

North Dakota and South Dakota Sunflower Hybrid Trial Results for 2014 and Selection Guide

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Introduction

In North Dakota, an estimated 655,000 acres of sunflowers were harvested in 2014. This was about 35 percent more than the acres harvested in 2013. Table 1 contains acreage data for the past 15 growing seasons as reported by the North Dakota Agricultural Statistics Service, U.S. Department of Agriculture.

Table 1. Harvested Sunflower Acreage in North Dakota and Yield Per Acre 2000-2014.

Year	Oil Type (1,000 acres)	Yield (lb/a)	Non-oil Type (1,000 acres)	Yield (lb/a)
2000	965	1,410	300	1,260
2001	835	1,440	215	1,260
2002	1,105	1,310	210	1,200
2003	1,020	1,300	145	1,330
2004	660	1,040	130	810
2005	885	1,610	220	1,490
2006	740	1,260	120	1,520
2007	895	1,450	160	1,270
2008	930	1,430	150	1,210
2009	760	1,520	108	1,500
2010	685	1,460	177	1,440
2011	495	1,380	66	1,250
2012	755	1,750	85	1,580
2013	415	1,260	71	1,360
2014	515	1,679 ¹	140	1,679 ¹

Source: National Agricultural Statistics Service.

¹Estimate by NASS for all sunflower October 2014.

2014 Sunflower Performance Trials

Information about sunflower hybrid performance can be accessed on the Web at www.ag.ndsu.edu/varietytrials/. This site has variety trial data from all NDSU Research Extension Centers for all crops.

The agronomic data presented in this publication are from replicated research plots using experimental designs that enable the use of statistical analysis. The LSD (least significant difference) numbers beneath the columns in tables are derived from the statistical analyses and apply only to the numbers in the column in which they appear. If the difference between two hybrids exceeds the LSD value, it means that with 95 percent probability (0.05 level) or 90 percent probability (0.10 level), the higher-yielding hybrid has a significant yield advantage. If the difference between two hybrids is less than the LSD value, then the hybrid yields are considered similar.

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The abbreviation NS is used to indicate no significant difference for that trait among any of the hybrids. The coefficient of variation (CV) is a measure of variability in the trial and is expressed as a percentage. Large CVs mean a large amount of variation that could not be attributed to differences in the hybrids. In the tables, the “mean” indicates the average of the observations in the trial. Only compare values within the table and look for trends for the desired trait among different experimental sites and years.

Oil and harvest yields were adjusted to 10 percent moisture. Oil values for NuSun and high-oleic hybrids were adjusted for oleic acid content.

In the tables, the sunflower hybrids are arranged in alphabetical order of the company/brand. Most of the tables have footnotes explaining, in more detail, information in the table under which they appear.

Traits to evaluate for selecting a sunflower hybrid include yield potential in your area, oil content (for the oil types), test weight, reaction to problematic diseases and insects, maturity date and the weed control system. When selecting a confection sunflower hybrid, the seed size also is of importance.

When selecting a high-yielding and good-quality hybrid, use data that summarizes several years and locations. Choose the hybrid that, on average, performs the best at multiple locations near you during several years.

The presentation of data for the entries tested does not imply approval or endorsement by the authors or agencies conducting the tests. A listing of seed companies entering hybrids and their brand name is provided in Table 2. Weather data for North Dakota is provided in Table 3.

Research specialists and technicians helped with the field work and data compilation. The assistance given by many secretaries in typing portions of this document is much appreciated. A special thank you goes to Lisa Johnson, Extension Plant Sciences secretary, for assisting in the compilation of this publication.

Table 2. Full Company Name, Abbreviated Name Used in Tables and Website.		
Company	Abbreviated	Website
AgVenture Scherr’s Seed LLC	AgVenture	www.agventure.com
CanSun LLC	CanSun	--
CHS Inc.	CHS	www.chssunflower.com
Croplan by Winfield	Croplan	www.winfield.com
Dahlgren and Co./SunOpta	SunOpta	www.sunflowerseed.com
DuPont Pioneer	Pioneer	www.pioneer.com
Genosys Global LLC	Genosys	www.genosysglobal.com
Legend Seeds	Legend	www.legendseeds.net
Mycogen Seeds	Mycogen	www.mycogen.com
Nuseed Global/Americas	Nuseed	www.nuseed.com/products/sunflowers/
NuTech Seed LLC	NuTech	www.nutechseed.com
Proseed Inc.	Proseed	www.proseed.net
Red River Commodities	Red River Comm.	www.redriv.com
Semillas Fito	Semillas Fito	www.semillasfito.com/gcgirasol.php
Syngenta Seeds	Syngenta	www3.syngenta.com/country/us/en/agriculture/seeds/sunflower/
U.S. Department of Agriculture	USDA	www.ars.usda.gov/Main/docs.htm?docid=3562

Table 3. April-September 2014 Average Temperature and Precipitation Rankings for Selected North Dakota Locations.

City	Temperature Ranking	Precipitation Ranking
Bowman	57.1 F (15th Coolest Period Since 1915)	17.6 inches (6th Wettest Period Since 1915)
Bismarck	59.7 F (63rd Coolest Period Since 1875)	11.7 inches (63rd Driest Period Since 1875)
Cavalier	56.7 F (20th Coolest Period Since 1934)	16.2 inches (30th Wettest Period Since 1927)
Fargo	60.8 F (46th Warmest Period Since 1881)	17.3 inches (51st Wettest Period Since 1881)
Minot Exp. Station	57.4 F (41st Coolest Period Since 1905)	18.2 inches (10th Wettest Period Since 1905)
Williston Exp. Station	58.9 F (50th Coolest Period Since 1894)	9.0 inches (34th Driest Period Since 1894)
North Dakota Average	57.6 F (41st Coolest Period Since 1895)	16.4 inches (19th Wettest Period Since 1895)

Source: Adnan Akyüz, NDSU, North Dakota state climatologist.

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Table 4. 2014 Sunflower - Non-oilseed Hybrids With Traits and Locations Where Tested.

Company/ Brand	Hybrid	Hybrid Type ¹	Location in which the hybrid has been tested					
			Galchutt	Carrington	Langdon	Minot	Highmore	Onida
CanSun	EX 5255	Trad.	--	--	X	X	--	--
CanSun	EX 755	Trad.	--	--	X	X	--	--
CanSun	EX 8255	Trad.	--	--	X	X	--	--
CHS	12EXP01	EX	X	X	--	--	X	X
CHS	14EXP01	Trad.	X	X	--	--	X	X
CHS	14EXP02	CL	X	--	--	--	X	X
CHS	14EXP03	EX	X	--	--	--	X	X
CHS	14EXP04	Trad.	X	--	--	--	X	X
CHS	RH1121	Trad.	--	X	--	--	--	--
CHS	RH1130-EX	Trad.	--	--	--	X	--	--
CHS	RH400CL	CL	--	--	--	--	X	X
CHS	RH609CL	Trad.	--	--	--	X	--	--
CHS	RH841	Trad.	--	--	--	X	--	--
Genosys	12GCF05	Trad.	--	X	--	X	X	X
Genosys	12GCF07	Trad.	--	X	--	X	X	X
Genosys	12GCF12	Trad.	--	X	--	X	X	X
Genosys	12GCF18	Trad.	--	X	--	X	X	X
Genosys	14GCF01	Trad.	--	X	--	X	X	X
Mycogen	8C451CP	CP	X	--	X	X	X	X
Nuseed	5009	Trad.	X	X	--	--	X	X
Nuseed	6946 DMR	DM	--	--	X	X	--	--
Nuseed	Jaguar	CL	X	X	--	X	X	X
Nuseed	Jaguar DMR	CL,DM	X	X	X	X	X	X
Nuseed	Jaguar II	CL	X	X	--	--	X	X
Nuseed	Jaguar XL	CL	--	--	--	--	X	X
Nuseed	NHW12706	DM	--	--	X	X	--	--
Nuseed	NHW12709	Trad.	X	X	--	X	--	--
Nuseed	NHW12732	Trad.	--	--	X	X	--	--
Nuseed	NHW12739	Trad.	--	--	X	--	--	--
Nuseed	NHW12759	Trad.	X	X	--	X	X	X
Nuseed	NHW12984	Trad.	--	--	--	--	X	X
Nuseed	NHW12985	Trad.	--	--	--	--	X	X
Nuseed	NSK12M018	CL	--	--	--	--	X	X
Nuseed	NSK12M044	CL	--	--	X	X	--	--
Nuseed	NSK12M045	CL	X	X	X	--	--	--
Nuseed	NSK12M048	CL,DM	X	X	--	--	X	X
Nuseed	NSK12N069	CL	--	--	X	--	--	--
Nuseed	Panther DMR	DM	--	--	X	X	--	--
Nuseed	Sundance DMR	DM	--	--	--	X	--	--
Nuseed	X3939	Trad.	X	X	--	--	--	--
Nuseed	X4334	CL	X	X	X	--	X	X
Nuseed	X4417	Trad.	--	--	--	--	X	X
Nuseed	X5334	CL	--	--	X	--	X	X
Nuseed	X9180	EX	X	X	X	X	X	X
Nuseed	X98578 (Puma)	Trad.	X	X	--	--	X	X
Red River Comm.	2215	Trad.	X	X	X	X	X	X
Red River Comm.	2215-CL	CL	X	X	X	X	X	X
Red River Comm.	8015	Trad.	X	--	X	--	--	--
Red River Comm.	2217-CP	CP	X	X	X	X	X	X
SunOpta	9521	Trad.	X	X	X	X	X	X
SunOpta	EX0030	EX	--	X	--	--	--	--
SunOpta	EX011	EX	X	--	--	X	X	X
SunOpta	EX019	Trad.	--	X	--	X	--	--
SunOpta	EX024S	CL	--	X	--	--	--	--
SunOpta	EX041	Trad.	X	X	X	X	X	X
USDA ²	924	Trad.	X	X	X	X	X	X

¹Hybrid type provided by companies.

CL = Clearfield, CP = Clearfield plus, EX = ExpressSun, Trad. = no herbicide tolerance trait, DM = downy mildew resistant.

²Long-term hybrid check.

Table 5. 2014 Sunflower - Oilseed Hybrids With Traits and Locations Where Tested (Page 1 of 2).

