

EC 909
Revised
Annually

Sunflower

2006 South Dakota Hybrid Performance Trials

Oilseed
Confection

List of Tables

Table		Page
1	Climate summary	3
2	Oilseed hybrid list and test sites	4
3	Confection hybrid list and test sites	6
4	Eureka oilseed trial	7
5	Miller oilseed trial	9
6	Reliance oilseed trial	11
7	Onida oilseed trial	13
8	Oilseed trial averaged over locations	15
9	Miller confection trial	17
10	Onida confection trial	18

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Sunflower

2006 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 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 Eureka oilseed test (Table 4) could be repeated in 2007 exactly as it was in 2006, the yield ranking of a hybrid that yielded 1620 lb/A and one that yielded 1379 lb/A might change places since their yield difference (241 lb/A) is less than the indicated yield LSD value of 299 lb/A. Within the accuracy level of the experiment, there was no statistical difference in yield between the two hybrids when grown under the conditions that existed at Eureka in 2006.

In contrast, a hybrid that yielded 1223 lb/A at Eureka in 2006 would likely be lower yielding than one that yielded 1620 lb/A if the two hybrids were grown again under similar conditions, because the difference between them in 2006 ($1620 - 1223 = 397$ lb/A) exceeded the LSD value of 299 lb/A.

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

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

Oil Content and Composition

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

Oil type may also be important. Hybrids are available with “traditional” (linoleic), high-oleic, and mid-oleic (NuSun) oil composition. Markets may pay a premium based on the composition of the oil produced by a particular hybrid. Some companies offer guarantees for NuSun oleic levels. Consistency of oleic levels for particular hybrids 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 control are planting resistant or tolerant hybrids and a minimum of 4 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 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.

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.

2006 Trial Procedures

Locations and Hybrids

Oilseed hybrid sunflower trials were planted at four locations in South Dakota (Eureka, Reliance, Miller, and Onida). 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 and Onida. Trial sites are indicated on the map (Fig 1). Lists of hybrids planted at each site appear in Tables 2 and 3.

Climate

The 2006 growing season was generally hot and dry in the major sunflower growing regions of South Dakota. Climate conditions near the sunflower test sites are presented in Table 1. May through August (especially July) temperatures were warmer than normal at all locations. September and October were cooler than normal. The first killing frost occurred on October 12 at all sites.

All locations had below normal precipitation in May, June, July, and October and above normal precipitation in September. Eureka, Miller, and Onida also had above normal precipitation in August. Storms in August at Onida and Miller were accompanied by high winds that caused considerable lodging and leaning of plants in the sunflower plots.

Experimental Methods

Plots at all locations consisted of four rows 25 feet long and 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).

All plots were overseeded, but emergence was poor at all locations and thinning was not necessary for most plots. Stands were poorest at Reliance, and the first replication was omitted from all analyses. Stands were variable at Onida, Eureka, and Miller.

Seed of most of the hybrids entered in the trials was pre-treated with an insecticide, fungicide, or both, while some was not treated. Seed treatments used on individual hybrids are listed in Tables 2 and 3. There was no major flea-beetle damage at any of the test sites.

The Reliance, Miller, and Onida trials were seeded no-till. Eureka was planted with conventional tillage practices. Spartan herbicide was applied for weed control at all locations.

Flowering was recorded at Onida as the number of days from planting to 50% ray petals extended. Maturity notes were not taken, due to excessive damage from drought and lodging.

Plant height and lodging notes were taken at all locations immediately before harvest. Lodging was minimal at Eureka and Reliance for most hybrids. Onida and Miller had many lodged and leaning plants due to wind damage. Many of the severely leaning plants at Onida had little to no seed. Seed set was also poor on many standing plants due to drought.

Plots were harvested with a Gleaner Model K combine fitted with a two-row all row crop header. All seed yields were adjusted to a 10% moisture basis. Oil content was determined by NMR analysis of oven-dry samples and converted to 10% moisture. Oil values for NuSun and high oleic hybrids were adjusted for oleic acid content. Hulling quality was measured at Onida 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, and weighing the 20 dehulled kernels.

Results

Data from each location and combined over locations are contained in Tables 4–8 (oilseed) and 9–10 (confection). Yields of oilseed hybrids were highest at Miller, averaging 1446 lb/A over all hybrids tested. Due to poor stands, drought, and wind damage, yields at Onida and Reliance were too variable for accurate estimations and are not reported. Confection seed yields averaged 1330 lb/A at Miller and were too variable to report at Onida.

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.

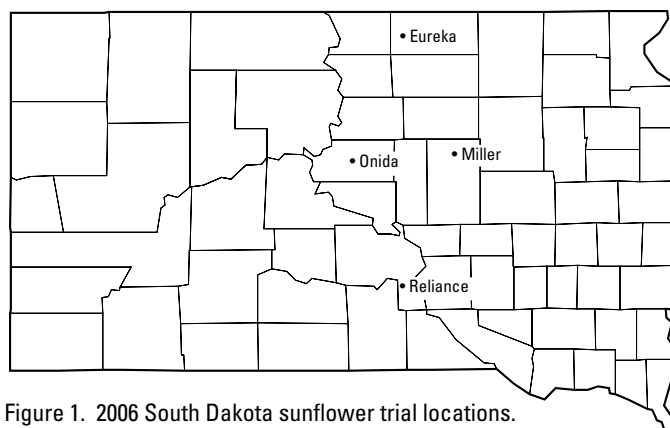


Figure 1. 2006 South Dakota sunflower trial locations.

Table 1. Climate summary for nearest weather stations to 2006 South Dakota sunflower test sites and departures from normal.

LOCATION-MONTH	2006 TEMPERATURE			TOTAL PRECIP IN.	DEPARTURE FROM NORMAL [^]			
	AVG MAX.	AVG MIN.	MEAN		MAX TEMP	MIN TEMP	AVG TEMP	PRECIP IN.
	-----°F-----				-----°F-----			
Reliance*								
May	76	45	60	0.55	4.6	0.6	2.6	-3.1
June	87	56	72	1.27	5.8	1.9	3.8	-2.1
July	97	65	81	1.00	8.2	5.5	6.8	-1.9
August	90	60	75	1.45	2.1	2.2	2.2	-0.8
September	71	48	59	4.36	-6.6	-0.5	-3.6	2.4
October	61	34	48	0.15	-1.6	-2.0	-1.8	-1.6
Eureka*								
May	72	45	58	1.04	1.8	1.5	1.6	-1.6
June	82	55	69	0.71	3.5	2.4	2.9	-2.5
July	94	63	78	0.72	8.9	4.6	6.7	-2.1
August	85	60	73	3.20	1.4	3.6	2.5	0.9
September	67	46	56	2.72	-6.4	0.5	-3.0	1.3
October	55	30	43	0.15	-4.0	-3.3	-3.7	-1.5
Miller*								
May	71	44	58	0.41	3.0	-2.0	0.5	-2.7
June	82	56	69	1.00	3.8	0.5	2.1	-1.9
July	94	64	79	0.31	8.4	2.9	5.6	-2.3
August	85	60	72	3.36	1.3	1.9	1.6	1.4
September	68	46	57	4.05	-5.7	-2.0	-3.9	2.3
October	58	31	44	0.13	-3.2	-3.6	-3.4	-1.6
Onida 4 NW*								
May	75	43	59	0.61	4.6	-1.4	1.5	-2.2
June	86	55	71	1.35	5.9	1.6	3.8	-1.8
July	97	64	81	0.29	9.6	5.4	7.5	-2.4
August	88	59	73	5.91	1.7	2.3	2.0	3.8
September	69	46	57	2.81	-7.3	-0.4	-3.9	1.3
October	56	31	44	0.06	-4.9	-3.1	-4.1	-1.5

* 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 2006 observations to 30-yr averages (1971–2000) for each site.

Table 2. Hybrids tested in the 2006 South Dakota oilseed hybrid sunflower trials.

