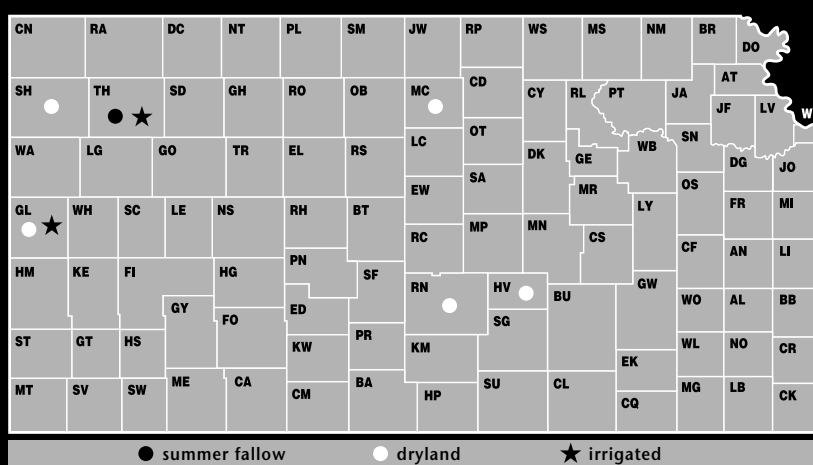


# 2003

## KANSAS PERFORMANCE TESTS WITH SUNFLOWER HYBRIDS

REPORT OF PROGRESS 922

Kansas State University  
Agricultural Experiment Station  
and Cooperative Extension Service



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## INTRODUCTION

### Objectives and Procedures

Sunflower performance tests were conducted in 2003 by the Kansas Agricultural Experiment Station to provide farmers, extension workers, and private industry with unbiased agronomic information on many of the sunflower hybrids marketed in the state. Tests were financed in part by entry fees from private companies. Companies known to be developing and marketing sunflowers were invited to participate and enter hybrids on a voluntary fee-entry basis. As a result, not all hybrids grown in the state were included in tests, and hybrids were not grown uniformly at all locations.

Eight test locations in 2003 included Thomas County, Sherman County, and Greeley County – on fallow; Thomas County and Greeley County – irrigated; Mitchell County, Reno County, and Harvey County – dryland, continuous crop. The test in Mitchell County had to be abandoned because of drought conditions. Oilseed entries were grown at all locations. Confectionary entries were included only in tests in Thomas and Greeley counties. Oilseed and confectionary entries were planted separately in all tests. Entries were planted in four-row, replicated plots at all locations. To ensure uniform and adequate stands, all tests except those in Thomas and Sherman counties were planted at a high seeding rate and hand thinned after emergence to desired stands. Tests in Thomas and Sherman counties were planted to stand with a modified Monosem Vacuum Planter.

Environmental factors affecting test results and cultural practices are discussed individually for each of the test sites. Test results for 2003, as well as period-of-years average data, are included in Tables 1-12. Entrants and entries in 2003 tests are listed in Table 13.

### Data Interpretation

**Yields** are reported as lbs seed/a adjusted to 10% moisture content.

**Days to half bloom** is number of days from date of planting to date when 50% of plants were in bloom.

**Lodging percent** is based on counts of lodged and total plants in harvested areas at all locations.

**Oil percent** was obtained from samples submitted under code number to the Kansas Grain Inspection Service for

analysis and is reported on a 10% moisture basis. Samples for all tests were derived by compositing replications by entry for each location and subsampling.

**Oil yields** are reported as net lbs oil/a.

**Seed size percent analysis** for confectionary-type entries was performed at the Northwest Research-Extension Center on cleaned samples submitted from each of the tests. Separation by seed size was made by screening a weighed sample through a series of six sieves (22/64, 21/64, 20/64, 19/64, 18/64, and 16/64-round holes) secured on a Ro-Tap mechanical shaker.

**Statistical analysis:** Conducting perfect tests is virtually impossible because soil fertility, moisture, and other environmental factors vary. Therefore, small differences in results may have no real meaning. To help interpret data, we applied a statistical technique, analysis of variance, wherever possible. Such analysis requires repeating whole sets of varieties or treatments several times and placing individual varieties or treatments as they would be placed by chance alone. Results of the analyses are reported in terms of least significant differences (LSD). If two means differ by more than the LSD (.05), such a difference would be due to chance variation only 5% of the time. So, it's 95% probable that the difference was due to treatment. If means do not differ by as much as the LSD, then little confidence can be placed in the importance of varietal or treatment differences. The coefficient of variability (CV) represents an estimate of the precision of replicated yield trials. CVs ranging from 10 to 15% are usually acceptable for performance comparisons. CVs greater than 15% provide only a rough guide to hybrid performance.

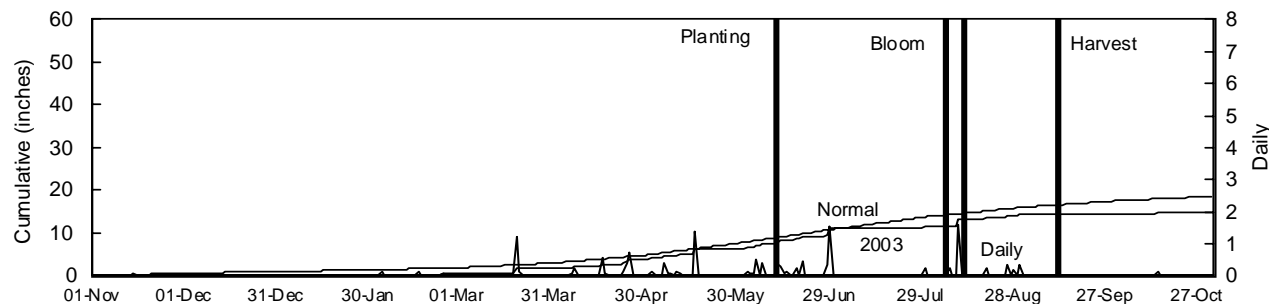
## ACKNOWLEDGEMENTS

Cooperation of research center personnel who performed many of the field operations is sincerely appreciated. Vicki Brown, secretary, and Kraig Roozeboom, coordinator – Kansas Crop Performance Tests, assisted in preparing this report; and temporary workers Samantha Wolf and Jordan Harris helped with seed counting, plot thinning, and maintenance. Mary Knapp at the Weather Data Library provided climatological data, and James R. Cochrane, Assistant Scientist, provided weather charts and posted data to the Web site.

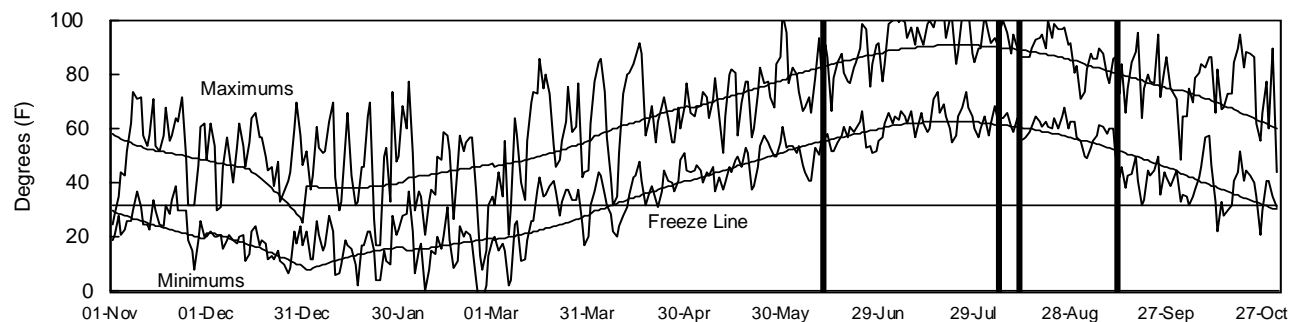
## NORTHWESTERN KANSAS FALLOW SUNFLOWER TEST

<p>LOCATION: Northwest Research-Extension Center, Colby</p> <p>COOPERATOR: Patrick Evans, agronomist</p> <p>TEST SITE: Keith silt loam Sorghum 2001, Fallow 2002</p> <p>FERTILIZATION: 80-0-0</p> <p>PLANTING DATE: 6/11/2003</p> <p>BLOOM DATES: 8/5/2003 - 8/11/2003</p> <p>HARVEST DATE: 9/22/2003</p> <p>PEST CONTROL: Treflan, May 28</p>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><b>Oil</b></td> <td style="width: 50%;"><b>Confectionary</b></td> </tr> <tr> <td>POPULATION: 17,000 plants/a</td> <td>14,900 plants/a</td> </tr> <tr> <td colspan="2">TEST YIELDS:</td> </tr> <tr> <td>Avg. (lbs/a): 210</td> <td>339</td> </tr> <tr> <td>Range (lbs/a): 139 - 327</td> <td>274-390</td> </tr> <tr> <td>LSD (lbs/a): 101</td> <td>101</td> </tr> <tr> <td>CV (%): 41</td> <td>24</td> </tr> </table> <p>2003 GROWING CONDITIONS</p> <p>Favorable spring rainfall allowed excellent stands to be established. The summer months were hot and very dry. Low subsoil moisture and minimal summer rainfall severely reduced yields.</p>	<b>Oil</b>	<b>Confectionary</b>	POPULATION: 17,000 plants/a	14,900 plants/a	TEST YIELDS:		Avg. (lbs/a): 210	339	Range (lbs/a): 139 - 327	274-390	LSD (lbs/a): 101	101	CV (%): 41	24
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LSD (lbs/a): 101	101														
CV (%): 41	24														

### PRECIPITATION



### DAILY TEMPERATURES



### GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2003	Normal	2003	Normal
April	2.2	1.8	52	49
May	2.3	2.9	60	60
June	4.7	3.1	68	70
July	0.4	3.0	80	76
August	3.0	2.2	77	74
Sep.	0.0	1.5	64	65
Oct.	0.2	1.1	57	53
<b>Totals</b>	<b>13.0</b>	<b>15.6</b>	<b>65</b>	<b>64</b>

**Table 1. Colby Fallow Oilseed Sunflower Performance Test, 2001-2003.**

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2003	2002	2001	2-Yr. AVG.	3-Yr. AVG.	2003	2002	2001	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.
DEKALB DK F 33-33NS	235	608	--	421	--	112	49	--	31.8	35.5	--	75	156	--
DEKALB DKF30-33NS	305	--	--	--	--	145	--	--	33.6	--	--	102	--	--
DEKALB EXP38-30NS	191	--	--	--	--	91	--	--	32.7	--	--	62	--	--
DEKALB EXP3880CL	216	--	--	--	--	103	--	--	31.7	--	--	68	--	--
FONTANELLE 902 NS	209	1479	--	844	--	100	119	--	37.8	41.3	--	79	370	--
GARST/INTERSTATE IS 4049	327	1397	--	862	--	156	113	--	35.2	38.7	--	115	352	--
GARST/INTERSTATE IS 6767	182	1107	--	644	--	87	89	--	33.5	38.8	--	61	274	--
KAYSTAR 2020NS	169	1649	1714	909	1177	80	133	113	32.3	36.8	37.8	55	367	473
KAYSTAR 9501	280	1256	1768	768	1101	133	101	117	31.1	34.5	35.0	87	282	400
KAYSTAR X3002	201	--	--	--	--	96	--	--	31.5	--	--	63	--	--
MYCOGEN 8377NS	220	--	1323	--	--	105	--	87	35.9	--	--	79	--	--
MYCOGEN 8488NS	262	1219	1752	741	1078	125	98	116	33.2	37.7	38.2	87	300	430
MYCOGEN 8N421	214	1471	--	843	--	102	118	--	35.4	40.3	--	76	370	--
PATRIOT SEED, INC P03NS2	201	--	--	--	--	96	--	--	34.4	--	--	69	--	--
PATRIOT SEED, INC P99NS2	182	--	--	--	--	87	--	--	32.7	--	--	60	--	--
PIONEER 63M80	204	1155	1392	680	917	97	93	92	32.0	38.4	38.7	65	291	377
PIONEER 63M91	204	1109	1549	656	954	97	89	102	33.0	38.0	38.8	67	272	390
PIONEER 64M60	111	1497	--	804	--	53	121	--	32.9	37.2	--	37	328	--
RED R. COMMODITIES RRC2011	203	--	--	--	--	97	--	--	33.8	--	--	69	--	--
SEEDS 2000 BLAZER	227	1312	1513	769	1017	108	106	100	32.2	37.6	38.3	73	318	412
SEEDS 2000 CHARGER	169	--	--	--	--	80	--	--	33.3	--	--	56	--	--
TRIUMPH 645	234	--	1876	--	--	111	--	124	35.2	--	--	82	--	--
TRIUMPH 665	158	1127	1873	643	1053	75	91	124	32.6	38.2	39.3	52	273	441
TRIUMPH 667	139	--	--	--	--	66	--	--	38.5	--	--	54	--	--
AVERAGES	210	1242	1515	726	989	100	100	100	33.7	38.0	38.6	71	297	400
CV(%)	41	33	16	--	--	20	--	--	--	--	--	--	--	--
LSD(0.05)**	101	480	281	--	--	48	39	19	--	--	--	--	--	--

BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.
DEKALB DK F 33-33NS	55	55	--	32	33	--	7	13	--	23.5	26.6	--	5.4	6.8	--
DEKALB DKF30-33NS	56	--	--	35	--	--	4	--	--	25.1	--	--	5.9	--	--
DEKALB EXP38-30NS	60	--	--	30	--	--	3	--	--	23.9	--	--	5.3	--	--
DEKALB EXP3880CL	58	--	--	31	--	--	7	--	--	22.7	--	--	4.4	--	--
FONTANELLE 902 NS	61	60	--	31	33	--	2	1	--	22.4	24.4	--	5.0	7.5	--
GARST/INTERSTATE IS 4049	60	59	--	36	36	--	2	4	--	23.1	26.1	--	5.6	8.1	--
GARST/INTERSTATE IS 6767	59	58	--	30	33	--	2	9	--	24.2	26.9	--	5.0	8.7	--
KAYSTAR 2020NS	60	60	59	29	31	37	3	3	6	22.6	25.5	26.0	4.6	7.5	7.8
KAYSTAR 9501	60	59	59	35	35	42	4	9	13	25.0	27.0	27.4	5.1	7.9	8.1
KAYSTAR X3002	60	--	--	34	--	--	2	--	--	25.0	--	--	5.2	--	--
MYCOGEN 8377NS	58	--	--	30	--	--	2	--	--	26.2	--	--	5.0	--	--
MYCOGEN 8488NS	55	56	56	35	35	40	11	6	8	22.7	26.1	26.8	4.6	7.0	7.2
MYCOGEN 8N421	60	59	--	33	34	--	1	1	--	23.7	26.4	--	5.1	7.9	--
PATRIOT SEED, INC P03NS2	60	--	--	29	--	--	1	--	--	24.1	--	--	4.7	--	--
PATRIOT SEED, INC P99NS2	61	--	--	31	--	--	2	--	--	23.7	--	--	4.7	--	--
PIONEER 63M80	56	57	57	32	33	39	4	6	10	23.3	26.9	26.3	5.3	7.1	8.0
PIONEER 63M91	57	57	57	33	35	41	8	7	8	22.5	25.7	25.9	5.0	7.2	8.2
PIONEER 64M60	60	60	--	32	34	--	3	2	--	22.8	24.4	--	5.6	7.5	--
RED R. COMMODITIES RRC2011	58	--	--	34	--	--	5	--	--	22.3	--	--	6.7	--	--
SEEDS 2000 BLAZER	57	58	58	28	30	36	3	3	6	24.4	26.0	26.0	4.7	7.2	7.5
SEEDS 2000 CHARGER	60	--	--	33	--	--	5	--	--	21.8	--	--	4.7	--	--
TRIUMPH 645	59	--	--	34	--	--	3	--	--	25.4	--	--	5.6	--	--
TRIUMPH 665	61	60	59	28	31	38	2	3	6	22.1	25.7	26.6	4.7	7.0	7.7
TRIUMPH 667	61	--	--	26	--	--	1	--	--	27.1	--	--	5.9	--	--
AVERAGES	59	58	58	31	33	39	3	4	7	23.7	26.0	26.1	4.9	7.4	8.0
CV(%)	1	--	--	6	--	--	110	--	--	0.0	--	--	--	--	--
LSD(0.05)**	1	--	--	2	--	--	4	--	--	0.0	--	--	--	--	--

\*\* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

**Table 2. Colby Fallow Confectionary Sunflower Performance Test, 2001-2003.**

BRAND and HYBRID	YIELD (lbs/a)					YIELD AS % OF TEST AVERAGE			DAYS TO 1/2 BLOOM		
	2003	2002	2001	2-Yr.	3-Yr.	2003	2002	2001	2-Yr.	3-Yr.	
				AVG.	AVG.				AVG.	AVG.	
RED R. COMMODITIES 2213	344	1769	1425	1057	1179	101	140	92	56	57	58
RED R. COMMODITIES EX 2418	390	1032	--	711	--	115	82	--	59	60	--
SIGCO GOLIATH RT	369	1363	--	866	--	109	108	--	58	59	--
SIGCO SUN PRODUCTS RUSTLER	372	--	1655	--	--	110	--	106	56	--	--
TRIUMPH 757C	275	1084	--	680	--	81	86	--	56	59	--
TRIUMPH 777C	352	1401	1809	876	1187	104	111	116	59	61	61
TRIUMPH TRX2352C	274	--	--	--	--	81	--	--	57	--	--
AVERAGES	339	1260	1554	799	1051	100	100	100	57	59	60
CV(%)	24	33	19	--	--	7	--	--	1	--	--
LSD(0.05)**	101	508	332	--	--	30	40	21	0	--	--

BRAND and HYBRID	PLANT HT (in.)			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2003	2-Yr.	3-Yr.	2003	2-Yr.	3-Yr.	2003	2-Yr.	3-Yr.	2003	2-Yr.	3-Yr.
		AVG.	AVG.		AVG.	AVG.		AVG.	AVG.		AVG.	
RED R. COMMODITIES 2213	36	37	43	4	4	7	18.5	19.4	19.8	11.8	14.7	16.6
RED R. COMMODITIES EX 2418	38	39	--	2	--	--	16.5	18.0	--	13.1	16.1	--
SIGCO GOLIATH RT	36	38	--	4	--	--	17.8	19.7	--	13.8	17.8	--
SIGCO SUN PRODUCTS RUSTLER	39	--	--	6	--	--	18.3	--	--	13.4	--	--
TRIUMPH 757C	38	37	--	2	--	--	15.5	17.6	--	15.2	18.5	--
TRIUMPH 777C	38	37	43	1	--	--	18.3	18.5	18.9	13.8	16.7	17.5
TRIUMPH TRX2352C	36	--	--	8	--	--	17.5	--	--	13.6	--	--
AVERAGES	37	37	43	4	2	4	17.5	18.7	19.5	13.5	17.2	18.1
CV(%)	6	--	--	110	--	--	6.2	--	--	--	--	--
LSD(0.05)**	3	--	--	5	--	--	1.3	--	--	--	--	--

\*\* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

**Table 3. Seed Size Distribution for Colby Fallow Confectionary Sunflower Performance Test, 2001-2003.**

BRAND and HYBRID	Seed Size Distribution (%)													
	2003							2-Year Average						
	Above 22/64	21/64 to 22/64	20/64 to 21/64	19/64 to 20/64	18/64 to 19/64	16/64 to 18/64	Below 16/64	Above 22/64	21/64 to 22/64	20/64 to 21/64	19/64 to 20/64	18/64 to 19/64	16/64 to 18/64	Below 16/64
RED R. COMMODITIES 2213	2.0	2.4	3.2	6.5	6.2	26.6	53.1	4.0	4.6	5.9	12.1	11.8	27.6	34.0
RED R. COMMODITIES EX 2418	0.8	1.4	3.0	6.0	9.2	38.0	41.6	5.0	6.1	6.7	11.9	12.0	31.8	26.6
SIGCO GOLIATH RT	0.0	2.6	5.7	10.1	10.8	38.2	32.6	11.3	9.2	9.7	12.4	10.9	27.2	19.4
SIGCO SUN PRODUCTS RUSTLER	2.0	3.3	6.2	15.0	16.2	28.2	29.1	--	--	--	--	--	--	--
TRIUMPH 757C	12.0	12.4	10.0	16.6	10.1	22.6	16.3	23.0	14.7	11.6	13.6	8.2	17.9	11.2
TRIUMPH 777C	0.5	2.4	5.0	10.4	11.2	37.2	33.3	10.4	6.9	9.9	14.3	11.0	26.9	20.6
TRIUMPH TRX2352C	1.3	2.0	4.1	8.6	12.6	42.4	29.0	--	--	--	--	--	--	--
AVERAGES	2.7	3.8	5.3	10.5	10.9	33.3	33.6	12.7	8.6	8.9	12.6	10.8	25.5	21.2

BRAND and HYBRID	3-Year Average						
	Above 22/64	21/64 to 22/64	20/64 to 21/64	19/64 to 20/64	18/64 to 19/64	16/64 to 18/64	Below 16/64
	RED R. COMMODITIES 2213	5.5	7.0	8.3	13.3	13.7	26.4
RED R. COMMODITIES EX 2418	--	--	--	--	--	--	--
SIGCO GOLIATH RT	--	--	--	--	--	--	--
SIGCO SUN PRODUCTS RUSTLER	--	--	--	--	--	--	--
TRIUMPH 757C	--	--	--	--	--	--	--
TRIUMPH 777C	15.1	9.2	11.3	14.0	10.8	22.8	16.7
TRIUMPH TRX2352C	--	--	--	--	--	--	--
AVERAGES	12.3	9.3	10.2	14.3	11.8	24.5	17.6

## NORTHWESTERN KANSAS IRRIGATED SUNFLOWER TEST

LOCATION: Northwest Research-Extension Center, Colby      POPULATION: 23,000 plants/a

COOPERATOR: Patrick Evans, agronomist

TEST YIELDS:

TEST SITE: Keith silt loam

Avg. (lbs/a): 3019

Soybeans 2001, Corn 2002

Range (lbs/a): 2123 - 3713

FERTILIZATION: 160-10-0

LSD (lbs/a): 353

PLANTING DATE: 6/10/2003

CV (%): 10

BLOOM DATES: 8/3/2003 - 8/9/2003

2003 GROWING CONDITIONS

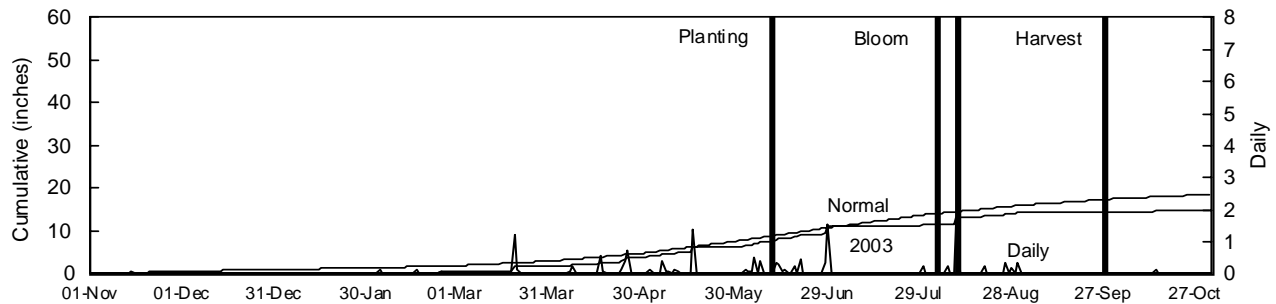
HARVEST DATE: 9/27/2003

Good stands were established and growing conditions were favorable throughout the growing season. Small hail in early August caused some leaf damage but probably did not affect yield.