Company/ Brand	Hybrid	Hybrid Type ¹	Location in which the hybrid has been tested									
			Galchutt	Carrington	Hettinger	Langdon	Minot	Williston	Eureka	Highmore	Onida	Presho
AgVenture	3H93DM	HO,CL,DM	--	--	X	--	X	--	X	X	X	--
AgVenture	3N94DM	NS,CL,DM	--	--	X	--	X	--	X	X	X	--
AgVenture	AF3H681ES	HO,EX,DM	--	--	X	--	X	--	X	X	X	--
AgVenture	AF3N692ES	NS,EX,DM	--	--	X	--	X	--	X	X	X	--
AgVenture	EXF4N14	NS,CL	--	--	X	--	--	--	X	X	X	--
AgVenture	EXF4N15DM	NS,CL,DM	--	--	X	--	--	--	X	X	X	--
Croplan	3080	NS,DM	--	--	--	--	--	--	X	X	X	X
Croplan	13-652 CL	HO,CL,DM	X	X	--	X	X	--	X	X	X	X
Croplan	14-572 CL	HO,CL,DM	X	X	--	X		--	X	X	X	X
Croplan	432 E	NS,EX,DM	X	X	X	X	X	--	X	X	X	X
Croplan	458 E HO	HO,EX,DM	X	X	--	X	X	--	--	--	--	--
Croplan	545 CL	NS,CL,DM	X	X	X	X	X	--	X	X	X	X
Croplan	559 CL	NS,CL,DM	X	X		X	X	--	X	X	X	X
Genosys	12E06	HO,DM	X	X	X	X	X	X	X	X	X	X
Genosys	12E12	HO,CL,DM	X	X	X	X	X	X	X	X	X	X
Genosys	12E13	HO,CL,DM	X	X	X	X	X	X	X	X	X	X
Genosys	12E14	HO,CL,DM	X	X	X	X	X	X	X	X	X	X
Genosys	11G08	NS	X	X	X	X	X	X	X	X	X	X
Genosys	12G20	HO,CL	X	X	X	X	X	X	--	--	X	X
Genosys	12G25	HO,CL	X	X	X	X	X	X	--	--	X	X
Legend	9502	Trad.	--	--	--	--	--	--	X	X	X	X
Legend	9302HOCL	HO,CL	--	--	--	--	--	--	X	X	X	X
Legend	9418HOCL	HO,CL	--	--	--	--	--	--	X	X	X	X
Legend	9426NCL	NS,CL	--	--	--	--	--	--	X	X	X	X
Legend	9468NCL	NS,CL	--	--	--	--	--	--	X	X	X	X
Legend	9536HOCL	HO,CL	--	--	--	--	--	--	X	X	X	X
Mycogen	8D310CL	NS,CL	X	X	X	X	X	--	X	--	--	--
Mycogen	8H288CLDM	HO,CL,DM	--	--	--	--	X	--	--	--	--	--
Mycogen	8H449CLDM	HO,CL,DM	X	X	X	--	X	--	X	X	X	
Mycogen	8H570CL	HO,CL	--	--	--	--	--	--	X	--	--	--
Mycogen	8H859CL	HO,CL	--	--	--	--	--	--	--	--	--	X
Mycogen	8N358CLDM	NS,CL,DM	X	X		X	X	--	--	--	--	--
Mycogen	8N421CLDM	NS,CL,DM	X	--	--	--	--	--	X	X	X	--
Mycogen	8N510	NS	--	--	--	--	--	--	--	X	X	X
Mycogen	8N668S	NS,SS	--	--	--	--	--	--	--	X	X	X
Mycogen	8N678S	NS,SS	--	--	--	--	--	--	--	X	X	X
Nuseed	Badger ²	Trad.,CL	X	X	X	X	X	X	X	--	X	X
Nuseed	Badger DMR ²	Trad.,CL,DM	X	X	X	X	X	X	X	--	X	X
Nuseed	Badger HO ²	HO,CL,DM	X	X	X	X	X	X	X	--	X	X
Nuseed	Camaro II	NS,CL,DM	X	X	X	X	X	X	X	--	X	X
Nuseed	Cobalt II	HO,CL,DM	X	X	X	X	X	X	X	--	X	X
Nuseed	Falcon	NS,EX	X	X	X	X	X	X	X	--	X	X
Nuseed	Hornet	HO,CL,DM	X	X	X	X	X	X	X	--	X	X
Nuseed	NHK12M011	HO,CL	--	X	--	--	X	--	--	--	--	--
Nuseed	NHK12M054	HO,CL,DM	X	X	--	--	X	--	--	--	--	--
Nuseed	NHK12M140	HO,CL	--	X	--	--	X	--	--	--	--	--

Table 5. 2014 Sunflower - Oilseed Hybrids With Traits and Locations Where Tested (Page 2 of 2).

Company/ Brand	Hybrid	Hybrid Type ¹	Location in which the hybrid has been tested										
			Galchutt	Carrington	Hettinger	Langdon	Minot	Williston	Eureka	Highmore	Onida	Presho	
Nuseed	Talon	NS,EX	x	x	x	x	x	x	x	x	--	x	x
NuTech	68H7	HO,EX,DM	--	--	--	x	--	x	--	--	--	--	--
NuTech	69M2	Trad.,EX,DM	--	--	--	x	--	x	--	--	--	--	--
Pioneer	P63ME80	NS,EX,DM	--	--	--	--	--	--	--	x	x	x	x
Pioneer	P64ME01	NS,EX,DM	--	--	--	--	--	--	--	x	x	x	x
Proseed	E-21 CL	HO,CL,DM	x	x	x	x	x	--	x	x	x	x	x
Proseed	E-31 CL	HO,CL,DM	x	x	x	x	x	--	x	x	x	x	x
Proseed	E-362436	HO,DM	x	x	x	x	x	--	x	x	x	x	x
Proseed	E-85 CL	HO,CL,DM	x	x	x	x	x	--	x	x	x	x	x
Semillas Fito	SF10G38	HO	--	--	--	--	x	--	--	--	--	--	--
Semillas Fito	SF11G39	Trad.	--	--	--	--	x	--	--	--	--	--	--
Semillas Fito	SF7G04	Trad.	--	--	--	--	x	--	--	--	--	--	--
SunOpta	4421CL	HO,CL	--	--	--	--	x	--	x	x	x	x	x
SunOpta	EX213	--	--	--	--	--	x	--	--	--	--	--	--
SunOpta	EX25CL	CL	--	--	--	--	x	--	x	x	x	x	x
Syngenta	3495 NS/CL/DM	NS,CL,DM	x	x	x	x	x	--	x	x	x	x	x
Syngenta	3732 NS	NS	--	--	--	--	--	--	x	x	x	x	x
Syngenta	7111 HO/CL/DM	HO,CL,DM	x	x	x	x	x	--	--	--	--	--	--
Syngenta	7717 HO/CL/DM	HO,CL,DM	x	x	x	x	x	--	x	x	x	x	x
Syngenta	NX34240 HO/CL/DM	HO,CL,DM	x	x	x	x	x	--	x	x	x	x	x
USDA	cms HA465/RHA 468	NS	--	--	--	--	--	--	--	x	x	--	--
USDA3	894	Trad.	x	--	x	x	x	--	x	x	x	x	x

¹Hybrid type provided by companies.

HO = high oleic, NS = NuSun, HS = high stearic, Trad. = traditional (linoleic),

EX = ExpressSun, CL = Clearfield, CP = Clearfield plus, DM = downy mildew resistant, SS = short stature.

²ConOil.

³Long-term hybrid check.

Table 6. 2014 Sunflower - Oilseed - Galchutt, N.D. - Author, B. Hulke.

Company/ Brand	Hybrid	Days to Flower (DAP) ³	Days to PM (DAP) ³	Phomopsis Incidence ¹ (%)	Harvest Moisture (%)	Test Wt. (lb/bu)	Oil Content (%)	2014 Seed Yield (lb/a)	Hulling Screen Test ²
Croplan	13-652 CL	72	108	7	9	28.6	46.6	3,085	--
Croplan	14-572 CL	65	108	27	7	29.9	46.2	3,471	--
Croplan	432 E	64	109	35	7	30.5	44.5	3,538	Exc.
Croplan	458 E HO	68	104	26	8	29.8	46.8	3,081	--
Croplan	545 CL	69	104	21	10	30.7	46.7	3,736	--
Croplan	559 CL	70	109	32	8	30.1	48.3	3,242	--
Genosys	12E06	65	105	28	8	30.3	46.0	3,637	Exc.
Genosys	12E12	66	105	13	7	29.7	43.6	3,194	Exc.
Genosys	12E13	67	103	34	7	28.6	44.4	3,053	Exc.
Genosys	12E14	68	106	12	7	27.2	44.5	3,537	Exc.
Genosys	11G08	67	104	31	7	30.7	46.1	3,238	--
Genosys	12G20	67	104	19	7	29.4	46.6	3,411	Fail
Genosys	12G25	66	108	29	8	30.3	49.3	3,713	Fail
Mycogen	8D310CL	67	103	27	7	24.6	38.9	3,217	--
Mycogen	8H449CLDM	69	108	15	10	30.9	51.4	3,295	--
Mycogen	8N358CLDM	66	107	31	7	28.3	49.6	3,017	--
Mycogen	8N421CLDM	70	109	30	8	30.5	47.3	3,076	--
Nuseed	Badger	67	108	44	7	27.9	39.5	2,940	--
Nuseed	Badger DMR	64	106	40	7	28.7	37.5	3,006	--
Nuseed	Badger HO	63	107	37	7	26.4	37.3	2,688	--
Nuseed	Camaro II	68	104	10	8	31.8	47.9	3,383	--
Nuseed	Cobalt II	66	110	33	7	31.7	47.7	2,557	--
Nuseed	Falcon	68	109	17	9	31.8	47.6	2,835	--
Nuseed	Hornet	72	110	9	10	29.9	48.1	3,191	--
Nuseed	NHK12M054	67	106	33	7	32.4	49.6	2,877	--
Nuseed	Talon	67	105	55	7	26.9	44.5	2,686	--
Proseed	E-21 CL	67	106	23	7	30.1	45.4	2,846	--
Proseed	E-31 CL	68	103	31	7	27.8	44.9	3,265	--
Proseed	E-362436	65	104	31	8	30.3	46.6	3,492	--
Proseed	E-85 CL	69	106	15	8	26.6	45.4	3,399	--
Syngenta	3495 NS/CL/DM	69	105	23	7	31.7	45.5	3,188	--
Syngenta	7111 HO/CL/DM	65	107	26	7	31.1	43.7	2,451	--
Syngenta	7717 HO/CL/DM	67	105	23	7	30.2	46.1	3,433	--
Syngenta	NX34240 HO/CL/DM	68	105	10	8	29.7	45.5	3,682	--
USDA ⁴	894	66	103	75	7	27.7	42.4	2,775	--
Mean		67	106	27	8	29.5	45.5	3,178	--
CV %		1.2	2.3	31.0	8.2	2.1	2.2	9.4	--
LSD 0.10		1	3	11.5	1	0.9	1.3	407	--
LSD 0.05		1	4	13.8	1	1.0	1.6	487	--

Planted May 28. Harvested Oct. 16. No desiccant applied.

¹Phomopsis Incidence: percentage of plants infected with Phomopsis spp., as evidenced by a stalk lesion;

²Hulling screen test: Exc. = 65% of seed over a 14/64 inch screen; Average = 75% of seed over a 13/64 inch screen;

Fail = does not meet these criteria.

³Days after planting. Maturity checks: 8N270CLDM = 102 DAP, Falcon = 109 DAP, 559 CL = 109 DAP.

⁴Long-term hybrid check.

Table 7. 2014 Sunflower - Non-oilseed - Galchutt, N.D. - Author, B.S. Hulke.

Company/ Brand	Hybrid	Days	Days	Phomopsis Incidence ¹	Harvest Moist.	Test Wt.	2014 Seed Yield	Seed over screen			Seed size		Nut- meat
		to Flower (DAP) ²	to PM (DAP) ²					(%)	(%)	(lb/bu)	(lb/a)	22/64	
CHS	12EXP01	71	114	3	15	20.7	3,087	92	98	99	19	10	46
CHS	14EXP01	69	108	30	11	21.4	3,118	93	98	99	18	10	47
CHS	14EXP02	68	105	68	14	20.4	3,177	93	99	99	20	9	50
CHS	14EXP03	72	116	21	14	18.7	2,135	84	95	99	23	9	44
CHS	14EXP04	75	116	19	20	19.4	3,300	90	95	97	20	9	43
Mycogen	8C451CP	72	103	18	14	20.4	3,140	84	94	98	18	9	50
Nuseed	5009	71	110	16	14	19.6	3,478	83	95	99	20	8	45
Nuseed	Jaguar	64	101	73	9	18.9	3,102	91	95	97	17	10	53
Nuseed	Jaguar DMR	62	101	43	13	20.3	3,311	91	96	98	18	9	50
Nuseed	Jaguar II	66	103	49	10	18.9	2,924	83	92	97	18	10	53
Nuseed	NHW12709	67	104	42	10	19.2	3,361	91	97	98	20	9	50
Nuseed	NHW12759	65	104	48	10	18.3	2,209	93	97	98	22	10	51
Nuseed	NSK12M045	67	106	33	11	18.0	2,634	95	97	99	20	10	50
Nuseed	NSK12M048	67	105	48	11	18.1	2,349	96	98	99	21	10	49
Nuseed	X3939	66	104	50	12	20.7	3,072	75	88	95	21	9	49
Nuseed	X4334	69	106	35	11	19.1	3,093	94	98	100	19	10	48
Nuseed	X9180	64	108	27	12	18.8	2,637	85	95	98	18	9	58
Nuseed	X98578 (Puma)	69	108	24	11	19.0	2,706	93	97	98	21	9	45
Red R. Comm.	2215-CL	71	103	12	13	21.2	3,359	87	97	99	18	9	51
Red R. Comm.	2215	72	103	8	13	21.5	3,306	84	97	99	18	9	51
Red R. Comm.	2217-CP	73	104	14	14	19.5	2,779	86	95	98	18	9	52
Red R. Comm.	8015	68	109	28	11	17.4	2,471	94	97	99	22	9	49
SunOpta	9521	69	104	25	13	20.6	3,182	94	98	99	18	10	47
SunOpta	EX011	70	114	9	12	20.1	3,313	94	97	98	18	10	49
SunOpta	EX041	70	104	34	12	20.3	2,886	93	97	98	18	9	48
USDA ³	924	68	103	78	10	21.9	1,985	47	71	87	14	9	55
Mean		69	106	33	12	19.7	2,927	88	95	98	19	9	49
CV %		1.7	1.3	34.7	21.6	2.6	13.2	--	--	--	--	--	--
LSD 0.10		2	2	16	4	0.7	529	--	--	--	--	--	--
LSD 0.05		2	2	19	4	0.8	634	--	--	--	--	--	--

Planted May 28. Harvested Oct. 17. No desiccant applied.

