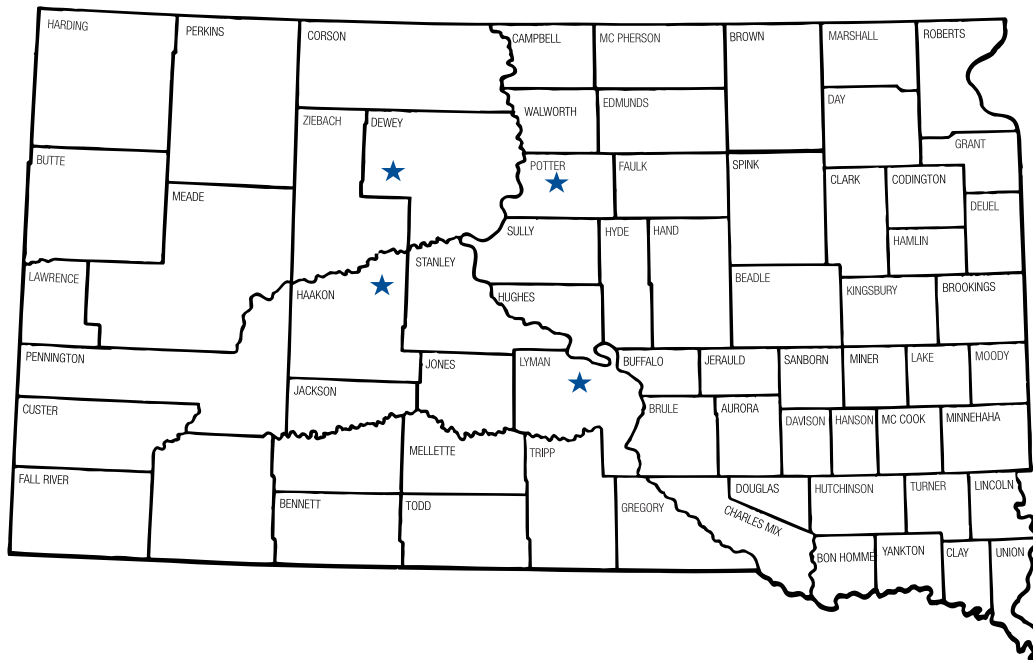


2019 South Dakota Sunflower Variety Trial Results

Febina Mathew | SDSU Field Crops Pathologist
Nathan Braun | Senior Ag. Research Technician



Trial locations: Fort Pierre (Haakon, Tables 3 and 4), Presho (Table 5), Lantry (Table 6)

Notes: List of entries is in Tables 1 and 2. Data from each location are contained in Tables 3-6.

The trials in Onida and Gettysburg was lost to rain and flooding. Hence the data for the variety trials in these locations is not available.

As for days to flowering across all hybrids, flowering was observed 60 days after planting (June 10).

Trial results from 2018 can be accessed online at: <https://extension.sdstate.edu/2018-south-dakota-sunflower-hybrid-performance-trials>

Table 1. List of sunflower hybrids (oils) tested in 2019.