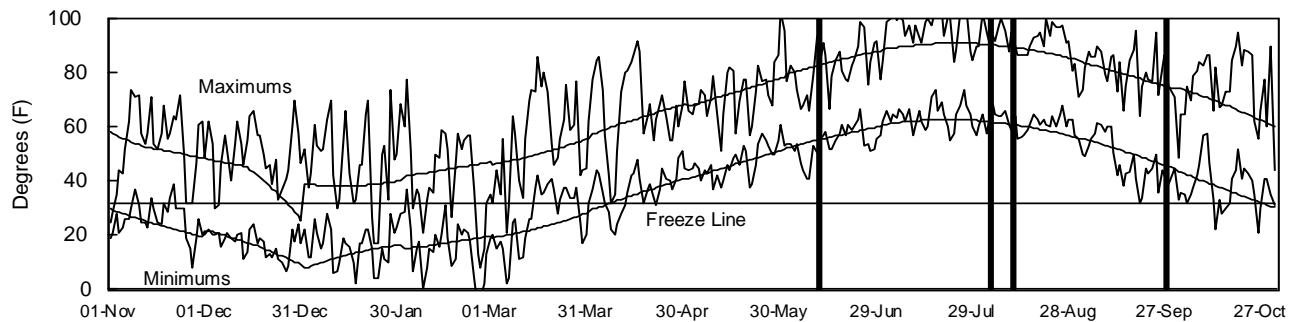
PEST CONTROL:

Treflan, May,30; Parathion, August 10

### PRECIPITATION



### DAILY TEMPERATURES



### GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2003	Normal	2003	Normal
April	2.2	1.8	52	49
May	2.3	2.9	60	60
June	4.7	3.1	68	70
July	0.4	3.0	80	76
August	3.0	2.2	77	74
Sep.	0.0	1.5	64	65
Oct.	0.2	1.1	57	53
Totals	13.0	15.6	65	64

**Table 4. Colby Irrigated Oilseed Sunflower Performance Test, 2001-2003.**

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2003	2002 *	2001 *	2-Yr. AVG.	3-Yr. AVG.	2003	2002 *	2001 *	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 308	3278	3371	--	3325	--	109	101	--	45.1	47.7	--	1478	1587	--
CROPLAN GENETICS CL 322NS	2761	3156	2808	2959	2908	91	94	84	39.6	42.1	43.6	1093	1249	1270
CROPLAN GENETICS CL 340	2415	--	--	--	--	80	--	--	39.2	--	--	947	--	--
CROPLAN GENETICS CL 345NS	3016	3617	3272	3316	3302	100	108	98	42.6	45.1	46.0	1285	1501	1524
CROPLAN GENETICS CL 380NS	3063	3527	3624	3295	3405	101	105	109	40.6	42.8	44.5	1244	1415	1521
CROPLAN GENETICS CL 385NS	2897	3730	3324	3314	3317	96	111	100	41.2	43.4	44.5	1194	1447	1483
DEKALB DK F 33-33NS	3036	3148	--	3092	--	101	94	--	39.1	39.9	--	1187	1207	--
DEKALB DKF30-33NS	3293	--	--	--	--	109	--	--	39.5	--	--	1301	--	--
DEKALB EXP38-30NS	2818	--	--	--	--	93	--	--	41.1	--	--	1158	--	--
DEKALB EXP3880CL	3386	--	--	--	--	112	--	--	39.1	--	--	1324	--	--
FONTANELLE 902 NS	2744	3582	--	3163	--	91	107	--	42.6	44.8	--	1169	1393	--
GARST/INTERSTATE HYSUN 424	3125	3085	3696	3105	3302	104	92	111	40.8	43.6	44.5	1275	1352	1474
GARST/INTERSTATE HYSUN 450	3346	3148	3706	3247	3400	111	93	111	40.9	42.1	43.7	1369	1340	1474
GARST/INTERSTATE HYSUN 454	3177	3595	3448	3386	3407	105	108	103	42.2	43.7	44.1	1341	1452	1484
GARST/INTERSTATE HYSUN 521	3259	3462	3226	3360	3316	108	104	97	39.9	42.4	44.3	1300	1395	1447
GARST/INTERSTATE HYSUN 525	2578	3324	--	2951	--	85	99	--	38.7	41.8	--	998	1245	--
GARST/INTERSTATE IS 4049	2814	3253	3444	3034	3170	93	97	107	39.5	41.7	41.5	1112	1241	1193
GARST/INTERSTATE IS 6767	3090	3791	3359	3441	3413	102	114	101	41.4	42.6	41.9	1279	1406	1170
KAYSTAR 2020NS	3063	3184	3326	3123	3191	101	95	98	41.1	42.3	42.7	1259	1295	1236
KAYSTAR 9501	3226	3670	3487	3448	3461	107	110	109	37.8	38.0	36.9	1219	1255	1050
KAYSTAR X3002	3713	--	--	--	--	123	--	--	37.4	--	--	1389	--	--
MYCOGEN 8377NS	3466	3714	3498	3590	3559	115	111	108	42.7	44.2	44.1	1480	1555	1437
MYCOGEN 8488NS	3366	3953	3572	3659	3630	111	119	111	41.8	42.8	43.0	1407	1536	1432
MYCOGEN 8N421	3271	3515	--	3393	--	108	105	--	42.6	45.2	--	1393	1537	--
MYCOGEN SF 260	3234	3348	3472	3291	3351	107	100	108	43.3	45.2	44.2	1400	1457	1228
MYCOGEN SF 270	3245	3003	3334	3124	3194	107	90	100	42.3	44.3	44.5	1373	1382	1421
PATRIOT SEED, INC P03NS2	3089	--	--	--	--	102	--	--	41.2	--	--	1273	--	--
PATRIOT SEED, INC P99NS2	3085	--	--	--	--	102	--	--	41.0	--	--	1265	--	--
RED R. COMMODITIES RRC2011	3408	--	--	--	--	113	--	--	41.7	--	--	1421	--	--
SEEDS 2000 BLAZER	3130	3419	3138	3275	3229	104	102	94	41.4	44.0	45.2	1296	1443	1460
SEEDS 2000 CHARGER	2123	--	--	--	--	70	--	--	37.5	--	--	796	--	--
TRIUMPH 636	2795	3829	3758	3312	3461	93	114	113	43.1	45.6	46.6	1205	1523	1624
TRIUMPH 645	3218	3632	3665	3425	3505	107	108	110	45.0	46.2	47.1	1448	1585	1653
TRIUMPH 658	2617	3447	--	3032	--	87	103	--	43.1	45.5	--	1128	1388	--
TRIUMPH 665	2999	3734	3769	3367	3501	99	111	113	43.6	45.8	46.6	1308	1550	1640
TRIUMPH 667	2557	--	--	--	--	85	--	--	43.4	--	--	1110	--	--
TRIUMPH TRX3221	2652	--	--	--	--	88	--	--	44.5	--	--	1180	--	--
TRIUMPH TRX3342	2371	--	--	--	--	79	--	--	41.2	--	--	977	--	--
AVERAGES	3019	3350	3340	3184	3236	100	100	100	41.3	43.0	43.1	1247	1343	1269
CV(%)	10	13	14	--	--	0	--	--	--	--	--	--	--	--
LSD(0.05)**	353	520	389	--	--	12	16	17	--	--	--	--	--	--

\* Values for 2002 and 2001 are from the Colby irrigated performance test, the NUSUN irrigated test, or an average of both if applicable. Yields from the 2002 and 2001 Colby irrigated performance tests were adjusted to reflect the yield levels of the NUSUN tests so hybrids would not be penalized if they were not in both tests.

\*\* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.



**Table 4. Colby Irrigated Oilseed Sunflower Performance Test, 2001-2003, continued.**

BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2003	2-Yr.*	3-Yr.*	2003	2-Yr.	3-Yr.	2003	2-Yr.	3-Yr.	2003	2-Yr.	3-Yr.	2003	2-Yr.	3-Yr.
		AVG.	AVG.		AVG.	AVG.		AVG.	AVG.		AVG.	AVG.		AVG.	AVG.
CROPLAN GENETICS CL 308	55	53	--	61	60	--	3	3	--	29.0	29.5	--	10.4	--	--
CROPLAN GENETICS CL 322NS	56	55	54	62	62	61	5	3	3	27.8	28.5	28.6	8.1	--	--
CROPLAN GENETICS CL 340	57	--	--	55	--	--	3	--	--	25.8	--	--	10.2	--	--
CROPLAN GENETICS CL 345NS	55	54	54	62	64	64	1	1	1	28.8	28.5	28.2	10.4	--	--
CROPLAN GENETICS CL 380NS	58	56	56	68	65	65	1	4	3	28.5	29.0	29.2	9.4	--	--
CROPLAN GENETICS CL 385NS	60	58	58	64	61	60	11	7	6	27.5	28.5	28.7	9.8	--	--
DEKALB DK F 33-33NS	56	55	--	67	64	--	2	2	--	29.0	29.2	--	11.3	12.2	--
DEKALB DKF30-33NS	57	--	--	71	--	--	2	--	--	27.8	--	--	11.9	--	--
DEKALB EXP38-30NS	60	--	--	68	--	--	3	--	--	27.8	--	--	9.5	--	--
DEKALB EXP3880CL	58	--	--	64	--	--	3	--	--	27.5	--	--	9.7	--	--
FONTANELLE 902 NS	60	58	--	69	64	--	5	3	--	25.0	25.8	--	10.3	11.9	--
GARST/INTERSTATE HYSUN 424	60	58	58	66	63	63	0	2	3	28.5	29.3	29.0	9.8	--	--
GARST/INTERSTATE HYSUN 450	60	58	58	64	60	59	3	2	1	28.0	28.7	28.7	10.3	12.1	--
GARST/INTERSTATE HYSUN 454	57	56	56	70	66	65	3	3	--	27.8	28.6	27.9	11.2	12.6	--
GARST/INTERSTATE HYSUN 521	54	53	53	55	55	53	2	2	2	29.5	30.0	29.9	10.8	11.4	--
GARST/INTERSTATE HYSUN 525	59	57	--	69	66	--	3	3	--	28.5	29.5	--	11.9	--	--
GARST/INTERSTATE IS 4049	59	58	58	77	70	68	2	2	4	27.0	27.5	27.7	9.7	11.3	11.2
GARST/INTERSTATE IS 6767	58	56	56	68	63	60	3	2	8	27.8	28.5	28.6	11.3	13.1	12.9
KAYSTAR 2020NS	59	58	58	63	59	58	2	3	6	28.3	28.8	28.6	9.6	11.5	10.9
KAYSTAR 9501	60	59	59	74	66	65	4	3	8	28.3	29.2	29.4	11.5	13.0	12.5
KAYSTAR X3002	59	--	--	67	--	--	2	--	--	28.5	--	--	11.4	--	--
MYCOGEN 8377NS	54	54	54	64	63	62	1	1	2	28.0	28.2	28.5	10.3	11.1	10.9
MYCOGEN 8488NS	58	57	56	65	63	62	2	2	4	28.3	29.1	29.2	9.4	10.9	10.4
MYCOGEN 8N421	58	56	--	70	67	--	1	1	--	27.3	27.9	--	9.7	--	--
MYCOGEN SF 260	58	56	56	63	61	59	1	2	8	27.3	28.4	28.5	10.2	11.3	10.8
MYCOGEN SF 270	53	52	53	54	55	57	1	3	--	29.0	29.1	28.9	12.4	--	--
PATRIOT SEED, INC P03NS2	59	--	--	64	--	--	2	--	--	28.5	--	--	9.0	--	--
PATRIOT SEED, INC P99NS2	60	--	--	67	--	--	3	--	--	28.0	--	--	9.1	--	--
RED R. COMMODITIES RRC2011	57	--	--	63	--	--	1	--	--	26.8	--	--	16.0	--	--
SEEDS 2000 BLAZER	57	56	56	61	59	58	2	2	1	27.8	28.8	28.4	9.2	--	--
SEEDS 2000 CHARGER	59	--	--	68	--	--	11	--	--	27.0	--	--	8.7	--	--
TRIUMPH 636	60	58	57	67	63	62	5	3	3	25.0	25.5	25.3	11.7	--	--
TRIUMPH 645	59	57	57	67	63	61	5	--	--	25.3	25.7	25.4	10.9	--	--
TRIUMPH 658	60	58	--	72	66	--	9	5	--	24.8	25.7	--	10.1	--	--
TRIUMPH 665	60	58	57	71	67	66	3	2	2	27.8	28.5	28.1	9.4	--	--
TRIUMPH 667	59	--	--	45	--	--	36	--	--	28.0	--	--	11.9	--	--
TRIUMPH TRX3221	59	--	--	45	--	--	16	--	--	30.8	--	--	9.3	--	--
TRIUMPH TRX3342	60	--	--	76	--	--	10	--	--	28.8	--	--	9.9	--	--
AVERAGES	58	57	56	65	63	61	4	3	5	27.7	28.3	28.2	10.4	11.7	11.4
CV(%)	1	--	--	5	--	--	108	--	--	2.7	--	--	--	--	--
LSD(0.05)**	1	--	--	4	--	--	6	--	--	0.9	--	--	--	--	--

