.7	73	112	0	17200
Croplan CL345	NuSun	1818	2519	2168	41.7	14.0	27.6	71	114	2	16500
Mycogen 8N421	NuSun	1809	--	--	42.2	14.2	29.9	74	130	1	15600
Croplan CL385	NuSun	1785	1903	1844	40.9	15.9	28.1	77	111	0	15400
Mycogen 8377NS	NuSun	1781	2062	1922	42.1	14.5	27.7	71	119	4	14800
Mycogen SF260	Trad.	1733	2051	1892	43.1	14.2	28.8	73	103	4	17200
Seeds 2000 Bronco	NuSun	1730	1624	1677	40.2	15.5	27.7	77	104	0	13700
Kaystar 9501	Trad.	1729	--	--	40.4	15.0	28.3	75	122	6	14700
Dekalb DK3900	Trad.	1726	--	--	42.2	15.3	29.3	74	103	4	15700
Croplan CL308	NuSun	1711	--	--	42.7	14.1	28.9	67	96	5	16600
Dekalb DKF33-33NS	NuSun	1700	--	--	39.5	14.4	29.0	70	98	6	15600
Seeds 2000 Blazer	NuSun	1696	2238	1967	40.5	14.1	27.4	73	98	10	16200
Interstate Hysun 521	NuSun	1679	--	--	41.2	14.7	28.6	68	106	9	15900
Kaystar 9404	Trad.	1677	2040	1858	41.3	14.7	27.8	73	112	9	16200
Pioneer hybrid P63M91	NuSun	1606	2123	1865	40.6	14.5	28.2	73	107	4	15300
Pioneer hybrid XF3119	NuSun	1590	--	--	40.8	14.3	28.5	70	100	19	18600
Mycogen 8488NS	NuSun	1574	2386	1980	40.2	15.3	28.6	74	114	4	15000
Proseed 9612	Trad.	1572	3007	2290	39.9	14.4	29.0	74	117	16	16300
Mycogen 8N327	NuSun	1559	--	--	42.8	14.2	29.6	68	112	7	16400
Mycogen SF270	Trad.	1545	2360	1953	42.2	14.3	28.3	67	95	4	16600
Interstate IS 4049	Trad.	1544	2051	1797	42.4	14.3	27.5	74	121	7	16000
Pioneer hybrid XF3120	NuSun	1530	--	--	40.7	14.4	28.1	72	102	11	15600
Pioneer hybrid P63A70	Trad.	1525	2211	1868	43.4	14.9	27.4	72	104	10	15700
Pioneer hybrid P63M02	NuSun	1522	--	--	42.0	14.2	28.7	67	109	9	15300
Proseed K-405	NuSun	1521	--	--	40.0	14.3	27.9	73	120	11	17700
Pioneer hybrid P63M80	NuSun	1503	1982	1743	41.9	14.3	28.7	71	105	12	14600
Interstate IS 6039	Trad.	1489	2275	1882	43.3	14.9	27.8	70	103	9	17000
Croplan CL380	NuSun	1488	2436	1962	39.8	15.1	28.2	73	117	0	15900
Proseed K-441	NuSun	1475	--	--	40.4	14.9	26.4	74	116	13	15500
Interstate IS 5331	Trad.	1474	--	--	42.1	15.0	26.9	71	92	0	13800
Dekalb DK3868	Trad.	1465	2229	1847	42.5	14.9	27.7	74	110	18	15600
Legend LSF124N	NuSun	1463	--	--	41.1	14.5	28.2	74	109	12	15000
Proseed K-653	NuSun	1459	--	--	38.4	14.8	27.6	74	108	12	14200
Pioneer hybrid P63M52	NuSun	1453	--	--	40.7	13.7	27.7	72	106	8	16600
Kaystar 8300	Trad.	1426	2023	1725	43.1	14.8	27.0	68	101	15	13900
USDA 894 (check)	Trad.	1276	1388	1332	42.3	14.4	27.7	72	117	12	14400
Interstate IS 6767	Trad.	1249	--	--	42.4	15.8	27.6	73	106	5	16000
Seeds 2000 Ranger	NuSun	1176	2090	1633	40.7	14.7	26.8	73	106	8	13800
Interstate F00001	Trad.	1050	--	--	41.6	14.3	30.7	71	103	7	18200
EXP. MEAN		1609	1985	1797	41.4	14.7	28.2	72	109	7	15700
LSD (5%)		346	499	--	1.5	1.1	1.6	2	8	8	NS*
TOP GROUP--MINIMUM		1672	--	--	43.1	--	29.1	--	--	--	--
TOP GROUP--MAXIMUM		--	--	--	--	14.8	--	--	--	8	--
C.V.%		15.4	18.0	--	2.5	5.2	4.0	1.5	5.4	75.8	10.1

\* NS--there are no significant differences among the values within the column.

Planted May 18, 2002. Harvested Oct. 7, 2002.

Cooperator: Doug Jones, Ipswich.