¹Phomopsis Incidence: percentage of plants infected with Phomopsis spp., as evidenced by a Phomopsis stalk canker lesion;

²Days after planting. Oil type maturity checks: 8N270CLDM = 102 DAP, Falcon = 109 DAP, 559 CL=109 DAP.

³Long-term hybrid check.

Table 8. 2014 Sunflower - Fatty Acid Trial - Galchutt, N.D. - Author, B. Hulke.

Company/ Brand	Hybrid	Type ¹	Palmitic	Stearic	Oleic	Linoleic
			----- % ± SEM -----			
Proseed	E-362436	HO	4.22 ± 0.09	2.12 ± 0.04	84.57 ± 1.12	9.12 ± 1.03
Proseed	E-21 CL	HO,CL	3.31 ± 0.05	2.07 ± 0.08	90.94 ± 1.00	3.70 ± 0.95
Proseed	E-31 CL	HO,CL	2.84 ± 0.03	2.20 ± 0.09	92.92 ± 0.14	1.76 ± 0.06
Proseed	E-85 CL	HO,CL	3.16 ± 0.08	2.20 ± 0.11	91.99 ± 0.60	2.59 ± 0.52
Syngenta	7111 HO/CL/DM	HO	3.23 ± 0.17	2.63 ± 0.09	87.84 ± 2.95	6.13 ± 2.84
Syngenta	7717 HO/CL/DM	HO	3.83 ± 0.09	2.47 ± 0.08	90.49 ± 0.68	3.09 ± 0.64
Syngenta	NX34240 HO/CL/DM	HO	3.11 ± 0.03	1.97 ± 0.05	92.24 ± 0.11	2.30 ± 0.09

¹HO = high oleic, CL = Clearfield.

Table 9. 2014 Sunflower - Oilseed - Carrington N.D. - Authors, B. Schatz, M. Ostlie, J. Berg and T. Ingebretson.

Company/ Brand	Hybrid	Days to	Plant	Plant	Days	Harvest	Test	Oil	Seed Yield	
		Flower	Height	Lodge ¹	to PM	Moist.	Weight	Content	2014	2-yr. Avg.
		(DAP) ²	(inch)	(0-9)	(DAP) ²	(%)	(lb/bu)	(%)	----- (lb/a) -----	
Croplan	13-652 CL	75	60	1	111	9	29.0	41.5	2,155	--
Croplan	14-572 CL	69	63	1	104	9	31.5	41.1	2,532	--
Croplan	432 E	68	62	2	105	9	31.2	40.1	2,439	2,176
Croplan	458 E HO	72	60	0	108	10	28.0	39.0	1,683	--
Croplan	545 CL	72	58	1	107	9	29.9	42.4	2,002	--
Croplan	559 CL	74	62	1	110	10	30.9	44.2	2,230	1,979
Genosys	12E06	70	68	2	105	10	31.7	39.4	2,180	1,991
Genosys	12E12	72	66	0	107	9	27.7	37.4	1,988	1,631
Genosys	12E13	73	64	2	109	9	28.7	38.4	2,123	2,187
Genosys	12E14	73	67	2	109	9	26.9	38.0	2,033	1,994
Genosys	11G08	71	61	2	106	9	30.8	41.9	1,943	1,652
Genosys	12G20	72	59	2	107	10	29.8	40.4	2,015	1,733
Genosys	12G25	71	60	1	106	10	31.3	40.6	2,191	--
Mycogen	8H449CLDM	72	56	1	124	10	32.5	45.5	2,467	2,065
Mycogen	8N358CLDM	69	58	1	121	9	31.5	46.2	1,933	1,666
Mycogen	8D310CL	72	63	2	126	10	28.5	37.5	2,355	2,063
Nuseed	Badger	70	63	3	105	9	28.7	40.1	2,161	1,890
Nuseed	Badger DMR	66	62	2	103	9	29.6	39.9	2,342	1,913
Nuseed	Badger HO	66	59	1	102	9	27.8	37.7	2,006	1,749
Nuseed	Camaro II	71	59	2	106	10	30.5	42.2	2,413	2,135
Nuseed	Cobalt II	68	57	1	104	9	30.2	40.7	1,849	1,600
Nuseed	Falcon	73	57	1	108	10	31.1	42.1	2,030	1,929
Nuseed	Hornet	73	60	1	108	11	28.4	40.0	1,879	1,725
Nuseed	NHK12M011	71	57	2	106	10	30.0	41.8	2,365	1,939
Nuseed	NHK12M054	68	58	2	105	9	31.7	41.3	2,222	--
Nuseed	NHK12M140	73	58	2	108	9	27.2	39.6	1,717	1,659
Nuseed	Talon	69	59	1	103	9	29.0	43.2	1,851	--
Proseed	E-21 CL	72	65	2	126	10	27.4	37.7	1,871	1,711
Proseed	E-31 CL	73	64	2	123	9	28.8	38.6	2,092	1,908
Proseed	E362436	71	66	2	123	9	31.8	40.1	2,712	2,185
Proseed	E-85 CL	72	67	2	125	10	26.8	37.2	2,251	1,977
Syngenta	3495 NS/CL/DM	72	62	1	106	9	32.2	41.1	2,297	--
Syngenta	7111 HO/CL/DM	67	54	1	103	9	30.4	39.6	1,954	1,670
Syngenta	7717 HO/CL/DM	70	62	2	105	9	30.2	41.5	2,283	--
Syngenta	NX34240 HO/CL/DM	72	64	2	107	10	28.7	40.6	2,371	--
Mean		71	61	1	109	9	29.7	40.5	2,141	1,885
CV %		1.8	4.3	52	2	8.1	2.7	2.8	12.1	--
LSD 0.10		2	3.1	1	2	1	0.9	1.3	303	--

Planted: June 3, Harvested: Oct. 27, Previous crop: spring wheat.

¹Lodging: 0 = perfectly upright and 9 = all plants lodged severely.²Days after planting.

Table 10. 2014 Sunflower - Non-Oilseed - Carrington N.D. - Authors, B. Schatz, M. Ostlie, J. Berg and T. Ingebretson.

Company/ Brand	Hybrid	Days to Flower	Plant Height	Plant Lodge ¹	Days to PM	Seed Over Screen			Harvest Moist.	Test Weight	Seed Yield	
		(DAP) ²	(inch)	(0 to 9)	(DAP) ²	22/64 (%)	20/64 (%)	18/64 (%)	(%)	(lb/bu)	2014	2-yr. Avg.
CHS	12EXP01	75	62	2.5	--	80	90	95	15	21.5	1,545	--
CHS	14EXP01	72	62	2.3	--	81	93	96	14	23.8	1,954	--
CHS	RH1121	74	64	2.0	--	73	88	94	14	23.3	1,852	--
Genosys	12GCF05	76	62	2.5	--	61	78	88	15	22.0	1,135	1,359
Genosys	12GCF07	77	65	1.8	--	64	81	90	15	21.6	1,395	--
Genosys	12GCF12	77	70	5.3	--	70	80	86	13	19.9	1,074	1,434
Genosys	12GCF18	76	62	2	--	70	87	94	16	20.8	1,284	--
Genosys	14GCF01	72	60	4	118	56	78	91	13	22.3	1,428	--
Nuseed	5009	75	61	2	--	73	88	94	16	21.4	1,477	1,549
Nuseed	Jaguar	68	54	2	--	66	85	94	13	21.6	1,536	1,489
Nuseed	Jaguar DMR	66	58	1.5	120	59	85	94	12	22.4	1,782	1,906
Nuseed	Jaguar II	69	58	2.3	125	62	79	91	13	21.3	1,741	1,642
Nuseed	NHW12709	71	62	2.3	125	72	89	95	12	20.8	1,785	1,793
Nuseed	NHW12759	71	61	2	--	82	90	93	15	18.6	1,212	--
Nuseed	NSK12M045	70	60	1.3	124	73	87	94	13	20.6	1,360	1,441
Nuseed	NSK12M048	72	65	2.8	125	89	94	95	14	20.2	1,368	1,334
Nuseed	X3939	71	64	1.8	125	54	74	86	13	23.1	1,613	1,644
Nuseed	X4334	74	62	2.3	--	77	90	95	15	21.3	1,670	1,574
Nuseed	X9180	69	60	3.0	--	54	79	92	13	22.1	1,425	1,583
Nuseed	X98578 (Puma)	76	62	1.0	--	73	86	93	14	20.8	1,486	1,712
Red River Comm.	2215	72	65	2.5	126	63	85	92	13	23.1	1,977	2,254
Red River Comm.	2215-CL	75	65	3.0	--	70	87	94	13	21.6	1,660	1,609
Red River Comm.	2217-CP	75	64	3.3	--	64	80	90	13	20.7	1,247	1,397
SunOpta	9521	72	60	2.0	126	72	89	95	13	23.9	2,072	2,302
SunOpta	EX019	72	67	2.3	126	72	85	91	13	20.1	1,459	--
SunOpta	EX024S	78	68	2.0	--	73	81	85	16	19.8	1,700	--
SunOpta	EX030	74	58	2.5	--	81	93	97	15	21.7	1,936	--
SunOpta	EX041	73	62	2.3	--	80	87	90	15	23.1	1,975	--
USDA ³	924	70	60	1.5	--	21	51	80	14	23.7	1,055	--
Mean		73	62	2.3	124	68	84	92	14	21.6	1,559	1,648
CV (%)		2.0	5.7	28	1.7	12.1	7.3	5.4	7.5	3.3	12.3	--
LSD 0.10		2	4.2	0.8	4	9.7	7.2	5.9	1	0.8	224	--

Planted: June 3, Harvested: Oct. 29. Previous crop: spring wheat.

¹Lodging: 0 = perfectly upright and 9 = all plants lodged severely.²Days after planting.³Long-term hybrid check.

Table 11. 2014 Sunflower - Oilseed - Langdon, N.D. - Authors, B. Hanson, T. Hakanson and L. Henry.

