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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. Select hybrids with traits that best suit your needs and production practices.

## Yield

Evaluate as much performance information as possible when selecting a hybrid. Consider information from trials close to your production area, but give more weight to relative hybrid performance over many locations and years. Performance averaged over many tests (locations and years) 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/years. 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 in the tables that follow, 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 Onida oilseed test could be repeated in 2015 exactly as it was in 2014, the yield ranking of a hybrid that yielded 3129 lbs/acre and one that yielded 2907 lbs/acre might change ranking since their yield difference (222 lbs/acre) is less than the indicated yield LSD value of 332 lbs/acre. 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 Onida in 2014. In contrast, a hybrid that yielded 2610 lbs/acre at Onida in 2014 would likely be lower yielding than one that yielded 3129 lbs/acre if the two hybrids were grown again under similar conditions, because their difference in 2014 ( $3129 - 2610 = 519$  lbs/acre) exceeded the LSD value of 332 lbs/acre.

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 (low variability) 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. However, seed must be dried to 9.5% or less for storage.

### **Disease, Insect, and Herbicide 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 to two or more races of rust. Some hybrids may also exhibit tolerance to sclerotinia head rot, Phomopsis, or sunflower midge. Clearfield<sup>®</sup> and ExpressSun<sup>™</sup> hybrids are resistant to Beyond<sup>®</sup> and Express<sup>®</sup> herbicides, respectively. Hybrid disease ratings may be included with some performance trial results. Consult the seed company for information on the reaction of a particular hybrid to diseases 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.

## **2014 Trial Procedures**

### **Locations and Hybrids**

Oilseed hybrid sunflower trials were planted at five locations in South Dakota (Bison, Highmore, Eureka, Onida, and Presho) in 2014. Entries in the oilseed sunflower trials included traditional linoleic oil hybrids, NuSun (mid-oleic) hybrids, high oleic, and ConOil hybrids. Non-oilseed (confection) sunflower trials were conducted at Highmore and Onida. Test locations are indicated on the map in Figure 1. Results from the Bison location are not reported due to poor stands from early season flooding and deer damage. Lists of the hybrids tested in 2014 appear in Tables 1 and 2.

### **Experimental Methods**

Plots at all locations consisted of four rows 30 feet long, with a 30 inch row spacing. 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 the hybrids entered in the trials was sent pre-treated with Cruiser insecticide and at least one fungicide. All trials were seeded no-till. Bison and Onida were seeded on June 9, 2014. Seeding dates for Eureka, Highmore, and Presho were June 10, 12, and 24, respectively. The previous crop at Eureka and Presho was corn. At all other locations, the previous crop was wheat. Plots were over-seeded and thinned to approximately 18,000 plants/acre. Stands were good at Eureka, Onida, and Presho. Bison had poor stands due to early season flooding and also suffered deer damage. Yield results were too variable to report. Stands were variable at Highmore due to weed infestation (herbicide failure). The first replication at Highmore had the poorest stands and was excluded from all analyses.

### **Climate**

A summary of weather conditions near the sunflower test sites is presented in Table 3. The closest weather station to the Presho sunflower plots was at Kennebec. The 2014 growing season was generally cooler than the 30-year average in May through August at all locations. September had near normal temperatures, while October was warmer than average at all sites (Table 3). All locations except Presho had above normal precipitation in June and August. July and October were much drier than normal at all sites. Bison was wetter than average in September, but the other locations had below normal precipitation in September.

### **Results**

Data from each location are contained in Tables 4- 9 and across locations in Tables 10 and 11. Lodging was highest at Highmore. There was no lodging at Presho. Oilseed seed yields were highest at Onida, where 51 hybrids averaged 2416 lbs/acre, with 42.9% oil (Table 6). The lowest oilseed yields (1641 lbs/acre) were recorded at Presho (Table 7). Confection hybrid yields were higher at Onida than at Highmore, averaging 2061 lbs/acre across the 34 hybrids tested (Table 9). 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. 2014 South Dakota sunflower trial locations.**



**Table**

- 1 Oilseed hybrid list and test sites
- 2 Confection hybrid list and test sites
- 3 Weather summary
- 4 Eureka oilseed trial
- 5 Highmore oilseed trial
- 6 Onida oilseed trial
- 7 Presho oilseed trial
- 8 Highmore confection trial
- 9 Onida confection trial
- 10 Oilseed trial averaged over 4 locations
- 11 Confection trial averaged over 2 locations

**Table 1. Oilseed sunflower hybrids and locations where tested in South Dakota - 2014.**

Company/ Brand	Hybrid	Hybrid Type <sup>1</sup>	Location			
			Eureka	Highmore	Onida	Presho
Croplan by Winfield	Croplan 13-652 CL	HO,CL,DM	X	X	X	X
Croplan by Winfield	Croplan 14-572 CL	HO,CL,DM	X	X	X	X
Croplan by Winfield	Croplan 3080	NS	X	X	X	X
Croplan by Winfield	Croplan 432 E	NS,EX,DM	X	X	X	X
Croplan by Winfield	Croplan 545 CL	NS,CL,DM	X	X	X	X
Croplan by Winfield	Croplan 559 CL	NS,CL,DM	X	X	X	X
DuPont Pioneer	P63ME80	NS,EX,DM	X	X	X	X
DuPont Pioneer	P64ME01	NS,EX,DM	X	X	X	X
Genosys	11G08	NS	X	X	X	X
Genosys	12E06	HO,DM	X	X	X	X
Genosys	12E12	HO,CL,DM	X	X	X	X
Genosys	12E13	HO,CL,DM	X	X	X	X
Genosys	12E14	HO,CL,DM	X	X	X	X
Genosys	12G20	HO,CL	X	X	X	X
Genosys	12G25	HO,CL	X	X	X	X
Legend Seeds	LSF 9302HOCL	HO,CL	X	X	X	X
Legend Seeds	LSF 9418HOCL	HO,CL	X	X	X	X
Legend Seeds	LSF 9426NCL	NS,CL	X	X	X	X
Legend Seeds	LSF 9468NCL	NS,CL	X	X	X	X
Legend Seeds	LSF 9502	Trad.	X	X	X	X
Legend Seeds	LSF 9536HOCL	HO,CL	X	X	X	X
Mycogen Seeds	8D310CL	ConOil,CL	X	--	--	--
Mycogen Seeds	8H449CLDM	HO,CL,DM	X	X	X	--
Mycogen Seeds	8H570CL	HO,CL	X	--	--	--
Mycogen Seeds	8H859CL	HO,CL	--	--	--	X
Mycogen Seeds	8N421CLDM	NS,CL,DM	X	X	X	--
Mycogen Seeds	8N510	NS	--	X	X	X
Mycogen Seeds	8N668S	NS,SS	--	X	X	X
Mycogen Seeds	8N678S	NS,SS	--	X	X	X
Nuseed Americas Inc	Badger	CL	X	--	X	X
Nuseed Americas Inc	Badger DMR	CL,DM	X	--	X	X
Nuseed Americas Inc	Badger HO	HO,CL,DM	X	--	X	X
Nuseed Americas Inc	Camaro II	NS,CL,DM	X	--	X	X
Nuseed Americas Inc	Cobalt II	HO,CL,DM	X	--	X	X
Nuseed Americas Inc	Falcon	NS,EX	X	--	X	X
Nuseed Americas Inc	Hornet	HO,CL,DM	X	--	X	X
Nuseed Americas Inc	Talon	NS,EX	X	--	X	X
Proseed	E-21 CL	HO,CL	X	X	X	X
Proseed	E-31 CL	HO,CL	X	X	X	X
Proseed	E-362436	HO	X	X	X	X
Proseed	E-85 CL	HO,CL	X	X	X	X
Scherr Seed AgVenture	AF3H681ES	HO,EX,DM	X	X	X	--
Scherr Seed AgVenture	AF3N692ES	NS,EX,DM	X	X	X	--
Scherr Seed Prosun	3H93DM	HO,CL,DM	X	X	X	--

Company/ Brand	Hybrid	Hybrid Type <sup>1</sup>	Location			
			Eureka	Highmore	Onida	Presho
Scherr Seed Prosun	3N94DM	NS,CL,DM	X	X	X	--
Scherr Seed Prosun	EXF4N14	NS,CL	--	--	X	--
Scherr Seed Prosun	EXF4N15DM	NS,CL,DM	--	--	X	--
Sunopta	4421CL	CL	X	X	X	X
Sunopta	EX25CL	CL	X	X	X	X
Syngenta	3495 NS/CL/DM	NS,CL,DM	X	X	X	X
Syngenta	3732 NS	NS	X	X	X	X
Syngenta	7717 HO/CL/DM	HO,CL,DM	X	X	X	X
Syngenta	NX34240 HO/CL/DM	HO,CL,DM	X	X	X	X
USDA	894 (check)	Trad.	X	X	X	X
USDA	cms HA465/RHA 468	NS	--	X	X	--

<sup>1</sup>Type: HO = High Oleic, NS = NuSun, Trad. = Traditional (linoleic), CL = Clearfield, EX = ExpressSun, DM = Downy Mildew Resistant, SS=Short Stature, HS = High Stearic.