Brand	Hybrid	Hybrid Type	Herb. Resist.	Seed* Treatmnt	Eureka	Miller	Onida	Reliance
Advanta Pacific, LLC	AP533NS	NS		Ap/Max/C	X	X	X	X
Advanta Pacific, LLC	AP534NS/CL	NS	CL	Ap/Max/C	X	X	X	X
Advanta Pacific, LLC	F30250	NS		Ap/Max/C	X	X	X	X
Advanta Pacific, LLC	F41271	NS		Ap/Max/C	X	X	X	X
Advanta Pacific, LLC	F51320	NS		Ap/Max/C	X	X	X	X
Advanta Pacific, LLC	F51321	NS		Ap/Max/C	X	X	X	X
Croplan Genetics	356 NS	NS			X		X	X
Croplan Genetics	378 DMR	HO			X		X	X
Dahlgren	4421	NS		CDM		X	X	
Dekalb	DKF 3875	Trad.		CDM	X		X	X
Dekalb	DKF 38-80 CL	Trad.	CL	CDM	X		X	X
Dekalb	DKF35-10 NS	NS/DM		CDM	X		X	X
Dekalb	DKF37-31NS	NS		CDM	X		X	X
Dekalb	DKF38-30 NS	NS		CDM	X		X	X
Dekalb	DKF38-45NS	NS		CDM	X		X	X
Dyna-Gro	94T90	Trad.		CDM	X	X	X	X
Dyna-Gro	95N70	NS		CDM				X
Dyna-Gro	FX06794	NS		CDM	X	X	X	X
Dyna-Gro	FX06483	NS	CL	CDM	X	X	X	X
Garst Seed	4420 NS	NuSun		Cruiser	X	X	X	X
Garst Seed	4651 NS	NuSun		Cruiser	X	X	X	X
Garst Seed	4665 HO	HO		Cruiser	X	X	X	X
Garst Seed	4668 NS/CL	NuSun	CL	Cruiser	X	X	X	X
Garst Seed	4704NS	NuSun		Cruiser	X	X	X	X
Integra Seed Ltd	INT 432	Trad.		Cruiser	X		X	
Integra Seed Ltd	INT 536NSDM	NSDM		Cruiser	X	X	X	
Integra Seed Ltd	INT 549NS	NS		Cruiser		X		
Integra Seed Ltd	INT 550NS	NS		Cruiser	X	X	X	X
Integra Seed Ltd	INT 555NS	NS		Cruiser				X
Integra Seed Ltd	INT 735NSCL	NS	CL	Cruiser	X		X	
Integra Seed Ltd	INT 737NSCL	NS	CL	Cruiser	X	X		X
Interstate Seed	HyOleic 120	HO		CDM	X	X	X	
Interstate Seed	Hysun 450	NS		CDM	X		X	
Interstate Seed	Hysun 454	NS		CDM	X		X	
Interstate Seed	Hysun 521	NS		CDM	X	X	X	
Interstate Seed	IS 4668 NS/CL	NS	CL	CDM	X	X	X	
Interstate Seed	IS 4704 NS	NS		CDM	X	X	X	
Interstate Seed	IS 5770 NS	NS		CDM	X	X	X	
Interstate Seed	IS 5880 NS/CL	NS	CL	CDM	X	X	X	
King Seed Inc.	SunKing 4404NS/CL	NS	CL	Cruiser	X	X	X	X
King Seed Inc.	SunKing 4500NS	NS		Cruiser	X	X	X	X
King Seed Inc.	SunKing 4505	Trad.		Cruiser	X	X	X	X
Legend Seeds	LSX138N	NuSun		Cruiser	X	X	X	X
Legend Seeds	LSF 121N	NuSun		Cruiser	X	X	X	X
Legend Seeds	LSF 142N	NuSun		Cruiser	X	X	X	X
Legend Seeds	LSF 223NCL	NuSun	CL	Cruiser	X	X	X	X
Monsanto	MH4436	NS		CDM	X		X	X
Monsanto	MH4437 CL	NS	CL	CDM	X		X	X
Monsanto	MH4438 CL	NS	CL	CDM	X		X	X
Monsanto	MH6635	HO		CDM	X		X	X
Monsanto	MH5434	HO		CDM	X		X	X
Monsanto	MH5436	NS/DM		CDM	X		X	X
Monsanto	MH5437	HO		CDM	X		X	X

Table 2 (cont.).

Brand	Hybrid	Hybrid Type	Herb. Resist.	Seed* Treatment	Eureka	Miller	Onida	Reliance
Monsanto	MH5438	HO		CDM	X		X	X
Monsanto	MH6636	NS		CDM	X		X	X
Mycogen Seeds	8D310	NuSun		CDM	X	X	X	X
Mycogen Seeds	8H350DM	HO		CDM	X	X	X	X
Mycogen Seeds	8H419CL	HO	CL	CDM	X	X	X	X
Mycogen Seeds	8N352	NuSun		CDM	X	X	X	X
Mycogen Seeds	8N386CL	NuSun	CL	CDM	X	X	X	X
Mycogen Seeds	8N453DM	NuSun		CDM	X	X	X	X
Mycogen Seeds	8N510	NuSun		CDM	X	X	X	X
Mycogen Seeds	8N520DM	NuSun		CDM	X	X	X	X
Mycogen Seeds	8N462DM	NuSun		CDM	X	X	X	X
Pannar Genetics	PEX 2961	NS		Cruiser		X	X	
Pannar Genetics	PEX 2968	Trad.		Cruiser		X	X	
Pannar Genetics	PEX 2986	NS		Cruiser	X	X	X	X
Pannar Genetics	PEX 3052	NS		Cruiser	X			
Pannar Seed Inc.	PAN 7813NS	NuSun		Apron+Cruiser	X	X	X	
Pannar Seed Inc.	PAN 7924NS	NuSun		Apron+Cruiser	X	X	X	X
Pannar Seed Inc.	PAN 9404	Trad.		Apron+Cruiser		X	X	
Pannar Seed Inc.	PAN 9501	Trad.		Apron+Cruiser		X	X	X
Pannar Seed Inc.	PAN EX2422	NuSun		Apron+Cruiser	X	X	X	
Pannar Seed Inc.	PAN EX2453	NuSun		Apron+Cruiser	X	X	X	
Pannar Seed Inc.	PAN EX2853	NuSun		Apron+Cruiser		X	X	X
Pioneer Hi-Bred	6423	HO		Cruiser+Dyn	X	X	X	X
Pioneer Hi-Bred	6444	HO		Cruiser+Dyn	X	X	X	X
Pioneer Hi-Bred	6447	HO		Cruiser+Dyn	X	X	X	X
Pioneer Hi-Bred	63M80	NS		Cruiser+Dyn	X	X	X	X
Pioneer Hi-Bred	63M91	NS		Cruiser+Dyn	X	X	X	X
Pioneer Hi-Bred	64H41	HO		Cruiser+Dyn	X	X	X	X
Producers Hybrids	XSF001NSCL	NuSun	CL	Cruiser		X	X	X
Producers Hybrids	SF7203	Trad.		Cruiser		X	X	X
Producers Hybrids	SF7303	NuSun		Cruiser		X	X	X
Proseed	9441	NuSun			X	X	X	X
Proseed	CL-51	NuSun	CL		X	X	X	X
Proseed	E-85	HO			X	X	X	X
Scherr's Seed LLC	SS630CL	NuSun	CL	Metalaxyl	X			
Scherr's Seed LLC	SS674	NuSun		Metalaxyl	X			
Seeds 2000	Barracuda	NuSun	CL	Cruiser	X	X	X	X
Seeds 2000	Blazer	NuSun		Cruiser	X	X	X	X
Seeds 2000	Sierra	HO		Cruiser	X	X	X	X
Seeds 2000	X5854	Con-oil		Cruiser	X			
Triumph Seed	645	NS		CDM	X	X	X	X
Triumph Seed	658	NS		CDM			X	
Triumph Seed	660CL	NS	CL	CDM		X	X	
Triumph Seed	820HO	HO		CDM	X			
Triumph Seed	845HO	HO		CDM	X	X	X	X
Triumph Seed	s672	NS		CDM	X	X	X	X
Triumph Seed	s675	NS		CDM	X	X	X	X
Triumph Seed	s678	NS		CDM	X	X	X	X
Triumph Seed	TRXs5423	NS		CDM		X		
Zuelzer & Son Canada	ZSun1	HO			X	X	X	X
USDA	Hyb. 894 (check)	Trad.			X	X	X	X
Total hybrids					90	75	95	77

* Ap = Apron, C = Cruiser, CDM = Cruiser DM Pak, Max = Maxim, Met = Metalaxyl, Dyn = Dynasty

Table 3. Hybrids tested in the 2006 South Dakota confection hybrid sunflower trials.

Brand	Hybrid	Hybrid Type	Seed* Treatment	Miller	Onida
CHS	RH112	Confect.	CDM/Apron	X	X
CHS	RH1122	Confect.	CDM/Apron	X	X
Dahlgren	D 9541	Confect.	Cruiser-DM	X	X
Dahlgren	D 9531	Confect.	Cruiser-DM	X	X
Mycogen Seeds	8C481	Confect.		X	X
Mycogen Seeds	8C482	Confect.		X	X
Red River Commodities	2214	Confect.	Cruiser-DM	X	X
Red River Commodities	2215	Confect.	Cruiser-DM	X	X
Red River Commodities	2216	Confect.	Cruiser-DM	X	X
Red River Commodities	8050	Confect.	Cruiser-DM	X	X
Seeds 2000	X3967	Confect.	Cruiser	X	X
Seeds 2000	X3938	Confect.	Cruiser	X	X
Seeds 2000	X3638	Confect.	Cruiser	X	X
Seeds 2000	X3654	Confect.	Cruiser	X	X
Sunflower R & D	6132	Confect.	Isotox	X	
Sunflower R & D	6009	Confect.	Isotox		X
Triumph Seed	777C	Confect.	CDM	X	
Triumph Seed	767C	Confect.	CDM	X	
USDA	924 (check)	Confect.		X	X
Total hybrids				18	16

*C = Cruiser, CDM = Cruiser DM Pak, Max = Maxim, Met = Metalaxyl, Dyn = Dynasty

Table 4. Oilseed sunflower hybrid trial - Eureka, SD 2006.

