

Agronomic & Test Information:
Corpus Christi, TX Oilseed Hybrid Sunflower Trial, 2010

TEST:	2010 Rainfed Oilseed Sunflower Hybrid Trial
LOCATION:	Texas AgriLife Research & Extension Center, Corpus Christi, TX
TEST COORDINATORS:	Dr. Dan Fromme, Texas AgriLife Extension Service agronomist, Corpus Christi; Mr. Dennis Pietsch, Texas AgriLife Research Crop Testing, College Station; Mr. Clinton Livingston and Mr. Rudy Alaniz, Extension assistants, Corpus Christi; Dr. Calvin Trostle, Texas AgriLife Extension Service agronomist, Lubbock
SOIL TYPE:	Orelia clay
ROW WIDTH:	38"
PREVIOUS CROP:	Fallow
LAND PREPARATION:	Limited tillage
DATE PLANTED:	March 9, 2010
SEEDING RATE:	Overplanted at ~27,000 seeds/A then targeted for thinning at 1 plant per 9-10" (~17,000 seeds/A); due to skips in initial stand (doubles and triples), stands were thinner but relatively uniform
PLANTED AREA:	4 rows x 35'
FERTILIZER:	Residual fertilizer remained from 2009 fertilizer which was applied, but then no crop planted due to drought
HERBICIDE:	Prowl H ₂ O (2 pints/A) at planting
INSECTICIDE:	Sprayed with Mustang Max (4 oz./A) on May 17, 21, & 28.
RAINFALL:	February = 4.42"; March = 1.15"; April = 1.90"; May = 0.31"; June = 6.97"; Total = 14.75"
IRRIGATION:	None
DATE HARVESTED:	July 7, 2010 (harvested by hand six days after Hurricane Alex then later threshed with a stationary thresher)
SIZE HARVESTED PLOT:	One 38" row X 35' (111 square ft.)
TEST DESIGN:	Randomized block (by rep)
NUMBER ENTRIES:	10

NUMBER REPLICATIONS: 4

TEST MEAN: 1,539 lbs./A yield (corrected to 10% moisture) with 42.8% average oil content (see note below)

TEST YIELD C.V.: 19.2% (High CV is due in part to wide range in hybrid yields, >800 lbs./A, which for a test averaging 1,539 lbs./A inherently generates a high CV despite low within-hybrid variability.)

COMMENTS: Rainfall was well above normal through planting then adequate through the cropping season with the exception of May. Soil profile moisture was nearly saturated at planting, and moisture was available to the plants for the entire season. No visible wilting or stress was observed. Head moth pressure was never heavy, but the test was sprayed three times to ensure good control. Lodging coincided with heavy rain and strong winds from Hurricane Alex on June 30-July 1 (>6" of rain) right before harvest. Lodging was due to root upheaval rather than stalk breakage; with the weight of the head, the wind, and the soft soil, some plants fell over. A plant was considered lodged if it had fallen well below the harvest height of a combine header or was on the ground.

Only about 1/3 of the lodging occurred in the oilseeds compared to an adjacent confectionary test. The two shortest short-statured hybrids (of three), Triumph s668 and s673, which were about 15-22" shorter than conventional height hybrids had no lodging as did one additional conventional hybrid (Seeds 2000 Firebird EX).

Some bird feeding occurred in the oilseed test. For plots where significant bird feeding occurred an estimate of % loss due to feeding was made, and the yield adjusted.

Oil contents in general were notably higher with Triumph hybrids. The average premium in this trial for oil content above 40% was \$0.39/cwt. though one hybrid was discounted for oil content below 40%.

Two hybrids, Triumph s668 and s673 yielded significantly higher than all other hybrids. As noted above discussing CV, the range of yields in this test artificially generates a higher CV which can lead to erroneous conclusions about the variability of the data. If all of these two hybrids' reps had yielded 200 lbs./A less, the CV would have been lowered to 17.2%.

Mid-oleic oilseed was priced at \$14.00/cwt, whereas high oleic was priced higher (\$15.25/cwt.). High oleic sunflower in particular is good for biodiesel conversion. In this trial, oil yields for biodiesel purposes were 68 to 127 gal/A.

An adjacent confectionary sunflower hybrid test (8 entries) yielded 1,460 lbs./A with a crop value of \$321/acre. (Confectionary seed price of \$22/cwt.)