**Table 2. Confection sunflower hybrids tested in South Dakota - 2014.**

Company/ Brand	Hybrid	Hybrid Type <sup>1</sup>	Location	
			Highmore	Onida
CHS	12EXP01	EX	X	X
CHS	14EXP001	Trad	X	X
CHS	14EXP002	CL	X	X
CHS	14EXP03		X	X
CHS	14EXP04		X	X
CHS	RH400CL	CL	X	X
Genosys	12GCF05		X	X
Genosys	12GCF07		X	X
Genosys	12GCF12		X	X
Genosys	12GCF18		X	X
Genosys	14GCF01		X	X
Mycogen Seeds	8C451CP	CL+	X	X
Nuseed Global	5009		X	X
Nuseed Global	JAG	CL	X	X
Nuseed Global	JAGDMR	CL,DM	X	X
Nuseed Global	JAGII	CL	X	X
Nuseed Global	JAGXL	CL	X	X
Nuseed Global	NHW12759		X	X
Nuseed Global	NHW12984		X	X
Nuseed Global	NHW12985		X	X
Nuseed Global	NSK12M018	CL	X	X
Nuseed Global	NSK12M048	CL	X	X
Nuseed Global	X4334		X	X
Nuseed Global	X4417		X	X
Nuseed Global	X5334		X	X
Nuseed Global	X9180	EX	X	X
Nuseed Global	X98578		X	X
Red River Commodities	RRC 2215		X	X
Red River Commodities	RRC 2215 CL	CL	X	X
Red River Commodities	RRC 2217 CP	CL+	X	X
Sunopta	9521		X	X
Sunopta	EX011		X	X
Sunopta	EX041		X	X
USDA	924 (check)		X	X

<sup>1</sup>Type: CL = Clearfield, EX = ExpressSun, DM = Downy Mildew Resistant.

**Table 3. Weather data from sites closest to 2014 South Dakota sunflower test plot locations**

Location-Month	2014 Temperature			Total Precip (in.)	Departure from Normal <sup>1</sup>			
	Avg Max.	Avg Min.	Mean		Max Temp	Min Temp	Avg Temp	Precip %
	----- (°F) -----				----- (°F) -----			
<b><u>Bison*</u></b>								
May	68	42	55	1.51	-1	-1	-1	49
June	71	50	60	8.07	-7	-3	-5	277
July	82	56	69	0.87	-5	-3	-4	37
August	81	59	70	3.26	-5	2	-2	201
September	73	47	60	1.82	-2	0	-1	143
October	63	38	51	0.30	3	4	3	20
<b><u>Onida 4 NW*</u></b>								
May	68.8	44.4	56.6	2.50	-1	0	-1	82
June	74.6	52.6	63.6	5.37	-5	-1	-3	161
July	82.6	56.1	69.4	0.93	-5	-4	-4	35
August	81.0	58.0	69.5	2.64	-5	0	-2	112
September	76.0	48.3	62.2	0.75	0	1	1	42
October	63.6	35.7	49.7	0.59	3	1	2	35
<b><u>Kennebec*</u></b>								
May	71.4	43.3	57.3	3.64	-2	-3	-2	115
June	79.4	54.4	66.9	3.03	-3	-1	-2	90
July	88.2	57.5	72.8	0.24	-2	-5	-3	10
August	84.6	59.3	72.0	2.28	-4	-1	-2	118
September	80.7	49.2	64.9	0.82	2	0	1	46
October	69.5	36.4	53.0	0.20	6	0	3	13
<b><u>Highmore 1 W*</u></b>								
May	68.5	44.3	56.4	3.61	-2	0	-1	131
June	76.3	53.5	64.9	4.01	-3	-1	-2	133
July	82.4	57.4	69.9	1.43	-4	-3	-4	53
August	80.1	58.1	69.1	2.35	-5	0	-3	105
September	76.5	48.8	62.7	0.35	1	0	1	21
October	64.7	39.0	51.9	0.10	4	3	3	7
<b><u>Eureka*</u></b>								
May	67.0	46.3	56.6	2.00	-2	2	0	69
June	74.1	53.9	64.0	4.61	-3	0	-2	126
July	80.1	58.2	69.1	0.24	-4	-1	-3	8
August	78.9	58.6	68.8	3.47	-4	1	-2	146
September	72.7	47.5	60.1	0.45	0	1	1	26
October	61.2	34.3	47.8	0.45	4	0	2	26

\*Weather observations are from sites as close to the actual 2014 test plot sites as available. Temperature and/or precipitation at the actual test plot sites may have differed from the values shown above.

<sup>1</sup>Departures from normal were determined by comparing 2014 observations to 30-yr averages (1981-2010) for each site.



**Table 4. 2014 - Sunflower - Oilseed - Eureka, SD**

Brand	Hybrid	Hybrid Type <sup>1</sup>	Seed Yield		Oil Content	Plant Height	Harv. Moist.	Test Wt.	Lodge	Pop. x1000
			2014	2-yr <sup>2</sup> Avg.						
			----(lb/a)---		%	in.	%	lb/bu	%	plt/a
Croplan by Winfield	Croplan 13-652 CL	HO,CL,DM	1993	--	39.2	71	11.4	29.3	4	18.0
Croplan by Winfield	Croplan 14-572 CL	HO,CL,DM	1984	--	40.3	74	12.6	34.8	3	15.1
Croplan by Winfield	Croplan 3080	NS	2143	--	46.2	64	9.0	30.5	9	18.0
Croplan by Winfield	Croplan 432 E	NS,EX,DM	2400	2467	39.8	70	9.8	32.8	9	18.0
Croplan by Winfield	Croplan 545 CL	NS,CL,DM	2266	--	39.6	72	12.7	32.1	7	18.0
Croplan by Winfield	Croplan 559 CL	NS,CL,DM	2519	2535	42.8	76	10.7	31.6	4	18.0
DuPont Pioneer	P63ME80	NS,EX,DM	1953	2073	45.3	74	10.5	33.2	5	18.0
DuPont Pioneer	P64ME01	NS,EX,DM	2541	--	40.0	81	12.7	31.7	0	18.0
Genosys	11G08	NS	2121	2128	39.2	76	9.8	32.5	9	18.0
Genosys	12E06	HO,DM	2373	--	41.4	78	11.3	34.8	7	18.0
Genosys	12E12	HO,CL,DM	1750	2099	35.2	80	11.7	27.3	5	18.0
Genosys	12E13	HO,CL,DM	2017	2236	39.9	79	10.7	30.6	8	18.0
Genosys	12E14	HO,CL,DM	2062	2429	39.4	80	10.7	31.1	8	18.0
Genosys	12G20	HO,CL	2241	--	39.5	71	9.8	29.4	14	18.0
Genosys	12G25	HO,CL	2345	--	43.5	73	11.0	33.3	8	18.0
Legend Seeds	LSF 9302HOCL	HO,CL	1812	2127	40.4	71	11.2	31.4	6	18.0
Legend Seeds	LSF 9418HOCL	HO,CL	2216	--	41.3	67	10.8	34.0	0	18.0
Legend Seeds	LSF 9426NCL	NS,CL	1709	--	41.4	74	11.5	31.0	27	18.0
Legend Seeds	LSF 9468NCL	NS,CL	2106	--	39.3	66	13.3	30.6	0	18.0
Legend Seeds	LSF 9502	Trad.	2012	--	37.9	74	11.9	27.4	0	18.0
Legend Seeds	LSF 9536HOCL	HO,CL	1756	--	39.5	68	12.8	29.4	13	18.0
Mycogen Seeds	8D310CL	ConOil,CL	2062	--	34.3	76	9.8	31.0	2	18.0
Mycogen Seeds	8H449CLDM	HO,CL,DM	2216	2340	44.8	68	11.3	33.8	1	18.0
Mycogen Seeds	8H570CL	HO,CL	1513	--	44.2	43	10.0	29.7	3	18.0
Mycogen Seeds	8N421CLDM	NS,CL,DM	2020	1937	41.4	71	9.8	29.9	5	18.0
Nuseed Americas Inc	Badger	CL	1404	2105	35.8	85	10.6	28.6	15	18.0
Nuseed Americas Inc	Badger DMR	CL,DM	2125	--	37.3	79	9.7	29.8	10	18.0