Brand	Hybrid	Type*	Seed Yield (lbs/A)			Oil %	Plant Hght cm	Lodg %	Harv. Moist. %	Test Wt. lb/bu	Pop. 1000 pl/A
			2006	2005 [^]	2-yr Avg.						
Advanta Pacific, LLC	AP533NS	NS	776	--	--	42.5	94	4	10.2	30.7	11.5
Advanta Pacific, LLC	AP534NS/CL	NS,CL	1223	2771	1997	42.5	104	3	13.8	30.6	13.1
Advanta Pacific, LLC	F30250	NS	1149	--	--	42.3	102	1	12.7	30.8	12.1
Advanta Pacific, LLC	F41271	NS	1071	--	--	42.9	99	2	11.6	29.2	12.0
Advanta Pacific, LLC	F51320	NS	905	--	--	44.0	101	5	11.6	30.6	12.2
Advanta Pacific, LLC	F51321	NS	1218	--	--	42.9	93	3	13.3	28.6	12.1
Croplan Genetics	356 NS	NS	1332	--	--	42.6	93	1	12.2	30.8	14.2
Croplan Genetics	378 DMR	HO	885	2646	1766	42.8	110	9	11.9	31.9	10.9
Dekalb	DKF 3875	Trad.	1207	3169	2188	44.7	95	2	13.1	31.0	11.0
Dekalb	DKF 38-80 CL	Trad.,CL	1260	2321	1791	45.3	95	5	11.5	30.7	13.9
Dekalb	DKF35-10 NS	NS/DM	1285	--	--	44.0	99	4	12.1	32.1	12.6
Dekalb	DKF37-31NS	NS	1269	--	--	43.7	93	4	12.5	31.0	13.1
Dekalb	DKF38-30 NS	NS	1285	2590	1937	43.9	100	2	13.0	30.8	12.1
Dekalb	DKF38-45NS	NS	1172	--	--	44.0	89	6	12.6	30.1	12.0
Dyna-Gro	94T90	Trad.	1203	2657	1930	43.8	110	4	12.3	30.8	12.8
Dyna-Gro	FX06794	NS	1111	--	--	42.9	96	4	13.1	30.4	11.7
Dyna-Gro	FX06483	NS,CL	1379	--	--	43.4	108	2	12.8	29.6	14.9
Garst Seed	4420 NS	NS	1189	--	--	42.4	110	2	12.5	30.4	11.0
Garst Seed	4651 NS	NS	999	--	--	43.4	107	3	11.9	29.3	10.0
Garst Seed	4665 HO	HO	1138	--	--	43.4	124	8	12.4	30.6	11.3
Garst Seed	4668 NS/CL	NS,CL	1620	--	--	42.2	109	4	13.1	30.1	14.6
Garst Seed	4704 NS	NS	838	--	--	42.4	96	1	12.3	30.6	13.6
IntegraSeed Ltd	INT 432	Trad.	748	--	--	44.6	112	2	11.5	29.3	13.5
IntegraSeed Ltd	INT 536NSDM	NS/DM	1029	--	--	42.3	95	2	12.5	30.7	11.6
IntegraSeed Ltd	INT 550NS	NS	1116	--	--	42.7	92	3	13.4	31.7	12.6
IntegraSeed Ltd	INT 735NSCL	NS,CL	1024	--	--	42.6	100	3	12.8	29.5	11.3
IntegraSeed Ltd	INT 737NSCL	NS,CL	1495	--	--	41.9	108	8	13.0	30.3	15.1
Interstate Seed	HyOleic 120	HO	931	2536	1734	43.6	110	4	11.0	30.6	10.6
Interstate Seed	Hysun 450	NS	1123	2807	1965	43.1	91	5	13.2	29.2	10.9
Interstate Seed	Hysun 454	NS	1160	--	--	44.8	108	7	12.5	30.3	10.1
Interstate Seed	Hysun 521	NS	1004	--	--	42.8	91	4	12.5	30.6	10.7
Interstate Seed	IS 4668 NS/CL	NS,CL	1403	--	--	42.3	107	2	14.2	31.0	13.5
Interstate Seed	IS 4704 NS	NS	967	2385	1676	44.3	99	0	13.0	29.3	11.8
Interstate Seed	IS 5770 NS	NS	1466	--	--	43.1	105	1	12.3	31.2	11.1
Interstate Seed	IS 5880 NS/CL	NS,CL	954	--	--	43.1	105	1	13.5	29.9	9.5
King Seed Inc.	SunKing 4404NS/CL	NS,CL	1326	--	--	40.5	100	6	12.8	30.2	14.6
King Seed Inc.	SunKing 4500NS	NS	1296	--	--	42.5	113	5	12.8	30.8	10.6
King Seed Inc.	SunKing 4505	Trad.	1321	--	--	45.9	114	4	12.6	29.7	11.5
Legend Seeds	LSX 138N	NS	1054	--	--	43.8	106	3	12.0	30.0	12.1
Legend Seeds	LSF 121N	NS	979	--	--	43.9	104	2	11.6	30.3	13.2
Legend Seeds	LSF 142N	NS	1232	--	--	43.8	96	1	12.6	30.7	12.6
Legend Seeds	LSF 223NCL	NS,CL	1548	--	--	43.4	108	1	13.4	29.8	14.9
Monsanto	MH4436	NS	1221	2890	2055	42.5	100	17	12.1	31.2	13.8
Monsanto	MH4437 CL	NS,CL	1085	--	--	43.3	93	8	11.8	28.7	16.2
Monsanto	MH4438 CL	NS,CL	1111	--	--	43.0	110	8	11.6	29.4	14.4
Monsanto	MH6635	HO	1091	--	--	43.0	105	4	11.1	29.3	15.3
Monsanto	MH5434	HO	1464	2740	2102	45.0	117	-0	11.9	30.5	14.4
Monsanto	MH5436	NS/DM	1007	--	--	44.3	92	8	10.1	26.6	13.1
Monsanto	MH5437	HO	1369	--	--	44.1	102	4	10.7	30.0	12.5

Table 4 (cont.). Eureka, SD 2006

Brand	Hybrid	Type*	Seed Yield (lbs/A)				Plant Hght cm	Lodg %	Harv. Moist. %	Test Wt. lb/bu	Pop. 1000 pl/A
			2006	2005 [^]	2-yr Avg.	Oil %					
Monsanto	MH5438	HO	1276	--	--	44.1	108	4	12.1	30.0	12.1
Monsanto	MH6636	NS	1157	--	--	44.0	105	5	11.9	29.7	14.1
Mycogen Seeds	8D310	NS	850	3061	1955	43.0	100	-0	12.5	29.3	10.8
Mycogen Seeds	8H350DM	HO	828	3718	2273	44.1	97	3	12.0	30.0	11.4
Mycogen Seeds	8H419CL	HO,CL	1127	3258	2193	42.9	94	2	12.7	29.8	12.3
Mycogen Seeds	8N352	NS	1219	3056	2137	43.6	92	0	12.4	30.5	13.0
Mycogen Seeds	8N386CL	NS,CL	784	2790	1787	42.8	104	5	12.2	28.0	11.3
Mycogen Seeds	8N453DM	NS	916	3093	2005	44.4	101	0	11.6	29.4	11.5
Mycogen Seeds	8N510	NS	1541	3226	2384	42.6	100	3	12.7	29.1	12.9
Mycogen Seeds	8N520DM	NS	1284	--	--	43.6	101	4	13.3	29.1	11.8
Mycogen Seeds	8N462DM	NS	1178	--	--	44.4	96	1	13.6	31.4	11.2
Pannar Genetics	PEX 2986	NS	1160	--	--	42.9	103	1	13.6	31.0	8.8
Pannar Genetics	PEX 3052	NS	977	--	--	43.6	96	7	12.0	28.9	9.1
Pannar Seed Inc.	PAN 7813NS	NS	1406	--	--	41.6	102	4	14.6	30.9	11.7
Pannar Seed Inc.	PAN 7924NS	NS	1333	--	--	42.9	111	2	13.2	29.4	11.5
Pannar Seed Inc.	PAN EX2422	NS	1203	--	--	42.6	101	1	13.2	28.7	12.3
Pannar Seed Inc.	PAN EX2453	NS	956	--	--	42.6	105	9	12.8	30.5	12.3
Pioneer Hi-Bred	6423	HO	904	--	--	42.9	107	4	11.3	30.2	12.0
Pioneer Hi-Bred	6444	HO	888	--	--	43.8	113	3	10.6	31.9	10.5
Pioneer Hi-Bred	6447	HO	1182	--	--	42.9	105	7	12.2	31.3	12.0
Pioneer Hi-Bred	63M80	NS	1107	2426	1766	43.9	88	6	11.4	30.8	12.3
Pioneer Hi-Bred	63M91	NS	1035	2348	1691	41.9	101	5	12.0	30.5	11.9
Pioneer Hi-Bred	64H41	HO	817	2443	1630	43.1	109	5	12.9	29.7	12.3
Proseed	9441	NS	690	2697	1694	42.9	107	1	11.0	29.2	11.1
Proseed	CL-51	NS,CL	954	--	--	43.8	103	6	11.3	29.3	12.5
Zuelzer & Son Canada	ZSun1	HO	1016	--	--	43.6	106	13	10.9	27.5	10.2
Proseed	E-85	HO	1242	--	--	43.6	113	5	11.5	29.6	13.1
Scherr's Seed LLC	SS630CL	NS,CL	1067	2300	1684	43.9	115	4	12.8	30.3	11.5
Scherr's Seed LLC	SS674	NS	1251	3071	2161	43.4	95	3	12.9	30.0	12.7
Seeds 2000	Barracuda	NS,CL	1124	2203	1663	43.5	102	-0	14.0	30.3	12.8
Seeds 2000	Blazer	NS	1253	3334	2294	43.9	83	4	12.6	30.8	11.7
Seeds 2000	Sierra	HO	1022	3087	2055	41.9	94	0	13.9	29.4	12.7
Seeds 2000	X5854	Con-oil	1151	--	--	42.6	94	4	11.4	28.9	10.7
Triumph Seed	645	NS	1616	3526	2571	43.6	106	3	13.8	30.1	14.4
Triumph Seed	820HO	HO	1045	--	--	44.3	106	5	11.3	28.5	11.1
Triumph Seed	845HO	HO	1309	--	--	43.3	99	6	12.4	31.0	13.6
Triumph Seed	s672	NS	1031	3134	2082	44.4	71	1	12.9	30.9	16.4
Triumph Seed	s675	NS	1324	3606	2465	43.5	75	3	14.0	30.4	15.1
Triumph Seed	s678	NS	1328	--	--	43.4	83	1	14.0	30.3	13.9
USDA	Hyb. 894 (check)	Trad.	977	2370	1674	45.8	92	0	11.3	28.0	10.8
	Grand mean		1144	2733	1939	43.3	101	4	12.4	30.1	12.3
	LSD 5%		299	590		1.6	12	5	1.3	1.8	2.2
	C.V.		18.8	15.5		2.6	8.2	97.4	7.4	4.3	12.8