Seed yield and oil % are reported at 10% moisture. Oil % adjusted for oleic acid content.

Design: Nearest neighbors in RCBD layout with 4 replications.

**Table 4. Results of the commercial oilseed sunflower trial grown at Miller, S.D., in 2002.**

SUNFLOWER BRAND-HYBRID	HYBRID TYPE	SEED YIELD (LB/AC)			2002 OIL %	HARV MOIST %	HGHT CM	LODG %
		2002	2001	2-YR				
Mycogen 8N327	NuSun	1877	--	--	42.4	10.9	122	24
Kaystar 9501	Trad.	1871	2830	2350	39.9	19.0	122	29
Proseed 9612	Trad.	1784	2881	2333	40.5	16.8	126	28
Legend LSF142N	NuSun	1750	2876	2313	39.7	12.4	111	27
Interstate Hysun 450	NuSun	1695	--	--	40.6	14.8	109	26
Mycogen SF187	Trad.	1606	2742	2174	41.2	12.4	98	22
Kaystar 2020NS	NuSun	1575	--	--	41.2	14.9	108	38
Dekalb DKF33-33NS	NuSun	1573	--	--	41.2	11.0	121	26
Croplan CL345	NuSun	1533	2681	2107	42.2	13.9	116	31
Mycogen 8377NS	NuSun	1509	2652	2080	41.9	16.7	119	24
Interstate F90039HO	HghOleic	1494	2615	2054	41.9	14.7	126	34
Interstate Hysun 521	NuSun	1447	--	--	41.1	11.9	105	28
Pioneer hybrid P63A70	Trad.	1408	2812	2110	43.7	15.3	120	32
Seeds 2000 Ranger	NuSun	1383	--	--	41.1	11.9	111	24
Seeds 2000 Bronco	NuSun	1353	--	--	39.6	15.2	107	31
Proseed 9405	NuSun	1344	2622	1983	41.2	20.1	118	30
Dekalb DK3900	Trad.	1332	--	--	42.7	14.0	105	41
Croplan CL308	NuSun	1324	--	--	43.6	13.5	110	30
Croplan CL385	NuSun	1319	2876	2097	40.2	10.2	112	32
Kaystar 9404	Trad.	1317	2944	2130	40.8	12.8	119	47
Interstate IS 5331	Trad.	1302	2913	2108	42.3	12.8	100	21
Interstate IS 4049	Trad.	1297	2984	2140	43.0	15.5	125	32
Mycogen 8488NS	NuSun	1290	3027	2158	40.8	16.1	134	32
Pioneer hybrid XF3120	NuSun	1284	--	--	41.5	16.2	117	40
Dekalb DK3868	Trad.	1240	2759	1999	43.1	13.7	104	44
Seeds 2000 Blazer	NuSun	1213	--	--	41.6	14.9	97	32
Croplan CL380	NuSun	1203	2948	2075	41.5	17.4	123	31
Pioneer hybrid P63M80	NuSun	1199	2615	1907	42.4	11.2	117	43
Interstate F00001	Trad.	1195	2712	1953	41.9	14.8	117	36
Proseed K-405	NuSun	1190	--	--	40.2	13.6	114	41
Seeds 2000 Colonel	NuSun	1168	--	--	39.8	13.9	112	36
Pioneer hybrid P63A84	Trad.	1167	--	--	42.4	11.9	113	38
Mycogen SF260	Trad.	1121	2879	2000	42.0	13.8	106	24
Pioneer hybrid XF3119	NuSun	1112	--	--	42.4	12.4	105	45
Dekalb DK3875	Trad.	1100	--	--	41.2	17.0	114	39
Mycogen 8N421	NuSun	1099	--	--	41.8	14.4	120	13
USDA 894 (check)	Trad.	1099	2666	1883	42.5	14.2	116	40
Interstate IS 6767	Trad.	1098	2604	1851	42.2	19.4	110	41
Proseed K-441	NuSun	1070	--	--	41.3	13.5	112	41
Proseed K-653	NuSun	1061	--	--	39.1	11.6	112	47
Legend LSF126N	NuSun	954	--	--	40.5	15.3	113	36
Pioneer hybrid P63M91	NuSun	918	2782	1850	42.2	16.2	125	47
Legend LSF124N	NuSun	887	--	--	40.7	17.6	116	48
Pioneer hybrid P63M52	NuSun	875	--	--	42.2	13.3	111	57
Pioneer hybrid P63M02	NuSun	755	--	--	44.2	11.6	110	40
Interstate IS 6039	Trad.	705	2834	1770	43.6	14.2	117	38
EXP. MEAN		1285	2684	1984	41.6	14.3	114	35
LSD (5%)		392	445	--	1.3	4.0	11	15
TOP GROUP--MINIMUM		1485	--	--	42.9	--	--	--
TOP GROUP--MAXIMUM		--	--	--	--	14.2	--	27
C.V.%		18.8	11.8	--	2.0	17.1	6.1	26.1

Planted May 28, 2002. Harvested Sept. 20, 2002.