Brand	Hybrid	Hybrid Type <sup>1</sup>	Seed Yield		Oil Content	Plant Height	Harv. Moist.	Test Wt.	Lodge	Pop. x1000
			2014	2-yr <sup>2</sup> Avg.						
			----(lb/a)----		%	in.	%	lb/bu	%	plf/a
Nuseed Americas Inc	Badger HO	HO,CL,DM	1649	2191	33.2	73	9.8	29.9	5	18.0
Nuseed Americas Inc	Camaro II	NS,CL,DM	2369	--	43.2	69	12.3	33.2	10	18.0
Nuseed Americas Inc	Cobalt II	HO,CL,DM	1975	--	41.1	69	11.0	32.3	9	18.0
Nuseed Americas Inc	Falcon	NS,EX	1878	2141	42.5	67	12.1	32.7	11	18.0
Nuseed Americas Inc	Hornet	HO,CL,DM	1990	--	40.5	71	12.6	29.0	21	18.0
Nuseed Americas Inc	Talon	NS,EX	1904	--	38.8	67	10.6	29.0	10	18.0
Proseed	E-21 CL	HO,CL	1938	2058	37.4	77	12.6	27.6	5	18.0
Proseed	E-31 CL	HO,CL	2138	--	40.1	75	11.0	31.1	7	18.0
Proseed	E-362436	HO	2383	--	41.7	87	11.3	33.9	4	18.0
Proseed	E-85 CL	HO,CL	2072	--	40.3	81	10.8	28.4	3	18.0
Scherr Seed AgVenture	AF3H681ES	HO,EX,DM	2309	--	41.5	81	12.2	33.6	3	18.0
Scherr Seed AgVenture	AF3N692ES	NS,EX,DM	2552	--	42.6	81	11.9	32.5	2	18.0
Scherr Seed Prosun	3H93DM	HO,CL,DM	1563	--	41.6	69	10.6	31.7	9	18.0
Scherr Seed Prosun	3N94DM	NS,CL,DM	2270	--	42.3	72	11.7	34.3	11	18.0
Sunopta	4421CL	CL	2083	2348	35.4	78	10.9	30.4	0	18.0
Sunopta	EX25CL	CL	1550	--	36.8	46	10.8	28.5	1	18.0
Syngenta	3495 NS/CL/DM	NS,CL,DM	2334	2413	42.5	76	10.5	34.6	5	18.0
Syngenta	3732 NS	NS	2323	--	43.5	70	10.5	31.6	8	18.0
Syngenta	7717 HO/CL/DM	HO,CL,DM	2489	--	41.8	71	10.8	33.0	6	18.0
Syngenta	NX34240 HO/CL/DM	HO,CL,DM	2277	--	38.2	78	11.8	32.3	10	18.0
USDA	894 (check)	Trad.	1765	1699	44.3	67	10.4	31.9	4	18.0
Grand Mean			2041	2196	40.4	72	11.0	31.2	7	17.9
LSD 5%			319	291	1.9	6	0.9	1.9	11	0.7
C.V.			11.2	12.5	3.3	5.6	6.0	4.3	122.5	2.8

<sup>1</sup>Type: HO = High Oleic, NS = NuSun, Trad = Traditional (linoleic), CL = Clearfield, EX = ExpressSun, DM = Downy Mildew Resistant, SS=Short Stature, HS = High Stearic.

<sup>2</sup>2-yr average yield is from 2012 & 2014.  
Yield is reported at 10% moisture. Oils adjusted for oleic acid content.  
Planted June 10, 2014. Harvested Oct. 25, 2014. Previous crop = corn.

**Table 5. 2014 - Sunflower - Oilseed - Highmore, SD**

Brand	Hybrid	Hybrid Type <sup>1</sup>	Seed Yield			Oil Content	Plant Height	Harv. Moist.	Test Wt.	Lodge	Pop. x1000
			2014	2-yr Avg.	3-yr Avg.						
			-----lb/a-----			(%)	(in)	(%)	lb/bu	(%)	(plt/a)
Croplan by Winfield	Croplan 13-652 CL	HO,CL,DM	1286	--	--	42.4	57	10.2	30.6	7	9.4
Croplan by Winfield	Croplan 14-572 CL	HO,CL,DM	2188	--	--	40.7	65	10.0	33.9	0	14.7
Croplan by Winfield	Croplan 3080	NS	1935	1924	--	46.8	57	6.4	32.7	8	18.0
Croplan by Winfield	Croplan 432 E	NS,EX,DM	1983	2016	2197	41.7	60	7.8	34.0	13	18.0
Croplan by Winfield	Croplan 545 CL	NS,CL,DM	2525	--	--	43.9	62	9.4	35.1	8	18.0
Croplan by Winfield	Croplan 559 CL	NS,CL,DM	2411	2270	2339	45.9	67	7.1	30.5	10	18.0
DuPont Pioneer	P63ME80	NS,EX,DM	1694	1724	1782	44.2	60	5.1	31.3	10	18.0
DuPont Pioneer	P64ME01	NS,EX,DM	2420	--	--	41.8	62	9.2	33.3	11	18.0
Genosys	11G08	NS	1817	--	--	41.5	62	6.0	34.2	4	16.8
Genosys	12E06	HO,DM	1428	--	--	42.7	65	8.7	35.0	28	18.0
Genosys	12E12	HO,CL,DM	1909	--	--	39.5	65	8.0	29.8	0	18.0
Genosys	12E13	HO,CL,DM	2053	--	--	41.4	56	6.1	30.1	3	18.0
Genosys	12E14	HO,CL,DM	1621	--	--	42.6	70	6.7	30.2	33	18.0
Genosys	12G20	HO,CL	2035	--	--	42.8	59	5.2	33.0	10	18.0
Genosys	12G25	HO,CL	2026	--	--	45.0	64	6.2	31.0	11	18.0
Legend Seeds	LSF 9302HOCL	HO,CL	1259	1433	1890	42.7	56	7.3	31.3	11	16.8
Legend Seeds	LSF 9418HOCL	HO,CL	1541	1844	--	42.4	55	7.3	28.6	4	15.3
Legend Seeds	LSF 9426NCL	NS,CL	2361	2351	--	43.7	60	9.9	38.3	10	18.0
Legend Seeds	LSF 9468NCL	NS,CL	2191	2198	--	42.6	60	9.1	32.5	10	18.0
Legend Seeds	LSF 9502	Trad.	1825	--	--	42.8	57	7.0	30.5	12	18.0
Legend Seeds	LSF 9536HOCL	HO,CL	2248	2157	--	42.8	64	8.1	32.3	4	18.0
Mycogen Seeds	8H449CLDM	HO,CL,DM	1532	1876	2059	45.3	55	7.3	37.7	53	18.0
Mycogen Seeds	8N421CLDM	NS,CL,DM	1819	1928	2132	44.4	62	6.5	32.1	20	18.0
Mycogen Seeds	8N510	NS	2642	2379	2446	43.8	56	7.0	34.0	0	18.0
Mycogen Seeds	8N668S	NS,SS	2484	2496	--	44.6	36	14.1	34.7	3	18.0
Mycogen Seeds	8N678S	SS	1865	--	--	45.6	46	9.0	36.5	5	18.0
Proseed	E-21 CL	HO,CL	2161	2134	2268	40.1	67	8.0	31.6	12	18.0
Proseed	E-31 CL	HO,CL	2038	1953	--	41.5	61	5.6	29.6	0	18.0
Proseed	E-362436	HO	2149	2028	--	42.4	68	8.2	39.0	10	18.0
Proseed	E-85 CL	HO,CL	1555	1651	--	42.4	64	5.8	31.9	27	18.0
Scherr Seed AgVenture	AF3H681ES	HO,EX,DM	2566	--	--	42.6	67	9.4	34.9	5	18.0
Scherr Seed AgVenture	AF3N692ES	NS,EX,DM	1505	--	--	43.7	65	7.8	32.1	36	18.0
Scherr Seed Prosun	3H93DM	HO,CL,DM	1736	--	--	42.5	59	6.6	30.9	6	18.0
Scherr Seed Prosun	3N94DM	NS,CL,DM	2575	--	--	44.9	63	7.3	33.9	4	18.0
Sunopta	4421CL	HO,CL	1481	1773	--	36.4	65	7.5	31.2	10	18.0
Sunopta	EX25CL	CL	1722	--	--	38.8	39	9.8	34.8	6	18.0
Syngenta	3495 NS/CL/DM	NS,CL,DM	1496	--	--	42.1	57	7.3	31.6	17	18.0
Syngenta	3732 NS	NS	2285	--	--	43.6	51	8.1	32.5	10	18.0
Syngenta	7717 HO/CL/DM	HO,CL,DM	1752	--	--	44.7	62	6.6	32.4	13	18.0
Syngenta	NX34240 HO/CL/DM	HO,CL,DM	2205	--	--	42.2	63	6.8	29.7	9	18.0

