

A652-25 (January 2026)

North Dakota Sunflower

Variety Trial Results for 2025 and Selection Guide

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In 2025, North Dakota continued to lead the nation in sunflower production, with **approximately 538,372 acres planted** across the state; a substantial uptick in acreage compared with recent years and among the largest acreage totals in the U.S. sunflower belt. While this expansion reflected strong grower interest and favorable market signals into the season, several **key agronomic challenges** emerged. A delayed spring and uneven early planting conditions in parts of the Plains, including prevent-plant acreage reported in surrounding states, underscored the continued risk that cool, wet soils pose to sunflower stand establishment and uniform emergence. Additionally, growers have to navigate the lingering impacts of variable weather, including high winds and storm events that can cause lodging or harvest delay, as part of broader climatic volatility that affected many crops in North Dakota during 2025. Finally, although sunflower oil markets remain a driver of acreage, ongoing public discussion around seed-oil health claims adds an unusual layer of **market-related agronomic decision pressure** for producers as they balance production risk with end-use demand dynamics

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About This Publication

Variety trial data from all North Dakota State University Research Extension Centers for all crops can be found at www.ag.ndsu.edu/varietytrials and the variety selection tool at <https://vt.ag.ndsu.edu/>.

The agronomic data presented in this publication are from replicated research plots using experimental designs that enable the use of statistical analysis. The least significant difference numbers beneath the columns in tables are derived from the statistical analyses. If the difference between two varieties exceeds the LSD value, it means that with

90% probability (10% level), the higher-yielding variety has a significant yield advantage. If the difference between two varieties is less than the LSD value, then the variety yields are considered similar.

The coefficient of variation (CV) is a measure of variability in the trial and is expressed as a percentage. Large CVs indicate substantial variation that cannot be attributed to differences among varieties. Only compare values within the table and look for trends for the desired trait among different experimental sites and years.

Sunflower harvest yields were adjusted to 10% moisture. Most of the tables have footnotes explaining 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 very important.

Among similar-yielding oilseed hybrids, select the one with the highest oil content. Oil content is intended to differentiate between hybrids at one location. LSD values should be used to determine differences between hybrids. The oilseed crushing market pays a premium for oilseed with more than 40% oil (at 10% moisture) and discounts for oilseed with less than 40% oil. Another factor to consider is the oil type. Hybrids are available with traditional (linoleic), midoleic (NuSun) and high-oleic oil compositions. Markets may pay a premium based on the composition of the oil produced by a particular hybrid.

Maturity is especially important if planting is delayed. Yield and oil content often are reduced when a hybrid is damaged by frost before it is fully mature. Often, with delayed planting, only an early hybrid will mature and exhibit its full yield potential. An early hybrid is likely to be drier at harvest than a later-maturing hybrid, thereby reducing drying costs.

The most economical and effective means of managing sunflower diseases and other pests is to plant resistant or tolerant hybrids and keep a minimum of four years of rotation between successive sunflower crops. Most commercial sunflower hybrids in the U.S. have resistance to downy mildew and rust. Some hybrids also may exhibit tolerance to *Phomopsis* stem canker or sunflower midge. Clearfield® and ExpressSun™ hybrids are resistant to Beyond Xtra® and Express® herbicides, respectively. Consult the seed company for information on how a particular hybrid reacts to diseases and other pests that may pose risks in your growing area.

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 over several years.

Research specialists and technicians contributed to the fieldwork and data compilation. Administrative assistants contributed to entering data into the respective sections of this document. We greatly appreciate the assistance provided by everyone involved.

The presentation of data for the varieties tested does not imply approval or endorsement by the authors or the agencies conducting the tests. NDSU approves the reproduction of any table in this publication only if no portion is deleted, appropriate footnotes are given, the order of the data is not rearranged, and NDSU is credited for the data.