Cooperator: Kelvin Grey, St. Lawrence.

Seed yield and oil % are reported at 10% moisture. Oil % adjusted for oleic acid content.

Design: Nearest neighbors in RCBD layout with 4 replications.

**Table 5. Results of the commercial oilseed sunflower trial grown at Pukwana, S.D., in 2002.**

SUNFLOWER BRAND-HYBRID	HYBRID TYPE	SEEDYIELD (LB/AC)			2002 OIL %	HARV MOIST %	HGHT CM	LODG %
		2002	2001	2-YR				
Mycogen 8N421	NuSun	1948	--	--	42.7	13.6	149	25
Mycogen SF187	Trad.	1824	2392	2108	42.2	15.2	109	33
Dekalb DK3875	Trad.	1724	--	--	42.6	13.9	110	44
Interstate IS 5331	Trad.	1585	3034	2310	43.0	14.4	107	28
Croplan CL385	NuSun	1523	--	--	41.5	14.4	115	47
Pioneer hybrid P63A84	Trad.	1477	--	--	44.2	14.2	124	42
Mycogen 8488NS	NuSun	1353	3034	2193	42.7	14.7	122	37
Triumph 658	NuSun	1348	3173	2261	42.8	14.8	125	57
Seeds 2000 Bronco	NuSun	1325	2399	1862	42.7	13.7	113	49
Interstate Hysun 450	NuSun	1259	--	--	40.2	14.7	112	40
Mycogen SF260	Trad.	1228	2813	2020	44.5	13.8	100	34
Mycogen Cavalry	Trad.	1199	2801	2000	45.1	13.6	133	45
Kaystar 9404	Trad.	1165	2630	1898	42.6	13.9	128	51
Dekalb DK3900	Trad.	1117	--	--	42.8	13.9	111	44
Pioneer hybrid XF3119	NuSun	1103	--	--	42.0	13.5	120	54
Interstate Hysun 521	NuSun	1072	--	--	41.7	13.7	122	34
Kaystar 9501	Trad.	1065	2480	1772	41.9	14.8	122	47
Interstate IS 4049	Trad.	1058	2799	1928	43.6	14.4	126	45
Legend LSF142N	NuSun	1052	2167	1610	41.8	15.0	117	50
Mycogen 8N327	NuSun	1049	--	--	42.1	12.9	124	50
Croplan CL380	NuSun	1047	--	--	42.2	14.3	125	35
Pioneer hybrid XF3120	NuSun	1030	--	--	42.0	13.0	115	50
Pioneer hybrid P63M52	NuSun	983	--	--	41.2	13.9	118	53
Dekalb DKF33-33NS	NuSun	981	--	--	42.5	14.0	122	51
Pioneer hybrid P63A70	Trad.	944	2684	1814	43.4	14.4	122	55
Seeds 2000 Blazer	NuSun	938	2768	1853	42.5	12.8	101	62
Triumph 636	NuSun	924	2939	1931	42.5	15.2	125	60
Proseed 9405	NuSun	912	3293	2102	43.5	13.7	125	48
Pioneer hybrid P63M80	NuSun	889	2443	1666	41.9	13.1	126	41
Interstate IS 6767	Trad.	888	2629	1759	43.7	14.6	117	60
Dekalb DK3868	Trad.	878	2592	1735	43.2	12.9	109	66
Interstate F00001	Trad.	878	--	--	43.6	14.3	114	53
Pioneer hybrid P63M02	NuSun	858	--	--	41.4	13.3	105	50
Proseed 9612	Trad.	849	2524	1687	42.1	13.2	123	56
Proseed K-441	NuSun	827	--	--	40.9	14.4	122	57
Pioneer hybrid P63M91	NuSun	825	2672	1749	41.3	13.3	116	43
Interstate IS 6039	Trad.	804	2844	1824	43.8	14.0	109	47
USDA 894 (check)	Trad.	695	1951	1323	42.8	13.1	116	67
Proseed K-653	NuSun	613	--	--	41.6	13.7	113	74
Proseed K-405	NuSun	567	--	--	41.4	13.5	125	58
EXP. MEAN		1095	2614	1854	42.5	13.9	118	48
LSD (5%)		331	668	--	1.6	1.4	12	11
TOP GROUP--MINIMUM		1617	--	--	43.5	--	--	--
TOP GROUP--MAXIMUM		--	--	--	--	14.2	--	36
C.V.%		18.6	18.3	--	2.3	6.0	6.5	14.3

Planted May 23, 2002. Harvested Oct. 9, 2002.

Cooperator: Tim Pazour, Pukwana.

Seed yield and oil % are reported at 10% moisture. Oil % adjusted for oleic acid content.

Design: Nearest neighbors in RCBD layout with 4 replications.

