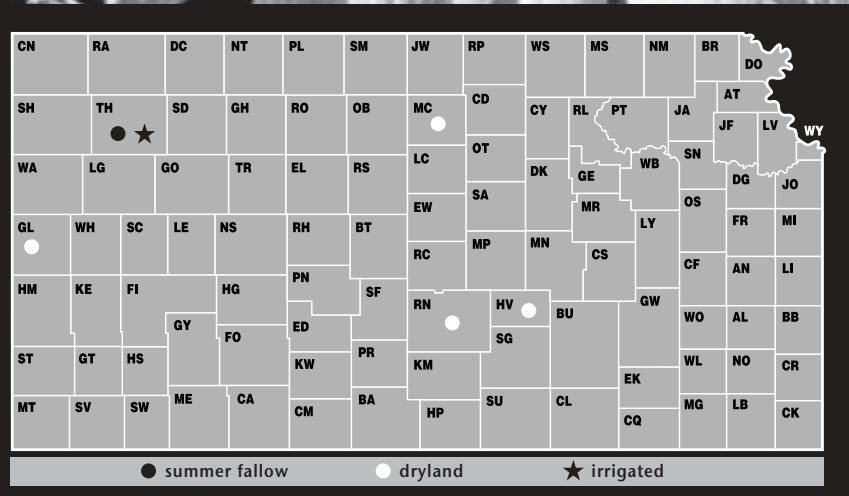


2002

KANSAS PERFORMANCE TESTS WITH SUNFLOWER HYBRIDS

REPORT OF PROGRESS 905

Kansas State University
Agricultural Experiment Station
and Cooperative Extension Service



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Excerpts from the
UNIVERSITY RESEARCH POLICY AGREEMENT
WITH COOPERATING SEED COMPANIES*

Permission is hereby given to Kansas State University to test our varieties and/or hybrids designated on the attached entry forms in the manner indicated on the test announcement. I understand that all results from Kansas crop performance tests belong to the University and to the public and shall be controlled by the University so as to produce the greatest benefit to the public. It is further agreed that the name of the University shall not be used by the company in any commercial advertising either in regard to this agreement or any other related matter.

*This agreement must be signed by an authorized individual before results involving the company's entries can be published by the Experiment Station. Except for the limitation that the name "KANSAS STATE UNIVERSITY" cannot be used in advertising (you may use something like "official state tests" or "state yield trials"), this does not preclude the use of data for advertising, if done in a fair manner.

Contribution No. 03-244-S from the Kansas Agricultural Experiment Station.

2002 KANSAS PERFORMANCE TESTS WITH SUNFLOWER HYBRIDS

INTRODUCTION

TEST OBJECTIVES AND PROCEDURES

Sunflower performance tests were conducted in 2002 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. So, not all hybrids grown in the state were included in tests, and hybrids were not grown uniformly at all locations.

Eight test locations in 2002 included Republic County and Greeley County—dryland; Reno County, Harvey County and Sumner County—dryland, continuous crop; Sherman County fallow and Thomas County—irrigated and fallow sites. Tests in Sherman and Sumner Counties had to be abandoned because of drought conditions. Oilseed entries were grown at all locations. Confectionary entries were included only in tests in Thomas, Sherman 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 were planted at a high seeding rate and hand thinned after emergence to desired stands.

Environmental factors affecting test results and cultural practices are discussed individually for each of the test sites. Test results for 2002, as well as period-of-years average data, are included in Tables 1-14. Entrants and entries in 2002 tests are listed at the end of the report.

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 Cade Moses, helped with seed counting and 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.

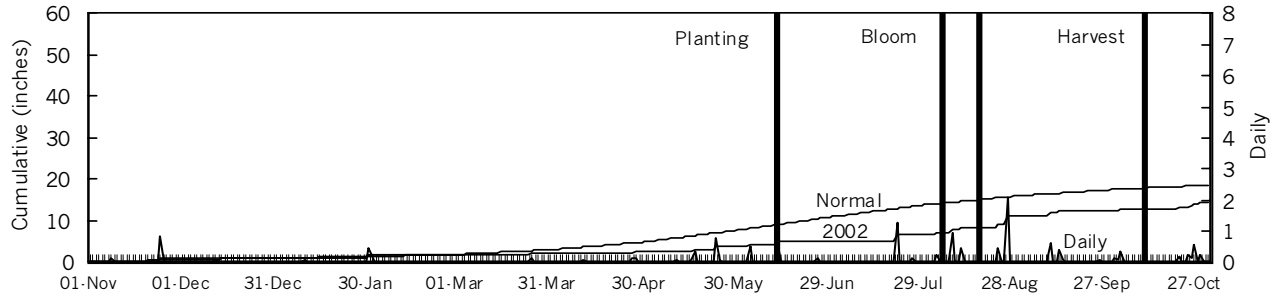
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Publications from K-State Research and Extension are available on the World Wide Web at <http://www.oznet.ksu.edu>. Crop performance test results are available electronically in a variety of formats at <http://www.ksu.edu/kscpt>.

