AGRONOMIC AND TEST INFORMATION:

TEST:	**2009 Irrigated Oilseed Sunflower Performance Test**
LOCATION:	Texas AgriLife Research North Plains Research Field, **Etter, Texas** (Moore County, 10 miles north of Dumas)
COOPERATORS:	Dr. Calvin Trostle, Extension agronomist; Dillon Spradley, research assistant
SOIL TYPE:	Sherm clay loam
ROW WIDTH:	30”
PREVIOUS CROP:	Wheat (2008)
LAND PREPARATION:	Field cultivator, rolling cultivator (for listing)
DATE PLANTED:	Replanted 7/8/09 with cones mounted on a JD Max-Emerge planter
SEEDS PER ACRE:	Seeds dropped at 1.5 seeds per foot of 30” row (26,000 seed/A), and any doubles were thinned to 1 plant
PLANTS PER ACRE:	Population for actual plant stand was calculated for the harvest area; trial average 19,800 plants per acre
PLOT LENGTH:	4 rows X 25’
FERTILIZER:	100 N—30 P_2O_5—0 K_2O
HERBICIDE:	Trifluralin, 0.75 qts./A
INSECTICIDE:	3.84 oz. pyrethroid (Warrior T) 8/28, 9/2, & 9/8 using a 4-row hand boom & back pack sprayer
RAINFALL:	July, 2.7”, August, 1.9”, Sept. 0.8”, Oct. 1-20, 0.1”; Seasonal total, 5.5”.
IRRIGATIONS:	Three row waterings, ~5” each
DATE HARVESTED:	11/11-12/09
SIZE HARVESTED PLOT:	2 middle rows X 22’
TEST DESIGN:	Randomized complete block
NUMBER ENTRIES:	33
NUMBER REPLICATIONS:	4
NUMBER ROWS/PLOT:	4

TEST MEANS:	2,646 lbs./A; yield corrected to 10% moisture; average oil content 45.1%
TEST C.V.:	12.6%
SISTER TRIAL SITES?:	Yes. Hybrids were also tested at the Halfway Experiment station farm, Hale Co, planted June 9, 2009.

COMMENTS:

The trial was originally planted 19 June 09, but was damaged severely by jackrabbits. We were unable to replant until July 8, which was 3 days past Extension's last recommended planting date for the area. This conservative date likely ensures that in just about any year a sunflower crop reaches adequate maturity. Maturation concerns were made worse by nighttime low temperatures of 26ºF the night of Oct. 10-11. Visually, it appeared that most hybrids did reach sufficient maturity, and the oil contents suggest that indeed this trial matured well in spite of the cold. A few hybrids that had half-bloom at 58 days or later did have significantly reduced test weight and/or oil content. The longest hybrid in this trial reached half bloom on Sept. 8, and it was still quite green with incomplete seed development during the Oct. 11 freeze.

The test was harvested by hand, and then threshed through a stationary thresher after seed samples had dried considerably. A clipper machine was used to clean trash from all samples.

Yield was very good averaging 2,615 lbs./A in spite of the late planting and October freeze (PLSD of 356 lbs./A). Crop value averaging $534/A was calculated using $19/cwt for high oleic, and $18/cwt. for NuSun, which was reflected in 2009 regional crop prices. A 2-for-1 oil premium (discount) was included. The accompanying table notes the performance of NuSun vs. high oleic hybrids as a group, and these yielded the same. Average oil content was also the same for HO and NuSun although if one lower oil HO line was omitted then HO oil content averaged 1.0% higher. Furthermore, short stature sunflower (5 entries), ranging in height from 4.1 to 4.9', yielded the same as taller hybrids, and had 2% higher oil content vs. the trial average.

For comparison, a confectionary hybrid trial (8 hybrids) to the side and managed the same yielded 2,092 lbs./A, with an average crop value of $460/acre. Confectionary hybrids on average bloomed two days sooner than the oilseed hybrids, but test weights were slightly lower than normal averaging 19.6 lbs./bu.

For biodiesel purposes, the average hybrid (1,197 lbs. oil per acre) would have yielded 150 gallons of oil per acre at extraction efficiency of 95%.