Company/ Brand	Hybrid	Days to Flower	Plant Height	Test Weight	Harvest Moisture	Oil Content	Seed Yield		
							2014	2-yr. Avg.	3-yr. Avg.
		(DAP) ¹	(inch)	(lb/bu)	(%)	(%)	------(lb/a)-----		
Croplan	13-652 CL	79	57	25.6	24	41.9	1,999	--	--
Croplan	14-572	73	57	30.5	13	44.2	2,780	--	--
Croplan	432 E	73	54	29.9	13	42.4	2,822	3,325	2,944
Croplan	458 E HO	75	56	27.9	19	42.1	2,303	--	--
Croplan	545 CL	79	57	28.2	27	42.3	2,625	3,162	--
Croplan	559 CL	77	59	28.2	20	44.5	2,198	2,967	2,568
Genosys	12E06	75	61	32.2	13	41.3	2,993	3,354	--
Genosys	12E12	75	62	31.8	19	38.7	2,528	2,885	2,397
Genosys	12E13	75	57	29.0	13	39.4	2,971	3,274	2,846
Genosys	12E14	76	62	27.4	16	39.5	2,657	3,047	2,538
Genosys	11G08	76	60	31.5	11	42.1	2,510	2,889	2,473
Genosys	12G20	77	57	28.2	15	41.4	2,679	3,245	--
Genosys	12G25	76	57	29.1	22	41.3	2,664	--	--
Mycogen	8D310CL	75	63	25.6	15	36.6	2,794	3,285	--
Mycogen	8N358CLDM	74	54	29.9	19	44.9	2,626	2,967	2,485
NuSeed	Badger	74	57	28.7	11	39.4	2,630	--	--
NuSeed	Badger DMR	71	56	30.9	12	38.5	3,005	--	--
NuSeed	Badger HO	70	59	29.2	9	39.4	3,228	--	--
NuSeed	Camaro II	76	58	31.2	19	42.4	2,956	3,398	2,986
NuSeed	Cobalt II	74	54	30.3	19	41.0	2,656	2,891	2,567
NuSeed	Falcon	76	53	30.1	14	43.8	2,475	2,729	2,362
NuSeed	Hornet	79	55	25.7	26	41.3	2,305	2,919	--
NuSeed	Talon	73	52	29.3	15	42.0	2,619	--	--
NuTech	68H7	75	61	32.9	20	41.8	3,117	--	--
NuTech	69M2	78	62	29.2	18	42.1	3,071	--	--
Proseed	E-21 CL	75	57	31.8	19	38.6	2,684	2,957	2,475
Proseed	E-31 CL	75	58	29.8	12	38.8	2,770	3,155	--
Proseed	E-362436	76	61	31.4	15	40.3	2,787	3,428	2,949
Proseed	E-85 CL	76	65	26.2	17	39.2	2,341	2,980	--
Syngenta	3495 NS/CL/DM	76	58	31.2	13	40.9	2,661	--	--
Syngenta	7111 HO/CL/DM	72	51	32.0	13	41.7	2,399	2,729	--
Syngenta	7717 HO/CL/DM	75	57	30.7	14	41.9	2,607	--	--
Syngenta	NX34240 HO/CL/DM	77	55	27.2	19	40.7	2,275	--	--
UDSA ²	894	73	56	29.4	11	41.5	2,500	2,972	2,535
Mean		75	58	29.6	16	41.2	2,654	3,074	2,625
CV %		1.1	5.4	4.0	17.0	2.5	9.7	--	--
LSD 0.10		1	4.2	1.6	4	1.4	354	--	--

Planted: May 23. Harvested: Oct. 16.

¹Days after planting.

²Long-term hybrid check.

Table 12. 2014 Sunflower - Non-oilseed - Langdon, N.D. - Authors, B. Hanson, T. Hakanson and L. Henry.

Company/ Brand	Hybrid	Days to Flower (DAP) ¹	Plant Height (inch)	Test Weight (lb/bu)	Harvest Moisture (%)	Seed Over Screen			Seed Yield		
						22/64	20/64	18/64	2014	2-yr. Avg.	3-yr. Avg.
						-----(%)-----			----- (lb/a) -----		
CanSun	EX 5255	71	57	23.7	12	74	84	91	3,132	3,573	--
CanSun	EX 755	76	56	22.6	15	67	82	92	3,010	--	--
CanSun	EX 8255	73	58	22.8	13	72	85	91	3,124	3,584	--
Mycogen	8C451CP	77	57	21.5	18	82	91	95	3,185	3,245	2,760
NuSeed	Jaguar DMR	70	53	23.6	8	82	93	96	2,900	--	--
NuSeed	NHW12732	72	55	22.6	11	91	95	97	2,949	--	--
NuSeed	NHW12739	70	57	23.0	9	86	93	97	3,234	--	--
NuSeed	NHW127063	77	60	23.3	25	77	90	94	2,950	3,157	--
NuSeed	NSK12M044	70	51	23.2	10	91	95	98	3,356	--	--
NuSeed	NSK12M045	74	58	20.8	12	83	88	92	2,918	--	--
NuSeed	NSK12N069	74	57	25.1	11	79	89	94	2,865	3,210	--
NuSeed	Panther DMR	71	54	24.3	10	75	89	95	3,026	--	--
NuSeed	X4334	75	56	21.6	19	88	95	97	3,392	--	--
NuSeed	X5334	78	61	22.6	22	87	93	95	3,181	--	--
NuSeed	X9180	73	58	23.4	14	66	85	93	2,753	3,341	--
NuSeed	6946 DMR	73	51	24.5	10	9	45	86	2,812	--	--
Red River Comm.	2215	73	56	22.4	11	83	90	95	3,170	3,861	3,282
Red River Comm.	8015	72	53	20.0	14	89	93	96	2,633	3,151	--
Red River Comm.	2215-CL	76	57	22.3	17	78	90	94	2,939	3,471	2,909
Red River Comm.	2217-CP	77	57	21.3	20	80	89	93	3,017	3,280	--
SunOpta	9521	74	56	22.7	13	83	89	94	3,299	3,991	--
SunOpta	EX041	75	57	20.7	20	76	94	94	3,154	--	--
USDA ²	924	72	52	26.7	10	7	39	73	3,093	--	2,724
Mean		74	56	22.8	14	74	86	93	3,047	3,429	2,919
CV %		1.4	5.8	3.2	15.3	--	--	--	9.6	--	--
LSD 0.10		1	4.5	1.0	3	--	--	--	NS	--	--

Planted: May 23. Harvested: Oct. 16.

¹Days after planting.²Long-term hybrid check.

Table 13. 2014 Sunflower - Oilseed - Minot, N.D. - Authors, E. Eriksmoen, J. Tarasenko and J. Effertz.

Company/ Brand	Hybrid	Days to Flower (DAP) ¹	Days to Maturity (DAP) ¹	Plant Height (inch)	Test Weight (lb/bu)	Oil Content (%)	Seed Yield		
							2014	2-yr. Avg.	3-yr. Avg.
							------(lb/a)-----		
AgVenture	3H93DM	69	117	68	30.4	41.7	1,928	2,154	--
AgVenture	3N94DM	73	117	70	29.0	39.6	2,352	2,410	--
AgVenture	AF3H681ES	73	119	72	30.8	39.0	1,889	--	--
AgVenture	AF3N692ES	75	119	69	29.1	41.3	2,303	--	--
Croplan	13-652 CL	75	115	70	24.6	44.1	2,271	--	--
Croplan	14-572 CL	69	118	68	29.3	40.1	2,445	--	--
Croplan	432 E	68	118	66	28.5	37.7	1,824	1,958	--
Croplan	458 E HO	71	120	67	29.3	42.5	2,096	--	--
Croplan	545 CL	74	119	69	28.3	41.3	2,597	--	--
Croplan	559 CL	73	120	76	28.8	46.3	2,641	2,562	2,721
Genosys	12E06	70	119	70	29.7	39.0	1,819	2,267	--
Genosys	12E12	71	120	71	28.2	36.6	2,053	2,326	2,241
Genosys	12E13	70	117	64	27.4	39.0	2,205	2,054	2,226
Genosys	12E14	71	121	75	26.7	37.6	1,955	2,248	2,491
Genosys	11G08	74	114	72	30.0	42.3	2,624	2,764	2,595
Genosys	12G20	71	117	67	30.8	41.4	2,189	2,466	--
Genosys	12G25	71	120	67	30.5	44.7	1,982	--	--
Mycogen	8D310CL	71	116	71	26.5	37.1	2,369	2,484	--
Mycogen	8H288CLDM	69	117	62	27.1	43.9	2,526	2,330	2,388
Mycogen	8H449CLDM	73	122	62	29.9	47.6	1,966	1,970	2,496
Mycogen	8N358CLDM	70	115	64	28.8	47.4	2,390	2,342	2,561
Nuseed	Badger	72	117	69	27.2	39.5	2,352	--	--
Nuseed	Badger DMR	67	116	66	29.0	36.8	2,281	--	--
Nuseed	Badger HO	67	118	73	26.1	37.1	1,699	--	--
Nuseed	Camaro II	72	117	71	30.3	41.4	2,456	2,368	2,600
Nuseed	Cobalt II	69	119	68	30.2	40.8	1,928	1,886	1,901
Nuseed	Falcon	72	119	65	30.8	46.3	1,840	1,900	2,087
Nuseed	Hornet	75	119	71	26.5	40.5	2,586	--	--
Nuseed	NHK12M011	74	118	68	28.1	41.8	2,526	--	--
Nuseed	NHK12M054	69	114	65	32.2	41.0	2,287	--	--
Nuseed	NHK12M140	75	119	72	24.5	42.0	2,374	2,204	--
Nuseed	Talon	70	120	63	26.4	42.2	1,977	--	--
Proseed	E-21 CL	71	119	69	27.9	36.9	1,846	1,983	2,017
Proseed	E-31 CL	72	118	68	26.5	38.8	2,156	2,189	--
Proseed	E-362436	71	116	72	30.0	40.6	2,287	2,610	2,622
Proseed	E-85 CL	71	122	71	27.2	37.2	1,819	1,911	2,150
Semillas Fito	SF10G38	73	117	66	26.7	43.2	2,265	--	--
Semillas Fito	SF11G39	71	116	61	26.7	38.9	1,846	--	--
Semillas Fito	SF7G04	70	115	65	30.0	40.5	2,385	--	--
SunOpta	4421CL	74	117	71	26.6	37.5	2,483	2,548	2,489
SunOpta	EX213	66	115	60	25.7	36.8	1,759	--	--
SunOpta	EX25CL	75	122	55	27.9	37.8	1,873	--	--
Syngenta	3495 NS/CL/DM	73	117	67	32.3	40.8	2,516	--	--
Syngenta	7111 HO/CL/DM	68	120	61	29.1	41.5	1,606	--	--
Syngenta	7717 HO/CL/DM	70	120	65	28.8	39.1	2,216	--	--
Syngenta	NX34240 HO/CL/DM	73	118	71	27.5	40.8	2,488	--	--
USDA ²	894	69	118	63	29.3	39.1	1,672	2,034	--
Mean		71	118	67	28.5	40.7	2,166	2,249	2,372
CV %		1.3	1.3	5.5	2.9	1.9	11.0	--	--
LSD 0.10		1	2	4.0	1.0	0.9	278	--	--

Planted: May 30. Harvested: Oct. 23.

¹Days after planting.²Long-term hybrid check.

Table 14. 2014 Sunflower - Non-oilseed - Minot, N.D. - Authors, E. Eriksmoen, J. Tarasenko and J. Effertz.

Company/ Brand	Hybrid	Days to	Days to	Plant	Test	Seed Over Screen			Seed Yield	
		Flower (DAP) ¹	Maturity (DAP) ¹	Height (inch)	Weight (lb/bu)	22/64	20/64	18/64	2014	3-Yr. Avg.
						------(%)-----			----- (lb/a)-----	
CanSun	EX 5255	68	118	66	20.7	87	94	97	2,026	--
CanSun	EX 755	72	119	64	22.1	77	90	96	2,239	--
CanSun	EX 8255	70	119	63	21.9	79	91	96	1,965	--
CHS	RH1130-EX	72	121	66	22.4	94	98	99	2,165	1,938
CHS	RH609CL	70	119	67	21.5	95	98	99	2,309	--
CHS	RH841	69	117	68	22.1	97	99	99	2,714	--
Genosys	12GCF05	73	122	74	21.1	91	97	99	2,165	1,985
Genosys	12GCF07	73	119	78	20.9	91	97	99	2,309	--
Genosys	12GCF12	73	117	78	19.8	89	95	98	1,978	--
Genosys	12GCF18	73	119	76	22.0	88	98	100	2,792	--
Genosys	14GCF01	71	115	75	20.8	83	95	99	2,047	--
Mycogen	8C451CP	72	118	66	21.2	92	98	99	2,269	2,085
Nuseed	X9180	68	119	60	21.7	88	97	99	2,374	1,962
Nuseed	6946 DMR	71	117	62	21.8	62	89	97	2,287	2,066
Nuseed	Jaguar	69	117	60	20.0	93	97	99	2,187	1,953
Nuseed	Jaguar DMR	66	117	62	21.2	91	97	99	2,012	1,933
Nuseed	NHW12706	72	123	72	24.2	71	89	97	2,161	--
Nuseed	NHW12709	70	116	73	20.0	94	98	99	2,535	--
Nuseed	NHW12732	68	116	68	21.5	91	98	99	2,283	--
Nuseed	NHW12759	69	120	66	18.2	92	95	98	1,825	--
Nuseed	NSK12M044	65	115	63	19.4	95	98	100	2,091	--
Nuseed	NSK12M045	69	117	70	19.6	95	99	99	2,309	--
Nuseed	Panther DMR	66	115	58	21.8	86	96	99	2,073	--
Nuseed	Sundance DMR	69	115	71	23.2	75	94	99	2,291	2,044
Red River Comm.	2215	69	116	68	22.1	90	98	100	2,226	2,072
Red River Comm.	2215-CL	71	118	67	23.0	89	98	99	2,422	2,131
Red River Comm.	2217-CP	72	120	64	21.3	92	98	99	2,178	1,717
SunOpta	9521	69	120	68	22.7	92	97	99	2,644	--
SunOpta	EX011	70	120	66	21.5	96	99	99	2,479	--
SunOpta	EX019	69	118	73	21.2	97	98	99	2,557	--
SunOpta	EX041	70	118	70	22.0	97	99	99	2,775	--
USDA ²	924	67	114	65	22.2	67	93	99	1,429	--
Mean		70	118	68	21.4	88	96	99	2,254	1,990
CV %		1.0	1.1	4.7	2.0	5.3	2.2	0.7	9.4	--
LSD 0.10		1	1	4.0	0.5	5	2	1	152	--

Planted: May 30. Harvested: Oct. 24.