Brand	Hybrid	Hybrid Type <sup>1</sup>	Seed Yield			Oil Content (%)	Plant Height (in)	Harv. Moist. (%)	Test Wt. lb/bu	Lodge (%)	Pop. x1000 (plt/a)
			2014	2-yr Avg.	3-yr Avg.						
USDA	894 (check)	Trad.	1509	1663	1956	43.9	58	7.4	32.2	12	15.6
USDA	cms HA465/RHA 468	NS	1647	--	--	41.3	60	7.2	28.5	12	18.0
Grand Mean			1914	1989	2119	42.8	59	7.7	32.4	10	17.4
LSD 5%			540	294	245	1.5	5	1.9	3.5	21	2.7
C.V.			17.4	14.1	14.2	2.2	6.0	17.3	6.6	126.9	9.7

<sup>1</sup>Type: HO = High Oleic, NS = NuSun, Trad = Traditional (linoleic), CL = Clearfield, EX = ExpressSun, DM = Downy Mildew Resistant, SS=Short Stature, HS = High Stearic.  
Yield is reported at 10% moisture. Oils adjusted for oleic acid content.  
Planted June 12, 2014. Harvested Oct. 20, 2014. Previous crop = wheat.

Table 6. 2014 - Sunflower - Oilseed - Onida, SD

Brand	Hybrid	Hybrid Type <sup>1</sup>	Seed Yield			Oil Content	Days to Flwr	Plant Height	Harv. Moist.	Test Wt.	Lodge	Hulling Screen Test <sup>2</sup>
			2014	2-yr Avg.	3-yr Avg.							
			------(lb/a)-----			(%)	(in)	(%)	lb/bu	(%)		
Croplan by Winfield	Croplan 13-652 CL	HO,CL,DM	2610	--	--	43.8	66	72	6.4	31.6	1.1	NT
Croplan by Winfield	Croplan 14-572 CL	HO,CL,DM	2763	--	--	42.5	61	78	7.0	36.9	0.0	NT
Croplan by Winfield	Croplan 3080	NS	1959	1702	--	46.3	60	65	6.2	30.2	29.7	NT
Croplan by Winfield	Croplan 432 E	NS,EX,DM	2972	2297	2319	41.8	58	68	7.2	33.2	2.0	Excel
Croplan by Winfield	Croplan 545 CL	NS,CL,DM	2807	--	--	43.6	65	69	6.7	35.1	0.1	NT
Croplan by Winfield	Croplan 559 CL	NS,CL,DM	3129	--	--	45.3	64	77	7.0	31.9	1.6	NT
DuPont Pioneer	P63ME80	NS,EX,DM	2510	2150	2160	44.5	62	71	7.2	31.7	1.2	NT
DuPont Pioneer	P64ME01	NS,EX,DM	2954	--	--	42.8	65	72	7.9	34.2	0.9	NT
Genosys	11G08	NS	2560	1927	1826	40.0	63	72	6.8	32.6	0.3	NT
Genosys	12E06	HO,DM	2683	--	--	42.9	61	83	7.2	36.1	5.7	NT
Genosys	12E12	HO,CL,DM	2478	1892	1947	39.9	63	80	7.3	32.0	2.5	NT
Genosys	12E13	HO,CL,DM	2109	1924	1929	40.5	63	71	6.8	32.4	2.2	NT
Genosys	12E14	HO,CL,DM	2220	2167	2195	41.1	63	80	7.1	31.7	2.9	NT
Genosys	12G20	HO,CL	2519	1893	--	42.6	62	69	6.3	34.9	5.4	NT
Genosys	12G25	HO,CL	2771	--	--	45.5	63	72	6.7	32.3	4.3	NT
Legend Seeds	LSF 9302HOCL	HO,CL	1695	1688	1962	41.3	64	61	6.1	28.4	1.1	Fail
Legend Seeds	LSF 9418HOCL	HO,CL	2120	1984	--	42.2	61	61	6.3	33.3	2.7	Fail
Legend Seeds	LSF 9426NCL	NS,CL	2613	2491	--	44.1	63	79	6.6	36.7	1.9	Fail
Legend Seeds	LSF 9468NCL	NS,CL	2644	2244	--	44.6	67	67	6.9	31.5	2.6	Fail
Legend Seeds	LSF 9502	Trad.	2164	--	--	43.3	66	69	5.7	28.3	8.4	Fail
Legend Seeds	LSF 9536HOCL	HO,CL	2469	2288	--	44.4	68	70	6.6	32.4	5.0	Fail
Mycogen Seeds	8H449CLDM	HO,CL,DM	2765	--	--	47.0	62	70	6.3	35.5	0.7	NT
Mycogen Seeds	8N421CLDM	NS,CL,DM	2273	2139	2165	42.9	62	72	6.1	32.4	7.2	NT
Mycogen Seeds	8N510	NS	2614	2212	2229	42.7	64	68	6.1	31.5	5.8	NT
Mycogen Seeds	8N668S	NS,SS	2461	--	--	46.2	66	47	6.8	34.3	0.8	NT
Mycogen Seeds	8N678S	NS,SS	2151	--	--	47.6	66	50	6.6	35.8	3.5	NT
Nuseed Americas	Badger	CL	2363	1743	1909	39.3	63	78	6.5	31.6	5.5	NT
Nuseed Americas	Badger DMR	CL,DM	2319	1810	--	37.8	59	76	6.3	30.7	4.0	NT