Table 1. Oil Type Sunflower**Fargo, ND**

Hybrid	Days to Flowering	Plant Height	Lodging Score	Oil Content	Test Weight	Yield
	DAP	inch	1-9	%	lb/bu	lb/ac
CP7919CL	69	81	3.7	42	32	2738
CP5249CL	66	73	2.3	45	32	2624
XH41H70 EX	67	75	3.3	44	33	2607
559CL	68	84	3.0	-	34	2602
N4H470 CLP	69	85	2.3	43	33	2428
EXP 2624 E	68	91	3.0	37	34	2333
8D310CL	67	91	2.0	36	32	2273
H49HO19 CL	69	83	4.0	43	33	2268
2534 E	68	83	4.0	42	35	2238
XH41H90 EX	69	81	4.0	41	34	2213
8D410CL	67	87	3.3	38	33	2191
50068 CL	67	81	1.7	40	34	2165
CP455E	67	81	5.0	40	33	2163
CP4490E	69	80	3.3	40	33	2122
N4H462 E	69	79	4.7	43	33	2096
8N270CLDM	59	72	1.7	-	34	2080
H47HO11 EX	68	85	4.7	39	36	2025
N4H422 CL	67	84	4.7	41	35	2001
N5MH493 CL	69	84	4.0	31	31	1989
4425 CL	67	87	3.0	38	33	1987
N4H337 E	67	76	6.0	41	35	1982
H50HO20 CP	69	84	3.0	43	33	1981
XH41H56 CL	55	62	1.7	39	34	1981
EXP 2691 CP	69	83	4.0	43	34	1971
2578 E	67	75	4.3	44	32	1887
XH41H54 CL	67	87	5.0	40	36	1885
Falcon	68	77	4.0	-	35	1713
CP4475E	66	88	5.3	41	35	1711
EXP 2625 E	70	93	4.7	37	32	1710
CP4255E	67	83	5.3	40	35	1699
N4H205 E	68	79	5.7	42	33	1509
H45HO10 EX	67	76	5.3	41	32	1499
Hybrid 894	66	82	4.7	41	34	1446
CP4157E	67	82	6.3	40	34	1421
EXP 2609 E	67	83	7.0	40	33	1375
N4H490 E	70	86	6.3	41	35	1306
E-2446 E	70	85	7.7	38	32	1021
4415 HO/DMR/CL	68	85	7.3	38	33	1017
E-93 E	68	86	7.7	40	33	789
Trial Mean	67	82	4.3	40	34	1924
C.V. (%)	4.0	7.1	38	6.4	3.7	23.7
LSD (10%)	1.1	13	2.5	1.3	1.0	813

Confectionery trial in Fargo was unable to be harvested because of early season

**DAP = Days after planting.*

Planting date: 6/5/2025

Table 2. Sunflower - Fatty Acid Trial - Fargo - Authors, B. Hulke, B. Koehler, and Z.Tarble

Company	Hybrid	Type ¹	Palmitic	Stearic	Oleic	Linoleic
----- % ± SEM -----						
CHS	8D310CL	HO	3.9 ± 0.1	2 ± 0.1	71 ± 2.8	23 ± 2.7
CHS	8D410CL	HO	3.4 ± 0.1	3.2 ± 0.2	82 ± 1.7	12 ± 1.5
Proseed	2578 E	HO	3.7 ± 0.1	1.7 ± 0.1	78 ± 2.9	16 ± 2.8
Proseed	EXP 2609 E	HO	3.5 ± 0.1	3.2 ± 0.1	91 ± 0.3	2.7 ± 0.2
Proseed	EXP 2624 E	HO	3.5 ± 0.1	3.9 ± 0.1	84 ± 2.7	8.4 ± 2.6
Proseed	EXP 2625 E	HO	3.8 ± 0.1	3.4 ± 0.1	85 ± 1.4	7.4 ± 1.3

¹ HO = high oleic, NS = NuSun.

Table 3. Oil Type Sunflower

Carrington, ND

Yield data were excluded from this report due to high variability caused by adverse weather conditions; the full report is available on the CREC website.