¹Days after planting.²Long-term hybrid check.

Table 15. 2014 Sunflower - Oilseed - Williston, N.D. - Authors, J. Bergman, G. Pradhan and D. Amiot.

Company	Hybrid	Days to	Plant	Oil	Test	Seed Yield	
		Flower (DAP) ¹	Height (inch)	Content (%)	Weight (lb/bu)	2014	2-yr Avg.
		------(lb/a)-----					
Genosys	12E06	52	57	30.9	29.7	1,761	--
Genosys	12E12	51	50	28.1	25.0	1,629	1,793
Genosys	12E13	54	49	29.6	25.3	1,503	1,652
Genosys	12E14	53	56	29.1	23.5	1,567	1,579
Genosys	11G08	53	50	30.2	26.8	1,274	1,403
Genosys	12G20	51	45	30.7	27.0	1,268	1,666
Genosys	12G25	51	50	32.9	27.7	1,575	--
Nuseed	Badger	51	52	27.9	28.2	1,649	--
Nuseed	Badger DMR	50	48	26.0	26.9	1,759	--
Nuseed	Badger HO	50	46	25.5	25.6	1,106	--
Nuseed	Camaro II	52	50	31.0	28.8	1,631	1,688
Nuseed	Cobalt II	51	48	31.3	30.3	1,677	1,818
Nuseed	Falcon	53	44	30.1	27.3	1,547	1,641
Nuseed	Hornet	54	50	31.8	27.2	1,851	1,776
Nuseed	Talon	50	45	29.9	25.0	1,988	1,841
NuTech	68H7	50	48	30.6	32.0	1,624	--
NuTech	69M2	54	49	32.1	28.0	1,906	--
Mean		52	49	29.9	27.3	1,607	1,686
CV %		1.8	5.6	2.8	2.7	23.9	--
LSD 0.10		1	3.3	1.0	0.9	456	--

Planted: June 3, Harvested: Oct. 7, Previous crop: durum.

¹Days after planting.

Table 16. 2014 Sunflower - Oilseed - Hettinger N.D. - Authors, J. Rickertsen and R. Olsen.

Company	Hybrid	Days to	Plant	Plant	Test	Oil	Seed Yield	
		Flower (DAP) ¹	Height (inch)	Lodge (%)	Weight (lb/bu)	Content (%)	2014	2-yr Avg. ----- (lb/a) -----
AgVenture	3H93 DM	72	50	0	26.6	40.4	983	1,200
AgVenture	3N94 DM	74	54	11	28.3	41.7	1,281	1,937
AgVenture	AF3H681ES	74	60	1	26.5	38.0	853	--
AgVenture	AF3N692ES	76	56	1	26.1	39.5	594	--
AgVenture	EXF4N14	79	53	2	26.6	41.8	1,401	--
AgVenture	EXF4N15DM	75	51	2	27.2	41.4	1,544	--
Croplan	432 E	71	50	5	26.6	37.7	989	1,484
Croplan	545 CL	76	56	3	26.3	40.4	1,536	--
Genosys	12E06	73	60	4	28.7	40.0	1,255	1,678
Genosys	12E12	74	62	4	27.2	39.3	741	1,304
Genosys	12E13	74	60	7	26.4	39.7	1,111	1,373
Genosys	12E14	75	65	1	25.4	38.8	1,226	1,575
Genosys	11G08	76	63	3	28.7	40.4	935	1,451
Genosys	12G20	74	53	10	27.9	41.0	1,710	1,932
Genosys	12G25	74	54	5	28.4	41.8	1,501	--
Mycogen	8D310CL	74	59	3	26.8	40.6	1,429	1,533
Mycogen	8H449CLDM	75	50	3	30.2	45.0	1,533	1,731
Nuseed	Badger	73	58	8	26.1	42.8	1,253	--
Nuseed	Badger DMR	71	55	4	26.2	41.5	1,101	--
Nuseed	Badger HO	68	53	2	25.7	41.6	796	--
Nuseed	Camaro II	75	57	8	27.7	41.9	1,305	1,676
Nuseed	Cobalt II	72	54	5	26.3	40.1	892	1,253
Nuseed	Falcon	75	51	1	27.0	39.7	1,223	1,808
Nuseed	Hornet	78	59	8	26.3	40.0	1,711	2,055
Nuseed	Talon	71	52	2	26.3	40.6	1,039	--
Proseed	E-21 CL	74	60	5	26.3	38.7	653	1,150
Proseed	E-31 CL	74	60	3	25.1	38.8	1,024	1,466
Proseed	E-362436	73	63	11	28.7	40.4	1,115	1,531
Proseed	E-85 CL	75	66	4	25.7	40.9	1,111	1,379
Syngenta	3495 NS/CL/DM	75	57	6	30.6	40.4	1,394	--
Syngenta	7111 HO/CL/DM	71	48	6	27.6	40.6	963	1,201
Syngenta	7717 HO/CL/DM	72	52	0	28.1	41.5	1,857	--
Syngenta	NX34420 HO/CL/DM	75	58	13	27.5	41.2	1,781	--
USDA	894	72	55	4	26.3	39.8	1,093	--
Mean		74	56	4	27.1	40.5	1,204	1,553
CV %		4.9	1.2	107	2.8	2.4	15.4	--
LSD 0.10		1	3.2	7	0.9	1.1	219	--

Planted: May 22, Harvested: Nov. 6, Previous crop: wheat.

¹Days after planting.²Long-term hybrid check.

2014 SOUTH DAKOTA HYBRID SUNFLOWER TRIALS

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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 neighbor's statistical analysis, which removes effects of field trends (see *Crop Science* 34:62-66).

Seed of the hybrids entered in the trials was sent pretreated with Cruiser insecticide and at least one fungicide. All trials were seeded no-till. The seeding date at Bison and Onida was June 9. 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 overseeded and thinned to approximately 18,000 plants per acre. Stands were good at Eureka, Onida and Presho. Bison had poor stands due to early season flooding, and they 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.

Flowering was recorded at Onida as the number of days from planting to 50 percent ray petals extended. Plant height and lodging notes were taken at all locations immediately before harvest. The center two rows of each four-row plot were harvested with a Kincaid 8-XP plot combine fitted with a two-row all-row crop header and HarvestMaster High Capacity GrainGage HM-800 HarvestData System. Seed yields were adjusted to a 10 percent moisture basis. A seed sample was collected from each plot.

The oil content of oilseed hybrids was determined by NMR analysis using a Bruker minispec. Oil values for NuSun and high-oleic hybrids were adjusted for oleic acid content. Hulling quality was measured at Onida on selected hybrids by passing a 1-pint seed sample over 14/64 and 13/64 round-hole screens. A 1-pint subsample of seed from each plot of the Highmore and Onida confection trials was passed over 22/64, 20/64 and 18/64 round-hole screens to determine the percent of large seed. The nutmeat percent was determined by weighing 20 whole seeds from each plot, dehulling them and weighing the 20 dehulled kernels.

Climate

A summary of weather conditions near the sunflower test sites is presented in Table 17. 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 17). 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 18 to 23 and across locations in Tables 24 and 25. Lodging was highest at Highmore. No lodging occurred at Presho. Oilseed seed yields were highest at Onida, where 51 hybrids averaged 2,416 pounds per acre, with 42.9 percent oil (Table 21). The lowest oilseed yields (1,641 pounds per acre) were recorded at Presho (Table 23). Confection hybrid yields were higher at Onida than at Highmore, averaging 2,061 pounds per acre across the 34 hybrids tested (Table 22). 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.

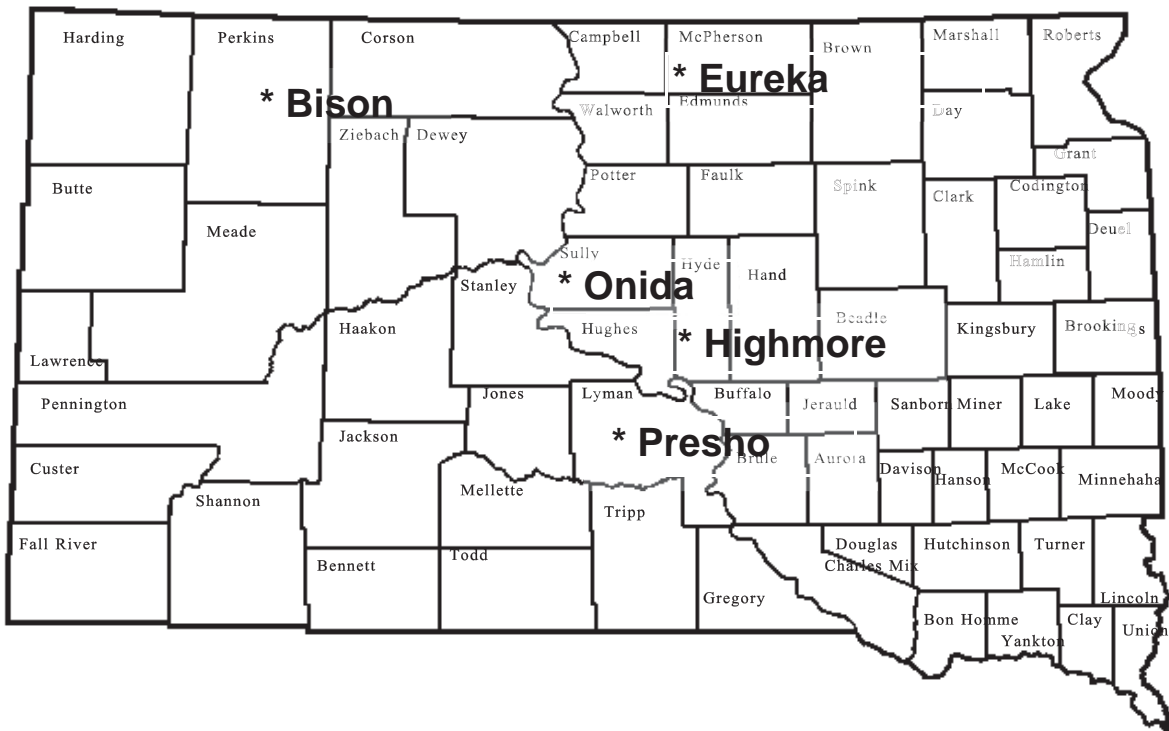


Table 17. 2014 Climate Summary for Weather Stations Nearest to South Dakota Sunflower Test Sites and Departures From Normal.

