



2010 Sunflower Performance Tests



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Information on Sunflower Performance Trials

Numerous hybrids were evaluated in performance tests during 2010. Commercially available hybrids and experimental lines were included within the tests. Tests were designed to provide information to assist producers in identifying superior hybrids and make crop management decisions.

Hybrids of private seed company origin are submitted based on decisions by the respective company and hybrid characteristics listed were provided by the companies (Table 2).

Methods

Test locations were near Miami, Enid, and Goodwell. All test plots were planted using four or two 30-inch rows (2 row Goodwell) that were 25 feet long. Plots were seeded at a rate of 18,000-21,000 seeds/ac depending on location. Tests were conducted using randomized complete block design with four replications. Irrigation was used only at the Goodwell location. Two rows the entire length of the plot was harvested with a small plot combine to determine grain yield.

Interpreting Data

Details of establishment and management of each test are listed in footnotes below the tables. Least significant differences (LSD) are listed at the bottom of all but the Performance Summary tables. Differences between varieties are significant only if they are equal to or greater than the LSD value. If a given variety out yields another variety by as much or more than the LSD value, then we are 95% sure that the yield difference is real, with only a 5% probability that the difference is due to chance alone. For example, if variety X is 200 lb/ac higher in yield than variety Y, then this difference is statistically significant if the LSD is 200 or less. If the LSD is 200 or greater, then we are less confident that variety X really is higher yielding than variety Y under the conditions of the test.

Results reported here should be representative of what might occur throughout the state but would be most applicable under environmental and management conditions similar to those of the tests. The relative yields of all sunflower hybrids are affected by crop management and by environmental factors including soil type, summer conditions, soil moisture conditions, diseases, and insects.

Additional information on the Web

A copy of this publication as well as additional information and more information on sunflower management can be found at

<http://oilseeds.okstate.edu/>

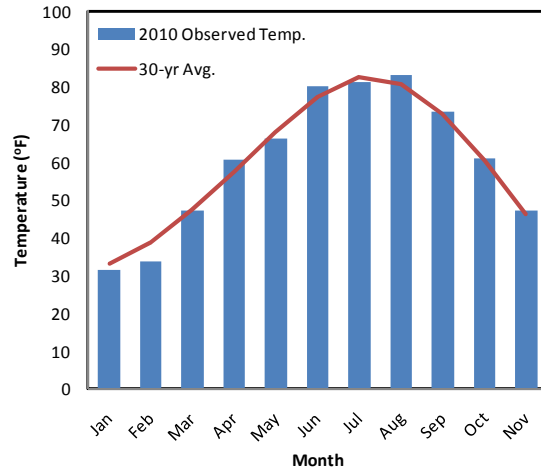
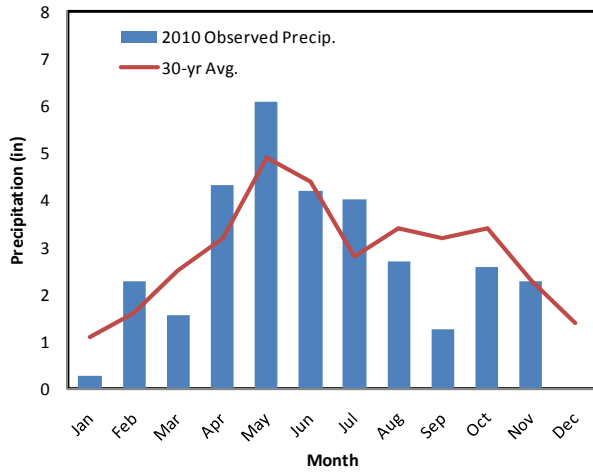
Table 1. Sources of Seed for the 2010 Sunflower Performance Tests.

