

North Dakota and South Dakota Sunflower Hybrid Trial Results for 2015 and Selection Guide

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Introduction

In North Dakota, an estimated 701,000 acres of sunflowers were harvested in 2015. This was about 7 percent more than the acres harvested in 2014. Table 1 contains acreage data for the past 16 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 2000-2015.

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	1,700	85	1,670
2013	415	1,260	71	1,360
2014	515	1,340	140	1,180
2015	605	1,450 ¹	96	1,450 ¹

Source: National Agricultural Statistics Service.

¹Estimate by NASS for all sunflower, October 2015.

2015 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 Experiment Station locations.

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.

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 consider when 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 is also of importance.

When selecting a high-yielding and good-quality hybrid, use data that summarize 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 are 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
Dupont-Pioneer	Pioneer	www.pioneer.com/home/site/about/products/crops/sunflowers/
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
Royal	Royal	--
SunOpta	SunOpta	--
Syngenta Seeds	Syngenta	www3.syngenta.com/country/us/en/agriculture/seeds/sunflower/
Thunder Seed	Thunder	www.thunderseed.com
U.S. Department of Agriculture	USDA	www.ars.usda.gov/Main/docs.htm?docid=3562

Table 3. April-September 2015 Average Temperature and Precipitation Rankings for Selected North Dakota Locations.

City	Temperature Ranking	Precipitation Ranking
Bowman	59.7 F (40th Warmest Period Since 1915)	12.6 inches (44th Wettest Period Since 1915)
Bismarck	62.0 F (23rd Warmest Period Since 1875)	14.0 inches (45th Wettest Period Since 1875)
Cavalier	59.3 F (23rd Warmest Period Since 1934)	20.9 inches (6th Wettest Period Since 1927)
Fargo	62.8 F (10th Warmest Period Since 1881)	16.9 inches (57th Wettest Period Since 1881)
Minot Exp. Station	59.9 F (22nd Warmest Period Since 1905)	14.8 inches (31st Wettest Period Since 1905)
Williston Exp. Station	61.3 F (14th Warmest Period Since 1894)	8.7 inches (27th Driest Period Since 1894)
North Dakota Average	60.4 F (15th Warmest Period Since 1895)¹	14.1 in. (46th Wettest Period Since 1894)¹

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

¹Statewide values are calculated based on all available locations in North Dakota rather than the mathematical average of the list above.

List of Tables

- Table 1. Harvested Sunflower Acreage in North Dakota and Yield Per Acre 2000-2015.
- Table 2. Full Company Name, Abbreviated Name Used in Tables and Website.
- Table 3. April-September 2015 Average Temperature and Precipitation Rankings for Selected North Dakota Locations.
- Table 4. 2015 Sunflower - Non-oilseed Hybrids With Traits and Locations Where Tested.
- Table 5. 2015 Sunflower - Oilseed Hybrids With Traits and Locations Where Tested.
- Table 6. 2015 Sunflower - Oilseed - Galchutt, N.D.
- Table 7. 2015 Sunflower - Non-oilseed - Galchutt, N.D.
- Table 8. 2015 Sunflower - Fatty Acid Trial - Galchutt, N.D.
- Table 9. 2015 Sunflower - Oilseed - Carrington, N.D.
- Table 10. 2015 Sunflower - Non-oilseed - Carrington, N.D.
- Table 11. 2015 Sunflower - Non-oilseed - Langdon, N.D.
- Table 12. 2015 Sunflower - Oilseed - Langdon, N.D.
- Table 13. 2015 Sunflower - Non-oilseed - Minot, N.D.
- Table 14. 2015 Sunflower - Oilseed - Williston, N.D.
- Table 15. 2015 Sunflower - Oilseed - Hettinger, N.D.
- Table 16. 2015 Climate Summary for Weather Stations Nearest to South Dakota Sunflower Test Sites and Departures From Normal.
- Table 17. 2015 Sunflower - Oilseed - Caputa, S.D.
- Table 18. 2015 Sunflower - Oilseed - Eureka, S.D.
- Table 19. 2015 Sunflower - Oilseed - Onida, S.D.
- Table 20. 2015 Sunflower - Non-oilseed - Highmore, S.D.
- Table 21. 2015 Sunflower - Non-oilseed - Onida, S.D.
- Table 22. 2015 Sunflower - Oilseed - Presho, S.D.
- Table 23. 2015 Sunflower - Non-oilseed - Means Across Two Locations (Highmore and Onida, S.D.).

Table 4. 2015 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
CHS	15EXP01	EX	x	--	--	x	x	x
CHS	15EXP04	CL	--	--	--	--	x	x
CHS	15EXP05	CL	x	--	--	--	--	--
CHS	15EXP06	EX	x	--	--	--	--	--
CHS	RH1130-EX	EX	x	--	--	x	x	x
CHS	RH609CLP	CP	x	--	--	x	x	x
CHS	RH841	Trad.	--	--	--	--	x	x
Mycogen	8C451CP	CP	x	--	--	--	x	x
Nuseed	6946 DMR	DM	--	--	x	x	--	--
Nuseed	Jaguar DMR	CL, DM	x	--	--	--	--	--
Nuseed	Jaguar II	CL	x	x	x	--	x	x
Nuseed	NDK12M147	CL	x	--	--	--	x	x
Nuseed	NSK12M504	CL, DM	x	--	--	--	--	--
Nuseed	Panther DMR	Trad., DM	x	x	x	x	--	--
Nuseed	X9180	EX	x	x	x	x	--	--
Red River Comm.	2215	Trad.	x	x	--	x	x	x
Red River Comm.	2215 CL	CL	x	x	--	x	x	x
Red River Comm.	2217 CP	CP	x	x	--	--	x	x
Royal	RH1130EX	EX	--	x	--	--	--	--
Royal	RH609CLP	CP	--	x	--	--	--	--
SunOpta	9521	Trad.	--	x	--	x	x	x
SunOpta	9524	Trad.	x	x	--	x	x	x
SunOpta	9506CL	CL	--	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. 2015 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	Williston	Caputa	Eureka	Highmore	Onida	Presho
AAFC/USDA	Honeycomb NS	NS	x	x	x	--	--	--	--	--	--	--
AgVenture	3N94DM	NS, CL, DM	--	--	--	--	--	x	x	x	x	x
AgVenture	4H95DM	HO, CL, DM	--	--	--	--	--	x	x	x	x	x
AgVenture - Scherr	AF3H681ES	HO, EX, DM	--	--	x	--	--	x	x	x	x	x
AgVenture - Scherr	AF3N692ES	NS, EX, DM	--	--	x	--	--	x	x	x	x	x
Croplan	3080	NS, DM	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	--	x	x	x	x	x
Croplan	545 CL	NS, CL, DM	x	x	x	x	--	x	x	x	x	x
Croplan	549 CL HO	HO, CL, DM	x	x	x	x	--	x	x	x	x	x
Croplan	553 CL HO	HO, CL, DM	x	x	x	x	--	x	x	x	x	x
Croplan	559 CL	NS, CL, DM	--	x	--	--	--	--	--	--	--	--
Dupont-Pioneer	P63HE60	HO, EX, DM	--	--	--	--	--	--	x	x	x	x
Dupont-Pioneer	P64ME01	NS, EX, DM	--	--	--	--	--	--	x	x	x	x
Genosys	12E06	HO, DM	--	--	--	x	--	--	--	--	--	--
Genosys	12G04	HO	x	x	x	x	x	x	x	x	x	x
Genosys	12G20	HO, CL	x	x	x	x	x	x	x	x	x	x
Genosys	12G25	HO, CL	x	x	x	x	x	x	x	x	x	x
Genosys	12G28	HO	x	x	x	x	x	x	x	x	x	x
Mycogen	8D310CL ²	NS, CL	x	x	x	--	--	x	x	x	x	x
Mycogen	8H449CLDM	HO, CL, DM	x	x	x	--	--	x	x	x	x	x
Mycogen	8H456CL	HO, CL, DM	x	x	x	--	--	x	x	x	x	x
Mycogen	8H570SCL	HO, CL, SS	x	x	--	--	--	x	x	x	x	x
Mycogen	8N270CLDM	NS, CL, DM	--	x	x	--	--	--	--	--	--	--
Mycogen	8N358CLDM	NS, CL, DM	--	x	--	--	--	x	x	--	x	--
Mycogen	8N668S	NS, SS	--	--	--	--	--	--	--	x	x	x
Nuseed	Badger DMR ²	NS, 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	x
Nuseed	Cobalt II	HO, CL, DM	x	x	x	x	x	x	x	x	x	x
Nuseed	Daytona	HO, CL	--	--	x	--	--	x	x	x	x	x
Nuseed	Falcon	NS, EX	--	x	x	x	--	x	x	x	x	x
Nuseed	Hornet	HO, CL, DM	x	x	x	x	x	x	x	x	x	x
Nuseed	Talon	NS, EX	x	x	x	x	x	x	x	x	x	x
Nuseed	NHK12M054	HO, CL, DM	x	x	x	--	--	x	x	x	x	x
Nuseed	NHK12M055	HO, CL, DM	x	x	x	--	--	x	x	x	x	x
Nuseed	NSK12M507 ²	NS, CL, DM	x	x	x	--	--	x	x	x	x	x
Nuseed	N4HM354	HO, CL, DM	--	--	--	--	x	--	--	--	--	--
Nuseed	N4HM355	NS, CL, DM	--	--	--	--	x	--	--	--	--	--
NuTech	68H7	HO, EX, DM	--	x	x	x	x	--	--	--	--	--
NuTech	69M2	HO, EX, DM	--	x	x	x	x	--	--	--	--	--
Proseed	E-1041 CL	HO, CL	x	--	x	--	--	--	--	--	--	--

Table 5. 2015 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	Williston	Caputa	Eureka	Highmore	Onida	Presho
Proseed	E-1402 CL	HO, CL	--	x	--	x	--	x	x	x	x	x
Proseed	E-21 CL	HO, CL, DM	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
Proseed	E-31051 CL	HO, CL	x	x	x	x	--	x	x	x	x	x
Proseed	E-362436	HO, DM	x	x	x	x	--	x	x	x	x	x
Proseed	E-53051 CL	HO, CL	x	x	x	x	--	x	x	x	x	x
Proseed	E-79051 CL	HO, CL	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
Prosun-Scherr	4H95DM	HO, CL, DM	--	--	x	--	--	--	--	--	--	--
Prosun-Scherr	3N94DM	NS, CL, DM	--	--	x	--	--	--	--	--	--	--
SunOpta	4415 HO/CLP/DM	HO, CP, DM	x	x	--	x	--	--	x	--	x	--
SunOpta	4416CLEX	Trad., CL	--	x	--	--	--	--	--	--	--	--
SunOpta	4421CL	HO, CL	x	x	--	x	--		x		x	--
Syngenta	3495 NS/CL/DM	NS, CL, DM	x	x	x	x	--	x	x	x	x	x
Syngenta	3732 NS	NS	--	--	--	--	--	x	x	x	x	x
Syngenta	3845 HO	HO	x	x	x	x	--	x	x	x	x	x
Syngenta	7111 HO/CL/DM	HO, CL, DM	x	x	x	x	--	--	--	--	--	--
Syngenta	SY7717	HO, CL, DM	x	x	x	x	--	x	x	x	x	x
Thunder	11N94	NS, CL, DM	x	x	x	x	x	x	x	x	x	x
Thunder	35H92	HO, CL, DM	x	x	x	x	x	x	x	x	x	x
Thunder	42H94	HO, CL, DM	x	x	x	x	x	x	x	x	x	x
USDA ³	cms HA465/RHA 468	NS	--	--	--	--	--	--	--	--	x	--
USDA ³	894	Trad.	x	x	x	x	--	x	x	x	x	x

¹Hybrid type provided by companies; some hybrids may have additional traits.