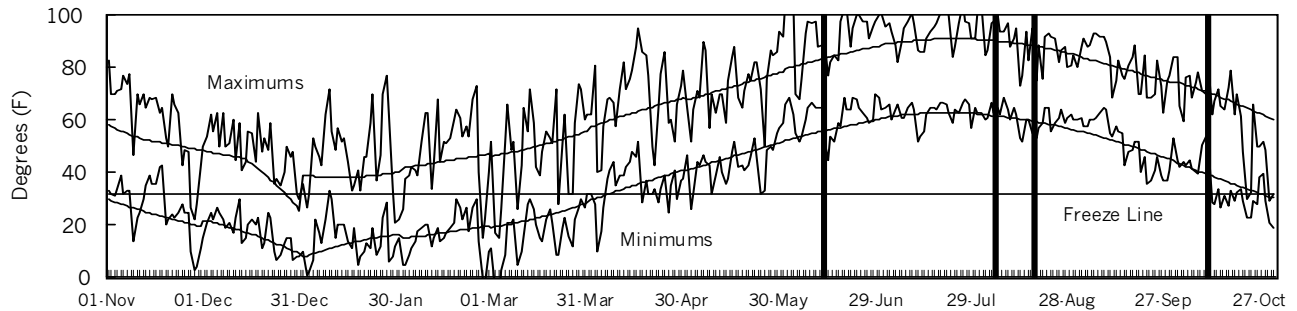
NORTHWESTERN KANSAS FALLOW SUNFLOWER TESTS

<p>LOCATION: Northwest Research-Extension Center, Colby</p> <p>COOPERATOR: Patrick Evans, agronomist</p> <p>TEST SITE: Keith silt loam Sorghum 2000, Fallow 2001</p> <p>FERTILIZATION: 110-0-0</p> <p>PLANTING DATE: 6/12/02</p> <p>BLOOM DATES: 8/5/02 - 8/13/02</p> <p>HARVEST DATE: 10/10/02</p> <p>PEST CONTROL: Treflan, May 28</p>	<p style="text-align: center;"><u>Oil</u> <u>Confectionary</u></p> <p>POPULATION: 17,000 plants/a 14,900 plants/a</p> <p>TEST YIELDS:</p> <table border="0" style="width: 100%;"> <tr> <td>Avg. (lbs/a):</td> <td>1242</td> <td>1260</td> </tr> <tr> <td>Range (lbs/a):</td> <td>608 - 1736</td> <td>998 - 1769</td> </tr> <tr> <td>LSD (lbs/a):</td> <td>480</td> <td>508</td> </tr> <tr> <td>CV (%):</td> <td>33</td> <td>33</td> </tr> </table> <p>2002 GROWING CONDITIONS</p> <p>Good stands were established. Spring and early summer were very dry until the middle of August when beneficial rains fell, aiding in seed fill. There were few disease or insect problems.</p>	Avg. (lbs/a):	1242	1260	Range (lbs/a):	608 - 1736	998 - 1769	LSD (lbs/a):	480	508	CV (%):	33	33
Avg. (lbs/a):	1242	1260											
Range (lbs/a):	608 - 1736	998 - 1769											
LSD (lbs/a):	480	508											
CV (%):	33	33											

PRECIPITATION



DAILY TEMPERATURES



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2002	Normal	2002	Normal
April	0.4	1.8	52	49
May	1.4	2.9	59	60
June	1.4	3.1	77	70
July	1.5	3.0	79	76
August	4.4	2.2	75	74
Sep.	1.2	1.5	66	65
Oct.	2.0	1.1	48	53
Totals	12.3	15.6	65	64

Table 1. Colby Fallow Oilseed Sunflower Performance Test, 2000-2002.

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2002	2001	2000	2-Yr. AVG.	3-Yr. AVG.	2002	2001	2000	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 322NS	1022	1391	--	1206	--	82	92	--	41.5	40.2	--	424	482	--
CROPLAN GENETICS CL 380NS	919	1759	1390	1339	1356	74	116	120	42.0	41.2	39.6	386	547	534
CROPLAN GENETICS CL 385NS	1095	1499	1231	1297	1275	88	99	106	41.8	41.4	39.5	458	535	504
DEKALB DK 3900	1080	1202	1030	1141	1104	87	79	89	42.9	42.5	40.4	463	484	447
DEKALB DK F 29-90	963	--	--	--	--	78	--	--	43.7	--	--	421	--	--
DEKALB DK F 33-33NS	608	--	--	--	--	49	--	--	39.1	--	--	238	--	--
DEKALB DKF 31-01NS	880	1135	--	1008	--	71	75	--	39.8	39.2	--	350	394	--
DEKALB DKF 36-40NS	1059	1119	--	1089	--	85	74	--	38.8	37.7	--	411	410	--
FONTANELLE 902 NS	1479	--	--	--	--	119	--	--	44.7	--	--	661	--	--
GARST/INTERSTATE IS 4049	1397	--	1080	--	--	113	--	93	42.1	--	--	588	--	--
GARST/INTERSTATE IS 5331	1605	--	--	--	--	129	--	--	41.3	--	--	663	--	--
GARST/INTERSTATE IS 6767	1107	--	926	--	--	89	--	80	44.0	--	--	487	--	--
GARST/INTERSTATE PAC 1298	1484	--	--	--	--	120	--	--	39.6	--	--	588	--	--
KAYSTAR 2020NS	1649	1714	--	1681	--	133	113	--	41.2	40.6	--	679	682	--
KAYSTAR 9404	1736	1676	1154	1706	1522	140	111	100	39.5	42.5	40.1	686	723	618
KAYSTAR 9501	1256	1768	1295	1512	1440	101	117	112	37.9	37.0	36.2	476	556	520
MYCOGEN 8488NS	1219	1752	986	1486	1319	98	116	85	42.1	40.7	39.0	513	601	518
MYCOGEN 8N421	1471	--	--	--	--	118	--	--	45.2	--	--	665	--	--
MYCOGEN CAVALRY	1141	1534	1478	1338	1384	92	101	128	45.7	44.5	42.7	522	593	588
MYCOGEN SF 187	1005	1670	1371	1337	1335	81	110	115	40.3	39.1	37.9	405	518	503
PIONEER 63A70	1520	1392	1338	1456	1417	122	92	115	46.1	43.9	42.7	701	640	606
PIONEER 63M80	1155	1392	871	1274	1139	93	92	75	44.8	42.1	40.2	517	533	461
PIONEER 63M91	1109	1549	1107	1329	1255	89	102	95	43.0	41.8	40.4	477	552	507
PIONEER XF 4735	1497	--	--	--	--	121	--	--	41.4	--	--	620	--	--
SEEDS 2000 BLAZER	1312	1513	--	1412	--	106	100	--	42.9	41.3	--	563	582	--
SEEDS 2000 BRONCO	1294	1618	1220	1456	1377	104	107	105	41.6	40.7	39.5	538	590	544
TRIUMPH 636	1207	1427	--	1317	--	97	94	--	42.6	42.3	--	514	556	--
TRIUMPH 658	1613	1614	--	1614	--	130	107	--	44.4	43.1	--	716	695	--
TRIUMPH 665	1127	1873	--	1500	--	91	124	--	43.8	42.7	--	494	635	--
AVERAGES	1242	1515	1159	1378	1305	100	100	100	42.2	41.0	39.5	524	564	518
CV(%)	33	16	30	--	--	--	--	--	--	--	--	--	--	--
LSD(0.05)**	480	281	414	--	--	39	19	36	--	--	--	--	--	--

BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 322NS	56	56	--	36	44	--	4	11	--	29.2	28.1	--	8.7	8.7	--
CROPLAN GENETICS CL 380NS	58	57	60	34	42	44	5	4	5	28.6	28.8	27.8	8.0	8.1	9.1
CROPLAN GENETICS CL 385NS	59	59	61	32	39	39	6	8	8	28.3	27.4	26.4	9.3	9.0	9.7
DEKALB DK 3900	60	59	61	33	42	42	9	20	18	29.0	28.5	27.3	7.9	9.1	9.4
DEKALB DK F 29-90	56	--	--	37	--	--	11	--	--	27.9	--	--	6.5	--	--
DEKALB DK F 33-33NS	54	--	--	33	--	--	19	--	--	29.7	--	--	8.2	--	--
DEKALB DKF 31-01NS	56	56	--	40	48	--	4	9	--	28.5	27.3	--	7.9	8.4	--
DEKALB DKF 36-40NS	56	56	--	41	49	--	9	13	--	28.8	28.1	--	9.9	10.2	--
FONTANELLE 902 NS	59	--	--	35	--	--	1	--	--	26.5	--	--	10.0	--	--
GARST/INTERSTATE IS 4049	59	--	--	36	--	--	6	--	--	29.2	--	--	10.6	--	--
GARST/INTERSTATE IS 5331	57	--	--	31	--	--	2	--	--	28.1	--	--	12.9	--	--
GARST/INTERSTATE IS 6767	57	--	--	36	--	--	16	--	--	29.5	--	--	12.3	--	--
GARST/INTERSTATE PAC 1298	61	--	--	36	--	--	1	--	--	27.4	--	--	9.4	--	--
KAYSTAR 2020NS	59	59	--	34	41	--	3	7	--	28.3	27.7	--	10.3	9.4	--
KAYSTAR 9404	57	57	59	35	43	43	0	5	5	28.3	27.7	26.9	11.3	10.2	10.6
KAYSTAR 9501	58	58	60	36	45	47	14	18	14	29.1	28.7	28.0	10.7	9.7	10.7
MYCOGEN 8488NS	57	57	59	34	43	44	1	7	7	29.6	28.8	27.8	9.4	8.5	9.0
MYCOGEN 8N421	58	--	--	36	--	--	1	--	--	29.1	--	--	10.7	--	--
MYCOGEN CAVALRY	58	58	60	36	45	47	4	8	6	29.8	28.8	28.4	10.3	9.9	10.5
MYCOGEN SF 187	57	57	59	32	39	40	4	8	9	27.5	27.0	26.3	10.2	9.5	9.8
PIONEER 63A70	55	55	57	37	43	43	7	11	10	27.3	26.3	25.7	11.5	10.8	11.3
PIONEER 63M80	57	57	59	35	43	44	8	13	11	30.5	27.8	26.8	8.9	9.3	10.6
PIONEER 63M91	57	57	59	38	45	46	5	8	6	28.8	27.7	27.3	9.4	9.8	10.6
PIONEER XF 4735	60	--	--	36	--	--	1	--	--	26.0	--	--	9.4	--	--
SEEDS 2000 BLAZER	58	58	--	33	40	--	4	7	--	27.6	26.8	--	9.6	8.9	--
SEEDS 2000 BRONCO	59	59	61	33	40	40	3	4	5	27.8	27.0	26.4	10.8	9.9	10.4
TRIUMPH 636	58	58	--	34	43	--	5	13	--	25.2	24.7	--	12.2	11.1	--
TRIUMPH 658	59	59	--	37	45	--	3	10	--	26.3	26.0	--	10.4	9.9	--
TRIUMPH 665	59	59	--	34	43	--	5	8	--	29.3	28.8	--	9.3	9.3	--
AVERAGES	58	57	60	35	43	44	5	9	9	28.3	27.3	26.6	9.9	9.5	10.1
CV(%)	1	--	--	7	--	--	137	--	--	3.6	--	--	--	--	--
LSD(0.05)**	1	--	--	3	--	--	9	--	--	1.2	--	--	--	--	--