Croplan Genetics 525 55th ST SE Minot, ND 58701	Telephone: 701-852-3556
Syngenta 4102 Timberline Dr. Fargo, ND 58104	www.syngenta.com
Mycogen Seeds 1614 Safford Ave. Garden City, KS 67846	Telephone: 1-800-MYCOGEN
Seeds 2000 115 North 3rd St. Breckenridge, MN 56520	Telephone: 218-643-2410
Advanta US, Inc. 6109 53rd Ave. SW Fargo, ND 58104	Telephone: 701-282-2952
Triumph Seed Co., Inc PO Box 1050 Ralls, TX 79357	Telephone: 888-521-7333

Table 2. Characteristics of sunflower hybrids (provided by the company) entered in the 2010 performance trials.

Entry	Company	Maturity	Oil Type	Oil Content	Plant Height	Disease Resistance	Herbicide Resistance
				-- % --	-- in --		
AP462NS	Advanta US Inc.	105	NuSun			Phoma, Phomopsis	
F51122NS,CL	Advanta US Inc.	mid-late	NuSun			Phomopsis	Clearfield
F30008NS,CL	Advanta US Inc.	99	NuSun				Clearfield
CG 3080 DMR NS	Croplan Genetics	90	NuSun	48	medium	Downy Mildew	
CG 356A NS	Croplan Genetics	95	NuSun	46	short		
CG 460 E NS	Croplan Genetics	95	NuSun	48	medium		Express
CG 559 CL DMR NS	Croplan Genetics	94	NuSun	46	med-tall	Downy Mildew	
CG 306 DMR NS	Croplan Genetics	87	NuSun	46	short	Downy Mildew	
4651 NS/DM	Syngenta	97	NuSun	42	58	Downy Mildew	
3732 NS	Syngenta	100	NuSun	43	62		
3845 HO	Syngenta	105	High Oleic	45	62		
3980 NSCL	Syngenta		NuSun	44			Clearfield
8N453DM	Mycogen Seeds	97	NuSun	45	62	Downy Mildew	
8N443DM	Mycogen Seeds	96	NuSun			Downy Mildew	
8H449DM	Mycogen Seeds	97	High Oleic	45	64	Downy Mildew	
8N510	Mycogen Seeds	100	NuSun	40	59		
BLAZER CL	Seeds 2000 Inc.	95	NuSun	43-45	62		Clearfield
SIERRA	Seeds 2000 Inc.	97	High Oleic	43-45	65		
Firebird	Seeds 2000 Inc.	98	NuSun	42-44	60		Express
X9866	Seeds 2000 Inc.	95	NuSun	43-45	62	Downy Mildew	Clearfield
X9464	Seeds 2000 Inc.		High Oleic				Clearfield
s671	Triumph Seed Co.	94-104	NuSun	44-48	Short stature (38-44)	Rust	
s674	Triumph Seed Co.	94-104	NuSun	45-49	Short stature (38-44)	Rust	
s878HO	Triumph Seed Co.	96-106	High Oleic	43-47	Short stature (48-54)	Rust	
s668	Triumph Seed Co.	96-106	NuSun	45-49	Short stature (42-48)	Rust	
s673	Triumph Seed Co.	94-104	NuSun	44-48	Short stature (40-46)	Rust	
859 CL	Triumph Seed Co.	95-105	High Oleic	42-46	55-65	Rust	Clearfield

Enid



Location Summary:

The Enid location was a double-crop test planted on June 24th. Plots were direct seeded into a long-term no-till field. The average yield was 1028 lb/acre when averaged across all varieties. This test was affected by a wind storm around mid bloom that caused some lodging, especially in the taller hybrids. The yield potential of this test was hurt by the below normal precipitation in August and September but overall yields were good for a double crop.

Table 3. Information on soil chemical properties and management practices for the Dryland Sunflower Performance Test near Enid, OK in 2010.