\* Values for 2002 and 2001 are from the Colby irrigated performance test, the NUSUN irrigated test, or an average of both if applicable.

\*\* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

**Table 5. Colby Irrigated Confectionary Sunflower Performance Test, 2001-2003.**

BRAND and HYBRID	YIELD (lbs/a)					YIELD AS % OF TEST AVERAGE			DAYS TO 1/2 BLOOM		
	2003	2002	2001	2-Yr.	3-Yr.	2003	2002	2001	2003	2-Yr.	3-Yr.
				AVG.	AVG.					AVG.	AVG.
HARVEST STATES RH 118	2157	2756	1936	2457	2283	94	107	89	58	59	59
HARVEST STATES RH318	2469	--	--	--	--	107	--	--	57	--	--
RED R. COMMODITIES 2213	2481	3416	2031	2948	2643	108	133	94	57	56	56
RED R. COMMODITIES 2582	2404	2672	2175	2538	2417	104	104	100	57	56	56
RED R. COMMODITIES EX 2215	2274	2495	--	2385	--	99	97	--	59	59	--
RED R. COMMODITIES EX 2418	2309	2850	--	2580	--	100	111	--	59	59	--
RED R. COMMODITIES RRC7015	2478	--	--	--	--	108	--	--	58	--	--
SEEDS 2000 GRIZZLY	1985	2284	2022	2135	2097	86	89	93	59	59	60
SEEDS 2000 X 3987	2247	2962	3031	2605	2747	98	116	140	59	60	60
SIGCO GOLIATH RT	2540	--	--	--	--	110	--	--	57	--	--
SIGCO SUN PRODUCTS RUSTLER	2305	--	2125	--	--	100	--	98	57	--	--
TRIUMPH 757C	2085	2278	--	2182	--	91	89	--	57	58	--
TRIUMPH 777C	2044	2834	2691	2439	2523	89	111	124	58	60	60
TRIUMPH TRX2352C	2458	--	--	--	--	107	--	--	57	--	--
AVERAGES	2302	2564	2168	2433	2345	100	100	100	58	58	58
CV(%)	11	20	16	--	--	0	--	--	2	--	--
LSD(0.05)**	303	616	403	--	--	13	24	19	2	--	--

BRAND and HYBRID	PLANT HT (in.)			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2003	2-Yr.	3-Yr.	2003	2-Yr.	3-Yr.	2003	2-Yr.	3-Yr.	2003	2-Yr.	3-Yr.
		AVG.	AVG.		AVG.	AVG.		AVG.	AVG.		AVG.	
HARVEST STATES RH 118	62	60	59	4	2	3	20.5	19.4	20.0	22.0	25.2	26.1
HARVEST STATES RH318	60	--	--	2	--	--	20.3	--	--	24.9	--	--
RED R. COMMODITIES 2213	65	62	61	3	2	7	20.3	20.5	21.1	23.1	24.9	24.3
RED R. COMMODITIES 2582	61	58	58	2	--	--	21.0	21.2	21.8	20.3	21.2	20.9
RED R. COMMODITIES EX 2215	63	58	--	3	--	--	18.5	18.9	--	22.4	26.1	--
RED R. COMMODITIES EX 2418	63	60	--	4	--	--	19.8	18.6	--	23.3	25.3	--
RED R. COMMODITIES RRC7015	61	--	--	2	--	--	17.5	--	--	24.2	--	--
SEEDS 2000 GRIZZLY	64	58	57	4	--	--	19.5	18.7	19.6	21.5	25.4	25.1
SEEDS 2000 X 3987	65	61	60	3	--	--	20.0	19.2	19.7	22.8	25.9	25.2
SIGCO GOLIATH RT	60	--	--	3	--	--	21.0	--	--	21.9	--	--
SIGCO SUN PRODUCTS RUSTLER	63	--	--	2	--	--	21.0	--	--	19.8	--	--
TRIUMPH 757C	59	56	--	5	3	--	18.3	17.4	--	24.1	27.5	--
TRIUMPH 777C	63	59	58	3	3	4	19.8	18.1	18.0	21.5	26.3	26.8
TRIUMPH TRX2352C	59	--	--	4	--	--	19.0	--	--	25.4	--	--
AVERAGES	62	59	58	3	2	4	19.7	18.9	19.8	22.7	25.9	25.3
CV(%)	4	--	--	94	--	--	4.5	--	--	--	--	--
LSD(0.05)**	3	--	--	3	--	--	1.1	--	--	--	--	--

\*\* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

**Table 6. Seed Size Distribution for Colby Irrigated Confectionary Sunflower Performance Test, 2001-2003.**

BRAND and HYBRID	Seed Size Distribution (%)													
	2003							2-Year Average						
	Above 22/64	21/64 to 22/64	20/64 to 21/64	19/64 to 20/64	18/64 to 19/64	16/64 to 18/64	Below 16/64	Above 22/64	21/64 to 22/64	20/64 to 21/64	19/64 to 20/64	18/64 to 19/64	16/64 to 18/64	Below 16/64
HARVEST STATES RH 118	22.9	14.6	18.5	22.2	10.6	7.4	3.8	34.1	17.6	17.5	16.4	7.1	5.0	2.4
HARVEST STATES RH318	14.8	15.6	18.0	18.6	14.9	14.1	3.9	--	--	--	--	--	--	--
RED R. COMMODITIES 2213	14.7	11.8	19.5	20.9	13.8	15.7	3.6	20.5	14.5	18.4	18.6	11.6	13.1	3.4
RED R. COMMODITIES 2582	14.6	17.3	20.1	16.0	7.7	15.7	8.6	22.5	16.6	17.1	15.1	7.6	14.8	6.4
RED R. COMMODITIES EX 2215	35.2	22.7	15.3	13.8	6.7	5.1	1.3	48.2	19.3	12.2	9.2	5.3	4.6	1.5
RED R. COMMODITIES EX 2418	9.4	12.7	17.0	23.7	16.3	18.1	2.7	16.2	16.1	17.0	20.0	13.3	14.9	2.6
RED R. COMMODITIES RRC7015	19.4	26.0	20.9	16.6	8.7	7.2	1.2	--	--	--	--	--	--	--
SEEDS 2000 GRIZZLY	27.8	18.6	18.5	17.2	7.9	7.9	2.0	47.0	16.5	13.1	11.5	4.9	5.5	1.6
SEEDS 2000 X 3987	27.1	20.4	18.1	17.7	6.5	6.7	3.5	46.1	16.5	13.5	12.6	4.9	4.3	2.3
SIGCO GOLIATH RT	13.1	16.7	18.3	22.6	8.5	14.6	6.3	--	--	--	--	--	--	--
SIGCO SUN PRODUCTS RUSTLER	14.7	15.7	19.4	19.5	11.8	14.1	4.9	--	--	--	--	--	--	--
TRIUMPH 757C	72.7	7.4	5.8	5.0	1.5	5.0	2.6	76.8	7.1	5.1	4.0	1.4	3.7	2.0
TRIUMPH 777C	23.7	13.5	18.7	18.3	7.8	14.5	3.4	49.8	12.4	11.8	11.5	4.7	7.9	2.0
TRIUMPH TRX2352C	28.7	24.4	19.1	13.7	7.1	5.6	1.4	--	--	--	--	--	--	--
AVERAGES	24.2	17.0	17.6	17.6	9.3	10.8	3.5	39.8	15.8	14.1	13.0	6.9	7.9	2.7

BRAND and HYBRID	3-Year Average						
	Above 22/64	21/64 to 22/64	20/64 to 21/64	19/64 to 20/64	18/64 to 19/64	16/64 to 18/64	Below 16/64
	HARVEST STATES RH 118	33.4	18.8	16.0	14.9	7.3	6.0
HARVEST STATES RH318	--	--	--	--	--	--	--
RED R. COMMODITIES 2213	16.3	12.4	16.5	17.8	13.7	18.0	5.4
RED R. COMMODITIES 2582	19.8	14.7	14.9	14.8	9.2	17.0	9.3
RED R. COMMODITIES EX 2215	--	--	--	--	--	--	--
RED R. COMMODITIES EX 2418	--	--	--	--	--	--	--
RED R. COMMODITIES RRC7015	--	--	--	--	--	--	--
SEEDS 2000 GRIZZLY	40.0	17.2	14.0	13.6	6.6	6.4	1.8
SEEDS 2000 X 3987	37.9	17.3	14.0	14.4	6.6	6.0	3.5
SIGCO GOLIATH RT	--	--	--	--	--	--	--
SIGCO SUN PRODUCTS RUSTLER	--	--	--	--	--	--	--
TRIUMPH 757C	--	--	--	--	--	--	--
TRIUMPH 777C	51.9	12.9	11.8	10.7	4.2	6.4	1.9
TRIUMPH TRX2352C	--	--	--	--	--	--	--
AVERAGES	33.9	15.2	14.0	13.9	8.3	10.2	4.4

## NORTHWESTERN KANSAS FALLOW SUNFLOWER TEST

LOCATION: Northern Sun Industries, Goodland

POPULATION: 18,000 plants/a

COOPERATOR: Patrick Evans, agronomist

TEST YIELDS:

TEST SITE: Ulysses silt loam

Avg. (lbs/a): 384

Sunflower 2001, Fallow 2002

Range (lbs/a): 225 - 551

FERTILIZATION: 60-0-0

LSD (lbs/a): 134

PLANTING DATE: 6/12/2003

CV (%): 30

BLOOM DATES: 8/5/2003 - 8/11/2003

2003 GROWING CONDITIONS

May and June rains allowed good stands to be established.