Brand	Hybrid	Hybrid Type <sup>1</sup>	Seed Yield			Oil Content (%)	Days to Flwr	Plant Height (in)	Harv. Moist. (%)	Test Wt. lb/bu	Lodge (%)	Hulling Screen Test <sup>2</sup>
			2014	2-yr Avg.	3-yr Avg.							
Nuseed Americas	Badger HO	HO,CL,DM	2110	1662	1801	36.4	58	71	6.6	31.8	3.6	NT
Nuseed Americas	Camaro II	NS,CL,DM	2668	2438	--	44.8	63	74	6.4	36.2	2.1	NT
Nuseed Americas	Cobalt II	HO,CL,DM	1811	1779	--	43.3	60	69	6.2	32.7	0.0	NT
Nuseed Americas	Falcon	NS,EX	2427	1984	1995	45.5	63	68	6.7	34.4	2.1	NT
Nuseed Americas	Hornet	HO,CL,DM	2577	2115	--	42.9	66	75	6.5	33.5	3.6	NT
Nuseed Americas	Talon	NS,EX	2032	--	--	41.6	61	74	6.7	29.5	8.9	NT
Proseed	E-21 CL	HO,CL	2268	1740	1961	38.4	62	77	7.5	30.2	0.5	NT
Proseed	E-31 CL	HO,CL	2474	1964	--	40.2	63	74	6.7	30.6	6.0	NT
Proseed	E-362436	HO	2655	1881	--	41.2	62	81	7.3	36.9	0.6	NT
Proseed	E-85 CL	HO,CL	2802	2287	--	41.7	63	81	6.7	32.0	0.0	NT
Scherr Seed AgVenture	AF3H681ES	HO,EX,DM	2788	--	--	43.6	63	79	7.3	34.3	0.0	NT
Scherr Seed AgVenture	AF3N692ES	NS,EX,DM	2907	--	--	44.4	64	78	7.2	34.3	1.1	Good
Scherr Seed Prosun	3H93DM	HO,CL,DM	2185	--	--	43.3	60	69	6.5	31.8	6.2	NT
Scherr Seed Prosun	3N94DM	NS,CL,DM	2849	--	--	45.6	63	73	7.1	37.9	0.4	Fail
Scherr Seed Prosun	EXF4N14	NS,CL	2648	--	--	43.4	66	70	7.5	33.5	2.3	NT
Scherr Seed Prosun	EXF4N15DM	NS,CL,DM	2771	--	--	44.1	64	67	7.5	33.6	1.6	NT
Sunopta	4421CL	CL	2087	2103	1984	38.4	63	76	6.8	32.2	2.6	NT
Sunopta	EX25CL	CL	2352	--	--	41.7	66	49	6.9	33.1	0.0	NT
Syngenta	3495 NS/CL/DM	NS,CL,DM	2202	--	--	42.5	63	70	7.0	34.7	2.3	NT
Syngenta	3732 NS	NS	2584	--	--	46.2	63	67	6.7	34.0	6.7	NT
Syngenta	7717 HO/CL/DM	HO,CL,DM	2070	--	--	43.9	61	71	5.9	34.9	10.0	NT
Syngenta	NX34240 HO/CL/DM	HO,CL,DM	2697	--	--	42.0	63	77	6.6	30.2	3.5	NT
USDA	894 (check)	Trad.	1896	--	--	44.9	61	62	7.0	32.6	1.8	NT
USDA	cms HA465/RHA 468	NS	2121	--	--	41.5	62	78	6.8	34.2	6.6	NT
Grand Mean			2416	2019	2027	42.9	63	70	6.8	32.9	3.2	
LSD 5% C.V.			332 9.8	284 13.2	254 14.1	1.3 2.2	1 1.0	4 4.3	0.6 6.1	2.8 6.1	7.5 166.1	

<sup>1</sup>Type: HO = High Oleic, NS = NuSun, Trad = Traditional (linoleic), CL = Clearfield, EX = ExpressSun, DM = Downy Mildew Resistant, SS=Short Stature, HS = High Stearic.

<sup>2</sup>Hulling screen test: Excel = ≥ 65% of seed passes over a 14/64 screen; Good = ≥ 75% of seed passes over a 13/64 screen; NT=not tested. Yield is reported at 10% moisture. Oils adjusted for oleic acid content.

Planted June 9, 2014. Harvested Oct. 27, 2014. Previous crop = wheat.

**Table 7. 2014 - Sunflower - Oilseed - Presho, SD**

Brand	Hybrid	Hybrid Type <sup>1</sup>	Seed Yield			Oil Content	Plant Height	Harv. Moist.	Test Wt.	Pop. x1000
			2014	2-yr Avg.	3-yr Avg.					
			----- (lb/a) -----			(%)	(in)	(%)	lb/bu	(plt/a)
Croplan by Winfield	Croplan 13-652 CL	HO,CL,DM	1521	--	--	39.7	57	9.8	27.9	14.6
Croplan by Winfield	Croplan 14-572 CL	HO,CL,DM	1576	--	--	39.1	62	11.8	32.6	9.3
Croplan by Winfield	Croplan 3080	NS	1749	1922	--	45.5	50	7.6	30.7	18.0
Croplan by Winfield	Croplan 432 E	NS,EX,DM	1825	2057	2010	41.8	54	8.7	33.0	18.0
Croplan by Winfield	Croplan 545 CL	NS,CL,DM	1717	--	--	39.1	57	11.9	31.2	18.0
Croplan by Winfield	Croplan 559 CL	NS,CL,DM	1920	2066	2173	43.0	58	10.2	30.7	18.0
DuPont Pioneer	P63ME80	NS,EX,DM	1842	1886	1941	43.3	57	10.3	30.8	18.0
DuPont Pioneer	P64ME01	NS,EX,DM	1809	--	--	40.0	60	13.2	30.5	18.0
Genosys	11G08	NS	1858	--	--	40.4	56	8.5	32.4	18.0
Genosys	12E06	HO,DM	1823	--	--	42.4	65	10.7	35.3	18.0
Genosys	12E12	HO,CL,DM	1536	--	--	35.2	57	12.7	29.4	18.0
Genosys	12E13	HO,CL,DM	1721	--	--	38.2	56	10.3	30.2	18.0
Genosys	12E14	HO,CL,DM	1778	--	--	37.6	61	10.8	28.6	18.0
Genosys	12G20	HO,CL	1697	--	--	43.3	51	8.5	30.8	18.0
Genosys	12G25	HO,CL	1935	--	--	44.8	54	10.3	33.2	16.0
Legend Seeds	LSF 9302HOCL	HO,CL	1737	1684	1690	39.8	50	12.0	30.0	18.0
Legend Seeds	LSF 9418HOCL	HO,CL	1465	1747	--	39.7	52	10.8	28.3	18.0
Legend Seeds	LSF 9426NCL	NS,CL	1824	1994	--	40.6	58	12.0	32.0	18.0
Legend Seeds	LSF 9468NCL	NS,CL	1677	1834	--	41.1	54	18.8	29.9	18.0
Legend Seeds	LSF 9502	Trad.	1653	--	--	38.7	56	10.1	25.9	18.0
Legend Seeds	LSF 9536HOCL	HO,CL	1927	1935	--	41.5	57	13.9	28.6	18.0
Mycogen Seeds	8H859CL	HO,CL	1509	--	--	41.3	58	10.2	31.7	18.0
Mycogen Seeds	8N510	NS	1779	1806	2012	39.6	53	10.8	29.7	18.0
Mycogen Seeds	8N668S	NS,SS	1660	1748	--	44.7	37	18.8	31.8	17.4
Mycogen Seeds	8N678S	NS,SS	1482	--	--	45.0	42	13.9	31.4	18.0
Nuseed	Badger	CL	1580	1579	1784	36.6	58	10.2	28.3	18.0
Americas Inc										
Nuseed	Badger DMR	CL,DM	1608	1733	--	35.5	60	9.5	30.3	18.0
Americas Inc										
Nuseed	Badger HO	HO,CL,DM	1610	1595	1688	35.0	56	10.8	28.8	18.0
Americas Inc										
Nuseed	Camaro II	NS,CL,DM	1444	1732	--	41.9	54	11.3	32.8	18.0
Americas Inc										
Nuseed	Cobalt II	HO,CL,DM	1266	1408	--	39.7	53	9.5	30.1	18.0
Americas Inc										
Nuseed	Falcon	NS,EX	1504	1649	1728	41.3	53	10.3	30.5	17.1
Americas Inc										
Nuseed	Hornet	HO,CL,DM	1820	2001	--	40.2	56	11.7	30.0	17.4
Americas Inc										
Nuseed	Talon	NS,EX	1565	--	--	39.4	53	11.7	28.6	18.0
Americas Inc										