Soil Properties	Result	Cultural Practice	Information
pH	na	Planting Date	June 24, 2011
Soil Test P Index	na	Harvest Date	October 28, 2011
Soil Test K Index	na	Previous Crop	winter wheat
Fertilizer Applied		Herbicide Applications	Prowl H ₂ O and Spartan pre-plant with glyphosate
N	100	Pesticide Applications	1 time
P	0		
K	0	Harvest Aid	none

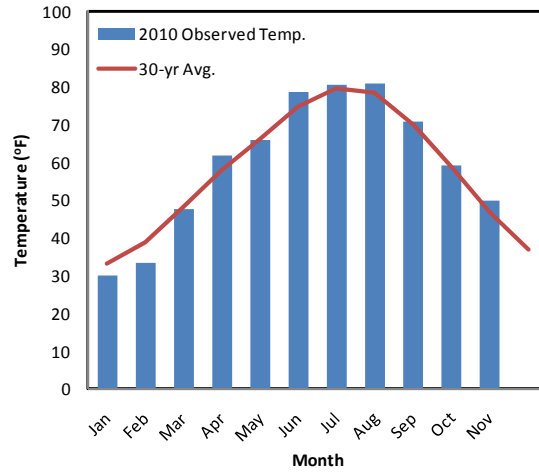
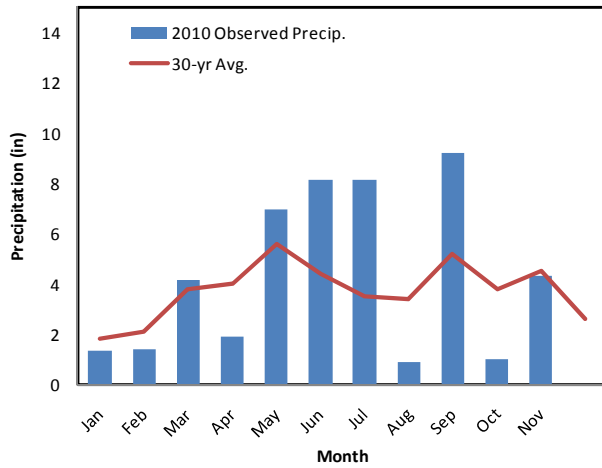
Table 4. Sunflower growth characteristics, oil content, and yield for 2010 near Enid, OK.

Entry	Company	Lodging [†]	Height	Oil [‡]	Yield	Percent of Trial Average
			-- in --	-- % --	-- lb/ac --	-- % --
s671	Triumph Seed Co.	0	34	40	1883	183
s668	Triumph Seed Co.	3	40	38	1665	162
s674	Triumph Seed Co.	0	34	37	1515	147
F30008NS,CL	Advanta US Inc.	1	39	35	1259	122
AP462NS	Advanta US Inc.	1	47	36	1235	120
3732 NS	Syngenta	2	47	37	1224	119
3980 NSCL	Syngenta	1	43	35	1223	119
8N433DM	Mycogen Seeds	1	47	39	1196	116
s673	Triumph Seed Co.	0	40	40	1178	115
s878HO	Triumph Seed Co.	1	43	35	1095	106
3080 DMR NS	Croplan Genetics	0	42	41	1078	105
306 DMR NS	Croplan Genetics	2	46	40	1073	104
8N510	Mycogen Seeds	1	46	35	1007	98
Sierra	Seeds 2000 Inc.	3	45	34	991	96
F51122NS,CL	Advanta US Inc.	1	44	35	967	94
Firebird	Seeds 2000 Inc.	1	46	33	921	90
X9464	Seeds 2000 Inc.	1	39	36	874	85
460 E NS	Croplan Genetics	2	42	38	868	84
8N453DM	Mycogen Seeds	1	44	35	858	83
559 CL DMR NS	Croplan Genetics	1	47	35	844	82
356A NS	Croplan Genetics	1	45	39	806	78
Blazer CL	Seeds 2000 Inc.	0	47	32	781	76
859HCL	Triumph Seed Co.	1	50	36	721	70
8H499DM	Mycogen Seeds	3	46	38	720	70
X9866	Seeds 2000 Inc.	5	52	32	694	67
4651 NS/DM	Syngenta	3	42	34	552	54
3845 HO	Syngenta	3	41	37	528	51
LSD (P=0.05)					324	
Trial Mean					36	1028

[†] Lodging is based on a scale of 1 to 5, with 5 being the most severe.

[‡]Oil analysis was performed on one composite sample, so statistical analysis was not possible.