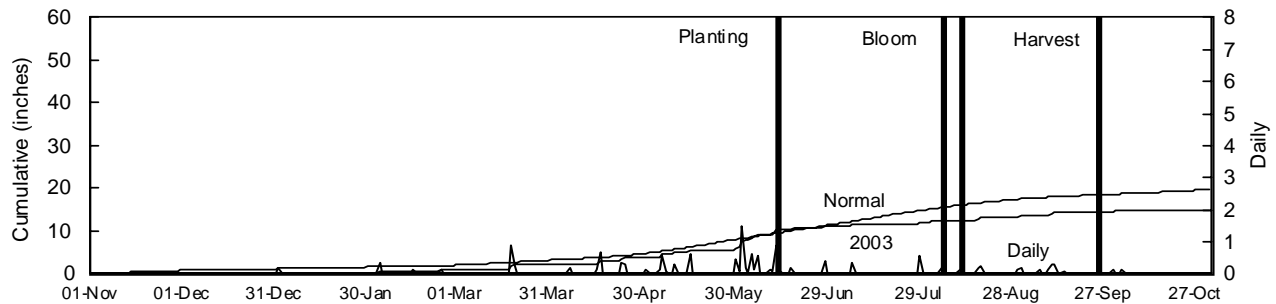
HARVEST DATE: 9/25/2003

The remainder of the growing season was hot and dry. Yields were very low and variable.

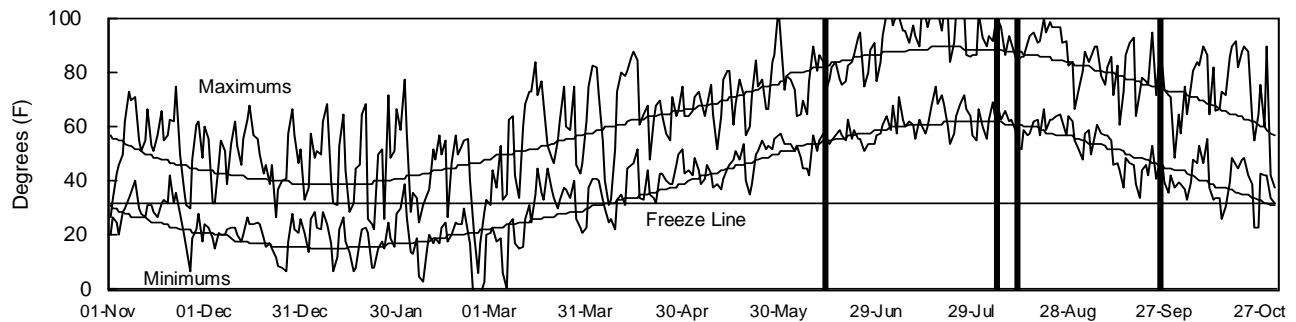
PEST CONTROL:

Prowl

### PRECIPITATION



### DAILY TEMPERATURES



### GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2003	Normal	2003	Normal
April	1.7	1.5	52	49
May	2.3	3.5	60	59
June	4.9	3.3	67	70
July	1.1	3.5	80	75
August	1.3	2.5	76	73
Sep.	1.2	1.1	63	64
Oct.	0.2	1.0	57	52
Totals	12.8	16.5	65	63

**Table 7. Goodland Fallow Oilseed Sunflower Performance Test, 2001-2003.**

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2003	2001	2000	2-Yr. AVG.	3-Yr. AVG.	2003	2001	2000	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 308	310	--	--	--	--	81	--	--	34.7	--	--	108	--	--
CROPLAN GENETICS CL 380NS	308	1110	--	709	--	80	101	--	35.9	36.0	--	111	255	--
CROPLAN GENETICS CL 385NS	332	1242	--	787	--	86	113	--	36.0	36.9	--	120	294	--
DEKALB DK F 33-33NS	344	--	--	--	--	90	--	--	33.0	--	--	114	--	--
DEKALB DKF30-33NS	349	--	--	--	--	91	--	--	34.5	--	--	120	--	--
DEKALB EXP38-30NS	431	--	--	--	--	112	--	--	37.4	--	--	161	--	--
DEKALB EXP3880CL	332	--	--	--	--	86	--	--	35.2	--	--	117	--	--
FONTANELLE 902 NS	430	--	--	--	--	112	--	--	37.3	--	--	160	--	--
GARST/INTERSTATE HYSUN 450	378	--	--	--	--	98	--	--	35.9	--	--	136	--	--
GARST/INTERSTATE HYSUN 454	492	--	--	--	--	128	--	--	37.0	--	--	182	--	--
GARST/INTERSTATE HYSUN 521	225	--	--	--	--	59	--	--	31.9	--	--	72	--	--
KAYSTAR 2020NS	391	1280	--	836	--	102	117	--	37.1	37.2	--	145	311	--
KAYSTAR 9501	432	1177	--	805	--	113	107	--	34.9	34.2	--	151	273	--
KAYSTAR X3002	551	--	--	--	--	143	--	--	36.2	--	--	199	--	--
MYCOGEN 8377NS	391	1080	--	736	--	102	98	--	36.1	36.9	--	141	274	--
MYCOGEN 8488NS	319	987	--	653	--	83	90	--	37.4	37.5	--	119	245	--
MYCOGEN 8N421	436	--	--	--	--	114	--	--	38.5	--	--	168	--	--
SEEDS 2000 BLAZER	389	--	--	--	--	101	--	--	36.0	--	--	140	--	--
SEEDS 2000 CHARGER	341	--	--	--	--	89	--	--	35.7	--	--	122	--	--
TRIUMPH 645	465	--	--	--	--	121	--	--	40.4	--	--	188	--	--
TRIUMPH 665	415	922	--	669	--	108	84	--	37.6	38.0	--	156	255	--
TRIUMPH 667	396	--	--	--	--	103	--	--	42.1	--	--	167	--	--
AVERAGES	384	1097	--	741	--	100	100	--	36.9	36.9	--	142	275	--
CV(%)	30	--	--	--	--	8	--	--	--	--	--	--	--	--
LSD(0.05)**	134	316	--	--	--	35	29	--	--	--	--	--	--	--

BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT			LOGGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 308	54	--	--	40	--	--	5	--	--	27.4	--	--	5.8	--	--
CROPLAN GENETICS CL 380NS	56	59	--	41	48	--	3	5	--	29.9	26.5	--	6.4	6.5	--
CROPLAN GENETICS CL 385NS	58	61	--	40	42	--	1	5	--	29.7	26.3	--	5.6	6.2	--
DEKALB DK F 33-33NS	54	--	--	43	--	--	13	--	--	30.9	--	--	6.0	--	--
DEKALB DKF30-33NS	54	--	--	40	--	--	3	--	--	28.0	--	--	6.6	--	--
DEKALB EXP38-30NS	57	--	--	43	--	--	1	--	--	28.6	--	--	6.7	--	--
DEKALB EXP3880CL	56	--	--	40	--	--	6	--	--	26.6	--	--	4.9	--	--
FONTANELLE 902 NS	58	--	--	42	--	--	1	--	--	24.7	--	--	5.3	--	--
GARST/INTERSTATE HYSUN 450	59	--	--	40	--	--	0	--	--	27.4	--	--	5.4	--	--
GARST/INTERSTATE HYSUN 454	56	--	--	44	--	--	5	--	--	25.2	--	--	6.5	--	--
GARST/INTERSTATE HYSUN 521	54	--	--	39	--	--	1	--	--	24.8	--	--	5.5	--	--
KAYSTAR 2020NS	59	61	--	37	41	--	1	8	--	27.1	26.3	--	5.8	6.2	--
KAYSTAR 9501	57	59	--	42	51	--	7	15	--	25.6	26.9	--	6.2	6.8	--
KAYSTAR X3002	57	--	--	46	--	--	3	--	--	24.8	--	--	7.0	--	--
MYCOGEN 8377NS	55	58	--	44	48	--	2	4	--	25.4	25.1	--	6.5	7.3	--
MYCOGEN 8488NS	56	59	--	40	45	--	2	8	--	26.2	25.0	--	5.5	5.6	--
MYCOGEN 8N421	56	--	--	42	--	--	2	--	--	30.3	--	--	6.0	--	--
SEEDS 2000 BLAZER	56	--	--	35	--	--	2	--	--	30.2	--	--	6.1	--	--
SEEDS 2000 CHARGER	58	--	--	41	--	--	0	--	--	28.9	--	--	6.4	--	--
TRIUMPH 645	58	--	--	43	--	--	0	--	--	29.4	--	--	7.1	--	--
TRIUMPH 665	58	61	--	42	49	--	4	13	--	30.6	29.5	--	6.5	6.9	--
TRIUMPH 667	59	--	--	34	--	--	0	--	--	25.7	--	--	7.1	--	--
AVERAGES	56	59	--	41	47	--	3	9	--	27.6	26.7	--	6.1	7.0	--
CV(%)	1	--	--	7	--	--	149	--	--	0.0	--	--	0.0	--	--
LSD(0.05)**	1	--	--	4	--	--	5	--	--	0.0	--	--	0.0	--	--

\*\* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

## WEST CENTRAL KANSAS FALLOW SUNFLOWER TEST

LOCATION: Southwest Research-Extension Center,  
Tribune

POPULATION: 17,424 plants/a

COOPERATOR: Alan Schlegel, agronomist

TEST YIELDS:

TEST SITE: Richfield silt loam

Avg. (lbs/a): 1161

Fallow 2001, Wheat 2002

Range (lbs/a): 504 - 1453

FERTILIZATION: 80-0-0

LSD (lbs/a): 408

PLANTING DATE: 6/18/2003

CV (%): 30

BLOOM DATES: 8/11/2003 - 8/18/2003

2003 GROWING CONDITIONS

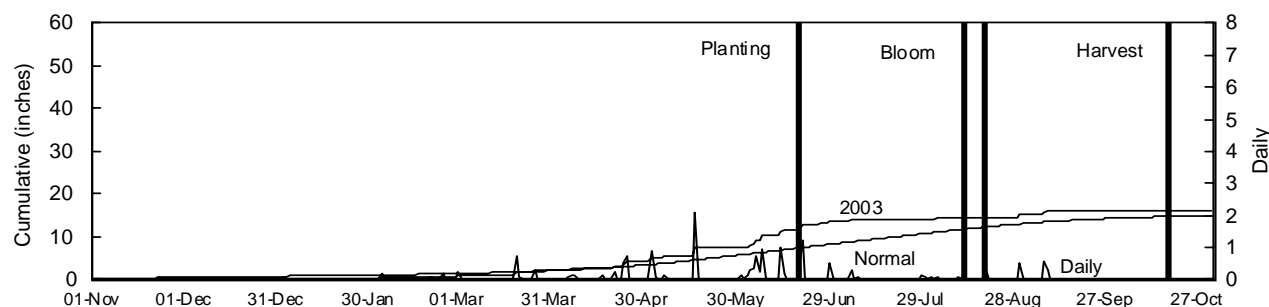
Favorable spring conditions allowed the test to establish well. Minimal stored soil moisture and summer rainfall severely reduced yields.