** 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, 2000-2002.

BRAND and HYBRID	YIELD (lbs/a)					YIELD AS % OF TEST AVERAGE			DAYS TO 1/2 BLOOM		
	2002	2001	2000	2-Yr. AVG.	3-Yr. AVG.	2002	2001	2000	2002	2-Yr. AVG.	3-Yr. AVG.
	RED R. COMMODITIES 2213	1769	1425	1742	1597	1645	140	92	109	59	58
RED R. COMMODITIES 2582	1191	1473	1742	1332	1469	95	95	109	60	60	61
RED R. COMMODITIES EX 2215	1160	--	--	--	--	92	--	--	62	--	--
RED R. COMMODITIES EX 2418	1032	--	--	--	--	82	--	--	61	--	--
SIGCO GOLIATH	1443	--	--	--	--	115	--	--	62	--	--
SIGCO GOLIATH RT	1363	--	--	--	--	108	--	--	61	--	--
TRIUMPH 700CLS	998	1264	--	1131	--	79	81	--	66	65	--
TRIUMPH 757C	1084	--	--	--	--	86	--	--	63	--	--
TRIUMPH 777C	1401	1809	--	1605	--	111	116	--	62	62	--
TRIUMPH TRX 2355CLS	1159	--	--	--	--	92	--	--	62	--	--
AVERAGES	1260	1554	1605	1407	1473	100	100	100	62	61	62
CV(%)	33	19	22	--	--	--	--	--	1	--	--
LSD(0.05)**	508	332	424	--	--	40	21	26	1	--	--

BRAND and HYBRID	PLANT HT (in.)			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
	RED R. COMMODITIES 2213	38	47	49	5	9	7	20.2	20.5	19.9	17.6	19.0
RED R. COMMODITIES 2582	36	45	47	1	4	4	21.1	21.4	20.9	16.9	17.5	19.4
RED R. COMMODITIES EX 2215	38	--	--	0	--	--	19.3	--	--	24.0	--	--
RED R. COMMODITIES EX 2418	40	--	--	0	--	--	19.4	--	--	19.1	--	--
SIGCO GOLIATH	36	--	--	0	--	--	20.8	--	--	19.8	--	--
SIGCO GOLIATH RT	40	--	--	0	--	--	21.5	--	--	21.8	--	--
TRIUMPH 700CLS	37	46	--	1	2	--	18.7	19.5	--	25.2	22.8	--
TRIUMPH 757C	37	--	--	0	--	--	19.8	--	--	21.7	--	--
TRIUMPH 777C	37	46	--	0	4	--	18.8	19.1	--	19.5	19.4	--
TRIUMPH TRX 2355CLS	38	--	--	0	--	--	19.5	--	--	23.4	--	--
AVERAGES	37	46	47	1	4	3	19.9	20.5	20.0	20.9	20.5	21.3
CV(%)	6	--	--	463	--	--	9.6	--	--	--	--	--
LSD(0.05)**	3	--	--	4	--	--	2.3	--	--	--	--	--

** 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, 2000-2002.

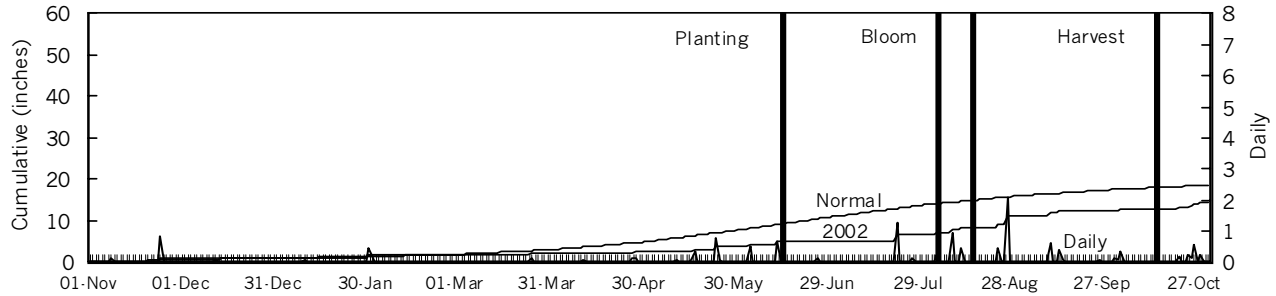
BRAND and HYBRID	Seed Size Distribution (%)													
	2002							2-Year Average						
	Above 22/64	21/64 to 22/64	20/64 to 21/64	19/64 to 20/64	18/64 to 19/64	16/64 to 18/64	Below 16/64	Above 22/64	21/64 to 22/64	20/64 to 21/64	19/64 to 20/64	18/64 to 19/64	16/64 to 18/64	Below 16/64
RED R. COMMODITIES 2213	6.0	6.7	8.5	17.7	17.4	28.7	14.9	7.3	9.3	10.9	16.8	17.5	26.3	11.8
RED R. COMMODITIES 2582	12.2	10.0	13.7	16.0	10.5	23.1	14.7	12.7	12.6	13.4	13.7	9.4	22.9	15.5
RED R. COMMODITIES EX 2215	34.6	16.5	14.3	14.6	8.4	9.1	2.5	--	--	--	--	--	--	--
RED R. COMMODITIES EX 2418	9.2	10.8	10.3	17.7	14.7	25.7	11.6	--	--	--	--	--	--	--
SIGCO GOLIATH	18.1	14.2	11.8	11.8	9.8	20.9	13.6	--	--	--	--	--	--	--
SIGCO GOLIATH RT	22.6	15.8	13.7	14.8	11.0	16.1	6.3	--	--	--	--	--	--	--
TRIUMPH 700CLS	28.9	16.0	14.7	16.5	9.1	10.2	4.4	20.6	11.7	13.1	19.5	12.5	15.9	6.4
TRIUMPH 757C	34.0	17.1	13.1	10.6	6.4	13.2	6.0	--	--	--	--	--	--	--
TRIUMPH 777C	20.2	11.4	14.7	18.2	10.8	16.7	7.9	22.5	12.6	14.5	15.8	10.6	15.5	8.4
TRIUMPH TRX 2355CLS	41.6	14.8	9.7	8.3	8.1	12.1	5.2	--	--	--	--	--	--	--
AVERAGES	22.7	13.3	12.5	14.6	10.6	17.6	8.7	17.1	12.1	12.7	16.2	12.3	20.1	9.6