Company	Hybrid	Type	Test Sites				
			Gettysburg	Ft. Pierre	Lantry	Onida	Presho
Pioneer	P64HE101	HOEX	X	X	–	X	X
Pioneer	P63HE90	HOEX	X	X	–	X	–
Pioneer	P64ME01	NSEX	X	X	–	X	X
Proseed	E-21 CL	NS, CL, DM	X	X	X	X	X
Proseed	E-31 CL	NS, CL, DM	X	X	X	X	X
Proseed	E-362436	NS, DM	X	X	X	X	X
Proseed	E-50016 CL	NS, CL, DM	X	X	X	X	X
Proseed	E-91 E	NS, EX, DM	X	X	X	X	X
Proseed	E-92 E	NS, EX, DM	X	X	X	X	X
Mycogen	MY8H270CL	CL	–	–	–	X	–
Mycogen	MY8H460CP	CLP	–	–	–	X	–
Mycogen	MY8H477CL	CL	–	–	–	X	–
Mycogen	MY8M380E	EX	–	–	–	X	–
Mycogen	MY8M400E(390E)	EX	–	–	–	X	–
SunOpta	4425CL	NS, CL	–	–	X	X	X
SunOpta	4415 HO/CLP/DM	HO, CL, DM	–	–	X	X	X
SunOpta	EX725	NS, CL	–	–	X	X	X
Dyna-Gro	H42HO18CL	HO, CL,	–	–	–	X	–
Dyna-Gro	H44HO12CL	HO, CL,	–	–	–	X	–
Dyna-Gro	H45HO10EX	HO, CL,	–	–	–	X	–
Dyna-Gro	H45NS16CL	NS, CL,	X	–	X	X	X
Dyna-Gro	H48HO15CL	HO, CL,	X	–	X	X	X
Dyna-Gro	H49HO19CL	HO, CL,	X	–	X	X	X
Dyna-Gro	H49NS14CL	NS, CL,	X	–	X	X	X
Dyna-Gro	XH93H75CL	HO,CL,DM	–	–	–	X	–
Dyna-Gro	XH93H76CL	HO,CL,DM	–	–	–	X	–
Dyna-Gro	XH93H77CL	HO,CL,DM	–	–	–	X	–
Dyna-Gro	XH93H78CL	HO,CL,DM	–	–	–	X	–
Dyna-Gro	XH93H79CL	HO,CL,DM	–	–	–	X	–
Dyna-Gro	XH91H54CL	HO,CL	–	–	–	X	–
Dyna-Gro	XH91H55CL	HO,CL	–	–	–	X	–
Dyna-Gro	XH81H52CP	HO,CL	–	–	–	X	–
Winfield	CP3845	HO, DM	X	X	X	X	X
Winfield	CP432E	NS, EX, DM	X	X	X	X	X
Winfield	CP450E	HO, EX, DM	X	X	X	X	X
Winfield	CP455E	HO, EX, DM	X	X	X	X	X
Winfield	CP4909E	NS, EX, DM	X	X	X	X	X
Winfield	CP545CL	NS, CL, DM	X	X	X	X	X
Winfield	CPX57919CLP	NS, CLP, DM	X	X	X	X	X
Winfield	CPX59619CLP	NS, CLP, DM	X	X	X	X	X
Mission Seed Solutions	3N692	Express Sun	X	X	–	X	X
Mission Seed Solutions	AF4H95CD	Clearfield HO	X	X	–	X	X
Mission Seed Solutions	AF4740MC	Clearfield NS	X	X	–	X	X
Mission Seed Solutions	AF4738HC	Clearfield HO	X	X	–	X	X
Mission Seed Solutions	AF3679HE	Express Sun HO	X	X	–	X	X
Mission Seed Solutions	AF2690HC	Clearfield HO	X	X	–	X	X
NuSeed	N4H470 CL Plus	HO, CL Plus, DM	X	X	X	X	X

Table 1. List of sunflower hybrids (oils) tested in 2019, continued.

Company	Hybrid	Type	Test Sites				
			Gettysburg	Ft. Pierre	Lantry	Onida	Presho
NuSeed	N4H302 E	HO, EX	X	X	X	X	X
NuSeed	N4H521 CL	HO, CL, DM	X	X	X	X	X
NuSeed	Hornet	HO, CL, DM	X	X	X	X	X
NuSeed	N4HM354	NS, CL, DM	X	X	X	X	X
NuSeed	Falcon	NS, EX	X	X	X	X	X
NuSeed	Camaro II	NS, CL, DM	X	X	X	X	X
NuSeed	N5LM307	NS, CL, DM	X	X	X	X	X
NuSeed	Badger DMR	NS, CL, DM	X	X	X	X	X
CHS	Allegiant 65H81CL	–	–	–	X	X	X
CHS	Allegiant 70H51CL	–	–	–	X	X	X
USDA	Check	–	X	X	X	X	X

Table 2. List of sunflower hybrids (non-oils) tested in 2019.

Company	Hybrid	Type	Trial sites	
			Ft. Pierre	Onida
CHS	17VTL0084-EX	EX	X	X
CHS	17VTL0067-EX	EX	X	X
RRC	2215	–	X	X
RRC	2215 CL	CL	X	X
RRC	2310	–	X	X
RRC	2414	–	X	X
SunOpta	9583CLP	CL, P	–	X
Valia	Valia 41	–	X	X
Valia	H9811EXP	EX	X	X
Valia	H9814EXP	EX	X	X
NuSeed	4334	CL	X	X
NuSeed	NSKM53777	CL, DM	X	X
USDA	Check	–	X	X

Table 3. 2019 Sunflower variety (oilseed) performance trial results for Fort Pierre, South Dakota.