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For further information about this test, contact Dr. Calvin Trostle, Extension agronomy, Lubbock, (806) 746-6101, ctrostle@ag.tamu.edu
For further information about the Texas AgriLife Research Crop Testing Program, contact Mr. Dennis Pietsch, Crop Testing Director, Texas AgriLife Research, College Station, TX, (979) 845-8505, croptest@neo.tamu.edu
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AgriLIFE EXTENSION
Texas A&M System

2009 Irrigated Oilseed Sunflower Hybrid Test
Etter, Moore Co., Texas

AgriLIFE RESEARCH
Texas A&M System

OILSEED, 2009														
Company or Brand	Hybrid	Oil Type†	Height (feet)	Avg. Plants/ acre	Days to Half Bloom	Avg. Lodg-ing	Avg. Bird Damage	Visual Phys. Maturity Oct. 23§	Test Weight (lbs./bu)	% Oil Content at 10% H2O	Seed Yld ,@ 10% H2O (lbs./A)	Oil Yield/ acre (lbs./A)	Crop Value ($/acre)‡
Advanta	AP461NS	Nu	5.7	15,000	58	1.3	1.5	3.5	27.2	43.5	2,458	1,068	473
Advanta	AP 462NS	Nu	6.6	17,100	58	0.7	0.0	3.3	26.4	45.5	2,459	1,119	491
Advanta	F30294 NS, Rust	Nu	7.5	22,200	62	0.4	1.5	2.9	24.1	41.1	2,262	931	417
Advanta	F30008NS,CL	Nu, CL	5.6	21,900	53	0.4	1.0	4.1	25.9	42.9	2,698	1,157	514
Croplan	CG 343DMR HO	HO	6.1	23,800	53	0.5	3.0	4.4	27.7	42.2	2,697	1,138	535
Croplan	CG 356A NS	Nu	5.1	17,200	55	0.0	0.3	3.8	27.5	45.1	3,107	1,402	617
Croplan	CG 369 DMR NS	Nu	6.2	19,100	56	0.5	2.0	4.0	26.5	44.9	2,751	1,238	545
Croplan	CG 378DMR NS	Nu	6.4	20,600	58	0.9	2.0	3.4	25.3	43.4	2,316	1,006	445
Croplan	CG 378 DMR HO	HO	6.6	20,200	58	0.0	2.8	3.4	25.5	43.0	2,511	1,079	506
Croplan	CG 460E NS	Nu	6.6	21,200	59	0.0	2.5	3.8	25.2	44.3	2,396	1,060	468
Croplan	CG 555CL DMR NS	Nu	6.3	19,400	56	0.0	2.3	4.3	25.6	42.9	2,559	1,097	487
Monsanto	DKF 37-31 NS	Nu	5.3	17,100	53	0.6	0.0	4.8	27.3	45.8	2,733	1,252	549
Monsanto	DKR 37-32 NS	Nu	5.2	20,600	53	0.0	0.5	4.4	27.7	46.1	2,959	1,364	597
Monsanto	DKR 38-45 HO	HO	5.4	20,300	54	0.0	0.0	4.3	28.3	48.2	2,868	1,382	634
Mycogen	8N358CLDM	Nu,CL	5.7	20,700	55	1.9	1.0	4.1	26.2	45.8	2,508	1,147	503
Mycogen	8N453DM	Nu	6.2	21,300	55	0.0	0.8	4.0	28.0	48.4	2,995	1,450	630
Mycogen	8H449DM	HO	6.0	18,600	55	0.6	1.0	3.9	28.0	46.7	2,888	1,347	621
Mycogen	8N510	Nu	5.9	23,800	57	0.8	0.5	3.8	26.4	44.0	3,063	1,346	595
Pioneer	64H41	HO	5.9	24,300	53	0.0	1.4	4.7	30.3	44.9	2,796	1,254	583
Pioneer	63M91	Nu	6.1	18,200	55	0.0	2.8	3.9	28.1	46.1	2,859	1,316	577
Check	(Pioneer 63N82)	Nu,Ex	6.1	21,600	57	0.0	3.8	3.8	27.0	44.1	2,294	1,009	446
Seeds 2000	Barracuda CL	Nu,CL	6.1	15,500	59	0.0	0.8	3.2	28.0	44.7	2,152	961	423
Seeds 2000	Blazer CL	Nu,CL	6.1	17,500	57	0.5	0.3	3.6	24.8	43.0	2,343	1,010	448
Seeds 2000	Sierra	HO	6.5	23,800	59	1.2	1.8	3.6	22.8	39.2	2,558	1,004	479
Triumph	657	Nu	6.6	12,500	58	0.0	3.0	2.9	24.1	46.0	2,348	1,082	474
Triumph	664	Nu	6.6	19,100	57	0.4	3.0	3.1	27.2	47.4	2,853	1,350	589
Check	(Triumph 820HO)	HO	6.2	22,800	52	1.6	5.3	5.0	29.1	47.1	2,360	1,111	512
Triumph	845HO	HO	6.3	19,900	55	3.2	0.0	3.9	24.2	47.8	2,271	1,086	499
Triumph	s671	Nu,SS	4.3	21,600	57	0.0	0.3	3.6	28.3	46.7	2,853	1,332	582
Check	(Triumph s672)	Nu,SS	4.2	17,200	57	0.0	1.5	3.1	27.6	46.8	2,623	1,231	538
Triumph	s674	Nu,SS	4.1	19,000	57	0.0	0.3	3.4	28.2	47.2	2,604	1,230	537
Triumph	s680CL	Nu,SS,CL	4.4	22,700	60	0.0	0.0	2.9	29.1	47.7	2,638	1,259	548
Triumph	s878HO	HO,SS	4.9	17,700	57	1.1	0.0	3.1	28.9	47.1	2,513	1,183	545