Location- Month	2014 Temperature			Total Precip. (inch)	Departure from Normal ¹			Precip. (%)
	Avg. Max.	Avg. Min.	Mean		Max. Temp	Min. Temp	Avg. Temp	
	------(°F)-----				------(°F)-----			
<u>Bison</u>								
May	67.9	42.0	55.0	1.51	-0.9	-1.3	-1.1	49
June	70.8	49.5	60.0	8.07	-7.2	-2.9	-5.2	277
July	81.9	55.6	69.0	0.87	-4.6	-3.1	-3.6	37
August	81.4	58.5	70.0	3.26	-5.0	1.5	-1.7	201
September	73.0	46.6	60.0	1.82	-2.3	0.0	-1.0	143
October	63.0	38.4	51.0	0.30	2.8	3.5	3.4	20
<u>Onida 4 NW</u>								
May	68.8	44.4	56.6	2.5	-1.2	0.3	-0.5	82
June	74.6	52.6	63.6	5.37	-5.1	-1.4	-3.2	161
July	82.6	56.1	69.4	0.93	-5.3	-3.7	-4.4	35
August	81.0	58.0	69.5	2.64	-4.9	0.2	-2.4	112
September	76.0	48.3	62.2	0.75	-0.1	1.1	0.5	42
October	63.6	35.7	49.7	0.59	3.1	1.1	2.1	35
<u>Kennebec</u>								
May	71.4	43.3	57.3	3.64	-1.5	-2.6	-2.1	115
June	79.4	54.4	66.9	3.03	-2.5	-1.4	-1.9	90
July	88.2	57.5	72.8	0.24	-1.5	-4.5	-3.1	10
August	84.6	59.3	72.0	2.28	-3.8	-0.7	-2.2	118
September	80.7	49.2	64.9	0.82	1.5	-0.1	0.6	46
October	69.5	36.4	53.0	0.20	5.7	0.4	3.1	13
<u>Highmore 1 W</u>								
May	68.5	44.3	56.4	3.61	-1.7	-0.1	-0.9	131
June	76.3	53.5	64.9	4.01	-2.7	-0.8	-1.7	133
July	82.4	57.4	69.9	1.43	-4.4	-2.8	-3.6	53
August	80.1	58.1	69.1	2.35	-5.3	-0.4	-2.9	105
September	76.5	48.8	62.7	0.35	1.0	0.2	0.6	21
October	64.7	39.0	51.9	0.10	3.9	2.9	3.4	7
<u>Eureka</u>								
May	67.0	46.3	56.6	2.00	-2.0	2.2	0.0	69
June	74.1	53.9	64.0	4.61	-3.4	0.1	-1.6	126
July	80.1	58.2	69.1	0.24	-4.4	-0.9	-2.7	8
August	78.9	58.6	68.8	3.47	-4.4	1.3	-1.5	146
September	72.7	47.5	60.1	0.45	0.2	0.8	0.5	26
October	61.2	34.3	47.8	0.45	3.5	0.2	1.9	26

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

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.

Table 18. 2014 Sunflower - Oilseed - Eureka, S.D.

Company/ Brand	Hybrid	Plant	Harvest	Plant	Test	Oil	Seed Yield	
		Height	Moisture	Lodge	Weight	Content	2014	2-yr Avg
		(inch)	(%)	(%)	(lb/bu)	(%)	----- (lb/a) -----	
AgVenture	AF3H681ES	81	12	3	33.6	41.5	2,309	--
AgVenture	AF3N692ES	81	12	2	32.5	42.6	2,552	--
Croplan	3080	64	9	9	30.5	46.2	2,143	--
Croplan	14-572 CL	74	13	3	34.8	40.3	1,984	--
Croplan	432 E	70	10	9	32.8	39.8	2,400	2,467
Croplan	545 CL	72	13	7	32.1	39.6	2,266	--
Croplan	559 CL	76	11	4	31.6	42.8	2,519	2,535
Croplan	13-652 CL	71	11	4	29.3	39.2	1,993	--
Genosys	12E06	78	11	7	34.8	41.4	2,373	--
Genosys	12E12	80	12	5	27.3	35.2	1,750	2,099
Genosys	12E13	79	11	8	30.6	39.9	2,017	2,236
Genosys	12E14	80	11	8	31.1	39.4	2,062	2,429
Genosys	11G08	76	10	9	32.5	39.2	2,121	2,128
Genosys	12G20	71	10	14	29.4	39.5	2,241	--
Genosys	12G25	73	11	8	33.3	43.5	2,345	--
Legend	9502	74	12	0	27.4	37.9	2,012	--
Legend	9418HOCL	67	11	0	34.0	41.3	2,216	--
Legend	9426NCL	74	12	27	31.0	41.4	1,709	--
Legend	9468NCL	66	13	0	30.6	39.3	2,106	--
Legend	9536HOCL	68	13	13	29.4	39.5	1,756	--
Legend	9302HOCL	71	11	6	31.4	40.4	1,812	2,127
Mycogen	8H449CLDM	68	11	1	33.8	44.8	2,216	2,340
Mycogen	8H570CL	43	10	3	29.7	44.2	1,513	--
Mycogen	8N421CLDM	71	10	5	29.9	41.4	2,020	1,937
Mycogen	8D310CL	76	10	2	31.0	34.3	2,062	--
Nuseed	Badger	85	11	15	28.6	35.8	1,404	2,105
Nuseed	Badger DMR	79	10	10	29.8	37.3	2,125	--
Nuseed	Badger HO	73	10	5	29.9	33.2	1,649	2,191
Nuseed	Camaro II	69	12	10	33.2	43.2	2,369	--
Nuseed	Cobalt II	69	11	9	32.3	41.1	1,975	--
Nuseed	Falcon	67	12	11	32.7	42.5	1,878	2,141
Nuseed	Hornet	71	13	21	29.0	40.5	1,990	--
Nuseed	Talon	67	11	10	29.0	38.8	1,904	--
Pioneer	P63ME80	74	11	5	33.2	45.3	1,953	2,073
Pioneer	P64ME01	81	13	0	31.7	40.0	2,541	--
Proseed	E-21 CL	77	13	5	27.6	37.4	1,938	2,058
Proseed	E-31 CL	75	11	7	31.1	40.1	2,138	--
Proseed	E-362436	87	11	4	33.9	41.7	2,383	--
Proseed	E-85 CL	81	11	3	28.4	40.3	2,072	--
Prosun/Agven.	3H93DM	69	11	9	31.7	41.6	1,563	--
Prosun/Agven.	3N94DM	72	12	11	34.3	42.3	2,270	--
SunOpta	4421CL	78	11	0	30.4	35.4	2,083	2,348
SunOpta	EX25CL	46	11	1	28.5	36.8	1,550	--
Syngenta	3495 NS/CL/DM	76	11	5	34.6	42.5	2,334	2,413
Syngenta	3732 NS	70	11	8	31.6	43.5	2,323	--
Syngenta	7717 HO/CL/DM	71	11	6	33.0	41.8	2,489	--
Syngenta	NX34240 HO/CL/DM	78	12	10	32.3	38.2	2,277	--
USDA ¹	894	67	10	4	31.9	44.3	1,765	1,699
Mean		72	11	7	31.2	40.4	2,072	2,196
CV %		5.6	6.0	123	4.3	3.3	11.2	12.5
LSD 0.05		5.6	1	11	1.9	1.9	319	291

Planted: June 10. Harvested: Oct. 25. Previous crop: corn.

¹Long-term hybrid check.

Table 19. 2014 Sunflower - Oilseed - Highmore, S.D.

Company/Brand	Hybrid	Plant	Harvest	Plant	Test	Oil	Seed Yield		
		Height	Moisture	Lodge	Weight	Content	2014	2-yr Avg	3-yr Avg
		(inch)	(%)	(%)	(lb/bu)	(%)	-----lb/a-----		
AgVenture	AF3H681ES	67	9	5	34.9	42.6	2,566	--	--
AgVenture	AF3N692ES	65	8	36	32.1	43.7	1,505	--	--
Croplan	3080	57	6	8	32.7	46.8	1,935	1,924	--
Croplan	14-572 CL	65	10	0	33.9	40.7	2,188	--	--
Croplan	432 E	60	8	13	34.0	41.7	1,983	2,016	2,197
Croplan	545 CL	62	9	8	35.1	43.9	2,525	--	--
Croplan	559 CL	67	7	10	30.5	45.9	2,411	2,270	2,339
Croplan	13-652 CL	57	10	7	30.6	42.4	1,286	--	--
Genosys	12E06	65	9	28	35.0	42.7	1,428	--	--
Genosys	12E12	65	8	0	29.8	39.5	1,909	--	--
Genosys	12E13	56	6	3	30.1	41.4	2,053	--	--
Genosys	12E14	70	7	33	30.2	42.6	1,621	--	--
Genosys	11G08	62	6	4	34.2	41.5	1,817	--	--
Genosys	12G20	59	5	10	33.0	42.8	2,035	--	--
Genosys	12G25	64	6	11	31.0	45.0	2,026	--	--
Legend	9502	57	7	12	30.5	42.8	1,825	--	--
Legend	9302HOCL	56	7	11	31.3	42.7	1,259	1,433	1,890
Legend	9418HOCL	55	7	4	28.6	42.4	1,541	1,844	--
Legend	9426NCL	60	10	10	38.3	43.7	2,361	2,351	--
Legend	9536HOCL	64	8	4	32.3	42.8	2,248	2,157	--
Legend	LSF 9468NCL	60	9	10	32.5	42.6	2,191	2,198	--
Mycogen	8H449CLDM	55	7	53	37.7	45.3	1,532	1,876	2,059
Mycogen	8N421CLDM	62	7	20	32.1	44.4	1,819	1,928	2,132
Mycogen	8N510	56	7	0	34.0	43.8	2,642	2,379	2,446
Mycogen	8N668S	36	14	3	34.7	44.6	2,484	2,496	--
Mycogen	8N678S	46	9	5	36.5	45.6	1,865	--	--
Pioneer	P63ME80	60	5	10	31.3	44.2	1,694	1,724	1,782
Pioneer	P64ME01	62	9	11	33.3	41.8	2,420	--	--
Proseed	E-21 CL	67	8	12	31.6	40.1	2,161	2,134	2,268
Proseed	E-31 CL	61	6	0	29.6	41.5	2,038	1,953	--
Proseed	E-362436	68	8	10	39.0	42.4	2,149	2,028	--
Proseed	E-85 CL	64	6	27	31.9	42.4	1,555	1,651	--
Prosun/Agven.	3H93DM	59	7	6	30.9	42.5	1,736	--	--
Prosun/Agven.	3N94DM	63	7	4	33.9	44.9	2,575	--	--
SunOpta	4421CL	65	8	10	31.2	36.4	1,481	1,773	--
SunOpta	EX25CL	39	10	6	34.8	38.8	1,722	--	--
Syngenta	3495 NS/CL/DM	57	7	17	31.6	42.1	1,496	--	--
Syngenta	3732 NS	51	8	10	32.5	43.6	2,285	--	--
Syngenta	7717 HO/CL/DM	62	7	13	32.4	44.7	1,752	--	--
Syngenta	NX34240 HO/CL/DM	63	7	9	29.7	42.2	2,205	--	--
USDA	cms HA465/RHA 468	60	7	12	28.5	41.3	1,647	--	--
USDA ¹	894	58	7	12	32.2	43.9	1,509	1,663	1,956
Mean		60	8	11	32.6	42.8	1,940	1,989	2,119
CV %		6.0	17.3	127	6.6	2.2	14.1	14.1	14.2
LSD 0.05		5.0	2	21	3.5	1.5	294	294	245

Planted: June 12. Harvested: Oct. 20. Previous crop: wheat.

¹Long-term hybrid check.

Table 20. 2014 Sunflower - Non-oilseed - Highmore, S.D.