**Table 6. Commercial oilseed sunflower trial, averaged over Miller, Ipswich, and Pukwana, S.D., 2002.**

SUNFLOWER BRAND-HYBRID	HYBRID TYPE	SEEDYIELD (LB/AC) OVER 3 LOCATIONS			2002	HARV	HGHT	LODG
		2002	2001	2-YR	OIL	MOIST	CM	%
					%	%		
		-3-^	-3-	-6-	-3-	-3-	-3-	-3-
Interstate Hysun 450	NuSun	1646	--	--	40.9	14.8	111	25
Mycogen 8N421	NuSun	1619	--	--	42.2	14.1	133	13
Dekalb DK3875	Trad.	1607	--	--	41.6	15.4	112	31
Legend LSF142N	NuSun	1607	2323	1965	40.9	14.2	113	28
Kaystar 9501	Trad.	1555	--	--	40.7	16.3	122	27
Croplan CL385	NuSun	1542	--	--	40.9	13.5	113	25
Pioneer hybrid P63A84	Trad.	1541	--	--	43.7	13.5	115	28
Mycogen 8N327	NuSun	1495	--	--	42.4	12.7	119	27
Seeds 2000 Bronco	NuSun	1469	--	--	40.8	14.8	108	27
Interstate IS 5331	Trad.	1454	--	--	42.5	14.1	100	15
Dekalb DKF33-33NS	NuSun	1418	--	--	41.1	13.1	114	28
Mycogen 8488NS	NuSun	1406	2816	2111	41.2	15.4	123	24
Proseed 9612	Trad.	1402	2804	2103	40.8	14.8	122	33
Interstate Hysun 521	NuSun	1399	--	--	41.3	13.4	111	23
Dekalb DK3900	Trad.	1392	--	--	42.6	14.4	106	30
Kaystar 9404	Trad.	1386	2538	1962	41.6	13.8	120	36
Proseed 9405	NuSun	1364	2584	1974	41.6	16.3	118	26
Mycogen SF260	Trad.	1361	2581	1971	43.2	13.9	103	21
Interstate IS 4049	Trad.	1299	2611	1955	43.0	14.7	124	28
Pioneer hybrid P63A70	Trad.	1292	2569	1931	43.5	14.9	115	32
Seeds 2000 Blazer	NuSun	1282	--	--	41.5	13.9	99	35
Pioneer hybrid XF3120	NuSun	1281	--	--	41.4	14.5	111	34
Pioneer hybrid XF3119	NuSun	1268	--	--	41.7	13.4	108	39
Croplan CL380	NuSun	1246	--	--	41.2	15.6	122	22
Pioneer hybrid P63M80	NuSun	1197	2347	1772	42.1	12.9	116	32
Dekalb DK3868	Trad.	1194	2527	1861	42.9	13.8	108	43
Proseed K-441	NuSun	1124	--	--	40.9	14.3	117	37
Pioneer hybrid P63M91	NuSun	1117	2526	1821	41.4	14.7	116	31
Pioneer hybrid P63M52	NuSun	1104	--	--	41.4	13.6	112	39
Proseed K-405	NuSun	1093	--	--	40.5	13.8	120	37
Interstate IS 6767	Trad.	1079	--	--	42.8	16.6	111	36
Pioneer hybrid P63M02	NuSun	1045	--	--	42.5	13.0	108	33
Proseed K-653	NuSun	1044	--	--	39.7	13.4	111	44
Interstate F00001	Trad.	1041	--	--	42.4	14.5	111	32
USDA 894 (check)	Trad.	1023	2002	1512	42.5	13.9	116	40
Interstate IS 6039	Trad.	999	2651	1825	43.6	14.4	109	32
EXP. MEAN		1316	2428	1872	41.8	14.3	114	30
LSD (5%)		360	--	--	1.3	NS*	9	10
TOP GROUP--MINIMUM		1285	--	--	42.4	--	--	--
TOP GROUP--MAXIMUM		--	--	--	--	--	--	23
C.V.%		16.8	--	--	1.9	9.7	4.7	20.2

^ Indicates the number of tests averaged to produced the means in the column.

\* NS--there are no significant differences among the values within the column.

**Table 7. Hybrids and test sites for the 2002 South Dakota confection hybrid sunflower trial.**

SUNFLOWER BRAND-HYBRID	DAKOTA*		
	LAKES	MILLER	PUKWANA
Agway RH 118	X	X	X
Interstate IS 33139	X	X	X
Interstate IS 8048	X	X	X
Mycogen 9338		X	
Mycogen X91416		X	
Mycogen X91459		X	
Seeds 2000 Bigfoot		X	
Seeds 2000 Grizzly		X	
Seeds 2000 X3987		X	
Sigco Sun Products Goliath	X	X	X
Sigco Sun Products Goliath RT	X	X	X
USDA 924 (check)	X	X	X
Total Hybrids	6	12	6

\* Dakota Lakes was not harvested due to excessive drought, lodging, and bird damage.