Brand	Hybrid	Hybrid Type <sup>1</sup>	Seed Yield			Oil Content	Plant Height	Harv. Moist.	Test Wt.	Pop. x1000
			2014	2-yr Avg.	3-yr Avg.					
			----- (lb/a) -----			(%)	(in)	(%)	lb/bu	(plt/a)
Proseed	E-21 CL	HO,CL	1585	1617	1793	35.6	57	13.4	29.4	18.0
Proseed	E-31 CL	HO,CL	1453	1449	--	38.1	56	10.6	28.4	17.1
Proseed	E-362436	HO	1813	1866	--	42.5	63	10.6	33.0	18.0
Proseed	E-85 CL	HO,CL	1630	1788	--	38.2	61	10.7	28.1	18.0
Sunopta	4421CL	CL	1639	1745	--	34.9	59	8.3	29.4	18.0
Sunopta	EX25CL	CL	1574	--	--	38.9	42	10.2	29.6	18.0
Syngenta	3495 NS/CL/DM	NS,CL,DM	1712	--	--	41.3	56	8.2	33.4	18.0
Syngenta	3732 NS	NS	1832	--	--	45.0	55	10.4	32.3	18.0
Syngenta	7717 HO/CL/DM	HO,CL,DM	1680	--	--	41.5	56	8.7	32.0	18.0
Syngenta	NX34240 HO/CL/DM	HO,CL,DM	1880	--	--	40.2	59	10.3	30.5	18.0
USDA	894 (check)	Trad.	1499	1421	1557	43.8	46	9.8	30.4	18.0
Grand Mean			1641	1761	1838	40.4	55	11.1	30.5	17.6
LSD 5%			250	165	152	1.0	3	1.2	1.5	1.6
C.V.			10.9	9.6	10.6	1.8	4.0	8.0	3.5	6.6

<sup>1</sup>Type: HO = High Oleic, NS = NuSun, Trad = Traditional (linoleic), CL = Clearfield, EX = ExpressSun, DM = Downy Mildew Resistant. SS=Short Stature. HS = High Stearic.  
Yield is reported at 10% moisture. Oils adjusted for oleic acid content.  
Planted June 24, 2014. Harvested Oct. 29, 2014. Previous crop = corn.



**Table 8. 2014 Sunflower - Confection - Highmore, SD (1 of 2)**

Company/Brand	Hybrid	Hybrid Type <sup>1</sup>	Seed Yield			Plant Height	Harv. Moist.	Test Wt.
			2014	2-yr Avg.	3-yr Avg.			
			------(lbs/a)-----			(inch)	(%)	(lb/bu)
CHS	12EXP01	EX	2169	1934	2067	73	7.5	21.2
CHS	14EXP001	Trad	1557	--	--	72	5.6	21.0
CHS	14EXP002	CL	1986	--	--	71	6.5	21.7
CHS	14EXP03		1786	--	--	72	7.5	18.9
CHS	14EXP04		1890	--	--	74	7.6	20.2
CHS	RH400CL	CL	1514	--	--	58	5.6	19.9
Genosys	12GCF05		1037	1189	--	72	7.3	17.8
Genosys	12GCF07		1166	--	--	68	7.4	17.6
Genosys	12GCF12		1532	1472	--	86	8.2	20.4
Genosys	12GCF18		987	--	--	67	8.0	18.6
Genosys	14GCF01		1167	--	--	74	5.3	17.9
Mycogen Seeds	8C451CP	CL+	1795	1714	1830	66	6.2	19.2
Nuseed Global	5009		1523	1678	1841	70	7.4	21.7
Nuseed Global	JAG	CL	2100	1932	1993	64	6.0	18.2
Nuseed Global	JAGDMR	CL,DM	2238	1972	1933	62	4.9	21.2
Nuseed Global	JAGII	CL	1692	1618	1809	68	6.0	19.7
Nuseed Global	JAGXL	CL	1619	1496	--	75	6.8	17.4
Nuseed Global	NHW12759		1532	--	--	64	5.1	18.6
Nuseed Global	NHW12984		1384	--	--	69	11.1	22.5
Nuseed Global	NHW12985		1574	--	--	66	6.4	18.7
Nuseed Global	NSK12M018	CL	1814	--	--	70	8.0	21.7
Nuseed Global	NSK12M048	CL	1725	1697	--	71	5.5	17.2
Nuseed Global	X4334		1651	1350	1646	69	6.6	18.6
Nuseed Global	X4417		1772	1559	1683	61	5.5	18.2
Nuseed Global	X5334		1378	--	--	73	7.1	20.1
Nuseed Global	X9180	EX	2336	--	--	64	6.9	21.6
Nuseed Global	X98578		1472	1465	--	71	6.5	19.2
Red River Commod.	RRC 2215		1794	1945	2039	71	6.9	18.8
Red River Commod.	RRC 2215 CL	CL	1611	1563	1707	76	5.1	19.2
Red River Commod.	RRC 2217 CP	CL+	1893	1670	--	70	7.1	19.2
Sunopta	9521		1720	1591	--	74	5.1	18.6
Sunopta	EX011		2354	--	--	68	9.0	22.4
Sunopta	EX041		1408	--	--	73	6.1	22.9
USDA	924 (check)		1258	1216	1270	72	3.7	18.4
Grand Mean			1660	1615	1802	70	6.6	19.7
LSD 5%			524	317	237	6	1.4	3.0
C.V.			19.4	18.4	16.6	5.6	14.9	9.4

<sup>1</sup>Type: CL = Clearfield, EX = ExpressSun, DM = Downy Mildew Resistant.

Seed yield is reported at 10% moisture.

Planted June 12, 2014. Harvested Oct. 20, 2014. Previous crop = wheat.

Table 8. 2014 Sunflower - Confection - Highmore, SD (2 of 2)

Company/Brand	Hybrid	Hybrid Type <sup>1</sup>	Lodge (%)	Pop. x1000 (plt/a)	Seed Over Screen			Nut-meat (%)
					22/64	20/64	18/64	
					------(%)-----			
CHS	12EXP01	EX	0.0	18.0	64	80	86	49
CHS	14EXP001	Trad	3.2	16.5	58	79	83	45
CHS	14EXP002	CL	2.7	18.0	46	65	76	52
CHS	14EXP03		2.2	18.0	60	79	86	46
CHS	14EXP04		2.2	18.0	67	81	86	47
CHS	RH400CL	CL	22.0	18.0	48	70	82	49
Genosys	12GCF05		1.1	18.0	51	68	76	47
Genosys	12GCF07		1.6	18.0	42	68	81	59
Genosys	12GCF12		2.7	18.0	60	72	77	53
Genosys	12GCF18		1.1	17.1	60	78	86	54
Genosys	14GCF01		7.5	18.0	49	72	84	50
Mycogen Seeds	8C451CP	CL+	3.8	18.0	54	71	78	54
Nuseed Global	5009		2.2	18.0	63	80	88	46
Nuseed Global	JAG	CL	9.1	18.0	57	75	85	54
Nuseed Global	JAGDMR	CL,DM	6.5	18.0	53	77	89	51
Nuseed Global	JAGII	CL	4.8	18.0	58	76	85	56
Nuseed Global	JAGXL	CL	3.2	18.0	48	67	80	52
Nuseed Global	NHW12759		4.3	18.0	49	68	79	51
Nuseed Global	NHW12984		0.0	4.7	66	82	88	52
Nuseed Global	NHW12985		0.5	17.1	56	72	78	52
Nuseed Global	NSK12M018	CL	0.5	18.0	58	76	84	50
Nuseed Global	NSK12M048	CL	2.7	18.0	65	77	82	49
Nuseed Global	X4334		2.7	18.0	46	65	76	52
Nuseed Global	X4417		8.6	18.0	63	78	85	51
Nuseed Global	X5334		3.8	16.5	63	78	83	49
Nuseed Global	X9180	EX	6.5	18.0	40	67	85	57
Nuseed Global	X98578		5.4	18.0	55	76	85	50
Red River Commod.	RRC 2215		4.3	18.0	56	71	77	51
Red River Commod.	RRC 2215 CL	CL	6.5	18.0	50	70	79	55
Red River Commod.	RRC 2217 CP	CL+	3.2	18.0	57	74	82	55
Sunopta	9521		4.8	18.0	59	77	84	51
Sunopta	EX011		0.0	13.1	72	84	87	46
Sunopta	EX041		3.8	18.0	64	77	81	45
USDA	924 (check)		6.5	18.0	9	22	54	58
Grand Mean			4.1	17.3	55	73	82	51
LSD 5%			ns	2.6	13	9	6	5
C.V.			143.1	9.3	11.9	5.9	3.9	4.7

<sup>1</sup>Type: CL = Clearfield, EX = ExpressSun, DM = Downy Mildew Resistant.