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	9.9	11.5	12.0	17.2	15.6	23.4	10.7
RED R. COMMODITIES 2582	11.2	12.7	15.4	17.2	11.0	20.7	12.3	
RED R. COMMODITIES EX 2215	--	--	--	--	--	--	--	
RED R. COMMODITIES EX 2418	--	--	--	--	--	--	--	
SIGCO GOLIATH	--	--	--	--	--	--	--	
SIGCO GOLIATH RT	--	--	--	--	--	--	--	
TRIUMPH 700CLS	--	--	--	--	--	--	--	
TRIUMPH 757C	--	--	--	--	--	--	--	
TRIUMPH 777C	--	--	--	--	--	--	--	
TRIUMPH TRX 2355CLS	--	--	--	--	--	--	--	
AVERAGES	16.7	14.0	14.3	17.1	11.8	17.8	8.4	

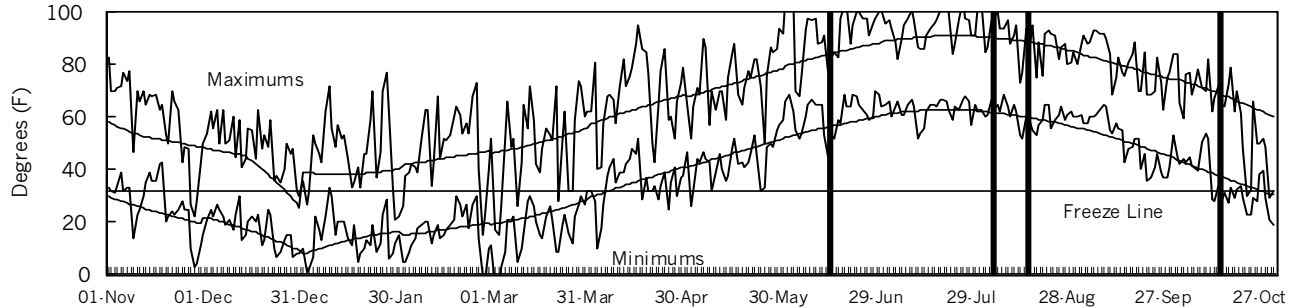
NORTHWESTERN KANSAS IRRIGATED SUNFLOWER TESTS

LOCATION: Northwest Research-Extension Center, Colby COOPERATOR: Patrick Evans, agronomist TEST SITE: Keith silt loam Sunflower 2000, Sorghum 2001 FERTILIZATION: 110-25-0 PLANTING DATE: 6/14/02 BLOOM DATES: 8/4/02 - 8/13/02 HARVEST DATE: 10/14/02 PEST CONTROL: Treflan, June 10; Parathion, August 10	<table border="0" style="width: 100%;"> <tr> <td style="text-align: right;">POPULATION:</td> <td style="text-align: center;"><u>Oil</u> 23,000 plants/a</td> <td style="text-align: center;"><u>Confectionary</u> 17,000 plants/a</td> </tr> <tr> <td style="text-align: right;">TEST YIELDS:</td> <td colspan="2"></td> </tr> <tr> <td style="text-align: right;">Avg. (lbs/a):</td> <td style="text-align: center;">3067</td> <td style="text-align: center;">2564</td> </tr> <tr> <td style="text-align: right;">Range (lbs/a):</td> <td style="text-align: center;">1972 - 3973</td> <td style="text-align: center;">1254 - 3416</td> </tr> <tr> <td style="text-align: right;">LSD (lbs/a):</td> <td style="text-align: center;">571</td> <td style="text-align: center;">616</td> </tr> <tr> <td style="text-align: right;">CV (%):</td> <td style="text-align: center;">16</td> <td style="text-align: center;">20</td> </tr> </table> <p>2002 GROWING CONDITIONS</p> <p>The tests were preirrigated in April and watered again on July 29 and September 4; approximately 3" each time. Insect and weed control was good.</p>	POPULATION:	<u>Oil</u> 23,000 plants/a	<u>Confectionary</u> 17,000 plants/a	TEST YIELDS:			Avg. (lbs/a):	3067	2564	Range (lbs/a):	1972 - 3973	1254 - 3416	LSD (lbs/a):	571	616	CV (%):	16	20
POPULATION:	<u>Oil</u> 23,000 plants/a	<u>Confectionary</u> 17,000 plants/a																	
TEST YIELDS:																			
Avg. (lbs/a):	3067	2564																	
Range (lbs/a):	1972 - 3973	1254 - 3416																	
LSD (lbs/a):	571	616																	
CV (%):	16	20																	

PRECIPITATION



DAILY TEMPERATURES



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2002	Normal	2002	Normal
April	0.4	1.8	52	49
May	1.4	2.9	59	60
June	1.4	3.1	77	70
July	1.5	3.0	79	76
August	4.4	2.2	75	74
Sep.	1.2	1.5	66	65
Oct.	2.0	1.1	48	53
Totals	12.3	15.6	65	64

Table 4. Colby Irrigated Oilseed Sunflower Performance Test, 2000-2002.