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

[^] 2005 yields are from Ipswich, SD.

Planted June 1, 2006. Harvested November 1, 2006.

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

Cooperator: James M. Fischer, Eureka, SD.

Table 5. Oilseed sunflower hybrid trial - Miller, SD 2006.

Brand	Hybrid	Type*	Seed Yield (lbs/A)				Oil %	Plant Hght cm	Lodg %	Harv. Moist. %	Test Wt. lb/bu	Pop. 1000 pl/A
			2006	2005	2-yr Avg.							
Advanta Pacific, LLC	AP533NS	NS	1025	--	--	41.9	119	4	13.0	27.6	14.3	
Advanta Pacific, LLC	AP534NS/CL	NS,CL	1527	2862	2194	42.5	119	13	13.2	27.9	13.6	
Advanta Pacific, LLC	F30250	NS	1142	--	--	42.1	113	12	12.7	27.4	12.6	
Advanta Pacific, LLC	F41271	NS	1207	--	--	41.5	110	7	12.7	28.5	11.2	
Advanta Pacific, LLC	F51320	NS	1100	--	--	41.3	104	6	12.6	28.2	13.1	
Advanta Pacific, LLC	F51321	NS	1397	--	--	41.0	105	1	13.1	27.9	15.4	
Dahlgren	4421	NS	1364	2507	1935	41.3	123	9	11.6	27.8	15.8	
Dyna-Gro	94T90	Trad.	1419	3156	2287	43.1	120	4	12.4	28.2	16.6	
Dyna-Gro	FX06794	NS	1621	--	--	42.2	99	4	13.6	27.6	15.7	
Dyna-Gro	FX06483	NS,CL	1626	--	--	42.2	108	4	12.5	27.7	15.6	
Garst Seed	4420 NS	NS	1268	--	--	42.0	105	9	13.0	27.6	15.0	
Garst Seed	4651 NS	NS	1082	--	--	43.1	123	10	14.3	27.9	11.1	
Garst Seed	4665 HO	HO	1267	--	--	42.8	115	13	12.1	28.4	8.8	
Garst Seed	4668 NS/CL	NS,CL	1477	--	--	41.5	123	13	13.4	27.9	16.2	
Garst Seed	4704 NS	NS	998	--	--	41.2	104	6	12.8	26.5	15.4	
IntegraSeed Ltd	INT 536NSDM	NS,DM	1373	--	--	43.2	112	10	13.0	28.7	15.9	
IntegraSeed Ltd	INT 549NS	NS	1556	--	--	42.0	104	3	13.1	28.8	14.2	
IntegraSeed Ltd	INT 550NS	NS	1114	--	--	42.7	110	12	13.3	28.0	14.3	
IntegraSeed Ltd	INT 737NSCL	NS,CL	1551	--	--	41.0	132	9	13.8	27.2	16.4	
Interstate Seed	HyOleic 120	HO	1405	--	--	42.7	122	6	12.5	28.6	14.6	
Interstate Seed	Hysun 521	NS	1125	--	--	41.9	107	16	12.6	29.3	13.6	
Interstate Seed	IS 4668 NS/CL	NS,CL	1707	--	--	42.4	117	9	13.1	28.0	15.6	
Interstate Seed	IS 4704 NS	NS	1189	--	--	42.3	111	6	12.4	27.3	13.8	
Interstate Seed	IS 5770 NS	NS	1342	--	--	42.7	116	3	12.4	29.7	13.1	
Interstate Seed	IS 5880 NS/CL	NS,CL	924	--	--	41.9	114	9	12.7	28.1	13.0	
King Seed Inc.	SunKing 4404NS/CL	NS,CL	1760	--	--	41.6	116	5	13.2	28.6	16.4	
King Seed Inc.	SunKing 4500NS	NS	1653	--	--	41.2	106	5	12.8	28.4	13.7	
King Seed Inc.	SunKing 4505	Trad.	911	--	--	43.3	120	-0	12.3	27.0	17.0	
Legend Seeds	LSX 138N	NS	1276	--	--	42.4	120	10	12.9	27.6	12.7	
Legend Seeds	LSF 121N	NS	1214	--	--	42.3	117	9	12.8	27.8	13.5	
Legend Seeds	LSF 142N	NS	1852	--	--	42.9	104	4	13.6	27.0	15.4	
Legend Seeds	LSF 223NCL	NS,CL	1540	--	--	41.3	104	4	13.0	27.5	15.9	
Mycogen Seeds	8D310	NS	1602	3096	2349	41.1	119	9	11.9	27.8	16.0	
Mycogen Seeds	8H350DM	HO	1248	3157	2203	42.8	118	11	12.5	28.4	15.3	
Mycogen Seeds	8H419CL	HO,CL	1719	3045	2382	43.4	128	0	12.9	27.9	17.0	
Mycogen Seeds	8N352	NS	1802	3324	2563	44.2	107	6	13.0	29.7	14.7	
Mycogen Seeds	8N386CL	NS,CL	1453	2744	2098	42.9	132	6	12.8	28.2	13.7	
Mycogen Seeds	8N453DM	NS	1498	3097	2298	44.2	108	4	12.4	28.7	14.7	
Mycogen Seeds	8N510	NS	1605	3017	2311	42.2	113	2	12.9	28.3	16.5	
Mycogen Seeds	8N520DM	NS	1596	--	--	41.9	110	6	13.0	27.5	16.3	
Mycogen Seeds	8N462DM	NS	1847	--	--	43.1	119	11	13.3	28.8	13.3	
Pannar Genetics	PEX 2961	NS	1214	--	--	41.6	125	3	12.7	29.5	14.9	
Pannar Genetics	PEX 2968	Trad.	1079	--	--	43.5	124	10	12.6	28.5	14.2	
Pannar Genetics	PEX 2986	NS	1699	--	--	40.8	116	12	12.7	29.1	14.3	
Pannar Seed Inc.	PAN 7813NS	NS	1430	--	--	41.7	111	9	12.8	26.7	13.5	
Pannar Seed Inc.	PAN 7924NS	NS	1560	--	--	42.1	123	9	13.5	26.7	15.5	
Pannar Seed Inc.	PAN 9404	Trad.	1587	3066	2327	41.5	115	4	12.9	28.6	14.0	
Pannar Seed Inc.	PAN 9501	Trad.	1542	2768	2155	40.8	136	3	12.5	28.6	16.2	

Table 5 (cont.). Miller, SD 2006.