Seed yield is reported at 10% moisture.

Planted June 12, 2014. Harvested Oct. 20, 2014. Previous crop = wheat.

**Table 9. 2014 Sunflower - Confection - Onida, SD (1 of 2)**

Company/Brand	Hybrid	Hybrid Type <sup>1</sup>	Seed Yield			Days to Flower	Plant Height (inch)	Harv. Moist. (%)
			2014	2-yr Avg.	3-yr Avg.			
			----- (lbs/a) -----					
CHS	12EXP01	EX	2406	2228	2313	66	74	8.6
CHS	14EXP001	Trad	2319	--	--	64	81	7.6
CHS	14EXP002	CL	2789	--	--	65	81	8.3
CHS	14EXP03		1843	--	--	67	77	8.8
CHS	14EXP04		2099	--	--	66	77	8.4
CHS	RH400CL	CL	1724	--	--	60	69	7.7
Genosys	12GCF05		1378	1479	1512	71	81	8.0
Genosys	12GCF07		1847	--	--	70	81	8.6
Genosys	12GCF12		1495	1689	--	68	86	8.6
Genosys	12GCF18		1649	--	--	71	78	8.8
Genosys	14GCF01		1439	--	--	62	80	5.3
Mycogen Seeds	8C451CP	CL+	2327	2004	2028	67	75	6.4
Nuseed Global	5009		2007	1886	1896	67	77	9.3
Nuseed Global	JAG	CL	2279	2152	2136	61	74	7.0
Nuseed Global	JAGDMR	CL,DM	1934	1851	1836	58	71	7.4
Nuseed Global	JAGII	CL	1657	1644	1728	62	75	9.3
Nuseed Global	JAGXL	CL	1858	1734	--	64	84	8.8
Nuseed Global	NHW12759		1906	--	--	62	69	8.7
Nuseed Global	NHW12984		1670	--	--	67	78	13.8
Nuseed Global	NHW12985		1921	--	--	66	79	8.0
Nuseed Global	NSK12M018	CL	2194	--	--	67	83	9.3
Nuseed Global	NSK12M048	CL	2403	1946	--	64	85	8.0
Nuseed Global	X4334		2309	1837	1879	67	81	8.9
Nuseed Global	X4417		1598	1363	1531	60	64	6.4
Nuseed Global	X5334		2114	--	--	65	79	8.5
Nuseed Global	X9180	EX	2564	--	--	61	73	6.6
Nuseed Global	X98578		2172	1590	--	68	81	8.0
Red River Commod.	RRC 2215		2636	2492	2315	67	78	7.0
Red River Commod.	RRC 2215 CL	CL	2761	2314	2334	63	81	7.3
Red River Commod.	RRC 2217 CP	CL+	2283	2032	--	67	77	7.6
Sunopta	9521		2642	2369	--	64	76	8.4
Sunopta	EX011		2309	--	--	66	79	7.6
Sunopta	EX041		2374	--	--	64	78	6.6
USDA	924 (check)		1168	1014	1122	64	82	5.4
Grand Mean			2061	1868	1886	65	78	8.0
LSD 5%			473	328	268	1	4	2.0
C.V.			16.4	17.3	17.3	1.0	4.1	17.9

<sup>1</sup>Type: CL = Clearfield, EX = ExpressSun, DM = Downy Mildew Resistant.

Seed yield is reported at 10% moisture.

Planted June 6, 2014. Harvested Oct. 27, 2014. Previous crop = wheat.

Table 9. 2014 Sunflower - Confection - Onida, SD (2 of 2)

Company/Brand	Hybrid	Hybrid Type <sup>1</sup>	Test Wt. (lb/bu)	Lodge (%)	Pop. x1000 (Pit/A)	Seed Over Screen			Nut- meat (%)
						22/64	20/64	18/64	
						------(%)-----			
CHS	12EXP01	EX	21.3	2.0	18.0	66	76	78	51
CHS	14EXP001	Trad	19.1	2.8	18.0	74	84	86	49
CHS	14EXP002	CL	18.5	2.8	18.0	54	68	74	53
CHS	14EXP03		23.9	3.2	18.0	64	77	82	46
CHS	14EXP04		23.3	3.2	18.0	71	82	85	49
CHS	RH400CL	CL	20.8	10.1	18.0	67	80	84	53
Genosys	12GCF05		19.2	0.8	18.0	50	68	77	56
Genosys	12GCF07		20.7	0.0	18.0	48	67	77	55
Genosys	12GCF12		22.1	6.9	18.0	53	65	70	52
Genosys	12GCF18		22.4	0.0	18.0	57	76	85	55
Genosys	14GCF01		19.6	12.5	18.0	58	78	87	53
Mycogen Seeds	8C451CP	CL+	20.4	1.6	18.0	47	68	77	55
Nuseed Global	5009		19.7	1.6	18.0	56	76	86	52
Nuseed Global	JAG	CL	22.5	8.5	18.0	60	78	85	56
Nuseed Global	JAGDMR	CL,DM	22.6	10.5	18.0	55	75	83	54
Nuseed Global	JAGII	CL	21.7	15.3	18.0	60	74	82	56
Nuseed Global	JAGXL	CL	19.3	11.7	18.0	52	74	84	52
Nuseed Global	NHW12759		18.6	8.5	18.0	72	80	84	52
Nuseed Global	NHW12984		22.1	0.0	10.8	64	79	85	50
Nuseed Global	NHW12985		18.2	2.0	18.0	58	67	71	55
Nuseed Global	NSK12M018	CL	21.6	6.5	18.0	54	76	83	50
Nuseed Global	NSK12M048	CL	18.4	3.6	18.0	71	83	86	55
Nuseed Global	X4334		22.0	4.8	18.0	60	69	76	54
Nuseed Global	X4417		19.5	16.5	18.0	70	79	81	54
Nuseed Global	X5334		23.2	9.3	18.0	59	78	83	54
Nuseed Global	X9180	EX	18.8	5.2	18.0	43	68	83	62
Nuseed Global	X98578		19.9	3.2	18.0	70	82	86	51
Red River Commod.	RRC 2215		20.7	1.2	18.0	60	74	77	53
Red River Commod.	RRC 2215 CL	CL	23.4	1.2	18.0	68	81	85	57
Red River Commod.	RRC 2217 CP	CL+	20.7	0.8	18.0	63	76	81	58
Sunopta	9521		20.4	4.4	18.0	73	81	85	51
Sunopta	EX011		22.0	1.2	18.0	73	83	86	52
Sunopta	EX041		19.9	1.4	16.9	72	79	81	46
USDA	924 (check)		24.1	10.9	18.0	16	33	63	58
Grand Mean			20.9	5.1	17.8	60	75	81	53
LSD 5%			2.9	5.2	ns	13	10	8	4
C.V.			9.8	71.6	2.3	11.0	6.9	4.7	3.5

<sup>1</sup>Type: CL = Clearfield, EX = ExpressSun, DM = Downy Mildew Resistant.

Seed yield is reported at 10% moisture.

Planted June 6, 2014. Harvested Oct. 27, 2014. Previous crop = wheat.