HARVEST DATE: 10/17/2003

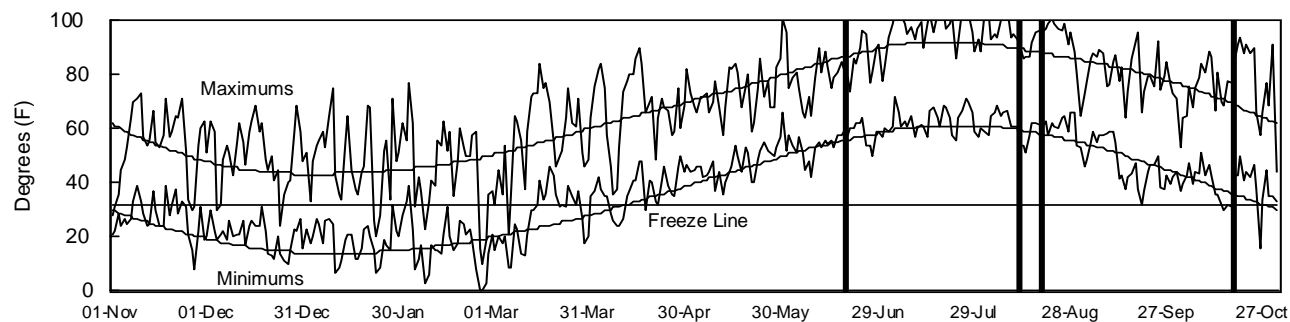
PEST CONTROL:

Spartan

### PRECIPITATION



### DAILY TEMPERATURES



### GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2003	Normal	2003	Normal
April	2.0	1.3	53	50
May	3.4	2.4	61	60
June	6.0	2.5	68	70
July	0.6	2.5	80	76
August	1.1	2.2	78	74
Sep.	0.9	1.3	64	65
Oct.	0.0	0.7	58	53
Totals	14.0	12.9	66	64

**Table 8. Tribune Dryland Oilseed Sunflower Performance Test, 2001-2003.**

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2003	2002	2001	2-Yr. AVG.	3-Yr. AVG.	2003	2002	2001	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.
DEKALB DK F 33-33NS	1219	904	--	1061	--	105	85	--	36.7	37.4	--	447	396	--
DEKALB DKF30-33NS	1094	--	--	--	--	94	--	--	38.8	--	--	424	--	--
DEKALB EXP38-30NS	944	--	--	--	--	81	--	--	41.3	--	--	390	--	--
DEKALB EXP3880CL	1205	--	--	--	--	104	--	--	39.7	--	--	478	--	--
FONTANELLE 902 NS	804	1198	--	1001	--	69	113	--	41.1	40.4	--	330	403	--
GARST/INTERSTATE HYSUN 450	1214	1259	89	1236	854	105	119	71	40.4	39.5	37.2	490	488	335
GARST/INTERSTATE HYSUN 454	1200	1234	128	1217	854	103	117	102	39.4	38.8	37.7	473	472	330
GARST/INTERSTATE IS 4049	1176	1164	128	1170	823	101	110	102	40.7	39.3	37.6	479	459	321
GARST/INTERSTATE IS 6767	1244	1053	88	1148	795	107	100	70	40.6	39.9	37.3	505	459	315
KAYSTAR 2020NS	1119	1173	--	1146	--	96	111	--	40.1	39.4	--	449	451	--
MYCOGEN 8488NS	1288	806	188	1047	761	111	76	149	40.2	40.1	37.9	518	420	301
MYCOGEN 8N421	1341	--	--	--	--	116	--	--	42.3	--	--	567	--	--
PIONEER 63M80	1129	682	160	905	657	97	64	127	40.6	39.7	37.0	458	361	258
PIONEER 63M91	896	956	84	926	646	77	90	67	39.9	39.4	37.4	358	364	252
PIONEER 64M60	1453	1128	--	1290	--	125	107	--	39.8	39.2	--	578	507	--
SEEDS 2000 BLAZER	1234	--	115	--	--	106	--	91	41.9	--	--	517	--	--
SEEDS 2000 CHARGER	1176	--	--	--	--	101	--	--	39.5	--	--	464	--	--
AVERAGES	1161	1058	126	1109	781	100	100	100	40.2	39.5	37.3	467	439	306
CV(%)	30	29	72	--	--	3	--	--	--	--	--	--	--	--
LSD(0.05)**	408	363	107	--	--	35	34	85	--	--	--	--	--	--

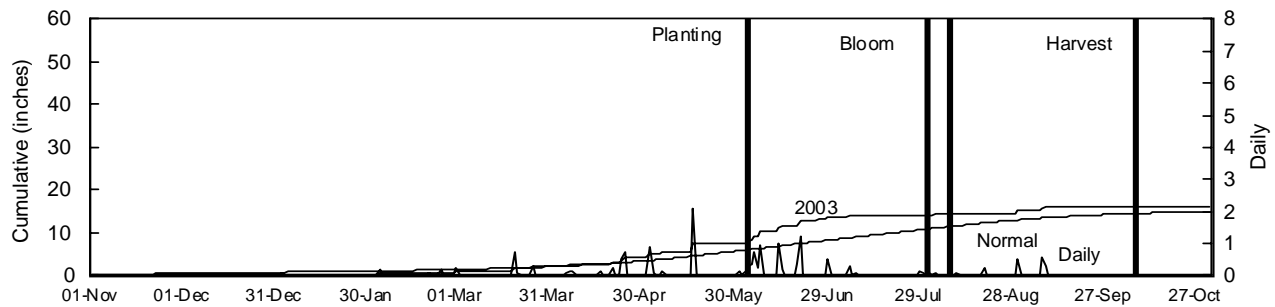
BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.
DEKALB DK F 33-33NS	54	58	--	47	47	--	0	8	--	27.3	28.2	--	9.2	11.3	--
DEKALB DKF30-33NS	56	--	--	49	--	--	0	--	--	29.0	--	--	11.8	--	--
DEKALB EXP38-30NS	58	--	--	54	--	--	0	--	--	30.0	--	--	10.8	--	--
DEKALB EXP3880CL	56	--	--	45	--	--	0	--	--	28.3	--	--	10.8	--	--
FONTANELLE 902 NS	58	63	--	52	54	--	0	11	--	27.8	28.4	--	10.5	12.6	--
GARST/INTERSTATE HYSUN 450	60	63	62	46	46	47	0	1	4	29.5	29.6	28.7	9.6	12.1	10.3
GARST/INTERSTATE HYSUN 454	57	61	60	53	51	53	0	9	16	28.3	28.8	28.3	13.0	13.8	11.8
GARST/INTERSTATE IS 4049	58	62	61	54	55	56	0	6	16	27.8	28.5	28.1	10.7	12.3	10.8
GARST/INTERSTATE IS 6767	59	62	61	45	46	48	0	20	31	28.8	29.5	28.6	12.7	14.0	11.8
KAYSTAR 2020NS	61	64	--	46	44	--	0	1	--	28.3	28.6	--	11.6	12.8	--
MYCOGEN 8488NS	57	61	60	53	54	54	0	10	20	30.3	29.3	28.3	9.3	12.1	10.4
MYCOGEN 8N421	57	--	--	53	--	--	0	--	--	29.8	--	--	10.4	--	--
PIONEER 63M80	59	62	60	50	49	49	0	12	22	26.8	28.2	26.9	12.4	13.3	11.4
PIONEER 63M91	58	61	60	47	49	50	0	8	18	28.8	29.4	28.3	12.7	13.5	11.3
PIONEER 64M60	60	64	--	51	56	--	0	6	--	28.5	28.3	--	11.1	12.6	--
SEEDS 2000 BLAZER	58	--	--	44	--	--	0	--	--	28.5	--	--	8.6	--	--
SEEDS 2000 CHARGER	59	--	--	53	--	--	0	--	--	28.3	--	--	11.7	--	--
AVERAGES	58	62	61	49	50	51	0	9	17	28.6	28.9	28.0	11.0	12.8	10.9
CV(%)	1	--	--	7	--	--	0	--	--	4.4	--	--	--	--	--
LSD(0.05)**	1	--	--	4	--	--	0	--	--	1.5	--	--	--	--	--

\*\* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

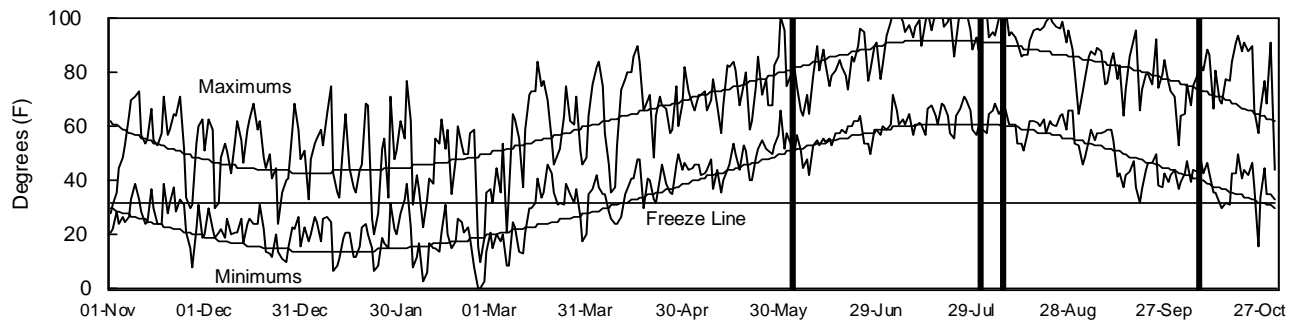
## WEST CENTRAL KANSAS IRRIGATED SUNFLOWER TEST

<p>LOCATION: Southwest Research-Extension Center, Tribune</p> <p>COOPERATOR: Alan Schlegel, agronomist</p> <p>TEST SITE: Ulysses silt loam 2001, Wheat 2002</p> <p>FERTILIZATION: 180-0-0</p> <p>PLANTING DATE: 6/2/2003</p> <p>BLOOM DATES: 7/31/2003 - 8/7/2003</p> <p>HARVEST DATE: 10/7/2003</p> <p>PEST CONTROL: Spartan, Prowl</p>	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"></td> <td style="text-align: center;"><b>Oil</b></td> <td style="text-align: center;"><b>Confectionary</b></td> </tr> <tr> <td>POPULATION:</td> <td style="text-align: center;">23,000 plants/a</td> <td style="text-align: center;">17,424 plants/a</td> </tr> <tr> <td>TEST YIELDS:</td> <td></td> <td></td> </tr> <tr> <td>Avg. (lbs/a):</td> <td style="text-align: center;">2575</td> <td style="text-align: center;">2388</td> </tr> <tr> <td>Range (lbs/a):</td> <td style="text-align: center;">1828 - 3195</td> <td style="text-align: center;">1765-2892</td> </tr> <tr> <td>LSD (lbs/a):</td> <td style="text-align: center;">668</td> <td style="text-align: center;">661</td> </tr> <tr> <td>CV (%):</td> <td style="text-align: center;">22</td> <td style="text-align: center;">23</td> </tr> </table> <p>2003 GROWING CONDITIONS</p> <p>Adequate moisture at planting allowed good stand establishment. Summer rainfall was near normal. The test was sprayed for head moth, stem bores, and seed weevils.</p>		<b>Oil</b>	<b>Confectionary</b>	POPULATION:	23,000 plants/a	17,424 plants/a	TEST YIELDS:			Avg. (lbs/a):	2575	2388	Range (lbs/a):	1828 - 3195	1765-2892	LSD (lbs/a):	668	661	CV (%):	22	23
	<b>Oil</b>	<b>Confectionary</b>																				
POPULATION:	23,000 plants/a	17,424 plants/a																				
TEST YIELDS:																						
Avg. (lbs/a):	2575	2388																				
Range (lbs/a):	1828 - 3195	1765-2892																				
LSD (lbs/a):	668	661																				
CV (%):	22	23																				

### PRECIPITATION



### DAILY TEMPERATURES



### GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2003	Normal	2003	Normal
April	2.0	1.3	53	50
May	3.4	2.4	61	60
June	6.0	2.5	68	70
July	0.6	2.5	80	76
August	1.1	2.2	78	74
Sep.	0.9	1.3	64	65
Oct.	0.0	0.7	58	53
<b>Totals</b>	<b>14.0</b>	<b>12.9</b>	<b>66</b>	<b>64</b>