Brand	Hybrid	Type*	Seed Yield (lbs/A)			Oil %	Plant		Harv. Moist. %	Test Wt. lb/bu	Pop. 1000 pl/A
			2006	2005	2-yr Avg.		Hght cm	Lodg %			
			Pannar Seed Inc.	PAN EX2422	NS	1063	--	--	42.2	103	10
Pannar Seed Inc.	PAN EX2453	NS	1490	--	--	42.0	115	8	12.9	27.8	12.9
Pannar Seed Inc.	PAN EX2853	NS	1178	--	--	41.7	106	2	13.0	28.0	13.9
Pioneer Hi-Bred	6423	HO	1321	--	--	42.4	123	13	12.2	27.8	15.2
Pioneer Hi-Bred	6444	HO	1132	--	--	41.5	112	7	13.2	28.3	14.6
Pioneer Hi-Bred	6447	HO	1628	--	--	40.6	122	9	13.8	27.8	12.2
Pioneer Hi-Bred	63M80	NS	1277	3087	2182	41.7	119	9	12.8	27.4	13.5
Pioneer Hi-Bred	63M91	NS	1279	3033	2156	42.1	122	1	12.6	27.9	17.2
Pioneer Hi-Bred	64H41	HO	1439	2977	2208	42.2	117	3	12.6	29.2	15.7
Producers Hybrids	XSF001NSCL	NS,CL	1690	--	--	39.6	109	5	13.1	27.0	17.0
Producers Hybrids	SF7203	Trad.	1420	2982	2201	42.3	115	11	12.7	27.6	16.5
Producers Hybrids	SF7303	NS	2099	2866	2482	41.9	113	3	14.1	29.3	15.0
Proseed	9441	NS	987	2488	1737	42.8	124	17	12.5	26.3	10.8
Proseed	CL-51	NS,CL	640	--	--	41.8	113	12	12.6	28.4	14.2
Zuelzer & Son Canada	ZSun1	HO	1198	--	--	41.4	109	6	12.4	28.9	13.5
Proseed	E-85	HO	1478	--	--	41.6	123	10	12.8	27.0	12.1
Seeds 2000	Barracuda	NS,CL	1483	3050	2266	41.0	112	7	13.9	28.4	15.0
Seeds 2000	Blazer	NS	1821	3194	2507	42.9	99	7	12.9	29.8	13.6
Seeds 2000	Sierra	HO	1667	2932	2300	42.3	105	9	13.0	28.2	16.7
Triumph Seed	645	NS	1505	2888	2196	42.7	112	6	13.2	28.0	14.4
Triumph Seed	660CL	NS,CL	1893	--	--	41.9	104	4	13.2	27.0	16.3
Triumph Seed	845HO	HO	1894	--	--	41.7	107	8	13.8	26.7	15.3
Triumph Seed	s672	NS	1694	2790	2242	43.1	82	0	13.2	27.8	17.2
Triumph Seed	s675	NS	2274	--	--	43.0	96	3	13.3	27.8	15.9
Triumph Seed	s678	NS	2091	--	--	42.9	111	5	13.8	28.0	14.3
Triumph Seed	TRXs5423	NS	1966	--	--	43.1	75	1	12.7	28.9	15.6
USDA	Hyb. 894 (check)	Trad.	1323	2477	1900	42.8	103	12	12.9	27.8	9.8
	Grand mean		1446	2812	2129	42.1	113	7	12.9	28.0	14.5
	LSD 5%		392	473		1.6	11	8	0.7	1.3	2.4
	C.V.		19.4	12.1		2.8	6.7	80.1	4.1	3.4	11.7

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

Planted June 5, 2006. Harvested October 27, 2006.

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

Cooperator: Roger Bertsch, St. Lawrence, SD.

Table 6. Oilseed sunflower hybrid trial - Reliance, SD 2006.

Brand	Hybrid	Type*	Seed Yield (lbs/A)				Plant Hght cm	Lodg %	Harv. Moist. %	Test Wt. lb/bu	Pop. 1000 pl/A
			2006^	2005	2-yr Avg.	Oil %					
Advanta Pacific, LLC	AP533NS	NS	--	--	--	40.2	118	3	14.0	29.9	10.6
Advanta Pacific, LLC	AP534NS/CL	NS,CL	--	--	--	40.4	110	4	15.2	30.9	13.0
Advanta Pacific, LLC	F30250	NS	--	--	--	40.1	108	1	15.9	31.8	10.9
Advanta Pacific, LLC	F41271	NS	--	--	--	40.1	117	0	18.5	29.8	6.5
Advanta Pacific, LLC	F51320	NS	--	--	--	40.3	108	3	14.1	32.4	13.0
Advanta Pacific, LLC	F51321	NS	--	--	--	40.2	112	3	18.1	30.3	14.3
Croplan Genetics	356 NS	NS	--	--	--	42.6	100	6	16.9	29.5	12.3
Croplan Genetics	378 DMR	HO	--	1863	--	40.4	123	3	15.0	27.2	8.7
Dekalb	DKF 3875	Trad.	--	2798	--	41.4	117	0	12.5	31.1	10.8
Dekalb	DKF 38-80 CL	Trad,CL	--	1875	--	39.8	109	5	15.6	30.3	10.0
Dekalb	DKF35-10 NS	NS/DM	--	--	--	42.4	118	5	15.0	28.8	10.3
Dekalb	DKF37-31NS	NS	--	--	--	41.1	102	3	13.9	31.4	10.7
Dekalb	DKF38-30 NS	NS	--	1251	--	40.9	112	4	14.4	31.6	13.7
Dekalb	DKF38-45NS	NS	--	--	--	42.2	120	-0	15.5	32.9	9.6
Dyna-Gro	94T90	Trad.	--	2282	--	42.8	130	0	16.1	31.0	15.3
Dyna-Gro	95N70	NS	--	--	--	42.3	115	4	16.3	32.1	14.9
Dyna-Gro	FX06794	NS	--	--	--	40.9	103	1	16.2	29.4	14.7
Dyna-Gro	FX06483	NS,CL	--	--	--	40.1	102	8	16.8	30.2	14.5
Garst Seed	4420 NS	NS	--	--	--	40.2	111	0	13.0	30.8	13.6
Garst Seed	4651 NS	NS	--	--	--	40.6	115	3	15.5	28.9	7.1
Garst Seed	4665 HO	HO	--	--	--	39.6	134	4	14.7	31.2	6.4
Garst Seed	4668 NS/CL	NS,CL	--	--	--	39.4	126	1	16.8	30.2	11.0
Garst Seed	4704 NS	NS	--	--	--	40.2	106	2	14.0	31.3	13.0
IntegraSeed Ltd	INT 550NS	NS	--	--	--	39.4	99	2	15.5	30.2	12.4
IntegraSeed Ltd	INT 555NS	NS	--	--	--	42.8	117	7	15.6	31.8	14.7
IntegraSeed Ltd	INT 737NSCL	NS,CL	--	--	--	40.3	113	4	19.2	28.8	14.3
King Seed Inc.	SunKing 4404NS/CL	NS,CL	--	--	--	39.5	117	2	20.4	28.7	11.1
King Seed Inc.	SunKing 4500NS	NS	--	--	--	41.8	118	2	16.3	31.8	12.9
King Seed Inc.	SunKing 4505	Trad.	--	--	--	42.3	118	0	15.5	30.1	13.3
Legend Seeds	LSX 138N	NS	--	--	--	41.4	118	2	14.0	34.0	12.3
Legend Seeds	LSF 121N	NS	--	--	--	38.8	118	1	15.7	29.6	10.0
Legend Seeds	LSF 142N	NS	--	--	--	40.9	93	0	16.7	30.4	12.5
Legend Seeds	LSF 223NCL	NS,CL	--	--	--	39.6	119	4	17.2	28.5	13.0
Monsanto	MH4436	NS	--	--	--	42.0	112	17	15.4	32.8	12.5
Monsanto	MH4437 CL	NS,CL	--	--	--	41.0	115	2	15.1	29.9	11.0
Monsanto	MH4438 CL	NS,CL	--	--	--	41.1	119	4	15.3	31.3	6.3
Monsanto	MH6635	HO	--	--	--	43.5	119	4	15.4	29.9	14.6
Monsanto	MH5434	HO	--	--	--	44.1	110	4	16.1	30.9	14.3
Monsanto	MH5436	NS/DM	--	--	--	42.7	103	22	14.9	31.3	13.5
Monsanto	MH5437	HO	--	--	--	39.7	108	9	15.8	30.7	12.1
Monsanto	MH5438	HO	--	--	--	42.8	112	0	15.4	29.4	10.6
Monsanto	MH6636	NS	--	--	--	42.7	114	3	14.9	30.3	15.7
Mycogen Seeds	8D310	NS	--	2572	--	39.4	132	0	15.4	28.8	11.0
Mycogen Seeds	8H350DM	HO	--	1860	--	42.6	129	3	16.2	30.7	9.9
Mycogen Seeds	8H419CL	HO,CL	--	2174	--	40.6	120	2	14.9	29.6	12.4
Mycogen Seeds	8N352	NS	--	2250	--	41.9	107	7	14.4	31.2	11.3
Mycogen Seeds	8N386CL	NS,CL	--	2303	--	40.3	134	6	15.5	30.0	10.6
Mycogen Seeds	8N453DM	NS	--	1778	--	42.6	115	5	17.0	30.8	10.7

Table 6 (cont.). Reliance, SD 2006.