Company	Hybrid	Oil Type	Trait ¹	DM Resist.	Days to Flower	Days to Maturity	Plant Height	Oil Content	Test Weight
					DAP	DAP	inch	%	lb/bu
USDA	Hybrid 894				65	114	70	38.9	33.7
USDA	559CL				71	120	82	39.6	34.3
USDA	8N270CLDM				65	117	73	37.4	33.7
Winfield Un./Croplan	CP4255E	HO	EX	Yes	68	131	71	36.6	33.2
Winfield Un./Croplan	CP4475E	HO	EX	Yes	68	124	77	37.5	32.2
Winfield Un./Croplan	CP4490E	HO	EX	Yes	73	126	75	36.3	30.4
Winfield Un./Croplan	CP455E	HO	EX	Yes	69	127	77	36.7	32.7
Winfield Un./Croplan	CP5249CL	HO	CL	Yes	67	119	69	43.3	31.3
Winfield Un./Croplan	CP7919CL	HO	CL	-	71	127	71	39.8	32
Nuseed	N4H422 CL	HO	CL	Yes	69	121	81	38.2	33.9
Nuseed	N4H470 CLP	HO	CP	Yes	71	124	79	40.5	33
Nuseed	N4H490 E	HO	EX	Yes	71	121	76	40.1	34.4
Nuseed	N4H205 E	HO	EX	Yes	70	115	72	41.3	31.6
Nuseed	N5H493 CL	HO	CL	No	71	119	77	28.5	29.3
Nuseed	N4H337 E	HO	EX	Yes	70	118	76	40.1	33.9
Nuseed	N4H462 E	HO	EX	Yes	72	121	77	40.7	32.8
Thunder Seed	TSU1561H	HO	EX	Yes	70	116	72	40.7	32.3
Thunder Seed	TSU1582H	HO	EX	Yes	71	124	79	39.6	33.9
Thunder Seed	TSU1512H	HO	EX	No	69	122	80	38.4	32.2
Thunder Seed	TSU1592N	NS	EX	No	71	123	76	38.4	35.4
Thunder Seed	TCP1533H	HO	CP	Yes	71	123	76	40.7	34
Limagrain	LG50459 SX	HO	EX	Yes	72	122	78	35	33.2
Limagrain	LG50487 CLP	HO	CP	Yes	67	119	75	37.7	32.3
Limagrain	LG50540 CLP	HO	CP	Yes	67	121	73	36.1	31.4
Proseed	50068CL	HO	CL	Yes	69	124	78	38.1	34.1
Proseed	E-93 E	HO	EX	-	72	123	82	38.3	32.5
Proseed	E-2446 E	HO	EX	-	73	117	87	37	32.1
Proseed	EXP2609 E	HO	EX	-	69	116	83	38.1	32.4
Proseed	EXP2624 E	HO	EX	-	72	124	85	33.9	30.6
Proseed	EXP2625 E	HO	EX	-	73	126	88	34.1	29.3
Proseed	2578 E	HO	EX	Yes	71	116	68	40.2	32.1
Proseed	2534 E	HO	EX	Yes	72	123	78	40.2	34.3
Proseed	EXP 2691 CP	HO	CP	Yes	70	125	75	40.6	34.2
Advanta Seeds	ADV 5205CLHO	HO	CL	Yes	74	125	84	37.4	33.1
Nutrien/Dyna-Gro	XH41H56 CL	HO	CL	Yes	63	118	56	35.6	30.7
Nutrien/Dyna-Gro	H49HO19 CL	HO	CL	Yes	73	122	78	39.2	32.8
Nutrien/Dyna-Gro	H50HO20 CP	HO	CP	Yes	71	123	78	40.6	34.6
Nutrien/Dyna-Gro	H45HO10 EX	HO	EX	No	70	121	79	38.8	31.1
Nutrien/Dyna-Gro	H47HO11 EX	HO	EX	Yes	70	131	83	37	34.9
Nutrien/Dyna-Gro	XH41H90 EX	HO	EX	Yes	71	122	79	40.1	33.4
Nutrien/Dyna-Gro	XH41H54 CL	HO	CL	Yes	68	121	79	39.3	34.7
Sunrich Products	4425CL	MO	CL	No	67	121	76	34.1	31.8
Sunrich Products	4415HO/DMR/CLP	HO	CP	Yes	70	120	77	36.9	33
Advanta Seeds	ADV 5310CL	Trad.	CL	Yes	73	122	77	42.3	32.9
Advanta Seeds	ADV 5407CL	Trad.	CL	Yes	73	117	77	43.8	31.3
Advanta Seeds	Hysun 182IT	Trad.	CL	Yes	69	118	77	36.4	33.6
Advanta Seeds	Hysun 302IT	Trad.	CL	Yes	72	120	80	36.7	33.7
Advanta Seeds	ADV 5420CL	Trad.	CL	Yes	74	126	75	43.4	32.3
Trial Mean					70	122	77	38.4	32.8
C.V. (%)					2	2	6	2.3	3
LSD (10%)					2	3	5	1	1.2

Planting Date = June 6; Harvest Date = November 6 and 12; Previous Crop = Durum

Storms with strong winds were prevalent during dry-down and resulted in uneven lodging significantly affecting yield.

*DAP = Days after planting.

¹ Type: TR-Traditonal, NS-NuSun, MO-Mid Oleic, HO-High Oleic, CL=Clearfield, CP=Clearfield Plus, EX=ExpressSun.