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2002	2001	2000	2-Yr. AVG.	3-Yr. AVG.	2002	2001	2000	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
DEKALB DK 3900	3973	1625	2362	2799	2653	130	96	106	46.2	43.9	44.2	1836	1256	1190
DEKALB DK F 29-90	2890	--	--	--	--	94	--	--	46.1	--	--	1332	--	--
DEKALB DK F 33-33NS	2851	--	--	--	--	93	--	--	38.6	--	--	1101	--	--
DEKALB DKF 31-01NS	1972	864	1336	1418	1390	64	51	60	40.3	38.7	38.9	795	557	546
DEKALB DKF 36-40NS	2139	1002	1458	1570	1533	70	59	65	38.9	36.9	37.4	832	591	581
FONTANELLE 902 NS	3376	--	--	--	--	110	--	--	45.3	--	--	1529	--	--
GARST/INTERSTATE 971136 NS	3353	--	2293	--	--	109	--	102	43.7	--	--	1465	--	--
GARST/INTERSTATE HYSUN 450	2509	--	2546	--	--	82	--	114	40.5	--	--	1016	--	--
GARST/INTERSTATE HYSUN 521	3303	--	--	--	--	108	--	--	43.7	--	--	1443	--	--
GARST/INTERSTATE IS 4049	2963	1946	2540	2455	2483	97	115	113	40.7	39.6	40.6	1206	976	1012
GARST/INTERSTATE IS 4340	2695	1934	2331	2314	2320	88	114	104	44.4	43.4	43.5	1196	1007	1012
GARST/INTERSTATE IS 5331	3000	2092	--	2546	--	98	123	--	41.2	39.5	--	1236	1014	--
GARST/INTERSTATE IS 6767	3508	1715	2142	2612	2455	114	101	96	43.7	42.2	42.4	1533	1115	1049
GARST/INTERSTATE PAC 1298	3107	--	--	--	--	101	--	--	41.0	--	--	1274	--	--
KAYSTAR 2020NS	2784	1570	--	2177	--	91	93	--	41.0	40.3	--	1142	882	--
KAYSTAR 9404	2556	--	--	--	--	83	--	--	41.0	--	--	1048	--	--
KAYSTAR 9501	3387	1843	2731	2615	2654	110	109	122	38.1	36.4	36.8	1290	965	985
MYCOGEN 8377NS	3513	1891	--	2702	--	115	111	--	44.2	42.2	--	1553	1155	--
MYCOGEN 8488NS	3906	1991	2338	2948	2745	127	117	104	42.2	40.8	40.7	1648	1215	1126
MYCOGEN 8N327	3007	--	--	--	--	98	--	--	46.2	--	--	1389	--	--
MYCOGEN SF 260	3030	1828	2687	2429	2515	99	108	120	45.6	43.8	44.0	1382	1075	1113
PIONEER 63A70	3229	1319	2127	2274	2225	105	78	95	48.0	44.4	44.7	1550	1043	1018
PIONEER 63M80	3053	1741	2010	2397	2268	100	103	90	47.5	43.8	43.5	1450	1074	1004
PIONEER 63M91	2995	1440	2747	2218	2394	98	85	123	44.0	41.6	41.7	1318	941	1012
PIONEER XF 4735	3570	--	--	--	--	116	--	--	41.6	--	--	1485	--	--
AVERAGES	3067	1696	2238	2381	2334	100	100	100	42.9	41.1	41.5	1322	996	979
CV(%)	16	20	14	--	--	--	--	--	--	--	--	--	--	--
LSD(0.05)**	571	398	372	--	--	19	23	17	--	--	--	--	--	--

BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
DEKALB DK 3900	59	58	60	60	58	60	3	17	15	30.0	29.6	28.9	12.0	11.1	11.3
DEKALB DK F 29-90	54	--	--	63	--	--	2	--	--	29.9	--	--	10.8	--	--
DEKALB DK F 33-33NS	54	--	--	60	--	--	2	--	--	29.4	--	--	13.0	--	--
DEKALB DKF 31-01NS	55	55	57	66	67	68	1	10	10	29.0	24.9	25.6	13.1	11.9	11.7
DEKALB DKF 36-40NS	54	55	56	66	66	66	1	13	12	28.9	25.9	26.0	14.6	13.2	12.7
FONTANELLE 902 NS	58	--	--	56	--	--	2	--	--	26.6	--	--	13.4	--	--
GARST/INTERSTATE 971136 NS	55	--	--	60	--	--	0	--	--	29.1	--	--	13.9	--	--
GARST/INTERSTATE HYSUN 450	57	--	--	52	--	--	0	--	--	29.0	--	--	13.9	--	--
GARST/INTERSTATE HYSUN 521	52	--	--	54	--	--	1	--	--	30.7	--	--	11.9	--	--
GARST/INTERSTATE IS 4049	57	58	59	62	60	63	1	8	7	27.1	28.2	28.1	12.9	11.9	11.4
GARST/INTERSTATE IS 4340	59	60	61	65	62	63	1	8	7	30.5	30.5	29.7	11.9	11.2	10.7
GARST/INTERSTATE IS 5331	55	56	--	47	47	--	1	5	--	27.9	28.1	--	16.2	14.0	--
GARST/INTERSTATE IS 6767	55	55	58	58	57	59	1	11	10	29.1	29.1	28.7	14.8	13.7	13.2
GARST/INTERSTATE PAC 1298	60	--	--	69	--	--	0	--	--	27.2	--	--	11.4	--	--
KAYSTAR 2020NS	58	58	--	54	52	--	0	11	--	29.3	28.4	--	13.3	11.6	--
KAYSTAR 9404	56	--	--	57	--	--	1	--	--	28.8	--	--	11.8	--	--
KAYSTAR 9501	57	58	60	59	60	64	1	11	10	30.1	29.9	29.5	14.5	13.0	12.5
MYCOGEN 8377NS	54	54	--	60	59	--	1	6	--	28.6	29.0	--	11.8	11.2	--
MYCOGEN 8488NS	57	56	58	59	58	61	0	10	8	29.9	29.4	28.8	12.3	10.9	10.6
MYCOGEN 8N327	54	--	--	60	--	--	0	--	--	29.6	--	--	12.4	--	--
MYCOGEN SF 260	55	56	58	58	57	59	1	11	8	30.1	29.4	28.5	12.4	11.1	10.9
PIONEER 63A70	53	53	56	58	56	57	0	7	5	29.2	27.3	26.6	12.3	11.7	11.5
PIONEER 63M80	56	56	58	61	59	61	1	7	6	31.9	30.5	29.2	11.9	12.8	12.9
PIONEER 63M91	56	56	58	64	63	65	1	11	9	29.3	28.9	28.4	13.1	12.1	12.2
PIONEER XF 4735	59	--	--	64	--	--	1	--	--	26.9	--	--	12.6	--	--
AVERAGES	56	56	58	59	58	61	1	9	8	29.1	28.5	27.9	12.9	11.9	11.7
CV(%)	1	--	--	4	--	--	173	--	--	2.5	--	--	--	--	--
LSD(0.05)**	1	--	--	2	--	--	2	--	--	0.9	--	--	--	--	--

** 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, 2000-2002.

BRAND and HYBRID	YIELD (lbs/a)					YIELD AS % OF TEST AVERAGE			DAYS TO 1/2 BLOOM		
	2002	2001	2000	2-Yr. AVG.	3-Yr. AVG.	2002	2001	2000	2002	2-Yr. AVG.	3-Yr. AVG.
	AGWAY RH 118	2756	1936	--	2346	--	107	89	--	60	60
GARST/INTERSTATE IS 8048	2555	2278	1933	2416	2255	100	105	93	54	54	56
GARST/INTERSTATE IS33139	2623	--	--	--	--	102	--	--	60	--	--
RED R. COMMODITIES 2213	3416	2031	2174	2723	2540	133	94	105	56	56	58
RED R. COMMODITIES 2582	2672	2175	2329	2424	2392	104	100	112	55	56	58
RED R. COMMODITIES EX 2215	2495	--	--	--	--	97	--	--	59	--	--
RED R. COMMODITIES EX 2418	2850	--	--	--	--	111	--	--	58	--	--
SEEDS 2000 GRIZZLY	2284	2022	--	2153	--	89	93	--	59	60	--
SEEDS 2000 X 3964	1990	--	--	--	--	78	--	--	58	--	--
SEEDS 2000 X 3987	2962	3031	--	2997	--	116	140	--	61	61	--
SIGCO GOLIATH	2967	--	--	--	--	116	--	--	60	--	--
TRIUMPH 700CLS	2655	1926	--	2291	--	104	89	--	62	63	--
TRIUMPH 757C	2278	--	--	--	--	89	--	--	59	--	--
TRIUMPH 777C	2834	2691	--	2763	--	111	124	--	61	61	--
TRIUMPH TRX 2353CLS	1254	--	--	--	--	49	--	--	60	--	--
TRIUMPH TRX 2354CLS	2184	--	--	--	--	85	--	--	57	--	--
TRIUMPH TRX 2355CLS	2813	--	--	--	--	110	--	--	60	--	--
AVERAGES	2564	2168	2080	2366	2270	100	100	100	59	59	60
CV(%)	20	16	15	--	--	--	--	--	2	--	--
LSD(0.05)**	616	403	384	--	--	24	19	18	1	--	--

BRAND and HYBRID	PLANT HT (in.)			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
	AGWAY RH 118	57	57	--	1	2	--	18.3	19.8	--	28.3	28.1
GARST/INTERSTATE IS 8048	53	54	55	0	3	3	20.3	21.5	21.0	29.0	27.8	27.2
GARST/INTERSTATE IS33139	55	--	--	2	--	--	18.1	--	--	28.0	--	--
RED R. COMMODITIES 2213	58	59	60	1	9	9	20.6	21.5	20.9	26.7	24.9	24.5
RED R. COMMODITIES 2582	55	56	57	0	5	5	21.5	22.1	20.6	22.1	21.2	22.6
RED R. COMMODITIES EX 2215	54	--	--	0	--	--	19.4	--	--	29.7	--	--
RED R. COMMODITIES EX 2418	57	--	--	0	--	--	17.4	--	--	27.3	--	--
SEEDS 2000 GRIZZLY	53	54	--	0	3	--	17.8	19.7	--	29.3	27.0	--
SEEDS 2000 X 3964	57	--	--	0	--	--	19.1	--	--	27.5	--	--
SEEDS 2000 X 3987	58	58	--	0	1	--	18.4	19.5	--	28.9	26.4	--
SIGCO GOLIATH	58	--	--	0	--	--	18.2	--	--	29.0	--	--
TRIUMPH 700CLS	58	58	--	1	2	--	17.9	18.4	--	27.5	26.8	--
TRIUMPH 757C	53	--	--	1	--	--	16.5	--	--	30.8	--	--
TRIUMPH 777C	56	56	--	3	5	--	16.4	17.1	--	31.0	29.5	--
TRIUMPH TRX 2353CLS	53	--	--	0	--	--	15.2	--	--	31.2	--	--
TRIUMPH TRX 2354CLS	53	--	--	1	--	--	16.0	--	--	35.4	--	--
TRIUMPH TRX 2355CLS	52	--	--	0	--	--	16.3	--	--	32.3	--	--
AVERAGES	55	56	58	1	5	5	18.1	19.8	19.5	29.1	26.6	26.1
CV(%)	4	--	--	351	--	--	5.6	--	--	--	--	--
LSD(0.05)**	3	--	--	2	--	--	1.2	--	--	--	--	--