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. 2015 Sunflower - Oilseed - Galchutt, N.D. - Author, B. Hulke.

Company/ Brand	Hybrid	Days to Flower (DAP) ³	Days to PM (DAP) ³	Height (inch)	Lodging ¹ (1-9)	Test Wt. (lb/bu)	Oil Content (%)	2015 Seed Yield (lb/a)	Hulling Screen Test ²
AAFC/USDA	Honeycomb NS	61	98	69	2.0	29.4	38.4	2,282	--
Croplan	3080	67	104	74	2.0	29.2	42.2	2,785	--
Croplan	432 E	65	103	73	2.0	31.4	39.3	3,453	Exc.
Croplan	458 E HO	68	106	77	1.7	30.9	42.2	3,143	Exc.
Croplan	545 CL	71	104	81	2.0	31.5	40.5	3,430	--
Croplan	549 CL HO	66	104	82	1.7	31.5	41.4	3,242	--
Croplan	553 CL HO	71	105	79	2.0	30.7	42.5	3,289	--
Genosys	12G04	69	105	77	2.0	31.8	44.0	3,412	--
Genosys	12G20	67	103	76	2.3	28.2	40.3	2,710	--
Genosys	12G25	68	103	76	2.0	31.0	43.4	3,497	--
Genosys	12G28	70	105	79	2.0	29.7	38.1	2,545	--
Mycogen	8D310CL	69	104	83	2.0	27.6	34.5	2,794	--
Mycogen	8H449CLDM	71	107	76	2.3	32.9	44.9	3,529	--
Mycogen	8H456CL	71	106	80	2.3	30.3	44.5	3,309	--
Mycogen	8H570SCL	72	107	54	2.0	31.0	41.8	2,056	--
Nuseed	Badger DMR	65	103	75	2.0	30.1	32.9	2,651	--
Nuseed	Camaro II	69	104	82	2.0	32.4	41.4	3,462	--
Nuseed	Cobalt II	66	104	73	2.0	32.3	41.2	2,322	--
Nuseed	Hornet	70	104	78	2.0	30.6	43.2	3,253	--
Nuseed	NHK12M054	67	105	75	2.0	33.6	43.8	2,624	--
Nuseed	NHK12M055	66	103	71	2.0	32.3	42.5	2,908	--
Nuseed	NSK12M507	65	103	73	2.0	27.2	35.1	2,548	--
Nuseed	Talon	67	102	75	3.0	27.2	38.7	2,460	--
Proseed	E-1041 CL	68	103	80	2.0	29.7	39.3	2,508	--
Proseed	E-21 CL	69	104	85	2.3	30.5	37.6	2,618	--
Proseed	E-31 CL	69	104	80	2.0	29.9	39.2	2,800	--
Proseed	E-31051 CL	68	106	81	2.0	30.4	37.6	2,604	--
Proseed	E-362436	67	104	87	2.3	31.5	41.4	3,099	--
Proseed	E-53051 CL	65	104	80	2.0	30.5	40.0	3,359	--
Proseed	E-79051 CL	68	103	82	2.0	28.8	39.2	3,032	--
Proseed	E-85 CL	69	104	86	2.3	27.8	39.7	2,627	--
SunOpta	4415HO/CLP/DM	68	104	82	2.0	30.3	40.5	3,211	--
SunOpta	4421CL	69	104	82	2.3	27.3	34.6	2,327	--
Syngenta	3495 NS/CL/DM	69	104	77	2.0	31.9	40.3	2,889	--
Syngenta	3845 HO	71	105	74	2.0	30.0	44.0	2,789	--
Syngenta	7111 HO/CL/DM	66	103	70	2.0	31.2	39.3	2,368	--
Syngenta	SY7717	68	103	76	2.0	30.6	41.2	3,050	Avg.
Thunder	11N94	68	104	79	2.0	32.5	41.7	3,314	--
Thunder	35H92	66	104	75	2.0	32.8	41.2	2,431	--
Thunder	42H94	69	104	79	2.7	30.5	43.8	3,452	--
USDA	894	68	102	78	1.7	29.4	38.6	2,624	--
Mean		68	104	77	2.1	30.4	40.4	2,898	--
CV %		1.2	1.1	2.9	20.1	1.9	1.7	11.7	--
LSD 0.05		1	2	4	0.7	1.0	1.1	543	--
LSD 0.10		1	2	3	0.6	0.8	0.9	455	--

Planted: May 22. Harvested: Oct. 15. No desiccant applied.

¹Description of lodging: 0 = perfectly upright stand; 1-3 = 10-30% root lodging, still easily harvested;

4-6 = 40-60% plants lodged, some severely; 7-8 = most plants lodged severely; 9 = all plants lodged severely.

²Hulling screen test: Exc. = 65% of seed over a 14/64 inch screen; Average = 75% of seed over a 13/64 inch screen;³Days after planting. Maturity checks: Honeycomb NS = 98 DAP, 8N270CLDM = 101 DAP, Falcon = 103 DAP, 559CL = 107 DAP.⁴Long-term hybrid check.

Table 7. 2015 Sunflower - Non-oilseed - Galchutt, N.D. - Author, B. Hulke.

Company/ Brand	Hybrid	Days	Days	Phomopsis Incidence ¹	Height	Lodging ²	Test Wt.	2015 Seed Yield	Seed over screen			Seed size L W	Nut- meat	
		to Flower (DAP) ³	to PM (DAP) ³						(%)	(inch)	(1-9)			(lb/bu)
CHS	15EXP01	72	110	24.3	78	3.0	18.9	1,816	87	95	97	21	10	47.6
CHS	15EXP05	68	105	18.8	76	2.3	19.7	2,851	80	92	98	22	9	48.7
CHS	15EXP06	70	106	10.5	89	3.3	19.5	2,389	72	91	97	19	9	49.6
CHS	RH1130EX	71	108	4.6	84	2.7	20.4	2,414	82	93	96	18	9	51.6
CHS	RH609CLP	69	103	37.2	81	2.3	19.4	2,377	83	92	96	19	10	48.3
Mycogen	8C451CP	72	105	8.4	86	3.0	20.4	2,215	69	87	96	17	8	51.3
Nuseed	Jaguar DMR	65	101	36.3	73	2.0	19.2	2,388	80	91	97	17	10	49.4
Nuseed	Jaguar II	68	102	37.2	75	2.7	19.4	2,314	77	89	95	17	10	53.8
Nuseed	NDK12M147	70	103	27.5	81	3.0	20.6	2,509	48	73	89	19	9	49.2
Nuseed	NSK12M504	68	103	13.9	78	3.0	20.6	2,540	68	87	95	18	9	55.9
Nuseed	Panther DMR	65	101	42.8	71	2.0	21.0	2,348	56	76	90	17	8	47.5
Nuseed	X9180	68	103	13.4	79	2.0	20.2	2,177	78	89	95	19	9	48.4
Red River Comm.	2215	69	102	15.7	88	3.0	20.4	2,496	71	87	94	18	9	51.2
Red River Comm.	2215	73	105	5.7	92	3.0	20.2	2,030	72	91	96	19	9	48.7
Red River Comm.	2217	72	104	13.9	88	3.3	19.8	2,352	70	87	94	18	9	48.2
SunOpta	9524	71	105	28.8	90	3.0	20.5	1,859	85	95	98	19	9	47.7
USDA ⁴	924	67	101	62.8	82	2.3	20.5	2,400	57	83	94	18	10	46.9
Mean		69	104	23.6	82	2.7	20.0	2,322	73	88	95	19	9	50.0
CV %		1.3	1.2	38.7	3.4	13.6	3.2	15.0	--	--	--	--	--	--
LSD 0.05		2	2	15.2	5	0.6	1.1	581	--	--	--	--	--	--
LSD 0.10		1	2	12.7	4	0.5	0.9	483	--	--	--	--	--	--

Planted: May 22. Harvested: Oct. 15. No desiccant applied.