Table 4. Oil Type Sunflower

Minot, ND

Company	Variety	Days to	Days to	Plant	Test	Oil	Yield				
		Flowering	Mature	Height	Weight	Content	2023	2024	2025	2-yr avg	3-y avg
		DAP	DAP	inch	lb/bu	%	lb/ac				
Croplan	CP4255E	69	134	62	30.9	35.7	2407	2162	2515	2339	2361
Croplan	CP4475E	67	131	67	30.3	37.6	3260	2875	2961	2918	3032
Croplan	CP4490E	72	133	69	29.4	36.3	--	--	2351	--	--
Croplan	CP455E	68	129	64	30.4	36.3	3223	2539	3207	2873	2990
Croplan	CP5249CL	66	131	59	27.8	37.2	2909	3035	2446	2740	2797
Croplan	CP7919CL	72	134	60	28.8	38.8	3497	4118	3224	3671	3613
Nuseed	N4H205 E	70	126	66	28.4	39.2	--	--	2752	--	--
Nuseed	N4H422 CL	70	133	66	29.4	36.7	--	2309	2565	2437	--
Nuseed	N4H470 CLP	68	132	67	31.2	37.6	--	3006	2371	2689	--
Nuseed	N4H490 E	71	129	69	30.8	38.2	--	2730	2512	2621	--
Proseed	2534 E	72	131	65	31.8	38	--	--	2897	--	--
Proseed	2578 E	69	128	57	30.3	37.4	--	--	2602	--	--
Proseed	50068 CL	69	132	67	29.7	36.7	2868	3377	2897	3137	3047
Proseed	E-2446 E	72	132	65	31.2	36.6	--	1475	3087	1475	--
Proseed	E-93 E	72	132	75	29.2	36.1	--	--	2694	--	--
Sunrich Products	4415HO/DMR/CLP	70	129	63	29.4	35.3	2717	3547	2964	3256	3076.0
Sunrich Products	4425CL	69	133	70	26.7	31.7	3684	3025	3003	3014	3237.0
Thunder Seed	TCP1533H	72	132	63	30.5	41.2	--	--	2920	--	--
Thunder Seed	TSU1512H	68	131	62	27.2	37.6			2901		
Thunder Seed	TSU1561H	72	126	64	28.2	39.8	--	--	2582	--	--
Thunder Seed	TSU1582H	74	131	63	30.5	39.2	--	--	3061	--	--
Thunder Seed	TSU1592N	70	131	61	31.1	36.5	--	--	2597	--	--
Long Term Check	Hybrid 894	68	130	60	31	34	1747	2345	2045	2195	2046
Early Maturity Check	Honeycomb	70	131	65	30.3	37.8	1594	1571	2492	2032	1886.0
Med Maturity Check	8N270CLDM	61	130	61	30.9	36.2	2441	2886	1648	2267	2325
Late Maturity Check	CP559CL	67	131	70	32.1	38.7	2510	3614	2873	3244	2999
Trial Mean	--	70	131	65	29.8	37.0	2548	2564	2704	--	--
C.V. (%)	--	3.2	1.3	6.5	5.7	4.5	7.6	12.9	11.9	--	--
LSD (10%)	--	3	2	6	2.3	2.3	272	450	440	--	--

*DAP = Days after planting.

Planting date: June 4, 2025

Harvest date: November 4, 2025

Seeding rate: 21,000 live seeds/acre

Previous crop: wheat

Tillage system: no-till

Soil type: Williams loam

Row spacing: 30"

Table 5. Non-Oil Type Sunflower

Minot, ND

Company	Variety	Days to	Days to	Plant	Test	Yield				
		Flowering	Mature	Height	Weight	2023	2024	2025	2-yr avg	3-y avg
		DAP	DAP	inch	lb/bu					
Royal Hybrid	RH1121	66	132	64	26.3	--	4232	4081	4157	--
Royal Hybrid	RH609CLP	69	131	67	20.9	--	3190	3068	3129	--
Royal Hybrid	RRC2319	70	133	78	21.5	--	2962	3354	3158	--
Royal Hybrid	RRC2414	71	135	67	23.3	--	3436	3751	3594	--
USDA	Hybrid 924	70	131	72	22.2	1487	2129	2440	2285	2019
Trial Mean	--	79	141	55	28.7	2155	2548	2564	--	--
C.V. (%)	--	3.2	1.9	9.3	8.8	12.6	7.6	12.9	--	--
LSD (10%)	--	3	3	7	3.4	369	272	450	--	--

*DAP = Days after planting.