Company/Brand	Hybrid	Plant	Harvest	Test	Plant	Seed Over Screen			Nut-	Seed Yield		
		Height	Moisture	Weight	Lodge	22/64	20/64	18/64	meat	2014	2-yr Avg.	3-yr Avg.
		(inch)	(%)	(lb/bu)	(%)	------(%)-----			(%)	------(lb/a)-----		
CHS	12EXP01	73	8	21.2	0	64	80	86	49	2,169	1,934	2,067
CHS	14EXP01	72	6	21.0	3	58	79	83	45	1,557	--	--
CHS	14EXP02	71	7	21.7	3	46	65	76	52	1,986	--	--
CHS	14EXP03	72	8	18.9	2	60	79	86	46	1,786	--	--
CHS	14EXP04	74	8	20.2	2	67	81	86	47	1,890	--	--
CHS	RH400CL	58	6	19.9	22	48	70	82	49	1,514	--	--
Genosys	12GCF05	72	7	17.8	1	51	68	76	47	1,037	1,189	--
Genosys	12GCF07	68	7	17.6	2	42	68	81	59	1,166	--	--
Genosys	12GCF12	86	8	20.4	3	60	72	77	53	1,532	1,472	--
Genosys	12GCF18	67	8	18.6	1	60	78	86	54	987	--	--
Genosys	14GCF01	74	5	17.9	8	49	72	84	50	1,167	--	--
Mycogen	8C451CP	66	6	19.2	4	54	71	78	54	1,795	1,714	1,830
Nuseed	5009	70	7	21.7	2	63	80	88	46	1,523	1,678	1,841
Nuseed	Jaguar	64	6	18.2	9	57	75	85	54	2,100	1,932	1,993
Nuseed	Jaguar DMR	62	5	21.2	6	53	77	89	51	2,238	1,972	1,933
Nuseed	Jaguar II	68	6	19.7	5	58	76	85	56	1,692	1,618	1,809
Nuseed	Jaguar XL	75	7	17.4	3	48	67	80	52	1,619	1,496	--
Nuseed	NHW12759	64	5	18.6	4	49	68	79	51	1,532	--	--
Nuseed	NHW12984	69	11	22.5	0	66	82	88	52	1,384	--	--
Nuseed	NHW12985	66	6	18.7	1	56	72	78	52	1,574	--	--
Nuseed	NSK12M018	70	8	21.7	1	58	76	84	50	1,814	--	--
Nuseed	NSK12M048	71	6	17.2	3	65	77	82	49	1,725	1,697	--
Nuseed	X4334	69	7	18.6	3	46	65	76	52	1,651	1,350	1,646
Nuseed	X4417	61	6	18.2	9	63	78	85	51	1,772	1,559	1,683
Nuseed	X5334	73	7	20.1	4	63	78	83	49	1,378	--	--
Nuseed	X9180	64	7	21.6	6	40	67	85	57	2,336	--	--
Nuseed	X98578	71	7	19.2	5	55	76	85	50	1,472	1,465	--
Red River Comm.	2215	71	7	18.8	4	56	71	77	51	1,794	1,945	2,039
Red River Comm.	2215 CL	76	5	19.2	6	50	70	79	55	1,611	1,563	1,707
Red River Comm.	2217 CP	70	7	19.2	3	57	74	82	55	1,893	1,670	--
SunOpta	9521	74	5	18.6	5	59	77	84	51	1,720	1,591	--
SunOpta	EX011	68	9	22.4	0	72	84	87	46	2,354	--	--
SunOpta	EX041	73	6	22.9	4	64	77	81	45	1,408	--	--
USDA ¹	924	72	4	18.4	6	9	22	54	58	1,258	1,216	1,270
Mean		70	7	19.7	4	55	73	82	51	1,660	1,615	1,802
CV %		5.6	14.9	9.4	143	11.9	5.9	3.9	4.7	19	18	17
LSD 0.05		6.0	1	3.0	NS	13.0	9.0	6.0	5	524	317	237

Planted: June 12. Harvested: Oct. 20. Previous crop: wheat.

¹Long-term hybrid check.

Table 21. 2014 Sunflower - Oilseed - Onida, S.D.

Company/ Brand	Hybrid	Days To Flower (DAP)	Plant Height (inch)	Harvest Moisture (%)	Test Weight (lb/bu)	Plant Lodge (%)	Oil Content (%)	Seed Yield			Hulling Screen Test ¹
								2014	2-yr. Avg.	3-yr. Avg.	
AgVenture	AF3H681ES	63	79	7	34.3	0	43.6	2,788	--	--	NT
AgVenture	AF3N692ES	64	78	7	34.3	1	44.4	2,907	--	--	Good
Croplan	3080	60	65	6	30.2	30	46.3	1,959	1,702	--	NT
Croplan	13-652 CL	66	72	6	31.6	1	43.8	2,610	--	--	NT
Croplan	14-572 CL	61	78	7	36.9	0	42.5	2,763	--	--	NT
Croplan	432 E	58	68	7	33.2	2	41.8	2,972	2,297	2,319	Excel
Croplan	545 CL	65	69	7	35.1	0	43.6	2,807	--	--	NT
Croplan	559 CL	64	77	7	31.9	2	45.3	3,129	--	--	NT
Genosys	12E06	61	83	7	36.1	6	42.9	2,683	--	--	NT
Genosys	12E12	63	80	7	32.0	2	39.9	2,478	1,892	1,947	NT
Genosys	12E13	63	71	7	32.4	2	40.5	2,109	1,924	1,929	NT
Genosys	12E14	63	80	7	31.7	3	41.1	2,220	2,167	2,195	NT
Genosys	11G08	63	72	7	32.6	0	40.0	2,560	1,927	1,826	NT
Genosys	12G20	62	69	6	34.9	5	42.6	2,519	1,893	--	NT
Genosys	12G25	63	72	7	32.3	4	45.5	2,771	--	--	NT
Legend	9502	66	69	6	28.3	8	43.3	2,164	--	--	Fail
Legend	9302HOCL	64	61	6	28.4	1	41.3	1,695	1,688	1,962	Fail
Legend	9418HOCL	61	61	6	33.3	3	42.2	2,120	1,984	--	Fail
Legend	9426NCL	63	79	7	36.7	2	44.1	2,613	2,491	--	Fail
Legend	9468NCL	67	67	7	31.5	3	44.6	2,644	2,244	--	Fail
Legend	9536HOCL	68	70	7	32.4	5	44.4	2,469	2,288	--	Fail
Mycogen	8N421CLDM	62	72	6	32.4	7	42.9	2,273	2,139	2,165	NT
Mycogen	8N510	64	68	6	31.5	6	42.7	2,614	2,212	2,229	NT
Mycogen	8N668S	66	47	7	34.3	1	46.2	2,461	--	--	NT
Mycogen	8N678S	66	50	7	35.8	3	47.6	2,151	--	--	NT
Mycogen	8H449CLDM	62	70	6	35.5	1	47.0	2,765	--	--	NT
Nuseed	Badger	63	78	7	31.6	6	39.3	2,363	1,743	1,909	NT
Nuseed	Badger DMR	59	76	6	30.7	4	37.8	2,319	1,810	--	NT
Nuseed	Badger HO	58	71	7	31.8	4	36.4	2,110	1,662	1,801	NT
Nuseed	Camaro II	63	74	6	36.2	2	44.8	2,668	2,438	--	NT
Nuseed	Cobalt II	60	69	6	32.7	0	43.3	1,811	1,779	--	NT
Nuseed	Falcon	63	68	7	34.4	2	45.5	2,427	1,984	1,995	NT
Nuseed	Hornet	66	75	7	33.5	4	42.9	2,577	2,115	--	NT
Nuseed	Talon	61	74	7	29.5	9	41.6	2,032	--	--	NT
Pioneer	P63ME80	62	71	7	31.7	1	44.5	2,510	2,150	2,160	NT
Pioneer	P64ME01	65	72	8	34.2	1	42.8	2,954	--	--	NT
Proseed	E-21 CL	62	77	8	30.2	1	38.4	2,268	1,740	1,961	NT
Proseed	E-31 CL	63	74	7	30.6	6	40.2	2,474	1,964	--	NT
Proseed	E-362436	62	81	7	36.9	1	41.2	2,655	1,881	--	NT
Proseed	E-85 CL	63	81	7	32.0	0	41.7	2,802	2,287	--	NT
Prosun/Agven.	3H93DM	60	69	7	31.8	6	43.3	2,185	--	--	NT
Prosun/Agven.	3N94DM	63	73	7	37.9	0	45.6	2,849	--	--	Fail
Prosun/Agven.	EXF4N14	66	70	8	33.5	2	43.4	2,648	--	--	NT
Prosun/Agven.	EXF4N15DM	64	67	8	33.6	2	44.1	2,771	--	--	NT
SunOpta	4421CL	63	76	7	32.2	3	38.4	2,087	2,103	1,984	NT
SunOpta	EX25CL	66	49	7	33.1	0	41.7	2,352	--	--	NT
Syngenta	3495 NS/CL/DM	63	70	7	34.7	2	42.5	2,202	--	--	NT
Syngenta	3732 NS	63	67	7	34.0	7	46.2	2,584	--	--	NT
Syngenta	7717 HO/CL/DM	61	71	6	34.9	10	43.9	2,070	--	--	NT
Syngenta	NX34240 HO/CL/DM	63	77	7	30.2	4	42.0	2,697	--	--	NT
USDA	cms HA465/RHA 468	62	78	7	34.2	7	41.5	2,121	--	--	NT
USDA ²	894	61	62	7	32.6	2	44.9	1,896	--	--	NT
Mean		63	70	7	32.9	3	42.9	2,455	2,019	2,027	--
CV %		1.0	4.3	6.1	6.1	166.1	2.2	9.8	13.2	14.1	--
LSD 0.05		1	4.3	1	2.8	8	1.3	332	284	254	--

Planted: June 9. Harvested: Oct. 27. Previous crop: wheat.

¹Hulling 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.

²Long-term hybrid check.

Table 22. 2014 - Sunflower - Non-oilseed - Onida, S.D.

Company/Brand	Hybrid	Days							Seed Yield				
		To	Plant	Harvest	Test	Plant	Seed Over Screen			Nut-	2-yr. 3-yr.		
		Flower (DAP) ¹	Height (inch)	Moisture (%)	Weight (lb/bu)	Lodge (%)	22/64	20/64	18/64	meat (%)	2014	Avg.	Avg.
CHS	12EXP01	66	74	9	21.3	2	66	76	78	51	2,406	2,228	2,313
CHS	14EXP01	64	81	8	19.1	3	74	84	86	49	2,319	--	--
CHS	14EXP02	65	81	8	18.5	3	54	68	74	53	2,789	--	--
CHS	14EXP03	67	77	9	23.9	3	64	77	82	46	1,843	--	--
CHS	14EXP04	66	77	8	23.3	3	71	82	85	49	2,099	--	--
CHS	RH400CL	60	69	8	20.8	10	67	80	84	53	1,724	--	--
Genosys	12GCF05	71	81	8	19.2	1	50	68	77	56	1,378	1,479	1,512
Genosys	12GCF07	70	81	9	20.7	0	48	67	77	55	1,847	--	--
Genosys	12GCF12	68	86	9	22.1	7	53	65	70	52	1,495	1,689	--
Genosys	12GCF18	71	78	9	22.4	0	57	76	85	55	1,649	--	--
Genosys	14GCF01	62	80	5	19.6	13	58	78	87	53	1,439	--	--
Mycogen	8C451CP	67	75	6	20.4	2	47	68	77	55	2,327	2,004	2,028
Nuseed	Jaguar	61	74	7	22.5	8	60	78	85	56	2,279	2,152	2,136
Nuseed	Jaguar DMR	58	71	7	22.6	10	55	75	83	54	1,934	1,851	1,836
Nuseed	Jaguar II	62	75	9	21.7	15	60	74	82	56	1,657	1,644	1,728
Nuseed	Jaguar XL	64	84	9	19.3	12	52	74	84	52	1,858	1,734	--
Nuseed	NHW12759	62	69	9	18.6	8	72	80	84	52	1,906	--	--
Nuseed	NHW12984	67	78	14	22.1	0	64	79	85	50	1,670	--	--
Nuseed	NHW12985	66	79	8	18.2	2	58	67	71	55	1,921	--	--
Nuseed	NSK12M018	67	83	9	21.6	6	54	76	83	50	2,194	--	--
Nuseed	NSK12M048	64	85	8	18.4	4	71	83	86	55	2,403	1,946	--
Nuseed	X4334	67	81	9	22.0	5	60	69	76	54	2,309	1,837	1,879
Nuseed	X4417	60	64	6	19.5	17	70	79	81	54	1,598	1,363	1,531
Nuseed	X5334	65	79	9	23.2	9	59	78	83	54	2,114	--	--
Nuseed	X9180	61	73	7	18.8	5	43	68	83	62	2,564	--	--
Nuseed	X98578	68	81	8	19.9	3	70	82	86	51	2,172	1,590	--
Nuseed	5009	67	77	9	19.7	2	56	76	86	52	2,007	1,886	1,896
Red River Comm.	2215	67	78	7	20.7	1	60	74	77	53	2,636	2,492	2,315
Red River Comm.	2215-CL	63	81	7	23.4	1	68	81	85	57	2,761	2,314	2,334
Red River Comm.	2217-CP	67	77	8	20.7	1	63	76	81	58	2,283	2,032	--
SunOpta	9521	64	76	8	20.4	4	73	81	85	51	2,642	2,369	--
SunOpta	EX011	66	79	8	22.0	1	73	83	86	52	2,309	--	--
SunOpta	EX041	64	78	7	19.9	1	72	79	81	46	2,374	--	--
USDA ²	924	64	82	5	24.1	11	16	33	63	58	1,168	1,014	1,122
Mean		65	78	8	20.9	5	60	75	81	53	2,061	1,868	1,886
CV %		1.0	4.1	17.9	9.8	71.6	11.0	6.9	4.7	3.5	16.4	17.3	17.3
LSD 0.05		1	4.5	2	2.9	5	13	10	8	4	473	328	268

Planted: June 6. Harvested: Oct. 27. Previous crop: wheat.