**Table 8. Results of the confection hybrid sunflower trial grown at Miller, S.D., in 2002.**

SUNFLOWER BRAND-HYBRID	SEEDYIELD (LB/AC)			TEST WT LB/BU	HGHT CM	LODGE %	% OVER SCREEN			NUT- MEAT %
	2002	2001	2-YR				22/64	20/64	18/64	
Sigco Sun Products Goliath	1629	--	--	24.9	130	29	53	77	85	48
USDA 924 (check)	1598	1554	1576	27.0	134	27	19	43	79	50
Agway RH 118	1588	2540	2064	24.4	152	27	43	69	87	51
Seeds 2000 X3987	1571	3052	2312	25.2	140	23	47	70	77	48
Mycogen X91459	1383	--	--	25.0	138	50	54	73	86	50
Seeds 2000 Grizzly	1383	2611	1997	23.8	129	42	46	71	87	48
Interstate IS 8048	1285	2078	1681	24.7	132	38	49	69	79	50
Sigco Sun Products Goliath RT	1257	--	--	25.5	141	39	49	72	81	48
Mycogen X91416	1101	--	--	23.7	142	48	42	68	81	51
Interstate IS 33139	1090	--	--	24.3	147	37	46	70	82	49
Mycogen 9338	1071	--	--	25.1	139	37	37	66	81	50
Seeds 2000 Bigfoot	928	2150	1539	25.9	134	47	36	64	76	52
EXP. MEAN	1324	2173	1748	25.0	138	37	43	68	82	50
LSD (5%)	367	453	--	NS*	13	14	12	12	NS	2
TOP GROUP--MINIMUM	1262	--	--	--	--	--	41	65	--	50
TOP GROUP--MAXIMUM	--	--	--	--	--	37	--	--	--	--
C.V.%	19.3	14.7	--	2.8	6.8	27.2	19.4	12.8	8.5	4.7

\*NS--there are no significant differences among the values within the column.

Cooperator: Kelvin Grey, St. Lawrence.

Planted May 28, 2002. Harvested September 21, 2002.

Design: Nearest neighbors in RCBD layout with 4 replications.

**Table 9. Results of the confection hybrid sunflower trial grown at Pukwana, S.D., in 2002.**

SUNFLOWER BRAND-HYBRID	SEEDYIELD (LB/AC)			TEST WT LB/BU	HGHT CM	LODGE %	% OVER SCREEN			NUT- MEAT %
	2002	2001	2-YR				22/64	20/64	18/64	
Sigco Sun Products Goliath	1474	--	--	27.7	112	17	29	57	79	51
Agway RH 118	1368	1770	1569	29.5	133	36	28	56	77	52
USDA 924 (check)	1307	1644	1476	27.5	115	38	17	46	69	52
Interstate IS 33139	1024	--	--	27.2	135	49	39	60	78	49
Sigco Sun Products Goliath RT	948	--	--	27.1	127	46	26	57	76	52
Interstate IS 8048	550	1823	1186	26.9	108	45	38	62	81	50
EXP. MEAN	1112	1761	1436	27.7	122	38	29	56	77	51
LSD (5%)	249	432	--	NS*	12	13	NS	NS	NS	2
TOP GROUP--MINIMUM	1225	--	--	--	--	--	--	--	--	50
TOP GROUP--MAXIMUM	--	--	--	--	--	30	--	--	--	--
C.V.%	14.8	17.2	--	4.2	6.5	23.0	32.6	17.0	6.8	3.1

\*NS--there are no significant differences among the values within the column.

Cooperator: Tim Pazour, Pukwana.

Planted May 23, 2002. Harvested October 9, 2002.

Design: Nearest neighbors in RCBD layout with 4 replications.

**Table 10. Confection hybrid sunflower trial, averaged over Pukwana and Miller, S.D., 2002.**

SUNFLOWER BRAND-HYBRID	SEEDYIELD (LB/AC)			TEST WT LB/BU	HGHT CM	LODGE %	% OVER SCREEN			NUT- MEAT %
	2002	2001	2-YR				22/64	20/64	18/64	
Sigco Sun Products Goliath	1566	--	--	26.3	121	22	41	67	82	50
Agway RH 118	1492	2158	1825	27.0	143	31	35	62	82	52
USDA 924 (check)	1467	1603	1535	27.3	125	32	18	44	74	51
Sigco Sun Products Goliath RT	1117	--	--	26.3	135	42	37	64	78	50
Interstate IS 33139	1071	--	--	25.8	142	42	42	65	80	49
Interstate IS 8048	932	1954	1443	25.8	121	41	43	65	80	50
EXP. MEAN	1274	1953	1613	26.4	131	35	36	61	79	50
LSD (5%)	424	424	--	NS*	7	17	16	14	9	NS
TOP GROUP--MINIMUM	1142	--	--	--	--	--	27	53	73	--
TOP GROUP--MAXIMUM	--	--	--	--	--	39	--	--	--	--
C.V.%	18.3	17.1	--	5.1	8.2	26.2	25.8	15.1	6.0	5.5

\*NS--there are no significant differences among the values within the column.