Brand	Hybrid	Harvest Moisture (%)	Yield (lb/A)	Test Weight (lb/bu)	Oil content	Plant Height (inch)	2-year Yield (Avg.)
Pioneer	P64HE101	13.4	1880.1	32.2	38.2	51.9	1867.0
Pioneer	P63HE90	12.8	1625.5	26.5	40.2	59.7	1694.6
Pioneer	P64ME01	12.7	1782.1	27.0	38.8	62.4	—
Proseed	E-21 CL	12.1	720.1	24.2	35.8	55.8	1111.6
Proseed	E-31 CL	12.2	1407.8	25.1	35.1	65.1	1776.6
Proseed	E-362436	12.6	1320.4	26.7	36.1	49.9	1631.2
Proseed	E-91 E	12.3	1315.0	20.9	36.6	59.7	—
Proseed	E-92 E	12.1	1035.3	23.4	38.2	61.2	—
Winfield	CP3845	12.3	1532.7	29.5	40.8	68.6	1700.5
Winfield	CP432E	11.7	1079.4	21.6	33.9	59.7	1843.6
Winfield	CP450E	12.8	1675.7	27.5	38.9	55.8	1783.1
Winfield	CP455E	12.3	1285.1	23.5	40.3	60.1	1771.0
Winfield	CP4909E	12.1	1698.9	35.3	38.7	74.1	—
Winfield	CP545CL	13.2	1915.4	32.3	42.1	53.0	1853.6
Winfield	CPX40419E	12.8	1521.9	23.5	41.2	72.2	—
Winfield	CPX57919CLP	12.8	1693.4	29.4	39.0	60.1	—
Winfield	CPX59619CLP	12.7	1862.5	32.0	40.5	62.4	—
Mission Seed Solutions	3N692	12.4	2041.3	30.7	41.6	64.0	2078.0
Mission Seed Solutions	AF4H95CD	13.0	1560.3	29.5	41.7	56.6	1794.7
Mission Seed Solutions	AF4740MC	12.8	1608.2	28.3	40.8	64.0	—
Mission Seed Solutions	AF4738HC	12.8	1451.6	30.5	41.1	67.1	—
Mission Seed Solutions	AF3679HE	12.6	1480.9	27.4	38.8	52.7	—
Mission Seed Solutions	AF2690HC	11.9	1778.7	30.7	43.7	66.3	—
NuSeed	N4H470 CL Plus	11.9	1549.0	29.7	44.3	63.2	1880.3
NuSeed	N4H302 E	11.2	1299.6	28.6	40.3	60.8	1681.5
NuSeed	N4H521 CL	12.5	1193.3	22.4	40.0	57.3	1810.5
NuSeed	Hornet	13.0	1663.8	31.7	41.8	59.3	1778.5
NuSeed	N4HM354	11.4	1071.5	25.7	42.3	60.8	1660.5
NuSeed	Falcon	11.9	1363.0	29.6	39.9	50.7	1631.8
NuSeed	Camaro II	11.9	1018.0	16.4	40.9	49.1	1626.6
NuSeed	N5LM307	12.7	1108.7	22.9	31.7	60.1	1607.3
NuSeed	Badger DMR	12.2	1538.7	25.9	33.4	53.0	1658.8
USDA	Check	12.2	1184.4	24.8	37.0	64.7	1448.4
LSD @ .05 †		0.78	366.92	7.38	3.73	—	496.40
CV ‡		4.50	15.39	17.038	6.78	—	27.74
P-Value		< 0.001	< 0.001	<0.001	0.194	—	0.153

† Value required (≥LSD) to determine if varieties are significantly different from one another.

‡ C.V. is a measure of variability or experimental error, 20% or less is considered acceptable.

2-year yield data was not available for all varieties

Table 4. 2019 Sunflower variety (non-oil) performance trial results for Fort Pierre, South Dakota.

Brand	Hybrid	Harvest moisture (%)	Yield (lb/A)	Test Weight (lb/bu)	Plant Height (inch)	2-year Yield (Avg.)
CHS	17VTL0084-EX	13.1	1544.2	18.2	46.4	–
CHS	17VTL0067-EX	13.1	1485.8	21.1	53.0	–
RRC	2215	13.3	1888.6	20.0	61.6	1368.2
RRC	2215 CL	13.3	1251.8	19.4	52.3	1033.8
RRC	2310	13.1	1605.9	21.7	66.7	1291.7
RRC	2414	14.0	1981.6	21.3	55.4	1443.6
Valia	Valia 41	13.4	1264.8	21.0	67.1	1168.9
Valia	H9811EXP	13.3	1856.0	19.4	53.0	1436.7
Valia	H9814EXP	13.1	1195.8	22.1	61.6	–
NuSeed	4334	13.0	1032.8	17.2	62.4	1055.1
NuSeed	NSKM53777	13.1	1739.6	20.6	59.3	1350.8
USDA	Check	13.1	851.6	19.6	63.6	748.2
LSD @ .05 †		0.5	385.4	5.0	–	511.48
CV ‡		2.5	15.5	17.3	–	36.33
P-Value		0.02	<0.001	0.73	–	0.14

† Value required ($\geq$ LSD) to determine if varieties are significantly different from one another.