For further info about this test or sunflower production in South Texas consult Dr. Dan Fromme, Extension agronomist, Texas AgriLife Extension Service, Corpus Christi, (361) 265-9203, dfromme@ag.tamu.edu

For further info. about the Texas AgriLife Research Crop Testing Program, contact Mr. Dennis Pietsch, Crop Testing director, Texas AgriLife Research, College Station, TX, (979) 845-8505, dpietsch@ag.tamu.edu

Please visit the Texas AgriLife Crop Testing Program webpage for sunflower as well as hybrid testing information for corn, grain sorghum, and forage at <http://varietytesting.tamu.edu>

For further information about sunflower production in Texas, contact Dr. Calvin Trostle, extension agronomist, Lubbock, (806) 746-6101, ctrostle@ag.tamu.edu or visit <http://lubbock.tamu.edu/sunflower>

Planted March 9, 2010; harvested July 7, 2010; February-June rainfall, 14.75"

Company or Brand	Hybrid	Oil Type†	Price per Cwt.‡	Days to Half Bloom	Plant Height (inches)	Avg. Plants/acre	Lodging %	Test Weight (lbs./bu)	Seed Yield @ 10% H2O (lbs./A)	% Oil Content¶	Oil Yield (lbs./A)	Crop Value (\$/Acre)
Croplan	369 DMR,NS	Nu	\$ 14.00	69	56	13,200	7	28.2	1,221	41.9	513	\$ 178
Croplan	378 DMR,NS	Nu	\$ 14.00	70	55	14,700	5	28.4	1,485	41.7	618	\$ 215
Croplan	460 E,NS	Nu, Ex	\$ 14.00	72	50	13,800	4	28.3	1,297	42.7	555	\$ 192
Seeds 2000	Blazer CL	Nu, CL	\$ 14.00	72	51	15,000	3	28.9	1,380	43.9	606	\$ 208
Seeds 2000	Firebird Ex	Nu, Ex	\$ 14.00	72	45	13,400	0	25.9	1,601	37.3	597	\$ 212
Seeds 2000	Sierra	HO	\$ 15.25	70	49	12,100	4	26.9	1,579	40.7	642	\$ 244
Triumph	664	Nu	\$ 14.00	72	53	12,200	6	29.1	1,385	43.5	602	\$ 207
Triumph	s668	Nu, SS	\$ 14.00	71	34	15,100	0	31.1	2,073	46.4	964	\$ 328
Triumph	s673 (TRXs8420)	Nu, SS	\$ 14.00	72	36	13,900	0	29.6	1,904	45.5	868	\$ 296
Triumph	s878H	HO, SS	\$ 15.25	69	42	14,000	5	30.1	1,465	44.0	645	\$ 241
Average				71	47	13,700	3	28.6	1,539	42.8	661	\$ 232

P-Value (Hybrid)	<0.0001	<0.0001	0.0054	0.0812	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Fisher's Protected LSD (0.05)§	1	3	1600	NS	1.5	252	1.5	113	\$ 45
Coefficient of Variation, CV (%)	2.0	16.4	10.4	120	6.0	19.2&	6.2	23.8	23.7

†Nu = NuSun mid-oleic, HO = high oleic, CL = Clearfield herbicide tolerant, Ex = Express herbicide tolerant, SS = short stature

‡Typical pricing in 2010 for South Texas; high oleic (HO) often \$1.00-1.50/cwt. higher.

¶Oilseed--2:1 premium/discount vs. 40% oil.

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

&High CV is due in part to wide range of yields in this trial, not necessarily within-hybrid variability; see accompanying trial discussion.

Trial Notes: Rainfall was above normal through planting then adequate through the cropping season except May. Soil moisture was near full capacity at planting and remained high through the season. Lodging (root upheaval, not stalk breakage) coincided with Hurricane Alex on June 30-July 1 (>6" of rain) right before harvest. Plants/A was below target 17,200 plants/A due to small skips.

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Please visit the Crop Testing webpage at <http://varietytesting.tamu.edu> for sunflower and other crop hybrid information.

For additional sunflower production resources for Texas contact Extension agronomist Dr. Calvin Trostle, Lubbock, Texas AgriLife Extension Service, Lubbock, (806) 746-6101, ctrostle@ag.tamu.edu, or visit <http://lubbock.tamu.edu/sunflower>