Planting date: June 4, 2025

Harvest date: November 4, 2025

Seeding rate: 21,000 live seeds/acre

Previous crop: wheat

Tillage system: no-till

Soil type: Williams loam

Row spacing: 30"

Table 6. Oil Type Sunflower

Hettinger, ND

Company	Hybrid	Oil Type & Traits ¹	Days to Flowering	Plant Height	Test Weight	Oil Content	Grain Yield		
							2025	2-Year	3-Year
			DAP	inch	lb/bu	%	-----lb/ac-----		
Advanta	ADV 5205CLHO	Trad. CL	76	78	29.3	38.9	1783	--	--
Advanta	ADV 5310CL	Trad. CL	75	68	30.2	38.8	1785	--	--
Advanta	ADV 5407CL	HO CL	75	69	27.0	41.3	1852	--	--
Advanta	ADV 5420CL	Trad. CL	76	74	30.5	39.1	2175	--	--
Advanta	Hysun 182IT	Trad. CL	74	64	28.7	38.1	2076	--	--
Advanta	Hysun 302IT	Trad. CL	76	75	31.5	36.7	2676	--	--
Croplan	CP4255E	HO EX	70	62	32.2	38.8	2413	1961	--
Croplan	CP4490E	HO CP	75	71	29.6	38.5	2189	--	--
Croplan	CP455E	HO CP	71	64	28.8	38.6	2254	1873	2307
Croplan	CP5249CL	HO CL	70	65	30.9	41.3	2063	1788	--
Croplan	CP7919CL	HO CP	74	66	30.3	38.9	2842	--	--
Dyna-Gro	H45HO10EX	HO EX	71	66	29.7	38.6	1873	1651	1913
Dyna-Gro	H47HO11EX	HO EX	70	69	29.5	37.7	2105	1821	2129
Dyna-Gro	H49HO19CL	HO EX	75	72	29.5	39.0	1969	1805	2223
Dyna-Gro	H50HO20CP	HO EX	72	70	30.3	40.3	1958	1708	--
Dyna-Gro	XH41H54CL	HO CL	72	74	29.9	38.4	1713	--	--
Dyna-Gro	XH41H56CL	HO EX	61	49	30.1	37.6	1346	1437	--
Dyna-Gro	XH41H90EX	HO EX	74	71	28.2	38.1	2140	1725	--
Limagrain	LG50459 SX	HO EX	72	72	31.1	37.5	2063	--	--
Limagrain	LG50487 CLP	HO EX	71	72	30.5	38.6	2209	--	--
Limagrain	LG50540 CLP	HO EX	69	58	29.1	37.7	2024	--	--
Nuseed	N4H205 E	HO CP	71	67	29.0	39.6	1965	1667	--
Nuseed	N4H337 E	MO CL	72	70	31.3	39.2	2292	1849	--
Nuseed	N4H422 CL	HO CP	73	72	30.7	38.7	2266	2030	2253
Nuseed	N4H462 E	HO EX	72	72	30.5	41.1	2552	2012	--
Nuseed	N4H470 CLP	HO EX	73	72	30.9	41.3	2027	1770	2183
Nuseed	N4H490 E	HO EX	74	70	30.4	38.8	1990	1655	--
Proseed	2534 E	NS EX	73	71	30.5	38.3	2048	1775	--
Proseed	2578 E	HO CP	71	70	30.3	40.1	1936	--	--
Proseed	50068 CL	HO EX	73	73	31.1	38.5	1861	1672	--
Proseed	E-2446 E	HO EX	73	66	31.0	37.7	2327	1824	--
Proseed	E-93 E	HO EX	73	74	30.6	38.4	1726	--	--
Proseed	EXP2609 E	HO CL	70	68	29.9	38.7	1997	--	--
Proseed	EXP2691 CP	HO CL	72	73	30.4	40.6	1841	--	--
Sunrich	4415 HO/CLP	HO CL	70	71	31.4	37.9	2302	--	--
Sunrich	4425 CL	HO CL	72	73	29.6	36.4	2187	1886	2194
Thunder	TCP1533H	HO CP	73	74	29.6	41.2	1834	--	--
Thunder	TSU1512H	HO EX	70	68	26.8	39.5	1718	--	--
Thunder	TSU1561H	HO EX	71	64	29.6	40.5	1971	--	--
Thunder	TSU1582H	HO EX	73	75	31.1	39.5	2104	--	--
Thunder	TSU1592N	HO CL	74	62	30.5	37.3	1932	--	--
USDA (Check)	894	TR	69	66	29.1	37.3	1619	1488	1738
CROPLAN (Check)	559CL	NS CL	73	76	30.3	39.2	2538	2038	2449
AAFC/USDA (Check)	Honeycomb	NS	67	60	30.0	39.8	1666	1396	1412
Trial Mean			72	69	30.0	38.9	2050	1785	2172
C.V. (%)			1.6	5.5	3.4	3.0	9.9	--	--
LSD (10%)			1.1	3.5	0.9	1.1	185	--	--

¹ Type: TR-Traditonal, NS-NuSun, MO-Mid Oleic, HO-High Oleic, CL=Clearfield, CP=Clearfield Plus, EX=ExpressSu

Planting Date: June 4

Harvest Date: November 6

Previous Crop: Corn

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

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