¹Phomopsis Incidence: percentage of plants infected with *Phomopsis* spp., as evidenced by a Phomopsis stalk canker lesion.²Description of lodging: 0 = perfectly upright stand; 1-3 = 10-30% root lodging, still easily harvested; 4-6 = 40-60% plants lodged, some severely; 7-8 = most plants lodged severely; 9 = all plants lodged severely.³Days after planting. Maturity checks: Honeycomb NS = 98 DAP, 8N270CLDM = 101 DAP, Falcon = 103 DAP, 559CL = 107 DAP.⁴Long-term hybrid check.**Table 8. 2015 Sunflower - Fatty Acid Trial - Galchutt, N.D. - Author, B. Hulke.**

Company/ Brand	Hybrid	Type ¹	% ± SEM			
			Palmitic	Stearic	Oleic	Linoleic
Croplan	458 E HO	HO, EX, DM	3.48 ± 0.21	3.70 ± 0.39	84.94 ± 4.66	6.20 ± 4.05
Croplan	549 CL HO	HO, CL, DM	3.76 ± 0.06	2.23 ± 0.06	83.84 ± 1.24	8.62 ± 1.21
Croplan	553 CL HO	HO, CL, DM	3.51 ± 0.11	2.50 ± 0.12	85.08 ± 1.78	7.10 ± 1.68
Croplan	3080	NS, DM	4.49 ± 0.26	2.89 ± 0.22	60.92 ± 6.41	30.20 ± 6.02
Proseed	E-1041 CL	HO, CL	3.30 ± 0.08	3.31 ± 0.20	87.90 ± 1.84	3.70 ± 1.62
Proseed	E-21 CL	HO, CL, DM	3.60 ± 0.08	2.72 ± 0.10	89.14 ± 0.20	2.52 ± 0.08
Proseed	E-31 CL	HO, CL, DM	3.13 ± 0.04	3.51 ± 0.12	89.41 ± 0.23	2.11 ± 0.09
Proseed	E-31051 CL	HO, CL	3.57 ± 0.06	2.61 ± 0.11	88.39 ± 0.64	3.46 ± 0.53
Proseed	E-362436	HO, CL, DM	4.02 ± 0.21	2.62 ± 0.14	84.90 ± 1.74	6.60 ± 1.61
Proseed	E-53051 CL	HO, CL	3.47 ± 0.03	3.14 ± 0.10	88.96 ± 0.48	2.63 ± 0.45
Proseed	E-79051 CL	HO, CL	3.31 ± 0.05	3.03 ± 0.08	89.33 ± 0.35	2.59 ± 0.27
Proseed	E-85 CL	HO, CL, DM	3.71 ± 0.14	2.97 ± 0.18	87.82 ± 0.38	3.47 ± 0.40
Syngenta	3495 NS/CL/DM	NS, CL, DM	5.65 ± 0.26	5.60 ± 0.41	49.20 ± 3.76	37.48 ± 3.75
Syngenta	3845 HO	HO	3.53 ± 0.07	1.99 ± 0.11	90.73 ± 0.21	2.13 ± 0.10
Syngenta	7111 HO/CL/DM	HO, CL, DM	3.84 ± 0.38	3.69 ± 0.21	86.67 ± 0.59	3.64 ± 0.39
Syngenta	SY7717	HO, CL, DM	4.31 ± 0.15	2.88 ± 0.06	85.96 ± 1.45	4.89 ± 1.32
Thunder	35H92	HO, CL, DM	3.60 ± 0.10	2.38 ± 0.11	87.31 ± 0.99	4.95 ± 0.94
Thunder	42H94	HO, CL, DM	3.79 ± 0.11	2.17 ± 0.12	83.85 ± 1.99	8.52 ± 1.89

¹HO = high oleic, CL = Clearfield, DM = downy mildew resistant.

Table 9. 2015 Sunflower - Oilseed - Carrington N.D. - Authors, B. Schatz, M. Ostlie, J. Nielsen and T. Ingebretson.

Company/ Brand	Hybrid	Days to	Plant	Days	Harvest	Test	Oil	Seed Yield	
		Flower	Height	to PM	Moist.	Weight	Content	2015	2-yr. Avg.
		(DAP) ¹	(inch)	(DAP) ¹	(%)	(lb/bu)	(%)	----- (lb/a) -----	
Croplan	432 E	64	62	107	10	31.7	41.4	1,914	2,176
Croplan	458 E HO	67	62	113	11	28.8	42.5	1,746	1,715
Croplan	545 CL	69	57	112	11	30.9	44.3	1,841	1,922
Croplan	549 CL HO	64	63	106	10	31.6	42.5	1,855	--
Croplan	553 CL HO	70	58	110	11	29.1	44.8	1,729	--
Genosys	12G04	68	62	111	10	31.8	46.2	2,167	--
Genosys	12G20	66	57	106	11	31.2	41.4	1,944	1,979
Genosys	12G25	68	61	111	10	33.6	46.5	2,203	2,197
Genosys	12G28	69	64	111	11	32.3	41.2	1,880	--
Mycogen	8D310CL	69	63	114	10	28.9	39.5	2,053	2,204
Mycogen	8H449CLDM	69	60	111	11	33.3	47.8	2,205	2,336
Mycogen	8H456CL	69	61	111	11	30.2	46.3	1,662	--
Mycogen	8H570SCL	70	48	121	11	34.2	45.6	1,691	--
Mycogen	8N358CLDM	65	59	108	11	31.5	47.3	1,360	1,647
Nuseed	Badger DMR	64	61	109	10	29.7	36.4	2,090	2,216
Nuseed	Camaro II	66	59	108	11	31.9	44.5	2,120	2,266
Nuseed	Cobalt II	65	57	109	11	32.0	41.8	1,500	1,674
Nuseed	Falcon	67	57	109	10	33.0	43.9	2,009	2,020
Nuseed	Hornet	69	58	108	11	29.3	44.2	1,611	1,745
Nuseed	NHK12M054	64	58	108	10	32.7	42.9	1,710	1,966
Nuseed	NHK12M055	65	58	108	11	32.0	43.5	2,042	--
Nuseed	NSK12M507	64	58	109	10	27.9	37.3	1,491	--
Nuseed	Talon	65	61	107	10	28.5	40.8	1,881	1,866
NuTech	68H7	68	64	114	11	31.9	41.9	1,537	--
NuTech	69M2	68	62	113	11	30.8	42.8	1,547	--
Proseed	E-1402 CL	68	59	108	10	29.0	38.0	1,435	--
Proseed	E-21CL	67	62	108	9	30.6	38.5	1,246	1,558
Proseed	E-31CL	68	61	107	10	29.5	38.2	1,261	1,676
Proseed	E-31051 CL	67	65	109	10	31.4	39.0	1,308	--
Proseed	E-362436	65	61	107	11	32.6	42.0	1,349	2,031
Proseed	E-53051 CL	64	63	112	10	31.1	40.1	1,613	--
Proseed	E-79051 CL	68	59	112	9	28.9	38.1	1,481	--
Proseed	E-85CL	67	64	109	10	29.4	40.9	1,508	1,879
SunOpta	4415H0/CLP/DM	68	58	108	11	31.1	41.8	1,238	--
SunOpta	4416CLEX	68	64	112	10	31.0	39.1	1,786	--
SunOpta	4421CL	68	65	111	11	28.7	36.9	1,869	--
Syngenta	3495 NS/CL/DM	67	64	107	10	33.1	42.9	1,694	1,995
Syngenta	3845 HO	66	57	108	10	32.7	45.1	1,882	--
Syngenta	7111 HO/CL/DM	63	58	105	10	31.5	38.5	1,467	1,711
Syngenta	SY7717	65	60	108	10	31.8	42.9	1,113	1,698
Thunder	11N94	67	58	106	11	32.1	46.1	1,727	--
Thunder	35H92	65	55	108	10	31.4	43.1	1,421	--
Thunder	42H94	69	55	108	11	29.0	44.0	1,517	--
USDA	894	65	59	105	11	31.9	44.7	1,394	--
Croplan (check)	559CL	67	61	111	10	31.0	44.0	1,881	--
Mycogen (check)	8N270CLDM	63	56	105	10	31.5	40.7	1,671	--
Nuseed (check)	Falcon	66	55	109	10	33.3	45.5	2,126	--
AAFC/USDA ³	Honeycomb NS	63	59	100	10	28.5	41.1	1,163	--
Mean		67	60	109	10	31.0	42.3	1,691	1,931
CV %		1.1	5.2	1.8	4.5	2.4	2.8	13.2	--
LSD 0.05		1	4.4	3	0.6	1.0	1.6	309	--
LSD 0.10		1	3.7	2	0.5	0.9	1.4	259	--

Planted: June 3. Harvested: Nov. 3. Previous crop: spring wheat.

²Days after planting.³Long-term hybrid check.

Table 10. 2015 Sunflower - Non-Oilseed - Carrington N.D. - Authors, B. Schatz, M. Ostlie, J. Nielson and T. Ingebretson.

Company/ Brand	Hybrid	Days to Flower	Plant Height	Days to PM	Seed Over Screen			Harvest Moist.	Test Weight	Seed Yield	
					22/64	20/64	18/64			2015	3-yr. Avg.
		(DAP) ¹	(inch)	(DAP) ¹	(%)	(%)	(%)	(%)	(lb/bu)		
Nuseed	Jaguar II	64	55	108	27	56	79	9	22.1	1,450	1,578
Nuseed	Panther DMR	62	58	105	11	46	78	8	24.3	1,716	--
Nuseed	X9180	64	56	107	19	49	76	9	23.1	1,272	1,480
Red River Comm.	2215	68	60	111	27	64	84	9	23.6	1,707	2,072
Red River Comm.	2215 CL	70	61	120	40	72	88	10	23.1	1,607	1,608
Red River Comm.	2217 CP	70	60	117	39	64	83	9	21.5	1,328	1,374
Royal	RH1130EX	69	64	127	47	76	91	9	22.9	1,527	--
Royal	RH609CLP	68	65	110	36	62	81	8	21.4	1,659	--
SunOpta	9521	68	63	114	40	71	90	9	23.4	1,664	2,089
SunOpta	9524	69	64	117	45	78	91	9	23.8	1,848	--
SunOpta	9506CL	71	65	123	42	68	88	10	23.1	1,587	--
USDA ²	924	65	59	107	6	34	74	9	24.4	1,655	--
Mean		67	61	114	32	61	83	9	23.1	1,585	1,700
CV (%)		1.6	4.3	2.7	31.8	14.3	6.6	5.2	2.8	13.5	--
LSD 0.05		2	4	5	15	13	8	0.7	0.9	307	--
LSD 0.10		1	3	4	12	11	7	0.6	0.8	255	--

Planted: June 3. Harvested: Oct. 22. Previous crop: spring wheat.