‡ C.V. is a measure of variability or experimental error, 20% or less is considered acceptable.

2-year yield data was not available for all varieties

Table 5. 2019 Sunflower variety (oilseed) performance trial results for Presho, South Dakota.

Brand	Hybrid	Harvest moisture (%)	Test Weight (lb/bu)	Yield (lb/A)	Oil content	Plant Height (inch)	Hulling test (%)	2-year Yield (Avg.)
Pioneer	P64HE101	11.9	30.4	2105.7	39.2	51.5	92.0	2085.2
Pioneer	P64ME01	11.7	30.8	2206.0	40.1	51.9	94.1	–
Proseed	E-21 CL	10.5	25.6	1069.2	38.0	55.8	96.4	1416.5
Proseed	E-31 CL	11.1	24.6	1601.2	38.6	51.1	96.1	2008.2
Proseed	E-362436	11.2	24.9	1213.9	37.0	68.3	84.7	1694.7
Proseed	E-91 E	10.6	23.6	1436.0	37.8	51.9	76.7	–
Proseed	E-92 E	10.8	27.3	1688.4	41.7	62.4	60.8	–
SunOpta	4425CL	10.9	27.4	1746.9	37.6	54.6	–	1893.9
SunOpta	4415 HO/CLP/DM	11.2	28.3	1633.9	41.0	50.7	–	2004.0
SunOpta	EX725	11.1	23.1	1490.7	40.4	66.7	–	1725.8
Dyna-Gro	H45NS16CL	10.7	27.2	1844.1	40.5	62.0	–	2384.6
Dyna-Gro	H48HO15CL	11.0	26.0	1722.9	44.2	60.8	–	1906.7
Dyna-Gro	H49HO19CL	11.6	28.7	2318.6	43.7	59.3	–	2309.1
Dyna-Gro	H49NS14CL	12.0	29.5	1871.7	39.6	64.4	–	2044.1
Winfield	CP3845	10.8	28.7	1584.9	45.4	58.9	82.0	2023.7
Winfield	CP432E	10.1	20.4	1266.3	29.7	63.6	68.6	1855.0
Winfield	CP450E	10.6	26.9	1440.9	38.3	53.4	70.1	1940.4
Winfield	CP455E	10.8	26.9	1655.2	38.6	57.7	–	1906.1
Winfield	CP4909E	11.4	28.1	1804.5	41.9	49.9	93.1	–
Winfield	CP545CL	12.3	32.8	2214.3	42.0	63.6	90.4	2196.6
Winfield	CPX40419E	10.7	25.5	1498.5	44.4	58.1	80.9	–
Winfield	CPX57919CLP	10.8	23.4	1508.6	41.0	59.3	91.7	–
Winfield	CPX59619CLP	11.3	29.1	1980.5	44.4	58.5	–	–
Mission Seed Solutions	3N692	11.1	29.7	2052.1	41.9	49.9	–	2210.2
Mission Seed Solutions	AF4H95CD	11.5	30.4	2055.3	44.1	49.5	–	2348.5
Mission Seed Solutions	AF4740MC	12.4	29.9	2093.1	42.0	50.3	–	–
Mission Seed Solutions	AF4738HC	11.1	25.9	1867.5	42.4	58.5	–	–
Mission Seed Solutions	AF3679HE	10.7	27.2	1596.6	42.4	62.4	–	–
Mission Seed Solutions	AF2690HC	10.8	29.4	1499.3	42.5	58.9	–	–
NuSeed	N4H470 CL Plus	11.6	28.3	2043.1	45.5	63.6	–	2324.6
NuSeed	N4H302 E	11.0	25.6	1479.3	40.6	62.4	–	1872.7
NuSeed	N4H521 CL	11.6	28.6	2120.0	44.2	59.3	–	2271.5
NuSeed	Hornet	11.9	29.1	2107.9	44.9	62.8	–	2219.2
NuSeed	N4HM354	11.0	27.2	1913.6	41.9	50.3	–	2172.7
NuSeed	Falcon	11.2	30.4	2038.0	41.4	56.9	–	2198.3
NuSeed	Camaro II	11.5	30.2	1959.2	41.1	56.6	–	2314.3
NuSeed	N5LM307	10.9	30.6	1155.2	33.0	64.4	86.2	1731.5
NuSeed	Badger DMR	10.4	23.7	1364.0	34.5	53.8	88.4	1538.1
CHS	Allegiant 65H81CL	10.0	22.9	1256.1	41.4	55.8	–	1734.0
CHS	Allegiant 70H51CL	10.3	22.8	1266.8	44.2	57.3	–	1897.4
USDA	Check	10.2	23.3	1315.8	39.1	58.1	–	1682.8
LSD @ .05 †		0.74	–	415.42	3.17	5.69	17.56	525.56
CV ‡		4.78	–	17.36	5.56	15.2	9.78	26.89
P-Value		<0.001	–	<0.001	<0.001	<0.001	0.01	0.00

† Value required ($\geq$ LSD) to determine if varieties are significantly different from one another.