**Table 11. NuSun hybrid sunflower yield trial, Agar, S.D., 2002.**

COMPANY-HYBRID	YIELD LB/AC	YIELD RANK	OIL %	DAYS TO FLW	DAYS TO MAT	HGHT IN.	HEAD DIAM. IN.	LODGE %	MOIST %	TEST WT LB/BU
<b>NuSun Hybrids</b>										
Croplan CL 385	2814	37	40.5	73	113	47	6.3	7	13.2	26.1
Croplan CL 345	3300	13	42.2	69	107	49	7.1	5	9.6	27.1
Croplan CL 308	3042	28	41.5	68	109	44	7.3	4	9.9	27.8
Croplan CL 380	2975	32	40.1	70	112	53	7.8	9	14.1	27.5
Dahlgren DO-2010	3480	5	37.4	67	103	53	8.1	18	9.8	26.5
Dahlgren DO-EX120	3619	3	38.5	68	105	54	7.8	10	10.1	27.7
Integra Seed INT 536NS	3126	22	40.4	67	105	46	8.1	9	11.3	27.4
Integra Seed INT 538NS	3174	20	40.5	69	111	53	8.9	7	9.9	27.4
Integra Seed INT 541NS	2664	49	40.4	69	101	50	8.0	5	10.1	27.5
Integra Seed INT 544NS	3306	11	40.4	71	108	51	7.1	5	12.2	27.1
Integra Seed INT 567NS	3164	21	40.7	69	106	47	8.3	0	12.1	26.2
Integra Seed INT 550NS	2797	38	39.9	72	109	49	7.4	3	12.7	26.8
Interstate Hysun 530	3191	18	38.4	69	108	52	8.3	0	12.1	28.1
Interstate Hysun 521	3408	7	39.7	67	105	51	7.2	10	9.9	27.4
Interstate 982727NS	3059	27	40.3	69	105	54	7.4	6	10.4	28.4
Interstate F63105NS	2979	31	39.5	71	107	48	7.3	7	11.4	27.8
Interstate 990213NS	3100	24	41.5	74	108	51	8.8	2	10.4	27.1
Interstate Hysun 450	3234	17	40.1	73	111	50	8.9	1	18.6	26.1
Kaystar 2020NS	2713	42	39.0	71	110	47	8.1	0	11.4	26.0
Legend LSF 124N	2439	52	39.8	68	105	51	7.9	32	8.8	28.1
Legend LSF 126N	2755	40	41.7	69	105	45	7.2	10	8.7	26.4
Legend LSF 142N	2893	35	40.5	71	111	50	7.6	3	12.3	27.1
Legend LSF LX202520	2277	53	39.7	68	105	46	6.9	16	8.8	26.4
Monsanto DKF 31-01NS	2924	33	40.7	69	106	52	6.7	0	9.3	27.8
Monsanto DKF 33-33NS	2678	47	40.4	67	105	45	7.9	10	8.8	27.6
Mycogen 8377NS	3101	23	41.4	69	107	51	7.4	0	11.5	27.5
Mycogen 8488NS	3177	19	42.2	70	113	55	7.8	0	11.1	28.2
Mycogen 8N421	3302	12	42.1	70	110	57	7.7	0	11.5	28.0
Mycogen 8N327	3020	29	42.6	68	109	47	7.5	33	10.0	28.6
Pioneer 63M80	3262	14	42.1	69	108	52	8.8	3	12.5	26.6
Pioneer 63M91	2682	46	41.6	69	109	55	7.8	19	10.0	27.2
Pioneer 63M02	2911	34	42.0	68	104	47	7.5	20	11.0	27.5
Pioneer 63M52	2665	48	41.6	70	102	43	8.3	7	9.8	25.9
Pioneer XF3119	2572	51	42.3	69	104	44	8.4	8	12.9	24.7
Pioneer XF3120	3366	10	39.8	68	105	52	8.1	6	11.3	28.0
Proseed 9405	3248	16	39.8	70	112	57	8.4	0	12.1	24.6
Proseed K-405	2614	50	38.5	68	101	55	7.6	19	8.6	26.2
Proseed K-441	2874	36	40.3	69	107	51	7.4	17	8.7	25.5
Proseed K-653	2720	41	38.4	68	102	47	7.0	12	8.4	25.2
Red River RR2010	3375	9	38.1	68	106	50	6.1	9	9.0	25.5
Red River RR2011	3728	2	37.1	69	109	57	7.6	8	9.1	25.9
Seeds 2000 Ranger	2982	30	38.3	69	110	50	8.1	10	12.1	25.2
Seeds 2000 Bronco	3420	6	40.2	72	112	49	7.5	4	13.1	26.5
Seeds 2000 Blazer	2792	39	41.0	70	110	44	8.1	5	12.9	26.8
Seeds 2000 Colonel	3257	15	39.0	70	105	48	8.5	18	8.6	24.5
Seeds 2000 X926	2697	44	40.9	71	110	55	7.7	18	10.4	27.5
Triumph 658	3779	1	38.7	71	109	51	8.1	7	12.4	24.9
Triumph 636	3582	4	41.4	70	110	54	8.3	12	10.3	24.6