¹Days after planting.²Long-term hybrid check.**Table 11. 2015 Sunflower - Non-oilseed - Langdon, N.D. - Authors, B. Hanson, T. Hakanson and L. Henry.**

Company/ Brand	Hybrid	Days to Flower	Plant Height	Test Weight	Harvest Moisture	Seed Over Screen			Seed Yield		
						22/64	20/64	18/64	2015	2-yr. Avg.	3-yr. Avg.
		(DAP) ¹	(inch)	(lb/bu)	(%)	------(%)-----			------(lb/a)-----		
NuSeed	6946 DMR	69	61	22.7	14	24	80	91	3,151	2,982	--
NuSeed	Jaguar II	70	63	21.9	16	69	95	97	3,077	--	--
NuSeed	Panther DMR	68	63	23.8	14	36	91	96	3,036	--	--
NuSeed	X9180	70	63	22.2	15	71	96	97	2,767	2,760	3,150
USDA ²	924	68	60	23.9	17	37	85	93	2,646	2,870	3135
Mean		69	62	22.9	15	47	89	95	2,936	2,870	3,142
CV %		0.8	3.2	3.0	10.5	--	--	--	7.8	--	--
LSD 0.05		1	NS	1.2	NS	--	--	--	377	--	--
LSD 0.10		1	NS	1.0	NS	--	--	--	309	--	--

Planted: May 21. Harvested: Oct. 16.

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

Table 12. 2015 Sunflower - Oilseed - Langdon, N.D. - Authors, B. Hanson, T. Hakanson and L. Henry.

Company/ Brand	Hybrid	Days to Flower (DAP) ¹	Days to PM (DAP) ¹	Plant Height (inch)	Test Weight (lb/bu)	Harvest Moisture (%)	Oil Content (%)	Seed Yield		
								2015	2-yr. Avg.	3-yr. Avg.
Croplan	432E	70	114	69	32.2	12	42.5	3,426	3,124	3,358
Croplan	458 E HO	74	116	68	31.0	13	43.8	2,831	2,567	--
Croplan	545 CL	76	118	66	33.1	16	44.0	3,405	3,015	3,243
Croplan	549 CL HO	71	113	73	32.5	13	41.6	3,038	--	--
Croplan	553 CL HO	76	117	68	31.5	14	43.1	3,087	--	--
Genosys	12G04	75	117	68	32.1	12	46.1	3,019	--	--
Genosys	12G20	73	115	68	31.2	12	43.1	3,064	2,872	3,185
Genosys	12G25	74	116	68	34.2	13	46.2	3,286	2,975	--
Genosys	12G28	75	116	71	31.8	13	40.6	2,789	--	--
NuSeed	Badger DMR	71	113	69	30.0	12	34.4	2,762	2,884	--
NuSeed	Camaro II	74	117	66	33.9	14	43.4	3,360	3,158	3,386
NuSeed	Cobalt II	73	118	66	33.6	13	44.6	2,968	2,812	2,917
NuSeed	Falcon	75	117	66	34.6	14	44.6	3,082	2,778	2,847
NuSeed	Hornet	76	118	67	31.8	14	45.0	3,736	3,020	3,191
NuSeed	Talon	72	114	68	29.6	13	41.1	3,287	2,953	--
Nuseed	NHK12M054	71	116	67	34.5	12	45.2	2,947	--	--
Nuseed	NHK12M055	71	116	65	34.5	12	45.1	3,276	--	--
Nuseed	NSK12M507	70	117	64	29.8	14	38.6	2,768	--	--
NuTech	68H7	74	118	73	34.2	14	44.7	2,837	2,977	--
NuTech	69M2	75	119	68	31.2	13	43.9	3,402	3,236	--
Proseed	E-1402 CL	75	116	69	30.7	13	39.6	2,828	--	--
Proseed	E-21 CL	74	117	70	31.8	14	39.3	2,848	2,766	2,921
Proseed	E-31 CL	74	115	69	30.2	13	39.6	2,656	2,713	2,989
Proseed	E-31051 CL	74	117	72	32.7	14	38.9	2,594	--	--
Proseed	E-362436	72	114	72	31.7	13	41.2	2,608	2,697	3,155
Proseed	E-53051 CL	70	114	69	32.2	13	40.2	2,779	--	--
Proseed	E-79051	75	117	69	30.6	13	39.0	3,105	--	--
Proseed	E-85 CL	74	116	73	29.5	13	40.2	2,640	2,491	2,866
SunOpta	4415 HO/CL/DM	74	118	70	31.1	14	42.0	2,930	--	--
SunOpta	4421 CL	75	117	71	29.5	15	35.8	2,686	--	--
Syngenta	3495 NS/CL/DM	75	116	67	33.6	11	43.1	2,842	2,752	--
Syngenta	3845 HO	74	117	66	33.2	12	46.8	3,260	--	--
Syngenta	7111 HO/CL/DM	70	115	63	33.0	12	40.4	2,896	2,648	2,785
Syngenta	SY7717	72	116	66	31.4	12	43.2	3,278	2,942	--
Thunder	11N94	74	117	67	34.4	13	44.6	3,091	--	--
Thunder	35H92	72	117	65	33.6	13	43.5	2,758	--	--
Thunder	42H94	76	118	68	31.1	13	44.4	3,379	--	--
USDA ²	894	71	112	61	30.9	12	40.9	2,700	2,600	--
Mean		73	116	68	32.1	13	42.2	3,006	2,856	3,070
CV %		1.0	0.9	2.9	1.9	5.8	2.9	10.2	--	--
LSD 0.05		1	2	3	1.0	1.3	2.0	496	--	--
LSD 0.10		1	2	3	0.8	1.1	1.6	415	--	--

Planted: May 21. Harvested: Oct. 16.

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

Table 13. 2015 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		
		50% Flower (DAP) ¹	Maturity (DAP) ¹	Height (inch)	Weight (lb/bu)	22/64	20/64	18/64	2015	2-yr. Avg.	3-yr. Avg.
					------(%)-----			------(lb/a)-----			
CHS	15EXP01	91	149	62	23.3	97	98	99	2,208	--	--
CHS	RH1130EX	90	149	66	24.0	94	98	99	1,434	1,799	1,672
CHS	RH609CL+	88	141	69	23.9	95	97	99	1,673	1,991	--
Nuseed	6946 DMR	88	136	63	25.6	88	96	99	1,648	1,968	1,906
Nuseed	Panther DMR	84	135	64	25.9	88	95	98	1,456	1,765	1,813
Nuseed	X9180	87	142	57	24.2	90	97	99	935	1,655	1,609
Red River Comm.	2215	88	145	72	25.0	96	99	99	2,142	2,184	2,023
Red River Comm.	2215 CL	93	150	73	25.0	96	98	99	1,894	2,158	1,959
SunOpta	9521	90	149	74	25.8	95	98	99	2,294	2,469	2,385
SunOpta	9524	88	149	75	24.6	96	98	99	1,804	--	--
USDA ²	924	87	138	73	25.1	91	97	99	1,747	1,588	--
Mean		88	144	68	24.8	93	97	99	1,749	1,953	1,910
CV %		1.1	1.0	3.8	3.7	2.9	1.0	0.3	12.3	--	--
LSD 0.05		1	2	4	1.3	4	1	1	310	--	--
LSD 0.10		1	2	3	1.1	3	1	1	258	--	--

Planted: May 26. Harvested: Nov. 2. Previous crop: spring wheat.

¹Days after planting.²Long-term hybrid check.**Table 14. 2015 Sunflower - Oilseed - Williston, N.D. - Authors, J. Bergman, G. Pradhan, D. Amiot and A. Link.**

Company	Hybrid	Days to	Days to	Plant	Plant	Oil	Test	Seed Yield		
		Flower (DAP) ¹	Maturity (DAP) ¹	Height (inch)	Lodge (0-9) ²	Content (%)	Weight (lb/bu)	2015	2-yr. Avg.	3-y. Avg.
					------(lb/a)-----					
Genosys	12G04	70	118	46	2.0	36.4	32.2	1,273	--	--
Genosys	12G20	68	113	46	5.3	33.8	31.3	1,411	1,339	1,694
Genosys	12G25	68	115	43	2.0	37.0	34.2	1,328	1,451	--
Genosys	12G28	70	116	44	4.0	32.6	33.4	1,363	--	--
Nuseed	Camaro II	66	113	44	2.3	34.9	32.9	1,752	1,691	1,709
Nuseed	Cobalt II	69	112	45	2.8	33.3	31.2	1,389	1,533	1,675
Nuseed	Hornet	69	113	43	1.8	35.2	30.3	1,452	1,652	1,694
Nuseed	N4HM354	67	113	46	3.8	34.2	31.9	1,481	--	--
Nuseed	N4HM355	68	114	43	4.5	34.4	31.6	1,475	--	--
Nuseed	Talon	67	114	46	4.8	31.4	29.5	1,400	1,694	1,694
NuTech	68H7	68	118	48	4.8	34.9	32.5	1,346	1,485	--
NuTech	69M2	68	118	44	5.8	34.9	32.0	1,501	1,703	--
Thunder	11N94	67	114	42	3.3	34.6	33.0	1,499	--	--
Thunder	35H92	67	112	43	1.8	34.4	31.4	1,399	--	--
Thunder	42H94	70	113	44	2.8	34.6	30.2	1,456	--	--
Mean		68	114	44	3.4	34.4	31.8	1,435	1,569	1,693
CV %		2.9	1.4	6.9	57.8	2.2	1.7	15.3	--	--
LSD 0.05		3	2	4	2.8	1.1	0.8	314	--	--
LSD 0.10		2	2	4	2.3	0.9	0.6	262	--	--

Planted: May 29. Harvested: Oct. 23. Previous crop: spring wheat.

¹Days after planting.²Lodging score: 0-upright, 9-flat on ground.

Table 15. 2015 Sunflower - Oilseed - Hettinger N.D. - Authors, J. Rickertsen and R. Olsen.