Miami



Location Summary:

The trial near Miami was planted on 30 inch beds. The sunflower seemed to perform well on the beds that created a more favorable environment early in the growing season. Yields at Miami in 2010 were good, especially in the top group of hybrids. Average yield, when averaged across hybrid, was 1150 lb/ac and average oil percentage was 45%. Yield was reduced by head clipping weevil in the field. The lack of rainfall in August most likely reduced yield potential.

Table 5. Information on soil chemical properties and management practices for the Dryland Sunflower Performance Test near Miami, OK in 2010.

Soil Properties	Result	Cultural Practice	Information
pH	5.7	Planting Date	April 28, 2011
Soil Test P Index	19	Harvest Dates	September 23, 2011
Soil Test K Index	130	Previous Crop	Soybean
Fertilizer Applied		Herbicide Applications	Spartan and Prowl H ₂ O
N	100	Pesticide Applications	June 29, 2011
P	40		
K	50	Harvest Aid	Yes - Glyphosate

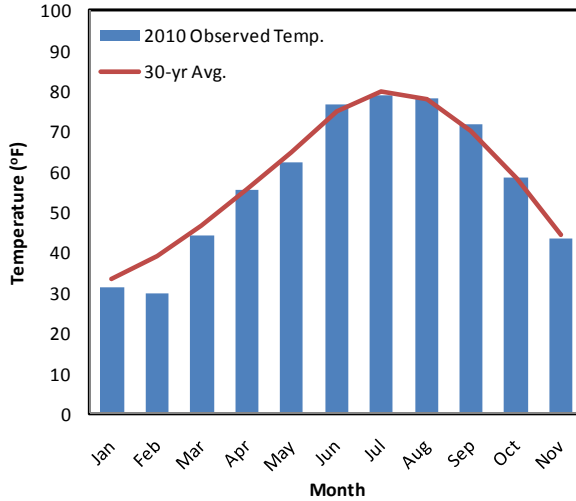
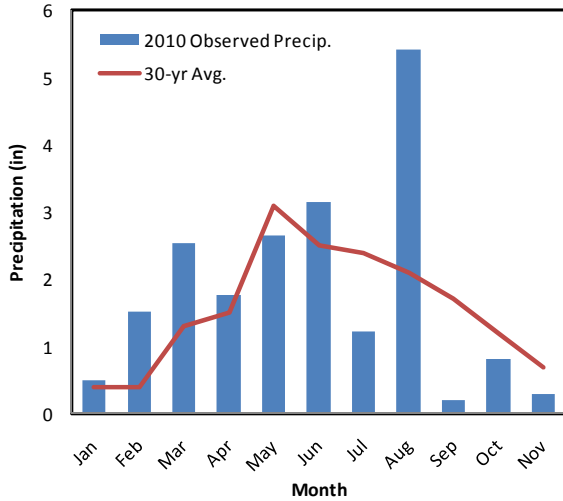
Table 6. Sunflower growth characteristics, oil content, and yield for 2010 near Miami, OK.

Entry	Company	Lodging [†]	Height -- in --	Oil [‡] -- % --	Yield -- lb/ac --	Percent of
						Trial Average -- % --
306 DMR NS	Croplan Genetics	0	50	44	2246	195
s674	Triumph Seed Co.	0	38	45	1834	159
356A NS	Croplan Genetics	0	50	46	1786	155
3080 DMR NS	Croplan Genetics	0	47	45	1711	149
AP462NS	Advanta US Inc.	0	51	44	1398	122
s668	Triumph Seed Co.	1	44	43	1332	116
4651 NS/DM	Syngenta	2	46	47	1248	108
460 E NS	Croplan Genetics	3	49	46	1246	108
Firebird	Seeds 2000 Inc.	3	51	43	1209	105
s671	Triumph Seed Co.	1	38	46	1145	99
8N510	Mycogen Seeds	2	49	42	1131	98
8N433DM	Mycogen Seeds	0	51	44	1126	98
Blazer CL	Seeds 2000 Inc.	0	52	45	1099	96
859HCL	Triumph Seed Co.	0	54	47	1073	93
X9464	Seeds 2000 Inc.	0	42	45	1056	92
F30008NS,CL	Advanta US Inc.	4	53	41	1025	89
3732 NS	Syngenta	2	51	44	1000	87
3980 NSCL	Syngenta	3	48	44	960	83
559 CL DMR NS	Croplan Genetics	2	51	47	955	83
F51122NS,CL	Advanta US Inc.	2	48	41	941	82
X9866	Seeds 2000 Inc.	3	56	45	886	77
Sierra	Seeds 2000 Inc.	3	50	44	844	73
3845 HO	Syngenta	3	45	44	840	73
s878HO	Triumph Seed Co.	2	47	47	815	71
s673	Triumph Seed Co.	2	44	47	810	70
8N453DM	Mycogen Seeds	1	49	43	735	64
8H499DM	Mycogen Seeds	3	50	43	623	54
LSD (P=0.05)					598	
Trial Mean					45	1150