**Table 9. Tribune Irrigated Oilseed Sunflower Performance Test, 2003.**

BRAND and HYBRID	YIELD (lbs/a)	YIELD (% AVG.)	OIL (%)	OIL YIELD (lbs/a)	DAYS TO 1/2 BLOOM	PLANT HT (in.)	LODGING (%)	TEST WEIGHT (lbs/bu)	200 SEED WT (g)
CROPLAN GENETICS CL 385NS	2815	109	40.6	1143	65	68	0	28.0	11.3
DEKALB DK F 33-33NS	2808	109	39.4	1106	58	68	0	28.3	11.7
DEKALB DKF30-33NS	1955	76	38.7	756	62	72	0	27.0	11.6
DEKALB EXP38-30NS	2110	82	41.1	867	65	76	0	27.0	9.9
DEKALB EXP3880CL	2756	107	38.0	1047	62	64	0	25.0	10.0
GARST/INTERSTATE HYSUN 424	3181	124	40.8	1298	65	77	0	28.8	11.0
GARST/INTERSTATE HYSUN 450	3195	124	41.0	1310	65	71	0	29.3	10.2
GARST/INTERSTATE HYSUN 454	2510	97	41.5	1042	64	73	0	26.5	12.0
GARST/INTERSTATE HYSUN 521	2612	101	38.9	1016	58	58	0	30.0	12.2
GARST/INTERSTATE HYSUN 525	2755	107	39.3	1083	65	72	0	29.3	11.5
GARST/INTERSTATE IS 4049	2612	101	40.1	1047	65	79	0	26.0	10.9
GARST/INTERSTATE IS 6767	2636	102	40.9	1078	63	71	0	27.3	12.9
MYCOGEN 8377NS	2780	108	40.9	1137	61	71	0	24.8	11.1
MYCOGEN 8488NS	2505	97	41.4	1037	64	74	0	27.0	10.0
MYCOGEN 8N421	2680	104	41.8	1120	64	76	0	24.5	10.6
MYCOGEN SF 260	2751	107	41.5	1142	64	66	0	25.3	10.1
MYCOGEN SF 270	2094	81	39.8	833	59	64	0	27.0	11.5
RED R. COMMODITIES RRC2011	2572	100	39.7	1021	63	75	0	25.5	15.8
TRIUMPH 636	2261	88	42.7	966	65	76	0	24.0	13.5
TRIUMPH 645	2816	109	45.1	1270	65	79	0	26.8	12.3
TRIUMPH 665	2406	93	41.4	996	65	74	0	23.3	10.7
TRIUMPH 667	1828	71	42.3	773	65	61	0	26.0	12.5
TRIUMPH TRX3244	2283	89	39.8	909	64	68	0	24.5	13.0
AVERAGES	2575	100	40.7	1048	63	71	0	26.5	11.6
CV(%)	22	1	--	--	1	5	0	7.9	--
LSD(0.05)**	668	26	--	--	1	5	0	2.5	--

\*\* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

**Table 10. Tribune Irrigated Confectionary Sunflower Performance Test, 2003.**

BRAND and HYBRID	YIELD (lbs/a)	YIELD (% AVG.)	DAYS TO 1/2 BLOOM	PLANT HT (in.)	LODGING (%)	TEST WEIGHT (lbs/bu)	200 SEED WT (g)	Seed Size Distribution (%)						
								Above 22/64	21/64 to 22/64	20/64 to 21/64	19/64 to 20/64	18/64 to 19/64	16/64 to 18/64	Below 16/64
								HARVEST STATES RH 118	2892	121	66	82	0	20.1
HARVEST STATES RH318	1765	74	60	68	0	17.7	33.1	21.2	24.6	27.2	16.0	6.1	3.8	1.1
RED R. COMMODITIES 2213	2873	120	63	78	0	21.1	22.7	7.1	7.0	11.9	21.5	13.6	34.4	4.5
RED R. COMMODITIES 2582	2139	90	64	72	0	20.6	24.4	24.5	18.3	15.4	14.4	9.1	12.2	6.1
RED R. COMMODITIES EX 2215	2122	89	65	78	0	17.0	24.7	27.5	21.2	18.6	15.6	7.9	7.8	1.3
RED R. COMMODITIES EX 2418	2014	84	66	81	0	20.1	24.4	11.5	15.2	17.2	23.0	14.3	16.8	2.1
RED R. COMMODITIES RRC7015	2857	120	66	77	0	17.1	26.1	13.1	24.3	23.2	17.0	12.1	8.0	2.4
SEEDS 2000 GRIZZLY	2804	117	66	73	0	18.7	24.3	24.7	21.0	20.2	16.7	9.8	6.0	1.6
SEEDS 2000 X 3987	2754	115	66	77	0	18.0	22.1	14.1	13.7	20.4	25.0	14.4	10.3	2.0
TRIUMPH 757C	2058	86	65	76	0	15.3	28.4	79.8	6.0	5.3	4.2	2.0	2.2	0.6
TRIUMPH TRX2352C	1995	84	65	75	0	18.4	27.4	36.5	22.1	14.1	12.8	8.0	5.1	1.5
AVERAGES	2388	100	65	76	0	18.6	25.9	26.3	17.8	17.8	16.4	9.4	10.1	2.3
CV(%)	23	1	1	5	0	6.2	--							
LSD(0.05)**	661	28	1	5	0	1.4	--							

\*\* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

## SOUTH CENTRAL KANSAS DRYLAND SUNFLOWER TEST

LOCATION: South Central Kansas Experiment Field,  
Hutchinson

POPULATION: 22,000 plants/a

COOPERATOR: William Heer, agronomist

TEST YIELDS:

TEST SITE: Ost silt loam

Avg. (lbs/a): 495

Wheat 2001, Fallow 2002

Range (lbs/a): 368 - 682

FERTILIZATION: 100-0-0

LSD (lbs/a): 138

PLANTING DATE: 6/9/2003

CV (%): 24

BLOOM DATES: 7/28/2003 - 8/4/2003

2003 GROWING CONDITIONS

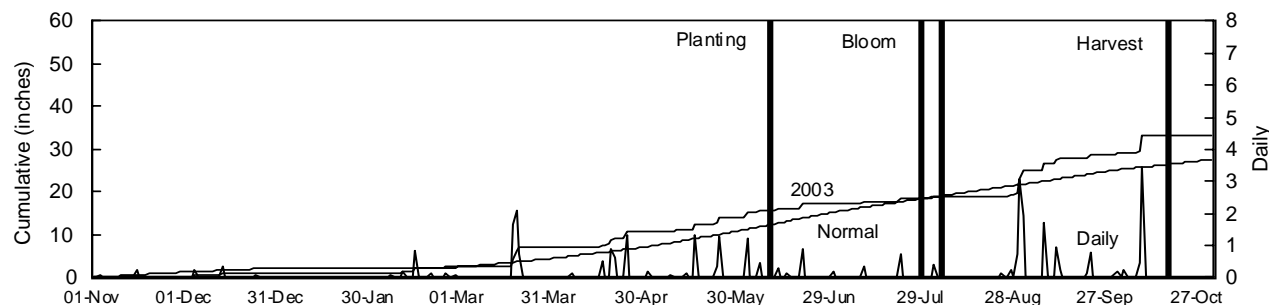
Spring was cool and wetter than normal but summer was extremely hot and dry. Stem borers caused severe lodging and test was hand harvested. Test was treated for head moths July 30 and August 11.

HARVEST DATE: 10/17/2003

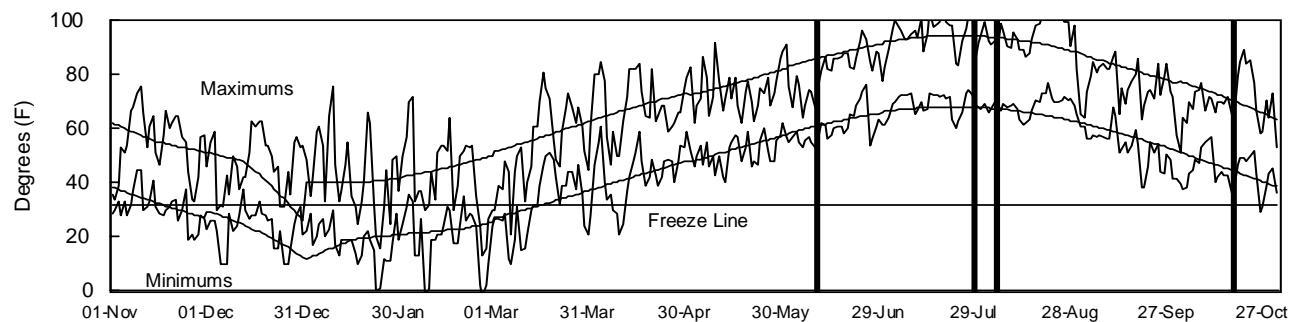
PEST CONTROL:

Treflan, Prowl, Baytroid

### PRECIPITATION



### DAILY TEMPERATURES



### GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2003	Normal	2003	Normal
April	3.6	2.6	56	56
May	3.5	3.9	63	65
June	3.2	4.3	71	75
July	1.1	3.4	82	81
August	6.5	3.1	81	79
Sep.	4.0	3.3	65	70
Oct.	4.4	2.5	57	58
Totals	26.1	23.1	68	69

**Table 11. Hutchinson Dryland Oilseed Sunflower Performance Test, 2001-2003.**

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2003	2002	2001	2-Yr. AVG.	3-Yr. AVG.	2003	2002	2001	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 345NS	442	--	--	--	--	89	--	--	38.8	--	--	172	--	--
CROPLAN GENETICS CL 380NS	469	--	623	--	--	95	--	102	36.1	--	--	169	--	--
CROPLAN GENETICS CL 385NS	682	--	458	--	--	138	--	75	34.8	--	--	237	--	--
DEKALB DK F 33-33NS	525	437	--	481	--	106	117	--	35.2	36.8	--	185	176	--
DEKALB DKF30-33NS	540	--	--	--	--	109	--	--	34.3	--	--	185	--	--
DEKALB EXP38-30NS	392	--	--	--	--	79	--	--	34.5	--	--	135	--	--
DEKALB EXP3880CL	541	--	--	--	--	109	--	--	34.3	--	--	186	--	--
FONTANELLE 902 NS	523	313	--	418	--	106	83	--	35.5	37.1	--	186	153	--
GARST/INTERSTATE IS 4049	606	397	--	502	--	122	106	--	35.4	37.5	--	215	186	--
GARST/INTERSTATE IS 6767	368	315	--	342	--	74	84	--	38.8	39.0	--	143	133	--
MYCOGEN 8488NS	422	467	784	445	558	85	125	128	35.1	36.8	36.0	148	164	200
MYCOGEN 8N421	493	380	--	436	--	100	101	--	38.3	38.9	--	189	169	--
PIONEER 63M80	473	294	518	384	428	96	78	84	36.7	38.3	36.7	174	145	155
PIONEER 63M91	423	335	772	379	510	86	90	126	39.2	38.9	38.1	166	147	192
PIONEER 64M60	573	404	--	489	--	116	108	--	35.3	36.8	--	202	179	--
TRIUMPH 665	531	405	518	468	485	107	108	85	36.5	38.1	37.0	194	177	179
TRIUMPH 667	416	--	--	--	--	84	--	--	39.7	--	--	165	--	--
AVERAGES	495	374	613	435	494	100	100	100	36.4	37.6	36.6	180	162	179
CV(%)	24	30	22	--	--	5	--	--	--	--	--	--	--	--
LSD(0.05)**	138	135	163	--	--	28	36	27	--	--	--	--	--	--

BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 345NS	49	--	--	52	--	--	54	--	--	23.0	--	--	5.5	--	--
CROPLAN GENETICS CL 380NS	52	--	--	52	--	--	46	--	--	22.0	--	--	5.5	--	--
CROPLAN GENETICS CL 385NS	55	--	--	44	--	--	60	--	--	21.0	--	--	6.3	--	--
DEKALB DK F 33-33NS	50	51	--	48	--	--	67	--	--	22.0	23.8	--	5.9	7.0	--
DEKALB DKF30-33NS	51	--	--	50	--	--	86	--	--	21.3	--	--	6.7	--	--
DEKALB EXP38-30NS	55	--	--	49	--	--	65	--	--	23.5	--	--	5.8	--	--
DEKALB EXP3880CL	52	--	--	43	--	--	74	--	--	19.3	--	--	5.2	--	--
FONTANELLE 902 NS	54	55	--	47	--	--	53	--	--	18.8	20.7	--	5.2	6.4	--
GARST/INTERSTATE IS 4049	55	55	--	54	--	--	39	--	--	20.5	21.7	--	6.4	7.1	--
GARST/INTERSTATE IS 6767	52	53	--	47	--	--	74	--	--	24.0	24.4	--	6.4	7.5	--
MYCOGEN 8488NS	52	54	55	48	--	--	54	--	--	21.8	22.6	23.6	5.0	6.7	6.8
MYCOGEN 8N421	53	54	--	49	--	--	39	--	--	22.0	22.9	--	6.2	7.3	--
PIONEER 63M80	50	52	53	47	--	--	64	--	--	20.0	22.8	23.5	6.7	7.5	7.7
PIONEER 63M91	50	52	53	51	--	--	64	--	--	23.5	23.5	23.9	6.7	7.4	7.4
PIONEER 64M60	54	55	--	46	--	--	54	--	--	19.5	21.9	--	6.5	7.4	--
TRIUMPH 665	53	55	56	47	--	--	45	--	--	21.3	22.9	23.6	5.3	6.7	7.4
TRIUMPH 667	54	--	--	42	--	--	57	--	--	23.5	--	--	6.2	--	--
AVERAGES	52	53	55	48	--	--	59	--	--	21.6	22.8	23.6	6.0	7.1	7.2
CV(%)	2	--	--	6	--	--	19	--	--	6.9	--	--	--	--	--
LSD(0.05)**	1	--	--	3	--	--	13	--	--	1.8	--	--	--	--	--

\*\* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

## SOUTH CENTRAL KANSAS DRYLAND SUNFLOWER TEST

LOCATION: Harvey County Experiment Field, Hesston

POPULATION: 22,000 plants/a

COOPERATOR: Mark Claassen, agronomist

TEST YIELDS:

TEST SITE: Ladysmith silty clay loam

Avg. (lbs/a): 981

Grain sorghum 2001, Wheat 2002

Range (lbs/a): 768 - 1300

FERTILIZATION: 28-0-0

LSD (lbs/a): 270

PLANTING DATE: 6/17/2003

CV (%): 19

BLOOM DATES: 8/7/2003 - 8/11/2003

### 2003 GROWING CONDITIONS

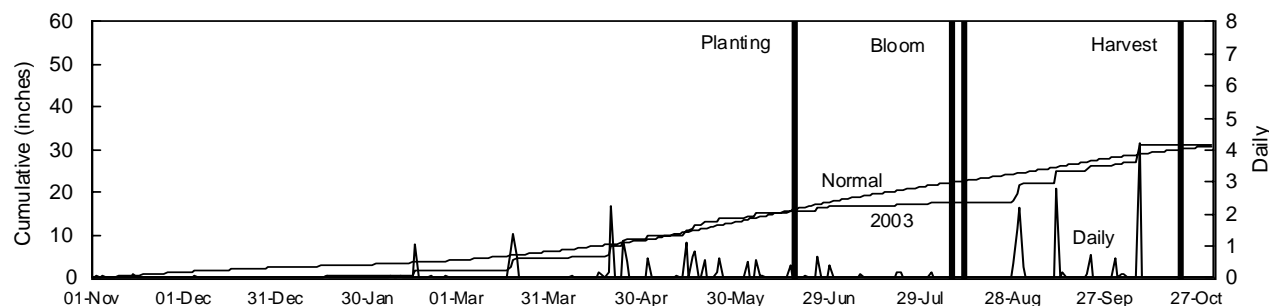
HARVEST DATE: 10/21/2003

Soil was moist and somewhat sticky at planting. Sunflower emerged 7 days after planting. First significant rain of 0.58 inch fell 8 days after planting. Final stands averaged 82% of the target population. In July and August, temperatures were nearly 2° F above normal with 21 days with temperatures at or above 100° F. Little rain fell between late June and August 28. These weather factors produced considerable drought stress. Late season lodging was significant and caused yield loss as well as variability in some entries. Lodging and stand irregularities accounted for approximately 9% of yield variation beyond the hybrid effect.

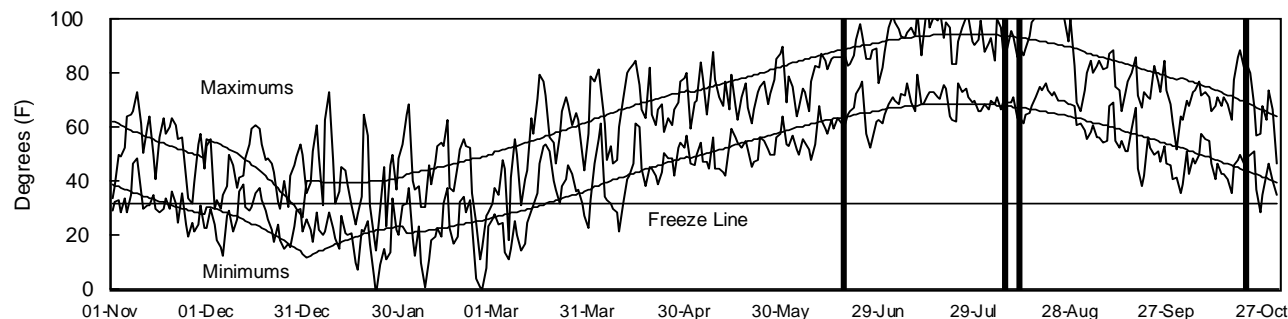
PEST CONTROL:

Roundup Ultra Max+Dual II Magnum 6/18/03, Baythroid 8/6/03,8/13/03

### PRECIPITATION



### DAILY TEMPERATURES



### GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2003	Normal	2003	Normal
April	4.5	2.6	57	56
May	4.8	4.5	62	66
June	2.9	4.7	71	76
July	0.6	3.6	83	81
August	4.8	3.0	81	79
Sep.	4.6	3.7	65	71
Oct.	4.5	2.6	58	59
Totals	26.5	24.6	68	70

**Table 12. Hesston Dryland Oilseed Sunflower Performance Test, 2001-2003.**

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2003	2002	2001	2-Yr. AVG.	3-Yr. AVG.	2003	2002	2001	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.
DEKALB DK F 33-33NS	864	1740	--	1302	--	88	112	--	44.2	--	--	382	--	--
DEKALB DKF30-33NS	878	--	--	--	--	90	--	--	43.4	--	--	381	--	--
DEKALB EXP38-30NS	815	--	--	--	--	83	--	--	43.7	--	--	356	--	--
DEKALB EXP3880CL	768	--	--	--	--	78	--	--	44.0	--	--	338	--	--
MYCOGEN 8488NS	1038	--	--	--	--	106	--	--	45.2	--	--	469	--	--
MYCOGEN 8N421	1300	--	--	--	--	133	--	--	44.9	--	--	584	--	--
TRIUMPH 667	1206	--	--	--	--	123	--	--	45.6	--	--	550	--	--
AVERAGES	981	1547	1235	1264	1254	100	100	100	44.4	--	--	436	--	--
CV(%)	19	21	13	--	--	2	--	--	--	--	--	--	--	--
LSD(0.05)**	270	380	226	--	--	27	25	18	--	--	--	--	--	--

BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.	2003	2-Yr. AVG.	3-Yr. AVG.
DEKALB DK F 33-33NS	51	54	--	45	50	--	28	30	--	28.7	27.0	--	--	--	--
DEKALB DKF30-33NS	51	--	--	48	--	--	28	--	--	28.4	--	--	8.0	--	--
DEKALB EXP38-30NS	54	--	--	47	--	--	39	--	--	28.6	--	--	--	--	--
DEKALB EXP3880CL	52	--	--	42	--	--	39	--	--	27.7	--	--	--	--	--
MYCOGEN 8488NS	54	--	--	51	--	--	15	--	--	26.7	--	--	--	--	--
MYCOGEN 8N421	54	--	--	51	--	--	14	--	--	26.2	--	--	--	--	--
TRIUMPH 667	55	--	--	41	--	--	9	--	--	26.3	--	--	--	--	--
AVERAGES	53	55	56	46	52	55	25	28	30	27.5	27.0	26.4	--	--	--
CV(%)	1	--	--	3	--	--	36	--	--	7.1	--	--	--	--	--
LSD(0.05)**	1	--	--	2	--	--	13	--	--	2.9	--	--	--	--	--

\*\* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

**Table 13. Entrants and Entries in 2003 Sunflower Performance Tests.**

---

**CROPLAN GENETICS**

Croplan Genetics  
PO Box 1291  
Minot, ND 58078  
701-852-2556  
CL 308  
CL 322NS  
CL 340  
CL 345NS  
CL 380NS  
CL 385NS

**DEKALB**

Monsanto Seed  
3100 Sycamore Road  
Dekalb, IL 60115  
815-758-9323  
DK F 33-33NS  
DKF30-33NS  
EXP38-30NS  
EXP3880CL

**FONTANELLE**

Fontanelle Hybrid  
10981 8th Street  
Fontanelle, NE 68044  
402-721-1410  
902 NS

**GARST/INTERSTATE**

Interstate Seed Co.  
PO Box 338  
West Fargo, ND 58078  
800-282-7331  
HYSUN 424  
HYSUN 450  
HYSUN 454  
HYSUN 521  
HYSUN 525  
IS 4049  
IS 6767

**HARVEST STATES**

Agway Inc.  
220 Clement Avenue  
Grandin, ND 58038  
701-484-5313  
RH 118  
RH318

**KAYSTAR**

Kaystar Seed Co.  
PO Box 947  
Huron, SD 57350  
605-352-8791  
2020NS  
9501  
X3002

**MYCOGEN**

Mycogen Seeds  
9330 Zionville Rd.  
Indianapolis, IN 46268  
317-337-7569  
8377NS  
8488NS  
8N421  
SF 260  
SF 270

**PATRIOT SEED, INC**

Patriot Seeds, Inc.  
208 S.Worrell St.  
Bowen, IL 62316  
800-643-1518  
P03NS2  
P99NS2

**PIONEER**

Pioneer Hi-Bred Intl Inc  
390 Union Blvd. Suite 500A  
Lakewood, CO 80228  
800-258-5604  
63M80  
63M91  
64M60

**RED R. COMMODITIES**

Red River Commodities  
1320 East College Drive  
Colby, KS 67701  
785-462-3911  
2213  
2582  
EX 2215  
EX 2418  
RRC2011  
RRC7015

**SEEDS 2000**

Seeds 2000  
Box 200  
Breckenridge, MN 56520  
218-643-2410  
BLAZER  
CHARGER  
GRIZZLY  
X 3987

**SIGCO**

Sigco Sun Products, Inc.  
P.O. Box 331  
Breckenridge, MN 56520  
218-643-8467  
GOLIATH RT  
RUSTLER

**TRIUMPH**

Triumph Seed Co., Inc.  
PO Box 1050  
Ralls, TX 79357  
800-530-4789  
636  
645  
658  
665  
667  
757C  
777C  
TRX2352C  
TRX3221  
TRX3244  
TRX3342

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