Company	Hybrid	Days to Flower	Plant Height	Plant Lodge	Test Weight	Oil Content	Seed Yield	
							2015	2-yr. Avg.
		(DAP) ¹	(inch)	(%)	(lb/bu)	(%)	------(lb/a)-----	
AgVenture	AF3H681ES	105	62	10	25.7	34.5	2,280	1,567
AgVenture	AF3N692ES	106	61	8	26.0	35.9	3,329	1,962
Croplan	432 E	102	57	13	23.5	32.8	1,916	1,453
Croplan	458 E HO	104	60	2	23.8	35.6	2,517	--
Croplan	545 CL	106	59	3	25.6	36.4	3,082	2,309
Croplan	549 CL HO	101	67	3	26.5	36.5	2,896	--
Croplan	553 CL HO	107	62	1	26.0	36.4	3,413	--
Genosys	12G04	106	54	5	24.4	36.6	2,648	--
Genosys	12G20	104	59	8	27.3	37.1	3,247	2,479
Genosys	12G25	104	58	1	27.0	38.5	3,757	2,629
Genosys	12G28	106	60	0	27.3	36.3	3,394	--
Mycogen	8D310CL	104	65	1	22.5	32.2	2,885	2,157
Mycogen	8H456CL	106	62	0	26.3	42.0	4,134	--
Mycogen	8H449CLDM	105	58	2	28.7	41.3	3,407	2,470
Nuseed	Badger DMR	102	59	6	22.5	30.4	2,352	1,727
Nuseed	Camaro II	104	62	5	26.9	36.9	3,103	2,204
Nuseed	Cobalt II	101	60	0	26.7	36.5	2,577	1,735
Nuseed	Daytona	105	55	0	24.7	34.9	2,996	--
Nuseed	Falcon	104	49	1	28.0	37.1	2,995	2,109
Nuseed	Hornet	106	61	2	26.8	37.5	3,687	2,699
Nuseed	NHK12M054	102	57	5	26.3	36.7	2,392	--
Nuseed	NHK12M055	102	55	2	25.7	36.1	2,117	--
Nuseed	NSK12M507	101	56	5	21.5	34.1	1,508	--
Nuseed	Talon	102	56	4	24.7	36.6	2,893	1,966
NuTech	68H7	106	65	11	26.0	34.6	2,666	--
NuTech	69M2	106	61	6	25.7	35.4	3,219	--
Proseed	E-1041 CL	104	63	23	25.4	34.0	2,039	--
Proseed	E-21 CL	104	67	0	24.6	33.5	2,040	1,347
Proseed	E-31 CL	106	65	15	24.4	32.5	2,111	1,568
Proseed	E-31051 CL	104	67	4	24.8	33.4	1,765	--
Proseed	E-362436	104	67	1	27.3	36.5	2,578	1,847
Proseed	E-53051 CL	102	66	2	24.1	32.8	2,076	--
Proseed	E-79051 CL	106	66	18	23.5	32.5	2,211	--
Proseed	E-85 CL	103	65	4	25.2	35.7	2,939	2,025
Prosun	3N94DM	104	62	14	28.4	37.6	3,195	--
Prosun	4H95DM	106	65	3	27.4	39.4	3,757	--
Syngenta	3495 NS/CL/DM	105	60	2	28.4	37.3	2,635	2,015
Syngenta	3845 HO	105	57	5	28.3	41.2	3,165	--
Syngenta	7111 HO/CL/DM	99	54	1	24.9	31.7	1,739	1,351
Syngenta	SY7717	101	57	0	27.3	36.1	2,797	2,327
Thunder	11N94	105	62	9	28.3	36.0	2,883	--
Thunder	35H92	102	54	0	26.7	36.5	2,613	--
Thunder	42H94	106	61	5	27.1	37.2	3,778	--
AAFC/USDA ²	Honeycomb NS	97	52	4	24.0	34.2	1,432	--
USDA ²	894	103	59	5	26.3	36.7	2,829	1,961
Mycogen (Check)	8N270CLDM	101	53	3	25.5	36.5	2,246	--
Mean		104	60	5	25.8	35.9	2,744	1,996
CV %		1.0	6.6	92	4.3	3.4	11.4	--
LSD 0.05		2	6	7.0	1.6	1.7	510	--
LSD 0.10		1	5	5.9	1.3	1.4	427	--

Planted: May 19. Harvested: Oct. 20. Previous crop: wheat.

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

2015 South Dakota Sunflower Hybrid Performance Trials Oilseed and Confection

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Locations and Hybrids

Oilseed hybrid sunflower trials were planted at five locations in South Dakota (Caputa, Eureka, Highmore, Onida and Presho) in 2015. 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. Lists of the hybrids tested in 2015 appear in Tables 4 and 5.

Experimental Methods

Plots at all locations except Presho consisted of four rows, 30 feet long, with a 30-inch row spacing. Row length at Presho was 25 feet. The plot layout was in a randomized complete block design with four replications at each location.

Seed of the hybrids entered in the trials was pre-treated with Cruiser insecticide and at least one fungicide. All trials were seeded no-till. Seeding dates were June 1, 5, 8, 15 and 23, 2015, for Highmore, Onida, Eureka, Presho, and Caputa, respectively. The previous crop at Eureka and Highmore 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 Caputa, Eureka, and Onida. Highmore had very poor stands and herbicide carryover caused damage in the oilseed trial, so that trial was not harvested. The first replication of the Highmore confection trial had poor stands and that replication was excluded from all analyses. Presho had good stands in most of replications one through three, but a large area of replication four drowned out, so that replication was excluded from analyses. Replication one at Eureka was damaged by machinery after emergence and similarly was excluded from analyses of data at that location.

Flowering was recorded at Onida as the number of days from planting to 50 percent ray petals extended. Phomopsis ratings were taken at Highmore and Onida in mid-September by Febina Mathew, oilseeds plant pathologist. Phomopsis stem canker severity was assessed using a 0-4 scale, where 0 = no infection, 1 = stem lesion < 2 inches, 2 = stem lesion > 2 inches, 3 = girdling stem lesion, and 4 = lodged plant. Plant height and lodging notes were taken at all locations immediately before harvest. The center two rows of each four-row plot at all locations except Caputa 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. Plots at Caputa were harvested with a Wintersteiger Delta plot combine fitted with a HarvestMaster GrainGage. 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 sub-sample of seed from each plot of two replications 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. Nutmeat percent was determined by weighing 20 whole seeds from each plot, and dehulling and weighing the 20 dehulled kernels.

Weather

A summary of weather conditions near the sunflower test sites is presented in Table 16. The closest weather stations to the Presho and Caputa sunflower plots were at Kennebec and Rapid City, respectively.

The 2015 growing season was generally warmer than the 30-year average in June, September and October, and cooler than average in August at all locations. Rapid City (Caputa), Kennebec (Presho), and Highmore were all wetter than

normal in May through August and drier than the 30-year average in September and October. Onida had above-average precipitation in May and August, near normal precipitation in June and September, and below normal rainfall in July and October. Eureka was drier than normal throughout the entire growing season (Table 16). The first killing frost (at or below 26 F) occurred on Oct. 16th at Eureka, Highmore, Onida, and Presho, and on Oct. 29th at Caputa.

Results

Data from each location are contained in Tables 17-22 and across locations in Table 23. Lodging was highest at Caputa. Very little lodging occurred at Eureka. Oilseed seed yields were highest at Eureka, where 54 hybrids averaged 2,704 pounds/acre, with 42.4 percent oil (Table 5). The lowest oilseed yields (667 pounds/acre) were recorded at Caputa (Table 17). Confection hybrid yields were nearly equal at Onida and Highmore, averaged across the 15 hybrids tested (Tables 20 and 21). 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. 2015 South Dakota sunflower trial locations.

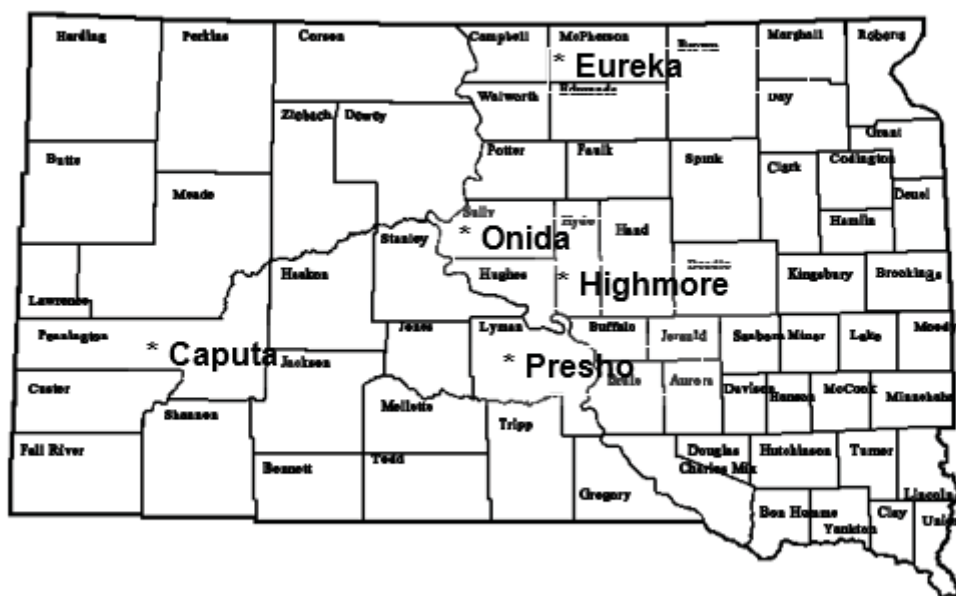


Table 16. 2015 Climate Summary for Weather Stations Nearest to South Dakota Sunflower Test Sites and Departures From Normal.