OILSEED, 2009													
Company or Brand	Hybrid	Oil Type†	Height (feet)	Avg. Plants/ acre	Days to Half Bloom	Avg. Lodg-ing	Avg. Bird Damage	Visual Phys. Maturity Oct. 23§	Test Weight (lbs./bu)	% Oil Content at 10% H2O	Seed Yld ,@ 10% H2O (lbs./A)	Oil Yield/ acre (lbs./A)	Crop Value ($/acre)‡
	Overall average	*5.8*	*19,800*	*56*	*0.5*	*1.4*	*3.7*	*26.9*	*45.1*	*2,646*	*1,197*	*534*	
	NuSun average								26.7	45.1	2,648	1,197	526
	High oleic average								27.2	45.1	2,654	1,197	556
	Short stature average								28.4	47.1	2,662	1,254	553
	Clearfield average								26.8	44.8	2,619	1,113	490
	P-Value	<0.0001	<0.0001	<0.0001					<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
	Fisher's Protected Least Signif. Diff. (0.05) ¶	0.3	2,800	1					0.8	1.5	356	163	72
	Coefficient of Variation (%CV)	13.9	16.7	4.3					6.6	5.2	12.6	14.4	14.1

†Oilseed types: NS = NuSun oil, HO = high oleic oil, SS = short stature oil, CL = Clearfield herbicide tolerant, Ex = ExpressSun herbicide tolerant

‡Oilseed--2:1 premium/discount vs. 40% oil: TX High Plains 2009 contract market, NS @ $18.00/cwt, HO @ $19.00/cwt.

§Scale of visual physiological maturity: 5, all heads brown; 4, lemon yellow heads, all bracts brown/black; 3, lemon yellow heads, 1/2 bracts brown/black; 2, lemon yellow heads, but few to no brown/black bracts.

¶Numbers in the same column that vary by more than the least significant difference are significantly different at a 95% confidence level.

Replanted 8 July 2009; harvested 11-12 November 2009

~26,000 seeds/A (1.5 seeds/ft. on 30" rows), all doubles thinned to 1 plant

Rainfall, 7/1-10/15, 5.5"; Furrow irrigation, ~15"; Fertilizer, 100N-30P_2O_5-0K.

Harvested area: 4 reps, 22' X middle 2 rows

Trial Notes: The trial was originally planted 19 June 09, but was damaged severely by rabbits. We were unable to replant until July 8, which was 3 days past Extension's last recommended planting date for the area. This conservative date likely ensures that in just about any year a sunflower crop reaches adequate maturity. Maturation concerns were made worse by nighttime low temperatures of 26ºF the night of Oct. 10-11. Visually, it appeared that most hybrids did reach sufficient maturity, and the oil contents suggest that indeed this trial matured well in spite of the cold.

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