Brand	Hybrid	Type*	Seed Yield (lbs/A)				Plant Hght cm	Lodg %	Harv. Moist. %	Test Wt. lb/bu	Pop. 1000 pl/A
			2006 [^]	2005	2-yr Avg.	Oil %					
Mycogen Seeds	8N510	NS	--	2453	--	40.4	100	1	14.3	30.9	15.4
Mycogen Seeds	8N520DM	NS	--	--	--	41.1	115	1	16.3	29.0	13.3
Mycogen Seeds	8N462DM	NS	--	--	--	41.6	120	5	15.1	32.2	9.6
Pannar Genetics	PEX 2986	NS	--	--	--	39.8	119	3	17.4	31.9	8.7
Pannar Seed Inc.	PAN 7924NS	NS	--	--	--	42.1	98	2	19.0	29.2	9.8
Pannar Seed Inc.	PAN 9501	Trad.	--	1916	--	40.2	115	5	15.3	30.6	13.3
Pannar Seed Inc.	PAN EX2853	NS	--	--	--	41.3	114	2	14.0	30.3	11.6
Pioneer Hi-Bred	6423	HO	--	--	--	40.9	129	3	15.9	29.6	10.7
Pioneer Hi-Bred	6444	HO	--	--	--	42.0	120	3	16.1	31.5	12.4
Pioneer Hi-Bred	6447	HO	--	--	--	40.5	111	0	19.0	28.7	12.3
Pioneer Hi-Bred	63M80	NS	--	1928	--	41.9	116	0	16.3	30.6	13.3
Pioneer Hi-Bred	63M91	NS	--	1481	--	41.4	129	3	15.6	31.9	13.1
Pioneer Hi-Bred	64H41	HO	--	1712	--	41.5	108	3	15.5	31.8	12.0
Producers Hybrids	XSF001NSCL	NS,CL	--	--	--	38.6	110	6	16.6	29.2	12.3
Producers Hybrids	SF7203	Trad.	--	2487	--	41.6	130	1	17.7	29.5	13.8
Producers Hybrids	SF7303	NS	--	2008	--	41.9	106	3	16.7	29.0	12.7
Proseed	9441	NS	--	1799	--	40.9	124	6	17.6	27.8	8.6
Proseed	CL-51	NS,CL	--	--	--	39.9	105	17	18.3	27.6	11.8
Zuelzer & Son Canada	ZSun1	HO	--	--	--	39.4	117	0	13.3	30.5	9.9
Proseed	E-85	HO	--	--	--	38.9	126	3	17.3	29.5	5.4
Seeds 2000	Barracuda	NS,CL	--	1553	--	41.6	113	3	18.0	32.3	11.6
Seeds 2000	Blazer	NS	--	1565	--	42.2	102	2	17.0	29.6	10.5
Seeds 2000	Sierra	HO	--	2455	--	41.7	112	1	19.4	29.8	11.5
Triumph Seed	645	NS	--	2390	--	41.8	114	1	16.6	29.3	11.4
Triumph Seed	845HO	HO	--	--	--	42.0	112	2	17.3	28.8	10.4
Triumph Seed	s672	NS	--	1836	--	42.6	74	1	17.3	30.2	11.5
Triumph Seed	s675	NS	--	--	--	41.9	81	2	21.4	28.6	14.4
Triumph Seed	s678	NS	--	2200	--	42.2	96	0	17.3	32.4	12.7
USDA	Hyb. 894 (check)	Trad.	--	1658	--	41.3	100	6	14.7	31.3	9.9
	Grand mean			1974		41.1	113	3	16.1	30.4	11.7
	LSD 5%			599		2.0	13	8	3.4	2.8	3.4
	C.V.			18.7		3.0	7.3	161.6	12.9	5.6	18.2

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

[^] Yields from 2006 were too variable for publication, due to poor stands and drought.

Planted June 8, 2006. Harvested October 23, 2006.

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

Cooperator: Trent Schindler, Reliance, SD.

Table 7. Oilseed sunflower hybrid trial - Onida, SD 2006.

Brand	Hybrid	Type*	Seed Yield (lbs/A)				Days to Flwr	Plant Hght cm	Lodg %	Harv. Moist. %	Pop. 1000 pl/A	Hulling Quality Test
			2006^	2005	2-yr Avg.	Oil %						
Advanta Pacific, LLC	AP533NS	NS	--	--	--	40.9	63	100	14	13.2	13.8	
Advanta Pacific, LLC	AP534NS/CL	NS,CL	--	--	--	39.2	66	98	10	13.8	14.5	
Advanta Pacific, LLC	F30250	NS	--	--	--	40.5	63	98	12	13.3	12.2	
Advanta Pacific, LLC	F41271	NS	--	--	--	37.8	62	82	9	12.8	10.8	
Advanta Pacific, LLC	F51320	NS	--	--	--	39.3	60	105	2	13.1	14.0	
Advanta Pacific, LLC	F51321	NS	--	--	--	39.2	61	90	9	13.7	14.6	
Croplan Genetics	356 NS	NS	--	--	--	39.7	63	85	4	13.0	16.8	
Croplan Genetics	378 DMR	HO	--	2154	--	41.0	63	86	6	13.7	12.8	Poor
Dahlgren	4421	NS	--	1835	--	39.7	59	93	14	12.0	10.0	
Dekalb	DKF 3875	Trad.	--	1917	--	41.2	65	78	0	12.8	14.6	Poor
Dekalb	DKF 38-80 CL	Trad,CL	--	1741	--	41.3	63	72	9	13.7	13.1	Poor
Dekalb	DKF35-10 NS	NS/DM	--	--	--	41.2	61	93	3	14.4	14.7	Poor
Dekalb	DKF37-31NS	NS	--	--	--	41.1	63	79	6	12.5	11.0	Poor
Dekalb	DKF38-30 NS	NS	--	1784	--	41.6	66	99	7	14.2	13.3	Poor
Dekalb	DKF38-45NS	NS	--	--	--	41.5	63	88	11	12.8	12.3	Poor
Dyna-Gro	94T90	Trad.	--	1970	--	41.3	64	95	5	13.4	12.1	
Dyna-Gro	FX06794	NS	--	--	--	40.7	65	83	7	14.1	13.1	
Dyna-Gro	FX06483	NS,CL	--	--	--	38.8	66	96	11	14.7	12.8	
Garst Seed	4420 NS	NS	--	--	--	38.5	66	94	7	13.6	15.7	
Garst Seed	4651 NS	NS	--	--	--	41.6	64	92	5	14.9	10.8	
Garst Seed	4665 HO	HO	--	--	--	40.0	64	111	6	12.8	12.3	
Garst Seed	4668 NS/CL	NS,CL	--	--	--	37.5	65	87	14	14.0	12.6	
Garst Seed	4704 NS	NS	--	--	--	38.6	60	86	11	12.6	9.9	
IntegraSeed Ltd	INT 432	Trad.	--	--	--	41.5	63	84	1	12.5	14.5	
IntegraSeed Ltd	INT 536NSDM	NS,DM	--	--	--	37.0	60	89	5	14.0	11.3	
IntegraSeed Ltd	INT 550NS	NS	--	--	--	38.7	61	91	11	13.2	11.4	
IntegraSeed Ltd	INT 735NSCL	NS,CL	--	--	--	40.2	64	93	3	12.9	14.7	
Interstate Seed	HyOleic 120	HO	--	1591	--	39.5	64	92	6	14.3	11.4	
Interstate Seed	Hysun 450	NS	--	2111	--	39.9	65	84	1	14.7	13.2	
Interstate Seed	Hysun 454	NS	--	--	--	40.0	63	89	3	13.8	14.9	
Interstate Seed	Hysun 521	NS	--	--	--	40.6	56	77	15	11.8	12.9	
Interstate Seed	IS 4668 NS/CL	NS,CL	--	--	--	39.6	65	90	14	14.8	13.6	Poor
Interstate Seed	IS 4704 NS	NS	--	1478	--	40.6	60	87	16	12.8	9.4	Poor
Interstate Seed	IS 5770 NS	NS	--	--	--	37.6	64	99	17	13.6	11.6	
Interstate Seed	IS 5880 NS/CL	NS,CL	--	--	--	39.1	64	81	6	14.5	10.1	
King Seed Inc.	SunKing 4404NS/CL	NS,CL	--	--	--	39.9	66	90	8	14.3	13.9	
King Seed Inc.	SunKing 4500NS	NS	--	--	--	41.0	64	91	4	13.5	16.2	
King Seed Inc.	SunKing 4505	Trad.	--	--	--	42.3	65	99	7	13.3	12.7	
Legend Seeds	LSX 138N	NS	--	--	--	36.8	64	92	2	13.7	15.6	
Legend Seeds	LSF 121N	NS	--	--	--	40.0	61	94	7	13.2	11.6	
Legend Seeds	LSF 142N	NS	--	--	--	40.4	66	87	12	15.0	13.3	
Legend Seeds	LSF 223NCL	NS,CL	--	--	--	39.5	67	99	3	14.3	13.8	
Monsanto	MH4436	NS	--	1722	--	40.3	64	93	8	12.8	15.4	Poor
Monsanto	MH4437 CL	NS,CL	--	--	--	39.2	61	94	5	12.6	14.7	Poor
Monsanto	MH4438 CL	NS,CL	--	--	--	39.7	63	97	3	13.4	13.1	Poor
Monsanto	MH6635	HO	--	--	--	41.3	63	102	0	13.9	14.0	Excel.
Monsanto	MH5434	HO	--	1841	--	41.2	65	94	6	13.2	15.3	Excel.
Monsanto	MH5436	NS/DM	--	--	--	40.2	59	79	7	12.8	12.5	Good
Monsanto	MH5437	HO	--	--	--	41.5	65	93	4	13.5	14.8	Poor
Monsanto	MH5438	HO	--	--	--	41.0	65	89	5	13.1	12.5	Poor
Monsanto	MH6636	NS	--	--	--	41.6	63	97	4	12.5	12.5	Poor
Mycogen Seeds	8D310	NS	--	2172	--	38.9	61	101	6	12.3	12.1	Poor

Table 7 (cont.). Onida, SD 2006.