Location ¹ - Month	2015 Temperature			Total Precip. (inch)	Departure from Normal ²			
	Avg. Max.	Avg. Min.	Mean		Max. Temp	Min. Temp	Avg. Temp	Precip.
	------(°F)-----				------(°F)-----			
								(%)
<u>Rapid City Regional AP*</u>								
May	62.2	41.6	51.9	6.86	-5.6	-0.5	-3.1	213
June	78.0	56.2	67.1	7.12	0.2	5.0	2.6	281
July	84.4	57.5	71.0	4.01	-2.7	-0.6	-1.6	217
August	84.5	55.2	69.9	3.41	-1.9	-1.4	-1.7	219
September	80.3	49.3	64.8	0.25	4.7	3.3	4.0	19
October	64.4	38.5	51.5	1.31	3.0	4.4	3.8	92
<u>Onida 4 NW</u>								
May	66.8	42.2	54.5	5.47	-3.2	-1.9	-2.6	179
June	79.9	55.9	67.9	3.31	0.2	1.9	1.1	99
July	87.8	60.5	74.2	1.35	-0.1	0.7	0.4	51
August	84.4	57.6	71.0	2.79	-1.5	-0.2	-0.9	118
September	80.6	52.0	66.3	1.92	4.5	4.8	4.6	107
October	64.4	40.0	52.2	1.35	3.9	5.4	4.6	81
<u>Kennebec</u>								
May	69.9	44.0	57.0	4.02	-3.0	-1.9	-2.4	127
June	84.9	57.1	71.0	4.40	3.0	1.3	2.2	131
July	90.3	60.5	75.4	4.08	0.6	-1.5	-0.5	164
August	87.8	59.7	73.8	3.14	-0.6	-0.3	-0.5	163
September	84.0	54.6	69.3	1.55	4.8	5.3	5.0	88
October	68.6	40.5	54.6	1.26	4.8	4.5	4.7	82
<u>Highmore 1 W</u>								
May	67.3	43.4	55.4	5.38	-2.9	-1.0	-2.0	195
June	80.0	56.8	68.4	6.08	1.0	2.5	1.8	201
July	86.0	60.7	73.4	4.20	-0.8	0.5	-0.2	155
August	81.7	57.1	69.4	3.17	-3.7	-1.4	-2.6	142
September	78.6	52.0	65.3	1.20	3.1	3.4	3.2	73
October	64.7	38.3	51.5	0.70	3.9	2.2	3.0	50
<u>Eureka</u>								
May	68.8	46.8	57.5	0.90	-0.2	2.7	0.9	31
June	77.0	54.2	65.6	2.37	-0.5	0.4	0.0	65
July	83.3	58.2	70.8	2.16	-1.2	-0.9	-1.1	72
August	80.8	56.0	68.4	1.88	-2.5	-1.3	-1.9	79
September	78.1	49.7	63.9	0.87	5.6	3.0	4.3	51
October	61.6	35.9	48.8	0.55	3.9	1.8	2.9	32

¹Weather observations are from sites as close to the actual 2015 test plot sites as available. Temperature and/or precipitation at the actual test plot sites may have differed from the values shown above.

²Departures from normal were determined by comparing 2015 observations to 30-year averages (1981-2010) for each site.

Table 17. 2015 Sunflower - Oilseed - Caputa, S.D. - Author, K. Grady.

Company/ Brand	Hybrid	Harvest Moisture	Plant Lodge ¹	Test Weight	Oil Content	Seed Yield 2015
		(%)	(0-5)	(lb/bu)	(%)	(lb/a)
AgVenture	3N94DM	7	2.6	30.3	40.9	539
AgVenture	4H95DM	7	1.9	28.5	40.0	953
AgVenture	AF3H681ES	8	1.6	31.8	41.1	780
AgVenture	AF3N692ES	8	1.6	29.1	40.8	800
Croplan	432 E	8	1.9	28.8	37.7	352
Croplan	458 E HO	8	1.6	27.4	38.1	740
Croplan	545 CL	7	1.5	27.9	37.8	872
Croplan	549 CL HO	7	2.4	27.4	40.2	496
Croplan	553 CL HO	7	1.6	28.2	38.3	861
Genosys	12G04	8	2.0	29.5	43.2	569
Genosys	12G20	8	1.7	31.0	41.4	546
Genosys	12G25	8	1.8	31.6	43.2	686
Genosys	12G28	8	1.8	27.8	39.1	658
Mycogen	8D310CL	7	1.6	26.5	37.9	740
Mycogen	8H449CLDM	8	0.7	31.5	41.8	867
Mycogen	8H456CL	6	1.0	26.0	41.9	1,119
Mycogen	8H570SCL	7	0.0	32.0	43.1	885
Mycogen	8N358CLDM	8	2.1	32.1	41.5	439
Nuseed	Badger DMR	7	3.4	28.4	33.7	281
Nuseed	Camaro II	7	2.1	30.4	41.6	683
Nuseed	Cobalt II	6	2.1	28.4	39.0	579
Nuseed	Daytona	7	1.2	29.2	39.9	947
Nuseed	Falcon	7	1.3	29.4	40.2	621
Nuseed	Hornet	7	1.6	27.5	39.5	871
Nuseed	NHK12M054	--	3.0	32.9	38.5	--
Nuseed	NHK12M055	7	2.7	27.5	38.2	212
Nuseed	NHK12M507	7	2.0	28.0	36.0	588
Nuseed	Talon	7	1.8	27.3	36.8	526
Proseed	E-1402 CL	7	1.5	27.5	41.8	704
Proseed	E-21 CL	9	2.0	29.5	38.6	973
Proseed	E-31 CL	7	1.0	26.0	39.7	1,009
Proseed	E-31051 CL	8	1.8	27.4	38.8	848
Proseed	E-362436	8	2.8	29.4	39.6	472
Proseed	E-53051 CL	7	2.1	27.8	39.8	639
Proseed	E-79051 CL	7	1.3	27.3	40.5	730
Proseed	E-85 CL	6	1.8	28.3	38.6	619
Syngenta	3495 NS/CL/DM	5	1.2	26.4	39.9	695
Syngenta	3732 NS	8	1.7	29.9	39.5	733
Syngenta	3845 HO	6	2.2	28.9	40.3	429
Syngenta	SY7717	7	1.9	29.6	39.9	592
Thunder	11N94	7	3.4	29.7	40.9	287
Thunder	35H92	6	1.7	28.5	38.7	472
Thunder	42H94	7	1.8	27.4	39.2	768
USDA ²	894	8	2.1	31.0	42.6	432
Mean		7	1.8	28.8	39.8	667
CV %		7.3	26	5.3	2.3	17.9
LSD 0.05		0.7	0.4	2.1	1.3	40
LSD 0.10		0.6	0.3	1.8	1.1	28

Planted: June 23. Harvested: Nov. 6.

¹Lodging was rated on a scale of 0 to 5, where 0 = all plants standing, 1 = 10% lodged, 2 = 20% lodged, 3 = 60% lodged, 4 = 80% lodged, 5 = 100% lodged.²Long-term hybrid check.

Table 18. 2015 Sunflower - Oilseed - Eureka, S.D. - Author, K. Grady.

Company/ Brand	Hybrid	Plant Height	Harvest Moisture	Plant Lodge	Test Weight	Oil Content	Seed Yield	
							2015	2-yr. Avg.
		(inch)	(%)	(%)	(lb/bu)	(%)	------(lb/a)-----	
AgVenture	3N94DM	68	8	0.7	36.1	43.6	3,047	2,607
AgVenture	4H95DM	67	8	0	30.2	42.1	3,108	--
AgVenture	AF3H681ES	75	10	0	34.4	42.3	2,492	2,391
AgVenture	AF3N692ES	76	9	0.7	35.6	45.4	3,183	2,827
Croplan	432 E	70	9	0.7	32.9	38.0	1,795	2,145
Croplan	458 E HO	72	9	0.7	31.3	42.8	2,834	--
Croplan	545 CL	68	9	0.7	34.9	43.1	3,038	2,601
Croplan	549 CL HO	71	9	0.4	35.9	41.1	2,407	--
Croplan	553 CL HO	70	9	1.4	33.9	43.7	3,070	--
Genosys	12G04	72	8	1.7	33.4	45.1	2,792	--
Genosys	12G20	66	8	0.4	33.0	42.7	2,940	2,544
Genosys	12G25	70	8	1.4	34.0	44.4	3,027	2,641
Genosys	12G28	69	8	0.4	34.5	40.7	3,042	--
Mycogen	8H449CLDM	67	8	0	35.6	46.8	3,417	2,734
Mycogen	8H456CL	71	8	0.4	32.8	45.3	2,836	--
Mycogen	8H570SCL	47	8	0	31.3	47.2	2,477	--
Mycogen	8N358CLDM	70	8	0.4	33.8	45.7	3,089	--
Mycogen	8D310CL	74	9	0	31.0	38.3	2,611	2,301
Nuseed	Camaro II	66	8	0.4	37.1	44.5	2,916	2,607
Nuseed	Cobalt II	70	8	0	35.0	42.1	2,471	2,191
Nuseed	Daytona	62	9	0.7	33.4	43.5	2,692	--
Nuseed	Falcon	64	8	0	34.6	44.3	2,578	2,182
Nuseed	Hornet	68	9	0	33.3	44.5	3,129	2,482
Nuseed	NHK12M054	67	8	0.4	36.8	44.4	2,834	--
Nuseed	NHK12M055	66	8	0.4	37.6	43.4	2,793	--
Nuseed	NHK12M507	69	9	1.7	31.1	41.9	2,453	--
Nuseed	Talon	67	9	0.7	30.9	40.8	2,280	2,069
Nuseed	Badger DMR	72	9	0.7	32.7	34.7	2,228	2,173
Pioneer	P63HE60	70	9	0	34.2	43.7	2,567	--
Pioneer	P64ME01	74	10	0	34.3	43.1	3,439	2,930
Proseed	E-1402 CL	72	9	0	32.6	39.8	2,214	--
Proseed	E-21 CL	75	9	0	31.5	38.6	2,421	2,149
Proseed	E-31 CL	72	9	0.7	32.6	39.2	2,396	2,252
Proseed	E-31051 CL	74	9	0	32.8	40.3	2,405	--
Proseed	E-362436	80	9	0.7	29.1	42.6	2,219	2,317
Proseed	E-53051 CL	72	8	0	33.6	42.4	2,737	--
Proseed	E-79051 CL	73	8	0	32.3	41.4	2,584	--
Proseed	E-85 CL	75	9	0	31.8	39.8	2,631	2,315
Sunopta	4415HO/CLP	74	9	0	33.8	41.4	2,973	--
Sunopta	4421CL	71	9	0.7	29.2	37.2	2,322	2,189
Syngenta	3495 NS/CL/DM	72	8	0	37.4	41.9	2,928	2,592
Syngenta	3732 NS	62	9	0	35.0	44.4	3,068	2,646
Syngenta	3845 HO	63	8	0.4	37.0	46.4	2,862	--
Syngenta	SY7717	66	8	0	36.0	43.8	2,789	--
Thunder	11N94	68	8	0.4	36.5	44.4	2,982	--
Thunder	35H92	66	8	0.7	34.8	43.1	2,236	--
Thunder	42H94	71	8	1.3	32.8	43.6	3,079	--
USDA ¹	894	60	9	0	34.1	42.6	2,256	1,980
Mean		69	9	0.4	33.7	42.5	2,723	2,411
CV %		4.9	6.8	47	5.4	3.0	9.5	10.0
LSD 0.05		6	1	NS	2.9	2.1	417	254
LSD 0.10		5	1	NS	2.4	1.7	349	213

Planted: June 8. Harvested: Oct. 21. Previous crop: corn.