¹DAP = Days after planting.²Long-term hybrid check.

Table 23. 2014 Sunflower - Oilseed - Presho, S.D.

Company/ Brand	Hybrid	Plant Height	Harvest Moisture	Test Weight	Oil Content	Seed Yield		
						2014	2-yr. Avg.	3-yr. Avg.
						------(lb/a)-----		
		(inch)	(%)	(lb/bu)	(%)			
Croplan	3080	50	8	30.7	45.5	1,749	1,922	--
Croplan	13-652 CL	57	10	27.9	39.7	1,521	--	--
Croplan	14-572 CL	62	12	32.6	39.1	1,576	--	--
Croplan	432 E	54	9	33.0	41.8	1,825	2,057	2,010
Croplan	545 CL	57	12	31.2	39.1	1,717	--	--
Croplan	559 CL	58	10	30.7	43.0	1,920	2,066	2,173
Genosys	12E06	65	11	35.3	42.4	1,823	--	--
Genosys	12E12	57	13	29.4	35.2	1,536	--	--
Genosys	12E13	56	10	30.2	38.2	1,721	--	--
Genosys	12E14	61	11	28.6	37.6	1,778	--	--
Genosys	11G08	56	9	32.4	40.4	1,858	--	--
Genosys	12G20	51	9	30.8	43.3	1,697	--	--
Genosys	12G25	54	10	33.2	44.8	1,935	--	--
Legend	9502	56	10	25.9	38.7	1,653	--	--
Legend	9418HOCL	52	11	28.3	39.7	1,465	1,747	--
Legend	9426NCL	58	12	32.0	40.6	1,824	1,994	--
Legend	9468NCL	54	19	29.9	41.1	1,677	1,834	--
Legend	9536HOCL	57	14	28.6	41.5	1,927	1,935	--
Legend	9302HOCL	50	12	30.0	39.8	1,737	1,684	1,690
Mycogen	8N510	53	11	29.7	39.6	1,779	1,806	2,012
Mycogen	8N668S	37	19	31.8	44.7	1,660	1,748	--
Mycogen	8N678S	42	14	31.4	45.0	1,482	--	--
Mycogen	8H859CL	58	10	31.7	41.3	1,509	--	--
Nuseed	Badger	58	10	28.3	36.6	1,580	1,579	1,784
Nuseed	Badger DMR	60	10	30.3	35.5	1,608	1,733	--
Nuseed	Badger HO	56	11	28.8	35.0	1,610	1,595	1,688
Nuseed	Camaro II	54	11	32.8	41.9	1,444	1,732	--
Nuseed	Cobalt II	53	10	30.1	39.7	1,266	1,408	--
Nuseed	Falcon	53	10	30.5	41.3	1,504	1,649	1,728
Nuseed	Hornet	56	12	30.0	40.2	1,820	2,001	--
Nuseed	Talon	53	12	28.6	39.4	1,565	--	--
Pioneer	P63ME80	57	10	30.8	43.3	1,842	1,886	1,941
Pioneer	P64ME01	60	13	30.5	40.0	1,809	--	--
Proseed	E-21 CL	57	13	29.4	35.6	1,585	1,617	1,793
Proseed	E-31 CL	56	11	28.4	38.1	1,453	1,449	--
Proseed	E-362436	63	11	33.0	42.5	1,813	1,866	--
Proseed	E-85 CL	61	11	28.1	38.2	1,630	1,788	--
SunOpta	4421CL	59	8	29.4	34.9	1,639	1,745	--
SunOpta	EX25CL	42	10	29.6	38.9	1,574	--	--
Syngenta	3495 NS/CL/DM	56	8	33.4	41.3	1,712	--	--
Syngenta	3732 NS	55	10	32.3	45.0	1,832	--	--
Syngenta	7717 HO/CL/DM	56	9	32.0	41.5	1,680	--	--
Syngenta	NX34240 HO/CL/DM	59	10	30.5	40.2	1,880	--	--
USDA ¹	894	46	10	30.4	43.8	1,499	1,421	1,557
Mean		55	11	30.5	40.4	1,675	1,761	1,838
CV %		4.0	8.0	3.5	1.8	6.6	9.6	10.6
LSD 0.05		3.1	1	1.5	1.0	2	165	152

Planted: June 24. Harvested: Oct. 29. Previous crop: corn.

¹Long-term hybrid check.

Table 24. 2014 Sunflower - Oilseed - Averages Across Four Locations (Eureka, Highmore, Onida and Presho, S.D.)

Company/Brand	Hybrid	Plant Height (inch)	Harvest Moisture (%)	Test Weight (lb/bu)	Plant Lodge (%)	Oil Content (%)	Seed Yield (lb/a)
Croplan	3080	59	7	31.0	12	46.2	1,947
Croplan	13-652 CL	65	9	29.8	3	41.3	1,852
Croplan	14-572 CL	70	10	34.6	0	40.6	2,128
Croplan	432 E	63	8	33.2	6	41.3	2,295
Croplan	545 CL	65	10	33.4	4	41.6	2,328
Croplan	559 CL	70	9	31.2	4	44.2	2,495
Genosys	12E06	73	9	35.3	10	42.3	2,077
Genosys	12E12	70	10	29.6	1	37.5	1,918
Genosys	12E13	65	8	30.8	3	40.0	1,975
Genosys	12E14	73	9	30.4	11	40.2	1,920
Genosys	11G08	66	8	32.9	3	40.3	2,089
Genosys	12G20	62	7	32.0	7	42.1	2,123
Genosys	12G25	66	9	32.5	6	44.7	2,269
Legend	9502	64	9	28.0	4	40.7	1,913
Legend	9302HOCL	60	9	30.3	5	41.1	1,626
Legend	9418HOCL	59	9	31.0	0	41.4	1,836
Legend	9426NCL	67	10	34.5	10	42.5	2,127
Legend	9468NCL	61	12	31.1	2	41.9	2,155
Legend	9536HOCL	65	10	30.7	5	42.0	2,100
Pioneer	P63ME80	65	8	31.8	4	44.3	2,000
Pioneer	P64ME01	69	11	32.4	2	41.1	2,431
Proseed	E-21 CL	70	10	29.7	4	37.9	1,988
Proseed	E-31 CL	67	8	29.9	2	40.0	2,026
Proseed	E-362436	75	9	35.7	4	41.9	2,250
Proseed	E-85 CL	72	9	30.1	7	40.6	2,015
SunOpta	4421CL	70	8	30.8	3	36.3	1,823
SunOpta	EX25CL	44	9	31.5	2	39.1	1,799
Syngenta	3495 NS/CL/DM	65	8	33.6	6	42.1	1,936
Syngenta	3732 NS	61	9	32.6	6	44.6	2,256
Syngenta	7717 HO/CL/DM	65	8	33.1	7	43.0	1,998
Syngenta	NX34240 HO/CL/DM	69	9	30.7	6	40.7	2,265
USDA ¹	894	58	9	31.7	4	44.3	1,667
Mean		65	9	31.8	5	41.5	2,051
CV %		5.0	9.8	5.3	164	2.5	11.9
LSD 0.05		2.3	1	1.2	6	0.7	177

¹Long-term hybrid check.

Table 25. 2014 Sunflower - Non-oilseed - Means Across Two Locations (Highmore and Onida, S.D.).

Company/ Brand	Hybrid	Plant Height	Harvest Moisture	Test Weight	Lodge	Seed Over Screen			Nut- meat	Seed Yield
						22/64	20/64	18/64		
						-----(%)------			(%)	(lb/a)
CHS	12EXP01	73	8	21.3	1	65	78	82	50	2,287
CHS	14EXP001	76	7	20.0	3	66	81	85	47	1,938
CHS	14EXP002	76	7	20.1	3	50	67	75	53	2,388
CHS	14EXP03	74	8	21.4	3	62	78	84	46	1,815
CHS	14EXP04	75	8	21.8	3	69	81	86	48	1,995
CHS	RH400CL	64	7	20.4	16	58	75	83	51	1,619
Genosys	12GCF05	77	8	18.5	1	50	68	76	51	1,208
Genosys	12GCF07	75	8	19.1	1	45	67	79	57	1,506
Genosys	12GCF12	86	8	21.3	5	56	68	73	52	1,514
Genosys	12GCF18	73	8	20.5	1	58	77	85	54	1,318
Genosys	14GCF01	77	5	18.7	10	53	75	85	51	1,303
Mycogen	8C451CP	70	6	19.8	3	50	69	77	54	2,061
Nuseed	5009	73	8	20.7	2	59	78	87	49	1,765
Nuseed	Jaguar	69	6	20.3	9	59	76	85	55	2,190
Nuseed	Jaguar DMR	67	6	21.9	8	54	76	86	52	2,086
Nuseed	Jaguar II	72	8	20.7	10	59	75	84	56	1,674
Nuseed	Jaguar XL	80	8	18.3	7	50	70	82	52	1,738
Nuseed	NHW12759	67	7	18.6	6	61	74	81	51	1,719
Nuseed	NHW12984	73	12	22.3	0	65	81	87	51	1,527
Nuseed	NHW12985	72	7	18.4	1	57	69	74	54	1,747
Nuseed	NSK12M018	77	9	21.6	3	56	76	84	50	2,004
Nuseed	NSK12M048	78	7	17.8	3	68	80	84	52	2,064
Nuseed	X4334	75	8	20.3	4	53	67	76	53	1,980
Nuseed	X4417	63	6	18.8	13	66	78	83	52	1,685
Nuseed	X5334	76	8	21.6	7	61	78	83	52	1,746
Nuseed	X9180	69	7	20.2	6	42	67	84	60	2,450
Nuseed	X98578	76	7	19.6	4	62	79	86	51	1,822
Red River Comm.	2215	74	7	19.7	3	58	72	77	52	2,215
Red River Comm.	2215 CL	78	6	21.3	4	59	75	82	56	2,186
Red River Comm.	2217 CP	74	7	20.0	2	60	75	81	56	2,088
SunOpta	9521	75	7	19.5	5	66	79	85	51	2,181
SunOpta	EX011	74	8	22.2	1	73	83	87	49	2,331
SunOpta	EX041	75	6	21.4	3	68	78	81	45	1,891
USDA ¹	924	77	5	21.2	9	12	28	59	58	1,213
Mean		74	7	20.3	5	57	74	81	52	1,860
CV %		4.8	16.8	9.7	103	11.4	6.4	4.3	4.2	17.8
LSD 0.05		3.7	1	2.1	5	9	7	5	3	352

¹Long-term hybrid check.

For more information on this and other topics, see: www.ag.ndsu.edu

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