Brand	Hybrid	Type*	Seed Yield (lbs/A)				Days to Flwr	Plant Hght cm	Lodg %	Harv. Moist. %	Pop. 1000 pl/A	Hulling Quality Test
			2006 [^]	2005	2-yr Avg.	Oil %						
Mycogen Seeds	8H350DM	HO	--	1876	--	42.0	59	99	8	12.9	11.2	
Mycogen Seeds	8H419CL	HO,CL	--	2006	--	40.6	65	94	5	13.8	13.1	
Mycogen Seeds	8N352	NS	--	2107	--	41.0	63	78	0	14.8	16.5	
Mycogen Seeds	8N386CL	NS,CL	--	1743	--	40.0	64	105	15	13.7	11.1	
Mycogen Seeds	8N453DM	NS	--	2013	--	40.2	61	78	0	14.8	11.9	
Mycogen Seeds	8N510	NS	--	1817	--	39.1	66	87	6	13.7	14.6	Poor
Mycogen Seeds	8N520DM	NS	--	--	--	40.8	65	86	4	14.1	14.8	Poor
Mycogen Seeds	8N462DM	NS	--	--	--	41.2	62	89	4	14.8	11.7	
Pannar Genetics	PEX 2961	NS	--	--	--	39.8	64	108	8	13.2	9.3	
Pannar Genetics	PEX 2968	Trad.	--	--	--	39.3	66	103	8	14.5	13.4	
Pannar Genetics	PEX 2986	NS	--	--	--	41.1	62	109	6	13.8	9.2	
Pannar Seed Inc.	PAN 7813NS	NS	--	--	--	40.5	63	89	12	15.4	12.2	
Pannar Seed Inc.	PAN 7924NS	NS	--	--	--	40.9	65	84	10	14.3	13.9	
Pannar Seed Inc.	PAN 9404	Trad.	--	1778	--	41.7	64	92	3	13.2	13.4	
Pannar Seed Inc.	PAN 9501	Trad.	--	1858	--	39.9	67	98	4	12.7	15.5	
Pannar Seed Inc.	PAN EX2422	NS	--	--	--	38.8	65	105	5	14.3	13.3	
Pannar Seed Inc.	PAN EX2453	NS	--	--	--	39.9	65	98	7	14.3	13.3	
Pannar Seed Inc.	PAN EX2853	NS	--	--	--	38.1	65	91	3	13.6	12.0	
Pioneer Hi-Bred	6423	HO	--	--	--	40.9	61	79	4	12.5	12.9	Poor
Pioneer Hi-Bred	6444	HO	--	--	--	40.1	67	97	4	14.2	15.9	Poor
Pioneer Hi-Bred	6447	HO	--	--	--	40.1	65	86	6	14.0	12.1	Good
Pioneer Hi-Bred	63M80	NS	--	1826	--	41.0	59	85	3	13.4	13.4	Poor
Pioneer Hi-Bred	63M91	NS	--	1866	--	40.8	60	109	2	13.4	13.3	Good
Pioneer Hi-Bred	64H41	HO	--	1612	--	39.8	62	106	10	13.2	12.8	Poor
Producers Hybrids	XSF001NSCL	NS,CL	--	--	--	38.9	65	88	6	14.2	14.4	
Producers Hybrids	SF7203	Trad.	--	1832	--	42.4	65	111	6	13.8	11.1	
Producers Hybrids	SF7303	NS	--	1853	--	41.6	66	82	6	12.9	9.3	
Proseed	9441	NS	--	1887	--	40.9	67	94	5	12.1	11.6	
Proseed	CL-51	NS,CL	--	--	--	40.6	64	87	5	12.1	13.4	
Zuelzer&Son Canada	ZSun1	HO	--	--	--	39.9	61	88	3	13.9	10.0	Excel.
Proseed	E-85	HO	--	--	--	39.9	63	94	6	13.4	14.1	Poor
Seeds 2000	Barracuda	NS,CL	--	1823	--	40.6	66	98	0	14.9	13.8	
Seeds 2000	Blazer	NS	--	1996	--	41.4	63	83	3	15.9	12.8	
Seeds 2000	Sierra	HO	--	2112	--	39.5	68	92	3	14.4	13.6	
Triumph Seed	645	NS	--	1690	--	39.6	65	93	5	15.3	13.3	Poor
Triumph Seed	658	NS	--	--	--	39.1	65	96	7	13.5	15.2	
Triumph Seed	660CL	NS,CL	--	1850	--	39.7	68	99	3	14.2	13.4	Excel.
Triumph Seed	845HO	HO	--	--	--	42.3	65	94	4	14.1	13.2	Excel.
Triumph Seed	s672	NS	--	1796	--	40.4	65	59	4	14.1	14.8	
Triumph Seed	s675	NS	--	2141	--	40.5	69	77	4	14.3	15.1	
Triumph Seed	s678	NS	--	1661	--	41.2	68	95	6	16.3	12.6	
USDA	Hyb. 894 (check)	Trad.	--	1709	--	41.6	65	104	15	14.4	8.8	
	Grand mean			1778		40.2	64	92	6	13.7	13.0	
	LSD 5%			380		2.1	1	17	ns	1.5	2.9	
	C.V.			13.3		3.7	1.5	13.6	109	8.0	16.1	

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

Planted June 7, 2006. Harvested October 25, 2006.

[^] Yields from 2006 were too variable for publication, due to drought and wind damage.

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

Cooperator: Van and Chris Huse, Onida, SD.

Hulling quality test: 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 averaged over Eureka and Miller, SD - 2006.

BRAND	HYBRID	TYPE	2006 Yield lbs/A	Oil %	Plant Hght cm	Lodg %	Harv. Moist. %	Test Wt. lb/bu	Pop. 1000 pl/A
Advanta Pacific, LLC	AP533NS	NS	898	42.2	106	4	11.6	29.1	12.9
Advanta Pacific, LLC	AP534NS/CL	NS,CL	1373	42.5	112	8	13.5	29.3	13.4
Advanta Pacific, LLC	F30250	NS	1143	42.2	107	6	12.7	29.1	12.3
Advanta Pacific, LLC	F41271	NS	1137	42.2	104	4	12.2	28.8	11.6
Advanta Pacific, LLC	F51320	NS	1000	42.6	103	6	12.1	29.4	12.6
Advanta Pacific, LLC	F51321	NS	1306	41.9	99	1	13.2	28.2	13.8
Dyna-Gro	94T90	Trad.	1309	43.4	115	4	12.3	29.5	14.7
Dyna-Gro	FX06794	NS	1364	42.6	98	4	13.4	29.0	13.6
Dyna-Gro	FX06483	NS,CL	1500	42.8	108	3	12.7	28.7	15.3
Garst Seed	4420 NS	NS	1226	42.2	108	5	12.8	29.0	13.0
Garst Seed	4651 NS	NS	1038	43.2	115	6	13.1	28.6	10.5
Garst Seed	4665 HO	HO	1201	43.1	119	11	12.3	29.5	10.0
Garst Seed	4668 NS/CL	NS,CL	1547	41.9	116	8	13.2	29.0	15.4
Garst Seed	4704 NS	NS	916	41.8	100	3	12.5	28.6	14.5
IntegraSeed Ltd	INT 536NSDM	NSDM	1199	42.7	104	6	12.8	29.7	13.8
IntegraSeed Ltd	INT 550NS	NS	1113	42.7	101	7	13.4	29.9	13.5
IntegraSeed Ltd	INT 737NSCL	NS,CL	1521	41.4	120	8	13.4	28.8	15.7
Interstate Seed	HyOleic 120	HO	1166	43.1	116	5	11.8	29.6	12.6
Interstate Seed	Hysun 521	NS	1062	42.3	99	10	12.6	29.9	12.1
Interstate Seed	IS 4668 NS/CL	NS,CL	1553	42.3	112	6	13.6	29.5	14.5
Interstate Seed	IS 4704 NS	NS	1076	43.3	105	2	12.7	28.3	12.8
Interstate Seed	IS 5770 NS	NS	1402	42.9	111	2	12.4	30.4	12.0
Interstate Seed	IS 5880 NS/CL	NS,CL	937	42.5	109	5	13.1	29.0	11.2
King Seed Inc.	SunKing 4404NS/CL	NS,CL	1541	41.0	108	5	13.0	29.4	15.5
King Seed Inc.	SunKing 4500NS	NS	1472	41.9	109	5	12.8	29.6	12.1
King Seed Inc.	SunKing 4505	Trad.	1114	44.6	117	2	12.5	28.3	14.3
Legend Seeds	LSX 138N	NS	1163	43.1	113	6	12.5	28.8	12.4
Legend Seeds	LSF 121N	NS	1094	43.1	111	5	12.2	29.1	13.3
Legend Seeds	LSF 142N	NS	1540	43.3	100	3	13.1	28.9	14.0
Legend Seeds	LSF 223NCL	NS,CL	1542	42.4	106	3	13.2	28.7	15.4
Mycogen Seeds	8D310	NS	1224	42.1	109	4	12.2	28.5	13.4
Mycogen Seeds	8H350DM	HO	1036	43.4	108	7	12.3	29.2	13.3
Mycogen Seeds	8H419CL	HO,CL	1421	43.2	111	0	12.8	28.9	14.7
Mycogen Seeds	8N352	NS	1508	43.9	99	2	12.7	30.1	13.8
Mycogen Seeds	8N386CL	NS,CL	1116	42.9	118	5	12.5	28.1	12.5
Mycogen Seeds	8N453DM	NS	1205	44.3	104	2	12.0	29.1	13.1
Mycogen Seeds	8N510	NS	1571	42.4	107	2	12.8	28.7	14.7
Mycogen Seeds	8N520DM	NS	1438	42.7	105	5	13.2	28.3	14.1
Mycogen Seeds	8N462DM	NS	1510	43.7	107	6	13.4	30.1	12.2
Pannar Genetics	PEX 2986	NS	1427	41.8	109	7	13.1	30.0	11.5
Pannar Seed Inc.	PAN 7813NS	NS	1416	41.6	106	7	13.7	28.8	12.6
Pannar Seed Inc.	PAN 7924NS	NS	1444	42.5	117	5	13.4	28.1	13.5
Pannar Seed Inc.	PAN EX2422	NS	1131	42.4	102	5	13.0	28.2	12.7
Pannar Seed Inc.	PAN EX2453	NS	1221	42.3	110	8	12.8	29.2	12.6
Pioneer Hi-Bred	6423	HO	1110	42.6	115	8	11.8	29.0	13.6
Pioneer Hi-Bred	6444	HO	1008	42.7	113	5	11.9	30.0	12.5
Pioneer Hi-Bred	6447	HO	1403	41.7	114	8	13.0	29.5	12.1
Pioneer Hi-Bred	63M80	NS	1190	42.8	103	8	12.1	29.1	12.9

Table 8 (cont.).