¹Long-term hybrid check.

Table 19. 2015 Sunflower - Oilseed - Onida, S.D. - Authors, K. Grady and F. Mathew.

Company/ Brand	Hybrid	Days		Phomopsis			Plant Lodge	Oil Content	Seed Yield			Hulling Screen Test ¹
		To Flower (DAP) ²	Plant Height (inch)	Onida	High- more	Test Weight (lb/bu)			2015	2-yr. Avg.	3-yr. Avg.	
AgVenture	3N94DM	65	65	1.8	1.0	35.3	3.4	44.1	1,956	2,401	--	Fail
AgVenture	4H95DM	60	60	2.0	1.3	31.8	2.3	43.0	1,900	--	--	NT
AgVenture	AF3H681ES	70	70	1.5	1.8	36.3	1.1	43.6	2,059	2,422	--	NT
AgVenture	AF3N692ES	70	70	1.5	1.0	34.3	4.0	43.2	1,816	2,360	--	Good
Croplan	432 E	68	68	2.0	1.5	34.5	3.5	41.3	1,813	2,391	2,199	Fail
Croplan	458 E HO	68	68	1.8	1.5	31.7	9.9	42.6	1,435	--	--	Fail
Croplan	545 CL	64	64	1.3	1.3	35.6	0.5	42.1	1,943	2,373	2,373	NT
Croplan	549 CL HO	70	70	2.0	1.5	35.5	8.8	43.9	1,946	--	--	NT
Croplan	553 CL HO	64	64	2.0	1.3	32.4	4.0	43.4	1,835	--	--	NT
Genosys	12G04	65	65	1.8	1.3	33.7	4.1	45.3	1,869	--	--	NT
Genosys	12G20	59	59	2.0	2.0	32.7	8.8	42.4	1,971	2,243	1,908	NT
Genosys	12G25	63	63	1.8	1.5	35.0	7.9	45.5	2,069	2,418	--	NT
Genosys	12G28	64	64	2.0	1.0	34.7	8.4	41.6	1,713	--	--	NT
Mycogen	8D310CL	70	70	1.5	1.5	32.8	4.7	39.7	1,420	--	--	NT
Mycogen	8H449CLDM	61	61	1.8	1.0	35.2	2.1	47.0	1,898	2,330	--	NT
Mycogen	8H456CL	61	61	2.0	1.3	31.8	5.2	45.6	1,727	--	--	NT
Mycogen	8H570SCL	41	41	1.0	1.3	31.6	0	46.1	1,691	--	--	NT
Mycogen	8N358CLDM	62	62	2.0	--	33.5	6.3	46.2	1,992	--	--	NT
Mycogen	8N668S	42	42	1.0	1.5	31.7	0.3	45.8	1,895	2,176	--	NT
Nuseed	Badger DMR	65	65	2.0	1.5	33.6	10.2	37.6	1,384	1,850	1,645	NT
Nuseed	Camaro II	66	66	1.8	1.5	36.4	5.7	44.4	2,015	2,340	2,324	NT
Nuseed	Cobalt II	59	59	1.5	1.3	33.8	2.0	43.2	1,629	1,718	1,714	NT
Nuseed	Daytona	59	59	1.8	1.5	32.5	0.7	43.1	1,526	--	--	NT
Nuseed	Falcon	61	61	1.5	1.8	36.2	3.1	43.7	2,038	2,231	1,972	NT
Nuseed	Hornet	62	62	1.5	1.8	33.0	2.5	44.2	2,025	2,299	2,077	NT
Nuseed	NHK12M054	61	61	1.5	1.5	38.0	1.5	45.0	1,807	--	--	NT
Nuseed	NHK12M055	58	58	1.8	1.3	35.6	3.6	43.4	1,783	--	--	NT
Nuseed	NHK12M507	65	65	1.5	1.3	30.1	5.2	40.2	1,181	--	--	NT
Nuseed	Talon	62	62	2.0	1.5	32.9	2.0	41.1	1,585	--	--	NT
Pioneer	P63HE60	66	66	1.5	2.0	34.5	2.0	44.0	1,844	--	--	NT
Pioneer	P64ME01	68	68	1.3	1.5	33.6	3.1	41.4	1,960	2,456	--	Fail
Proseed	E-1402 CL	68	68	2.0	1.8	32.2	5.9	41.6	1,624	--	--	NT
Proseed	E-21 CL	70	70	1.8	1.3	32.7	2.5	39.9	1,583	1,924	1,745	NT
Proseed	E-31 CL	68	68	1.5	1.5	34.2	2.8	40.9	1,578	2,024	1,820	NT
Proseed	E-31051 CL	70	70	1.0	1.3	34.2	3.5	40.4	1,623	--	--	NT
Proseed	E-362436	71	71	2.0	1.5	37.2	13.7	43.3	1,663	2,157	1,837	NT
Proseed	E-53051 CL	69	69	1.3	1.0	34.4	7.4	42.8	1,860	--	--	NT
Proseed	E-79051 CL	69	69	2.0	1.3	31.3	2.5	40.3	1,666	--	--	NT
Proseed	E-85 CL	68	68	1.8	1.3	31.8	5.9	44.1	1,779	2,289	2,131	NT
Sunopta	4415HO/CLP	65	65	1.8	--	31.7	10.7	42.6	1,637	--	--	NT
Sunopta	4421CL	69	69	1.8	--	31.1	3.0	39.6	1,468	1,776	1,759	NT
Syngenta	3495 NS/CL/DM	64	64	1.5	1.5	36.2	9.3	42.7	1,816	2,007	--	NT
Syngenta	3732 NS	63	63	2.0	1.3	33.4	1.4	41.7	1,881	2,231	--	NT
Syngenta	3845 HO	63	63	2.0	1.5	36.3	3.5	45.3	1,970	--	--	NT
Syngenta	SY7717	63	63	2.0	1.3	34.0	2.8	44.7	1,985	--	--	NT
Thunder	11N94	65	65	1.8	1.0	37.5	4.7	45.1	1,829	--	--	NT
Thunder	35H92	62	62	1.8	1.5	34.6	0.9	42.8	1,675	--	--	NT
Thunder	42H94	65	65	2.0	1.3	31.9	3.5	43.8	2,035	--	--	NT
USDA ⁴	894	60	60	2.0	1.3	34.5	7.9	46.2	1,609	1,751	--	NT
USDA	cms HA465/RHA 468	66	66	1.8	--	34.4	6.0	42.3	1,982	2,049	--	NT
Mean		64	64	1.7	1.4	33.9	4.5	43.1	1,780	2,176	1,962	--
CV %		1.8	3.6	23.2	35.4	4.5	38.6	3.2	12.4	9.4	3.9	--
LSD 0.05		2	3	0.5	NS	2.1	1.1	1.9	306	202	459	--
LSD 0.10		2	3	0.6	NS	1.8	0.9	1.6	256	169	380	--

Planted: June 5. Average plant population was 18,000 plants per acre. Harvested: Oct. 17. Previous crop: wheat.

¹Good = > 75% of seed passes over a 13/64 screen; NT = not tested.²Days after planting.³Phomopsis rating scale: 0 = no infection, 1 = stem lesion < 2 inches, 2 = stem lesion > 2 inches, 3 = girdling stem lesion, and 4 = lodged plant.

Phomopsis was rated on Sept. 18.

⁴Long-term hybrid check.

Table 20. 2015 Sunflower - Non-oilseed - Highmore, S.D. - Authors, K. Grady and F. Mathew.

Company/ Brand	Hybrid	Phom- opsis (0-4) ¹	Harvest Moist. (%)	Test Weight (lb/bu)	Plant Lodge (%)	Seed Over Screen			Nut- meat (%)	Seed Yield		
						22/64	20/64	18/64		2015	2-yr. Avg.	3-yr. Avg.
CHS	15EXP01	1.0	11	17.5	0.6	80	83	86	40.9	1,538	--	--
CHS	15EXP04	1.3	10	24.3	2.2	27	65	85	47.4	2,263	--	--
CHS	RH1130EX	1.3	11	20.6	1.6	81	82	88	44.4	1,901	--	--
CHS	RH609CLP	1.8	11	23.9	5.4	55	76	88	46.1	2,097	--	--
CHS	RH841	1.8	11	20.3	0	82	83	90	45.1	1,256	--	--
Mycogen	8C451CP	1.3	11	16.9	3.7	81	82	89	49.0	1,725	1,760	1,703
Nuseed	JAGII	2.0	11	20.0	0.5	86	86	93	48.1	1,506	--	--
Nuseed	NDK12M147	2.0	10	21.7	2.7	50	54	75	50.3	1,916	--	--
Red River C.	RRC 2215	2.0	10	20.8	2.2	85	86	93	46.2	1,860	1,827	1,928
Red River C.	RRC 2215 CL	1.5	11	18.9	1.1	77	81	87	49.3	1,122	1,396	1,441
Red River C.	RRC 2217 CP	1.3	11	17.7	4.3	83	85	90	48.0	1,303	1,598	1,531
Sunopta	9521	2.0	11	18.7	2.2	87	88	93	45.6	1,611	1,665	1,577
Sunopta	9524	2.0	11	19.3	5.2	88	89	92	42.0	1,350	--	--
Sunopta	9506CL	1.0	11	23.0	0.7	86	88	92	47.1	1,924	--	--
USDA ²	924	2.5	10	20.4	1.9	9	23	59	57.0	1,196	1,227	1,200
Mean		1.6	11	20.3	2.3	70	77	87	47.1	1,638	1,579	1,563
CV %		23.0	3.3	12.1	116	11.8	11.6	10.6	4.3	14.1	19.9	19.3
LSD 0.05		0.4	0.6	4.1	NS	18.0	19.2	NS	4.4	386	376	274
LSD 0.10		0.5	0.5	3.4	NS	14.8	15.7	NS	3.6	321	311	228

Planted: June 1. Harvested: Oct. 25. Previous crop: corn.

¹Phomopsis rating scale: 0 = no infection, 1 = stem lesion < 2 inches, 2 = stem lesion > 2 inches, 3 = girdling stem lesion, and 4 = lodged plant. Phomopsis was rated on Sept. 18. ²Long-term hybrid check.