‡ C.V. is a measure of variability or experimental error, 20% or less is considered acceptable.

2-year yield data was not available for all varieties

Table 6. 2019 Sunflower variety(oilseed) performance trial results for Lantry, South Dakota.

Brand	Hybrid	Moisture (%)	Yield (lb/A)	Oil content	Test Weight (lb/bu)	Plant Height (inch)	2-year Yield (Avg.)
Proseed	E-21 CL	14.2	712.2	46.1	26.7	60.1	810.1
Proseed	E-31 CL	12.5	1019.8	45.6	26.5	57.7	964.8
Proseed	E-362436	13.5	1344.0	45.3	31.2	60.8	973.2
Proseed	E-91 E	13.0	1639.9	44.8	31.8	62.0	—
Proseed	E-92 E	12.5	804.7	45.8	23.4	61.2	—
SunOpta	4425CL	13.1	1352.5	44.1	32.3	66.3	1115.0
SunOpta	4415 HO/CLP/DM	13.8	1173.5	46.1	25.9	58.1	1057.0
SunOpta	EX725	13.9	1439.9	45.1	25.9	65.5	1327.9
Dyna-Gro	H45NS16CL	13.2	1775.6	45.4	34.3	57.3	1381.2
Dyna-Gro	H48HO15CL	18.1	1626.0	44.7	31.8	66.3	1201.0
Dyna-Gro	H49HO19CL	14.4	1452.1	44.2	31.0	56.2	1457.5
Dyna-Gro	H49NS14CL	18.0	1570.4	44.3	33.1	66.3	1112.0
Winfield	CP3845	12.5	830.4	47.3	22.4	62.4	897.6
Winfield	CP432E	12.2	1067.7	41.0	29.4	62.4	825.9
Winfield	CP450E	13.6	1520.9	45.0	33.1	57.7	1320.8
Winfield	CP455E	13.2	1496.4	46.2	28.6	59.3	1323.2
Winfield	CP4909E	13.9	1234.5	45.7	34.9	56.2	—
Winfield	CP545CL	16.0	1413.7	45.0	32.2	55.8	1363.6
Winfield	CPX40419E	16.2	1708.7	41.0	30.9	64.4	—
Winfield	CPX57919CLP	16.8	1205.6	46.4	32.1	45.2	—
Winfield	CPX59619CLP	14.6	1439.1	44.2	33.7	55.8	—
NuSeed	N4H470 CL Plus	15.3	1090.0	44.3	25.6	56.9	1210.2
NuSeed	N4H302 E	12.5	895.7	41.3	25.2	59.3	1044.5
NuSeed	N4H521 CL	16.4	1258.7	46.8	31.5	50.7	1087.1
NuSeed	Hornet	15.1	1432.1	43.1	31.6	60.8	1196.6
NuSeed	N4HM354	12.8	1294.3	44.8	30.7	59.3	1458.0
NuSeed	Falcon	13.1	1626.6	44.5	32.7	56.2	1289.6
NuSeed	Camaro II	13.4	1259.5	47.9	31.0	58.5	1153.1
NuSeed	N5LM307	13.6	1124.6	44.5	28.4	59.3	887.1
NuSeed	Badger DMR	11.0	833.2	47.5	20.8	46.8	933.4
CHS	Allegiant 65H81CL	12.9	1490.8	42.1	29.7	62.4	1227.7
CHS	Allegiant 70H51CL	15.1	1608.8	44.4	30.7	60.1	1308.2
USDA	Check	12.0	697.1	46.9	16.4	51.5	788.7
LSD @ .05 †		2.23	280.54	4.36	7.21	—	397.44
CV ‡		11.36	13.38	6.93	15.36	—	30.60
P-Value		<0.001	<0.001	0.218	<0.001	—	0.01

† Value required ($\geq$ LSD) to determine if varieties are significantly different from one another.

‡ C.V. is a measure of variability or experimental error, 20% or less is considered acceptable.

2-year yield data was not available for all varieties