**Table 11 (continued).**

COMPANY-HYBRID	YIELD LB/AC	YIELD RANK	OIL %	DAYS TO FLW	DAYS TO MAT	HT. IN.	HEAD DIAM. IN.	LOD %	MOIST %	TEST WT LB/BU
Traditional Hybrids										
Croplan 803	2699	43	41.0	66	100	45	8.2	22	8.8	27.8
Interstate 4049	3097	25	41.1	69	105	57	7.6	5	12.1	26.6
Mycogen 270	2691	45	40.9	66	103	51	8.0	33	9.6	27.8
Mycogen 260	3088	26	42.6	69	105	49	8.7	9	9.4	28.5
Pioneer 63A81	3396	8	42.5	72	110	51	9.0	5	10.9	26.0
EXPMEAN	3042		40.4	69	107	50	7.8	9	10.8	26.8
C.V. %	11.1		3.4	1.5	2.2	6.8	8.8	126	5.3	2.9
LSD 5%	547		2.2	2	4	6	1.1	18	0.9	1.3

Harvested October 29, 2002.

Yield is reported at 10% moisture.

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

**Table 12. NuSun hybrid sunflower yield trial, Selby, S.D., 2002.**

COMPANY-HYBRID	YIELD* LB/AC	YIELD RANK	OIL %	DAYS TO FLW	DAYS TO MAT	HGHT IN.	HEAD DIAM. IN.	LODGE %	MOIST %	TEST WT LB/BU
<b>NuSun Hybrids</b>										
Croplan CL 385			36.8	72	104	40	5.6	29	10.5	27.6
Croplan CL 345			38.9	69	104	57	8.6	6	10.3	27.7
Croplan CL 308			37.8	67	101	50	8.0	18	9.6	29.3
Croplan CL 380			37.2	71	107	54	6.1	16	9.4	29.0
Integra Seed INT 536NS			35.6	66	102	53	7.1	14	9.8	28.0
Integra Seed INT 538NS			35.9	67	102	49	6.7	52	8.2	28.3
Integra Seed INT 541NS			37.8	69	102	48	8.2	34	9.9	29.7
Integra Seed INT 544NS			36.5	69	105	53	7.5	29	9.3	28.1
Integra Seed INT 567NS			37.7	69	101	42	7.7	30	10.0	28.3
Integra Seed INT 550NS			37.3	73	105	48	6.0	23	10.0	28.4
Interstate Hysun 530			37.3	68	100	48	6.9	36	9.8	28.3
Interstate Hysun 521			36.4	66	102	52	7.0	19	10.1	28.8
Interstate 982727NS			37.0	69	103	51	8.8	32	8.9	28.6
Interstate F63105NS			35.9	69	100	42	6.7	41	9.0	28.5
Interstate 990213NS			36.5	73	103	50	7.2	19	9.4	28.2
Interstate Hysun 450			37.9	73	107	44	6.8	31	8.8	28.1
Legend LSF 124N			38.1	71	101	49	7.9	46	9.5	28.8
Legend LSF 126N			37.0	70	102	42	7.0	37	9.7	27.9
Legend LSF 142N			38.1	74	107	44	7.2	1	9.2	28.2
Legend LSF LX202520			38.5	66	101	46	7.0	65	9.4	28.9
Monsanto DKF 31-01NS			37.4	70	101	51	6.6	25	9.6	29.4
Monsanto DKF 33-33NS			36.3	64	99	44	6.1	69	9.6	28.5
Mycogen 8377NS			39.0	69	104	55	7.5	20	10.6	28.9
Mycogen 8488NS			38.2	71	108	55	7.3	9	10.2	28.5
Mycogen 8N421			39.4	71	108	55	8.6	5	9.8	28.6
Mycogen 8N327			37.7	66	102	48	6.1	23	9.4	28.7
Pioneer 63M80			37.5	69	103	50	6.1	47	9.6	28.5
Pioneer 63M91			36.7	66	101	55	7.5	28	9.1	28.8
Pioneer 63M02			37.4	66	98	51	7.6	49	9.6	28.8
Pioneer 63M52			37.1	69	100	48	7.4	52	9.7	27.7
Pioneer XF3119			38.1	69	101	53	8.9	49	9.5	27.3
Pioneer XF3120			37.6	67	102	44	6.5	32	9.6	29.8
Proseed 9405			37.9	71	107	50	6.4	34	10.8	27.9
Proseed K-405			35.6	67	101	51	7.3	52	9.1	27.0
Proseed K-441			38.2	69	102	50	7.2	41	9.1	27.6
Proseed K-653			35.7	69	104	52	9.7	3	9.6	27.5
Red River RR2010			35.7	68	102	56	8.5	20	9.4	28.5
Red River RR2011			36.7	70	105	52	7.4	26	9.4	28.4
Seeds 2000 Maverick			36.8	69	104	54	8.5	32	10.3	28.5
Seeds 2000 Ranger			37.6	70	109	54	7.6	25	9.5	28.2
Seeds 2000 Bronco			37.9	73	107	46	7.7	40	10.4	28.5
Seeds 2000 Blazer			37.9	71	107	47	7.4	25	9.6	28.2
<b>Traditional Hybrids</b>										
Croplan 803			40.1	66	100	51	9.2	45	9.1	28.4
Interstate 4049			38.3	68	106	55	7.9	44	10.3	27.8
Mycogen 270			37.6	65	100	49	6.4	40	8.8	28.1
Mycogen 260			38.5	69	101	46	7.7	16	9.6	27.9
Pioneer 63A81			38.6	72	104	53	7.6	21	9.6	27.9
EXP MEAN			37.4	69	103	50	7.4	31	9.6	28.3
C.V. %			2.8	1.8	2.1	8.1	11.6	55	3.6	2.1
LSD 5%			1.7	2	4	7	1.4	28	0.6	1.0