[†] Lodging is based on a scale of 1 to 5, with 5 being the most severe.

[‡]Oil analysis was performed on one composite sample, so statistical analysis was not possible.

Goodwell



Location Summary:

This trial was planted after wheat. Yields at Goodwell in 2010 were a little lower than average. Average yield, when averaged across hybrid, was 1045 lb/ac.

Table 7. Information on soil chemical properties and management practices for the Irrigated Sunflower Performance Test near Goodwell, OK in 2010.

Soil Properties	Result	Cultural Practice	Information
pH	7.3	Planting Date	July 13, 2011
Soil Test P Index	36	Harvest Dates	November 10, 2011
Soil Test K Index	987	Previous Crop	Wheat
Fertilizer Applied		Herbicide Applications	Spartan and Prowl H ₂ O
N	130 [†]	Pesticide Applications	none
P	30	Harvest Aid	none
K	0	Irrigation	as needed

[†] Fertilizer was applied to the preceding wheat crop but sufficient amount of residual N should have been present.

Table 8. Sunflower growth characteristics, oil content, and yield for 2010 near Goodwell, OK.

Entry	Company	Lodging†	Oil	Yield	Percent of Trial Average
			-- % --	-- lb/ac --	-- % --
s673	Triumph Seed Co.	1	41	1590	152
s671	Triumph Seed Co.	1	39	1383	132
AP462NS	Advanta US Inc.	0	39	1383	132
s668	Triumph Seed Co.	1	40	1372	131
8N510	Mycogen Seeds	1	37	1351	129
s674	Triumph Seed Co.	1	40	1264	121
8N433DM	Mycogen Seeds	1	41	1252	120
Firebird	Seeds 2000 Inc.	1	37	1230	118
s878HO	Triumph Seed Co.	1	38	1133	108
559 CL DMR NS	Croplan Genetics	1	39	1133	108
3080 DMR NS	Croplan Genetics	2	43	1089	104
Sierra	Seeds 2000 Inc.	2	34	1078	103
4651 NS/DM	Syngenta	2	36	1078	103
8N453DM	Mycogen Seeds	1	41	1067	102
8H499DM	Mycogen Seeds	1	40	1056	101
859HCL	Triumph Seed Co.	2	39	958	92
F30008NS,CL	Advanta US Inc.	2	37	956	92
460 E NS	Croplan Genetics	2	40	948	91
3732 NS	Syngenta	2	38	882	84
X9464	Seeds 2000 Inc.	1	36	871	83
F51122NS,CL	Advanta US Inc.	2	35	817	78
356A NS	Croplan Genetics	2	38	806	77
Blazer CL	Seeds 2000 Inc.	2	39	795	76
3980 NSCL	Syngenta	2	37	795	76
306 DMR NS	Croplan Genetics	2	40	708	68
3845 HO	Syngenta	1	39	686	66
X9866	Seeds 2000 Inc.	2	37	523	50
LSD (P=0.05)			2	350	
Trial Mean			39	1045	

† Lodging is based on a scale of 1 to 5, with 5 being the most severe.

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