BRAND	HYBRID	TYPE	2006 Yield lbs/A	Oil %	Plant Hght cm	Lodg %	Harv. Moist. %	Test Wt. lb/bu	Pop. 1000 pl/A
Pioneer Hi-Bred	63M91	NS	1155	42.0	111	3	12.3	29.2	14.5
Pioneer Hi-Bred	64H41	HO	1126	42.6	113	4	12.8	29.5	14.0
Proseed	9441	NS	836	42.8	116	9	11.8	27.7	10.9
Proseed	CL-51	NS,CL	795	42.8	108	9	11.9	28.9	13.3
Zuelzer & Son Canada	ZSun1	HO	1105	42.5	108	9	11.7	28.2	11.8
Proseed	E-85	HO	1358	42.6	118	7	12.2	28.3	12.6
Seeds 2000	Barracuda	NS,CL	1301	42.2	107	4	14.0	29.4	13.9
Seeds 2000	Blazer	NS	1535	43.3	91	6	12.7	30.3	12.7
Seeds 2000	Sierra	HO	1342	42.1	99	4	13.4	28.8	14.7
Triumph Seed	645	NS	1559	43.2	109	4	13.5	29.1	14.4
Triumph Seed	845HO	HO	1599	42.5	103	7	13.1	28.8	14.4
Triumph Seed	s672	NS	1361	43.8	76	-0	13.0	29.4	16.8
Triumph Seed	s675	NS	1797	43.2	85	3	13.7	29.1	15.5
Triumph Seed	s678	NS	1707	43.1	97	3	13.9	29.2	14.1
USDA	Hyb. 894 (check)	Trad.	1148	44.3	97	6	12.1	27.9	10.3
	Grand mean		1279	42.7	107	5	12.7	29.0	13.3
	LSD 5%		391	1.3	12	ns	1.3	ns	2.5
	C.V.		20	2.8	8	99	5.9	3.8	13.4

Table 9. Confection hybrid sunflower trial - Miller, SD 2006.

Brand	Hybrid	Seed Yield (lbs/A)			Plant Height cm	Harv. Moist. %	Lodging %	Test Wt. lb/ bu	Pop. 1000 pl/A	% Seed Over Screen			Nut-meat %
		2006	2005	2-yr						22/64	20/64	18/64	
CHS	RH112	1012	3409	2210	136	12.7	15	22.9	11.8	61.2	80.9	91.3	50.0
CHS	RH1122	1195	--	--	133	12.7	23	22.4	10.1	62.5	80.8	89.9	48.6
Dahlgren	D 9541	1437	--	--	142	12.9	19	23.1	13.0	51.2	76.4	89.5	51.4
Dahlgren	D 9531	1529	3053	2291	137	13.2	16	23.1	10.4	48.7	71.8	87.3	51.2
Mycogen Seeds	8C481	1436	3177	2306	139	12.9	14	23.1	12.3	55.2	79.8	91.8	51.2
Mycogen Seeds	8C482	1539	--	--	145	13.3	16	22.3	11.5	68.0	85.7	92.4	51.7
Red River Commod.	2214	950	3448	2199	129	13.3	14	22.9	8.3	51.5	75.1	86.8	51.5
Red River Commod.	2215	1398	3828	2613	128	12.9	21	23.1	9.2	56.2	79.8	91.4	50.4
Red River Commod.	2216	1430	3488	2459	128	13.0	13	23.2	12.1	54.9	77.9	89.7	51.8
Red River Commod.	8010	1330	--	--	119	13.2	35	23.4	5.3	56.9	76.2	87.4	50.0
Seeds 2000	X3967	1339	--	--	126	13.0	13	23.6	8.2	63.2	79.6	90.2	49.9
Seeds 2000	X3938	1505	--	--	125	12.7	7	23.5	12.7	59.3	76.5	89.1	50.3
Seeds 2000	X3638	1374	--	--	122	12.5	8	23.7	12.9	50.6	76.2	90.2	50.5
Seeds 2000	X3654	1674	--	--	128	13.0	18	24.5	9.3	36.7	65.4	84.6	54.2
Sunflower R & D	6132	909	--	--	151	13.5	60	23.9	4.1	51.8	73.9	88.3	51.4
Triumph Seed	777C	1549	2987	2268	126	12.8	15	23.4	11.1	59.1	78.4	89.3	52.1
Triumph Seed	767C	1494	3341	2418	135	13.8	15	22.5	11.0	68.6	82.7	91.3	50.4
USDA	924(check)	846	2864	1855	133	12.5	13	23.2	6.4	45.9	69.5	85.3	49.2
Grand mean		1330	3301	2316	132	13.0	19	23.2	10.0	55.6	77.0	89.2	50.9
LSD 5%		335	563		13	0.6	10	ns	2.7	14.7	9.1	4.6	ns
C.V.		17.7	12.1		7.1	3.1	38.3	3.9	19.1	18.5	8.3	3.7	4.0

Planted June 5, 2006. Harvested October 27, 2006.

Yields are reported at 10% moisture.

Cooperator: Roger Bertsch, St. Lawrence, SD.

Table 10. Confection hybrid sunflower trial - Onida, SD 2006.

Brand	Hybrid	Seed Yield (lbs/A)			Days to Flwr	Plant Hght cm	Harv. Moist. %	Lodg-ing %	Test Wt. lb/bu	Pop. 1000 pl/A	% Seed Over Screen			Nut-meat %
		2006*	2005	2-yr							22/64	20/64	18/64	
CHS	RH112	--	--	--	65	98	12.4	6	25.4	13.0	33.9	57.9	77.3	50.4
CHS	RH1122	--	--	--	63	100	12.5	5	25.5	9.7	22.7	47.9	73.5	51.4
Dahlgren	D 9541	--	--	--	65	105	12.5	5	25.3	10.5	37.3	63.7	82.7	50.4
Dahlgren	D 9531	--	1608	--	64	100	12.9	2	24.9	10.7	36.9	65.6	83.0	52.1
Mycogen Seeds	8C481	--	2125	--	63	111	12.8	14	26.1	8.1	36.5	56.2	74.8	51.1
Mycogen Seeds	8C482	--	--	--	65	111	14.5	8	25.8	8.5	36.7	59.3	77.1	52.0
Red River Commod.	2214	--	1667	--	65	99	12.8	5	25.7	7.2	37.2	62.1	80.1	49.6
Red River Commod.	2215	--	1798	--	65	93	12.9	2	25.6	10.6	34.7	60.5	80.1	53.2
Red River Commod.	2216	--	1573	--	65	92	12.6	4	26.7	10.2	29.7	52.7	77.2	53.0
Red River Commod.	8010	--	--	--	67	88	14.2	4	24.6	5.0	43.4	64.8	80.6	49.1
Seeds 2000	X3967	--	--	--	64	96	13.2	4	25.6	10.8	30.1	53.6	74.5	48.6
Seeds 2000	X3938	--	--	--	64	109	12.5	2	25.4	8.5	39.9	62.6	79.1	47.4
Seeds 2000	X3638	--	--	--	63	96	12.4	5	25.1	9.5	34.3	60.0	79.5	44.8
Seeds 2000	X3654	--	--	--	67	96	12.7	3	26.2	9.7	19.8	45.0	73.0	55.4
Sunflower R & D	6009	--	--	--	66	106	12.4	12	25.4	7.9	33.6	60.2	80.1	53.0
USDA	924(check)	--	1559	--	65	114	12.9	5	26.8	7.2	35.1	56.1	73.4	48.1
Grand mean			1779		65	101	12.9	5	25.6	9.2	33.9	58.0	77.9	50.6
LSD 5%			339		2	14	0.9	ns	ns	ns	ns	ns	ns	4.5
C.V.			13.4		1.8	9.9	5.1	120.1	3.8	27.7	29.3	15.1	7.0	6.2

Planted June 7, 2006. Harvested October 25, 2006.

* Yields from 2006 were too variable for publication, due to poor stands, drought, and wind damage.

Yields are reported at 10% moisture.

Cooperator: Van and Chris Huse, Onida, SD.