Table 21. 2015 - Sunflower - Non-oilseed - Onida, S.D. - Authors, K. Grady and F. Mathew.

Company/ Brand	Hybrid	Days		Phom- opsis	Test Weight	Plant Lodge	Seed Over Screen			Nut- meat	Seed Yield		
		To Flower (DAP) ¹	Plant Height (inch)				22/64	20/64	18/64		2015	2-yr. Avg.	3-yr. Avg.
CHS	15EXP01	65	65	1.3	21.7	0	43	64	75	46.0	1,073	--	--
CHS	15EXP04	64	67	1.3	21.0	1.6	20	41	69	49.9	1,758	--	--
CHS	RH1130EX	66	68	1.3	21.8	2.8	55	75	84	40.6	1,627	--	--
CHS	RH609CLP	62	73	1.8	23.6	4.0	31	51	64	47.3	1,694	--	--
CHS	RH841	63	67	1.8	23.0	2.8	54	75	78	43.2	1,912	--	--
Mycogen	8C451CP	66	65	1.3	22.4	2.7	29	53	66	45.3	1,545	1,935	1,855
Nuseed	JAGII	60	67	2.0	21.4	0.8	51	76	86	47.9	1,377	--	--
Nuseed	NDK12M147	61	67	1.8	20.9	4.0	36	57	74	50.9	1,467	--	--
Red River C.	RRC 2215	63	67	1.5	24.1	4.8	62	69	76	46.3	1,758	2,196	2,252
Red River C.	RRC 2215 CL	66	65	1.0	23.6	3.6	49	60	79	45.1	1,474	2,117	2,039
Red River C.	RRC 2217 CP	66	63	1.3	21.5	2.0	46	58	69	48.9	1,597	1,939	1,891
Sunopta	9521	63	70	1.8	20.3	2.8	65	80	86	45.6	1,906	2,320	2,245
Sunopta	9524	62	68	2.0	23.8	1.6	76	84	87	41.3	1,917	--	--
Sunopta	9506CL	67	68	1.0	22.4	1.2	65	77	83	45.4	1,537	--	--
USDA ³	924	60	71	1.8	23.9	6.5	8	23	62	55.6	1,556	1,361	1,199
Mean		63	67	1.5	22.4	2.8	46	63	76	46.6	1,613	1,978	1,913
CV %		1.2	4.0	29.6	8.3	89.5	36.9	20.0	9.2	5.1	16.7	14.6	17.2
LSD 0.05		2	4	0.5	NS	NS	NS	27	15	5.0	385	294	271
LSD 0.10		1	3	0.6	2.2	2.9	30	22	12	4.1	321	244	226

Planted: June 5. Average plant population was 17,900 plants per acre. Harvested: Oct. 17. Previous crop: wheat.

¹DAP = Days after planting.

²Phomopsis rating scale: 0 = no infection, 1 = stem lesion < 2 inches, 2 = stem lesion > 2 inches, 3 = girdling stem lesion, and 4 = lodged plant. Phomopsis was rated on Sept. 18. ³Long-term hybrid check.

Table 22. 2015 Sunflower - Oilseed - Presho, S.D. - Author, K. Grady.

Company/ Brand	Hybrid	Plant Height	Harvest Moisture	Test Weight	Plant Lodge	Oil Content	Seed Yield		
							2015	2-yr. Avg.	3-yr. Avg.
							------(lb/a)-----		
AgVenture	3N94DM	62	11	33.5	5.1	40.5	2,300	--	--
AgVenture	4H95DM	62	12	31.3	7.1	41.3	2,080	--	--
AgVenture	AF3H681ES	70	11	33.5	0	40.9	2,291	--	--
AgVenture	AF3N692ES	66	11	31.2	3.2	41.1	2,632	--	--
Croplan	432 E	60	12	32.6	3.5	37.1	2,475	2,041	2,139
Croplan	458 E HO	64	11	29.5	3.2	40.2	2,199	--	--
Croplan	545 CL	66	11	32.6	1.9	40.2	2,691	2,134	--
Croplan	549 CL HO	70	11	32.7	4.5	40.6	2,207	--	--
Croplan	553 CL HO	70	11	30.1	7.7	41.2	2,205	--	--
Genosys	12G04	62	12	30.3	2.6	41.8	1,853	--	--
Genosys	12G20	51	11	31.0	14.7	39.8	1,959	1,809	--
Genosys	12G25	58	11	31.2	21.2	41.8	1,756	1,858	--
Genosys	12G28	60	11	31.1	1.9	38.0	2,248	--	--
Mycogen	8H449CLDM	58	11	33.3	0	41.4	2,432	--	--
Mycogen	8H456CL	62	11	29.0	2.6	43.8	2,279	--	--
Mycogen	8H570SCL	39	12	29.8	2.6	41.7	1,968	--	--
Mycogen	8N668S	38	12	34.3	1.9	45.8	1,827	1,732	1,768
Nuseed	Badger DMR	62	11	30.4	2.6	33.7	2,506	1,992	1,943
Nuseed	Camaro II	62	11	32.4	9.0	40.6	2,278	1,801	1,880
Nuseed	Cobalt II	58	11	31.0	0.6	40.5	2,097	1,622	1,595
Nuseed	Daytona	54	11	31.3	3.2	39.6	2,068	--	--
Nuseed	Falcon	59	11	33.3	1.3	42.0	2,372	1,876	1,845
Nuseed	Hornet	66	11	31.9	4.5	40.6	2,460	2,094	2,125
Nuseed	NHK12M054	59	11	33.3	1.3	42.4	2,484	--	--
Nuseed	NHK12M055	58	11	32.6	2.6	41.1	2,739	--	--
Nuseed	NHK12M507	68	11	24.8	0.6	36.5	1,845	--	--
Nuseed	Talon	56	12	27.2	9.6	37.6	2,087	1,788	--
Pioneer	P63HE60	70	11	32.0	1.9	41.7	2,286	--	--
Pioneer	P64ME01	67	12	32.5	1.9	38.7	2,903	2,277	--
Proseed	E-1402 CL	60	11	29.4	10.9	39.4	2,314	--	--
Proseed	E-21 CL	68	11	32.1	0	34.5	2,085	1,684	1,668
Proseed	E-31 CL	64	11	30.5	5.8	39.1	2,268	1,802	1,671
Proseed	E-31051 CL	71	11	31.4	1.3	38.0	2,177	--	--
Proseed	E-362436	71	11	33.8	2.6	39.1	2,383	2,057	2,006
Proseed	E-53051 CL	67	11	30.8	0	40.4	2,346	--	--
Proseed	E-79051 CL	66	11	29.3	6.7	38.9	2,282	--	--
Proseed	E-85 CL	68	11	30.4	2.6	39.1	2,229	1,887	1,907
Syngenta	3495 NS/CL/DM	62	11	33.5	0	40.2	2,228	1,884	--
Syngenta	3732 NS	58	11	32.6	1.9	40.2	2,307	2,035	--
Syngenta	3845 HO	54	10	31.0	0.6	40.4	1,805	--	--
Syngenta	SY7717	64	11	31.8	0	40.4	2,400	--	--
Thunder	11N94	68	11	33.2	4.5	42.1	2,065	--	--
Thunder	35H92	60	11	32.5	1.3	40.1	2,016	--	--
Thunder	42H94	63	11	30.7	12.2	40.9	2,248	--	--
USDA ¹	894	42	12	29.3	5.4	41.5	1,788	1,595	1,494
Mean		61	11	31.4	4.0	40.1	2,233	1,893	1,837
CV %		4.9	3.3	4.1	86.9	3.6	14.0	11.6	11.0
LSD 0.05		5	1	2.1	5.1	2.4	505	236	172
LSD 0.10		4	1	1.7	4.3	2.0	422	197	144

Planted: June 15. Harvested: Oct. 26. Previous crop: wheat.

¹Long-term hybrid check.

Table 23. 2015 Sunflower - Non-oilseed - Means Across Two Locations (Highmore and Onida, S.D.) - Authors, K. Grady and F. Mathew.

Company/ Brand	Hybrid	Plant Height (inch)	Phom- opsis (0-4) ¹	Test Weight (lb/bu)	Lodge (%)	Seed Over Screen			Nut- meat (%)	Seed Yield (lb/a)
						22/64	20/64	18/64		
CHS	15EXP01	64	1.1	19.6	0.3	61	74	80	43.5	1,272
CHS	15EXP04	65	1.3	22.4	1.8	23	53	77	48.7	1,975
CHS	RH1130EX	68	1.3	21.2	2.3	68	78	86	42.5	1,744
CHS	RH609CLP	70	1.8	23.7	4.6	43	63	76	46.7	1,867
CHS	RH841	66	1.8	21.8	1.6	68	79	84	44.1	1,630
Mycogen	8C451CP	65	1.3	20.0	3.1	55	68	77	47.2	1,622
Nuseed	JAGII	66	2.0	20.8	0.7	69	81	89	48.0	1,432
Nuseed	NDK12M147	67	1.9	21.3	3.5	43	55	74	50.6	1,659
Red River Comm.	RRC 2215	65	1.8	22.4	3.7	73	77	85	46.3	1,801
Red River Comm.	RRC 2215 CL	63	1.3	21.9	2.5	58	67	82	47.2	1,340
Red River Comm.	RRC 2217 CP	62	1.3	19.9	3.0	65	71	79	48.4	1,471
Sunopta	9521	67	1.9	19.5	2.5	76	84	89	45.6	1,752
Sunopta	9524	67	2.0	21.5	3.1	82	87	89	41.6	1,627
Sunopta	9506CL	67	1.0	22.6	1.0	75	82	88	46.2	1,703
USDA ²	924	68	2.1	22.4	4.5	9	23	60	56.3	1,402
Mean		66	1.6	21.4	2.6	58	70	81	46.9	1,620
CV %		4.4	26.2	9.9	99	23.2	15.6	10.0	4.7	15.7
LSD 0.05		3	0.3	2.3	2.7	20	16	12	3.2	271
LSD 0.10		3	0.4	1.9	2.3	16	13	10	2.7	227

¹Phomopsis rating scale: 0 = no infection, 1 = stem lesion < 2 inches, 2 = stem lesion > 2 inches, 3 = girdling stem lesion, and 4 = lodged plant.

²Long-term hybrid check.

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

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550-12-15