**Table 10. 2014 - Sunflower - Oilseed - Averaged over four SD locations**

Brand	Hybrid	Hybrid Type <sup>1</sup>	Seed Yield (lbs/a)	Oil Content (%)	Plant Height (in)	Harv. Moist. (%)	Test Wt. lb/bu	Lodge (%)	Pop. x1000 (plt/a)
Croplan by Winfield	Croplan 13-652 CL	HO,CL,DM	1852	41.3	65	9.4	29.8	3	14.8
Croplan by Winfield	Croplan 14-572 CL	HO,CL,DM	2128	40.6	70	10.3	34.6	0	14.0
Croplan by Winfield	Croplan 3080	NS	1947	46.2	59	7.3	31.0	12	18.0
Croplan by Winfield	Croplan 432 E	NS,EX,DM	2295	41.3	63	8.4	33.2	6	18.0
Croplan by Winfield	Croplan 545 CL	NS,CL,DM	2328	41.6	65	10.2	33.4	4	18.0
Croplan by Winfield	Croplan 559 CL	NS,CL,DM	2495	44.2	70	8.8	31.2	4	18.0
DuPont Pioneer	P63ME80	NS,EX,DM	2000	44.3	65	8.3	31.8	4	18.0
DuPont Pioneer	P64ME01	NS,EX,DM	2431	41.1	69	10.7	32.4	2	18.0
Genosys	11G08	NS	2089	40.3	66	7.8	32.9	3	17.7
Genosys	12E06	HO,DM	2077	42.3	73	9.5	35.3	10	18.0
Genosys	12E12	HO,CL,DM	1918	37.5	70	9.9	29.6	1	18.0
Genosys	12E13	HO,CL,DM	1975	40.0	65	8.5	30.8	3	18.0
Genosys	12E14	HO,CL,DM	1920	40.2	73	8.8	30.4	11	18.0
Genosys	12G20	HO,CL	2123	42.1	62	7.5	32.0	7	18.0
Genosys	12G25	HO,CL	2269	44.7	66	8.5	32.5	6	17.4
Legend Seeds	LSF 9302HOCL	HO,CL	1626	41.1	60	9.2	30.3	5	17.7
Legend Seeds	LSF 9418HOCL	HO,CL	1836	41.4	59	8.8	31.0	0	17.3
Legend Seeds	LSF 9426NCL	NS,CL	2127	42.5	67	10.0	34.5	10	18.0
Legend Seeds	LSF 9468NCL	NS,CL	2155	41.9	61	12.0	31.1	2	18.0
Legend Seeds	LSF 9502	Trad.	1913	40.7	64	8.7	28.0	4	18.0
Legend Seeds	LSF 9536HOCL	HO,CL	2100	42.0	65	10.4	30.7	5	18.0
Proseed	E-21 CL	HO,CL	1988	37.9	70	10.4	29.7	4	18.0
Proseed	E-31 CL	HO,CL	2026	40.0	67	8.5	29.9	2	17.8
Proseed	E-362436	HO	2250	41.9	75	9.4	35.7	4	18.0
Proseed	E-85 CL	HO,CL	2015	40.6	72	8.5	30.1	7	18.0
Sunopta	4421CL	CL	1823	36.3	70	8.4	30.8	3	18.0
Sunopta	EX25CL	CL	1799	39.1	44	9.4	31.5	2	18.0
Syngenta	3495 NS/CL/DM	NS,CL,DM	1936	42.1	65	8.3	33.6	6	18.0
Syngenta	3732 NS	NS	2256	44.6	61	8.9	32.6	6	18.0
Syngenta	7717 HO/CL/DM	HO,CL,DM	1998	43.0	65	8.0	33.1	7	18.0
Syngenta	NX34240 HO/CL/DM	HO,CL,DM	2265	40.7	69	8.9	30.7	6	18.0
USDA	894 (check)	Trad.	1667	44.3	58	8.7	31.7	4	17.4
Grand Mean			2051	41.5	65	9.1	31.8	5	17.7
LSD 5%			177	0.7	2	0.6	1.2	6	0.7
C.V.			11.9	2.5	5.0	9.8	5.3	164.5	5.8

<sup>1</sup>Type: HO = High Oleic, NS = NuSun, Trad = Traditional (linoleic), CL = Clearfield, EX = ExpressSun, DM = Downy Mildew Resistant, SS=Short Stature, HS = High Stearic.

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

Table 11. 2014 - Sunflower - Confection - Averaged over two SD locations

Company/Brand	Hybrid	Hybrid Type <sup>1</sup>	Seed Yield (lb/a)	Plant Height (inch)	Harv. Moist. (%)	Test Wt. lb/bu	Lodge (%)	Pop. x1000 (plt/a)	Seed Over Screen			Nut-meat (%)
									22/64	20/64	18/64	
									-----(% )-----			
CHS	12EXP01	EX	2287	73	8.0	21.3	1	18.0	65	78	82	50
CHS	14EXP001	Trad	1938	76	6.6	20.0	3	17.3	66	81	85	47
CHS	14EXP002	CL	2388	76	7.4	20.1	3	18.0	50	67	75	53
CHS	14EXP03		1815	74	8.1	21.4	3	18.0	62	78	84	46
CHS	14EXP04		1995	75	8.0	21.8	3	18.0	69	81	86	48
CHS	RH400CL	CL	1619	64	6.6	20.4	16	18.0	58	75	83	51
Genosys	12GCF05		1208	77	7.7	18.5	1	18.0	50	68	76	51
Genosys	12GCF07		1506	75	8.0	19.1	1	18.0	45	67	79	57
Genosys	12GCF12		1514	86	8.4	21.3	5	18.0	56	68	73	52
Genosys	12GCF18		1318	73	8.4	20.5	1	17.6	58	77	85	54
Genosys	14GCF01		1303	77	5.3	18.7	10	18.0	53	75	85	51
Mycogen Seeds	8C451CP	CL+	2061	70	6.3	19.8	3	18.0	50	69	77	54
Nuseed Global	5009		1765	73	8.4	20.7	2	18.0	59	78	87	49
Nuseed Global	JAG	CL	2190	69	6.5	20.3	9	18.0	59	76	85	55
Nuseed Global	JAGDMR	CL,DM	2086	67	6.1	21.9	8	18.0	54	76	86	52
Nuseed Global	JAGII	CL	1674	72	7.7	20.7	10	18.0	59	75	84	56
Nuseed Global	JAGXL	CL	1738	80	7.8	18.3	7	18.0	50	70	82	52
Nuseed Global	NHW12759		1719	67	6.9	18.6	6	18.0	61	74	81	51
Nuseed Global	NHW12984		1527	73	12.4	22.3	0	7.7	65	81	87	51
Nuseed Global	NHW12985		1747	72	7.2	18.4	1	17.6	57	69	74	54
Nuseed Global	NSK12M018	CL	2004	77	8.7	21.6	3	18.0	56	76	84	50
Nuseed Global	NSK12M048	CL	2064	78	6.7	17.8	3	18.0	68	80	84	52
Nuseed Global	X4334		1980	75	7.8	20.3	4	18.0	53	67	76	53
Nuseed Global	X4417		1685	63	6.0	18.8	13	18.0	66	78	83	52
Nuseed Global	X5334		1746	76	7.8	21.6	7	17.3	61	78	83	52
Nuseed Global	X9180	EX	2450	69	6.7	20.2	6	18.0	42	67	84	60
Nuseed Global	X98578		1822	76	7.2	19.6	4	18.0	62	79	86	51
Red River Commod.	RRC 2215		2215	74	7.0	19.7	3	18.0	58	72	77	52
Red River Commod.	RRC 2215 CL	CL	2186	78	6.2	21.3	4	18.0	59	75	82	56
Red River Commod.	RRC 2217 CP	CL+	2088	74	7.4	20.0	2	18.0	60	75	81	56
Sunopta	9521		2181	75	6.7	19.5	5	18.0	66	79	85	51
Sunopta	EX011		2331	74	8.3	22.2	1	15.5	73	83	87	49
Sunopta	EX041		1891	75	6.4	21.4	3	17.5	68	78	81	45
USDA	924 (check)		1213	77	4.6	21.2	9	18.0	12	28	59	58
Grand Mean			1860	74	7.3	20.3	5	17.5	57	74	81	52
LSD 5%			352	4	1.2	2.1	5	1.2	9	7	5	3
C.V.			17.8	4.8	16.8	9.7	102.8	6.3	11.4	6.4	4.3	4.2

<sup>1</sup>Type: CL = Clearfield, EX = ExpressSun, DM = Downy Mildew Resistant.  
Seed yield is reported at 10% moisture.