\* Yield results are not reported because the C.V.% was too high for reliable hybrid comparisons.

Harvested October 25, 2002.

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

**Table 13. Confection hybrid sunflower yield trial, Agar, S.D., 2002.**

COMPANY	HYBRID	YIELD LB/AC	YIELD RANK	DAYS TO FLW	DAYS TO MAT	HGHT IN.	% OVER 20/64	LODGE %	MOIST %	RUST 0-5 0=none	TEST WT LB/BU
Agway	RH 318	3126	5	69	102	60	82	3	13.1	2.3	19.9
Agway	RH 118	2637	16	75	111	66	83	0	11.5	1.3	20.2
Dahlgren	D-9530	2531	17	74	112	56	83	0	12.7	1.0	20.1
Dahlgren	D-9518	2889	9	76	114	64	82	0	12.3	1.7	19.1
Dahlgren	D-9525	3218	3	79	116	57	88	1	12.0	1.7	17.9
Dahlgren	D-EX69	3302	2	75	116	64	88	0	13.4	1.0	19.5
Interstate	IS 8048	2522	18	69	102	57	84	1	11.8	2.8	20.4
Interstate	IS 33139	2722	14	75	119	63	90	0	11.5	1.3	20.1
Mycogen	9338	2873	10	72	107	61	82	0	11.3	2.7	19.4
Mycogen	X91459	3191	4	74	114	60	78	1	14.7	1.0	19.6
Mycogen	X91416	2984	7	70	110	63	89	4	13.0	1.3	19.7
Red River	2582	3451	1	71	107	56	78	2	14.2	1.0	20.2
Red River	2213	2789	12	74	107	56	87	2	12.0	1.7	19.6
Seeds 2000	Grizzly	2680	15	75	116	60	82	0	11.7	1.7	20.8
Seeds 2000	X3987	3018	6	75	116	60	86	2	11.6	2.3	20.0
Seeds 2000	X4115	2770	13	67	97	54	90	10	11.9	3.7	18.9
Triumph	777C	2805	11	74	115	57	94	0	13.0	2.0	19.1
Triumph	TRX2351C	2979	8	72	111	60	81	5	13.3	1.3	19.1
EXPMEAN		2916			111	60	85	2	12.5	1.8	19.6
C.V. %		16.4			2.7	6.5	9.5	143	9.5	26.0	5.2
LSD 5%		NS			5	6	NS	4	2.0	0.8	NS

Harvested October 29, 2002.

Yield is reported at 10% moisture.

**Table 14. Confection hybrid sunflower yield trial, Selby, S.D., 2002.**

COMPANY	HYBRID	YIELD LB/AC	YIELD RANK	DAYS TO FLW	DAYS TO MAT	HGHT IN.	% OVER 20/64	LODGE %	MOIST %	TEST WT LB/BU
Agway	RH 318	908	6	66	100	53	32	41	9.6	25.4
Agway	RH 118	1263	2	76	108	49	36	12	9.2	25.1
IntegraSeed	INT 626	954	5	69	100	48	43	25	9.5	24.4
Mycogen	9338	1250	3	70	106	52	43	21	9.2	23.4
Mycogen	X91459	1272	1	75	107	50	41	9	9.9	23.2
Mycogen	X91416	1098	4	71	102	53	46	53	8.8	23.5
Red River	2582	765	8	67	102	46	36	33	8.8	25.1
Red River	2213	829	7	69	104	51	43	31	9.6	24.0
EXPMEAN		1043			104	50	40	28	9.3	24.3
C.V. %		16.4			2.8	9.9	26.0	48.6	3.2	2.9
LSD 5%		300			5	NS	NS	24	0.5	1.2

Harvested October 25, 2002.

Yield is reported at 10% moisture.