** 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, 2000-2002.

BRAND and HYBRID	Seed Size Distribution (%)													
	2002							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
AGWAY RH 118	45.3	20.6	16.5	10.5	3.5	2.6	1.0	38.6	20.9	14.7	11.2	5.7	5.3	3.3
GARST/INTERSTATE IS 8048	50.4	14.7	12.6	10.6	6.2	4.4	1.1	37.3	15.5	12.8	11.9	9.1	9.8	3.8
GARST/INTERSTATE IS33139	46.5	14.8	14.5	8.9	6.3	5.7	3.2	--	--	--	--	--	--	--
RED R. COMMODITIES 2213	26.3	17.2	17.3	16.2	9.4	10.4	3.2	17.2	12.7	15.0	16.3	13.6	19.2	6.3
RED R. COMMODITIES 2582	30.4	15.9	14.1	14.2	7.4	13.9	4.2	22.5	13.5	12.4	14.3	10.0	17.7	9.6
RED R. COMMODITIES EX 2215	61.1	15.8	9.0	4.6	3.8	4.0	1.7	--	--	--	--	--	--	--
RED R. COMMODITIES EX 2418	23.0	19.4	17.0	16.3	10.2	11.6	2.5	--	--	--	--	--	--	--
SEEDS 2000 GRIZZLY	66.1	14.3	7.7	5.8	1.8	3.0	1.2	46.1	16.6	11.8	11.9	6.0	5.7	1.7
SEEDS 2000 X 3964	47.8	16.7	9.6	8.1	6.5	8.4	2.9	--	--	--	--	--	--	--
SEEDS 2000 X 3987	65.0	12.6	8.9	7.4	3.2	1.9	1.0	43.3	15.8	11.9	12.7	6.7	5.7	3.6
SIGCO GOLIATH	55.1	15.5	10.9	9.0	4.6	3.2	1.6	--	--	--	--	--	--	--
TRIUMPH 700CLS	44.4	17.7	13.5	10.5	5.4	5.4	3.1	--	--	--	--	--	--	--
TRIUMPH 757C	80.9	6.7	4.4	3.0	1.3	2.3	1.4	--	--	--	--	--	--	--
TRIUMPH 777C	75.9	11.2	4.8	4.7	1.6	1.3	0.6	66.1	12.7	8.4	6.9	2.4	2.4	1.2
TRIUMPH TRX 2353CLS	79.1	8.2	5.6	2.9	1.6	1.7	0.9	--	--	--	--	--	--	--
TRIUMPH TRX 2354CLS	66.3	12.6	9.3	7.2	2.1	1.5	0.9	--	--	--	--	--	--	--
TRIUMPH TRX 2355CLS	76.2	12.8	4.1	2.0	1.9	2.2	1.0	--	--	--	--	--	--	--
AVERAGES	55.3	14.5	10.6	8.3	4.5	4.9	1.9	38.8	14.3	12.3	12.1	7.8	9.9	4.8

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
	AGWAY RH 118	--	--	--	--	--	--
GARST/INTERSTATE IS 8048	36.9	16.2	13.7	12.4	8.5	8.6	3.8
GARST/INTERSTATE IS33139	--	--	--	--	--	--	--
RED R. COMMODITIES 2213	22.7	14.0	15.3	15.2	11.6	15.4	5.9
RED R. COMMODITIES 2582	23.3	15.1	13.3	15.1	9.6	15.6	7.8
RED R. COMMODITIES EX 2215	--	--	--	--	--	--	--
RED R. COMMODITIES EX 2418	--	--	--	--	--	--	--
SEEDS 2000 GRIZZLY	--	--	--	--	--	--	--
SEEDS 2000 X 3964	--	--	--	--	--	--	--
SEEDS 2000 X 3987	--	--	--	--	--	--	--
SIGCO GOLIATH	--	--	--	--	--	--	--
TRIUMPH 700CLS	--	--	--	--	--	--	--
TRIUMPH 757C	--	--	--	--	--	--	--
TRIUMPH 777C	--	--	--	--	--	--	--
TRIUMPH TRX 2353CLS	--	--	--	--	--	--	--
TRIUMPH TRX 2354CLS	--	--	--	--	--	--	--
TRIUMPH TRX 2355CLS	--	--	--	--	--	--	--
AVERAGES	35.7	15.7	13.3	12.9	8.0	9.6	4.5

NORTH CENTRAL KANSAS DRYLAND SUNFLOWER TEST

LOCATION: Mark Studer Farm, Beloit

POPULATION: 22,000 plants/a

COOPERATOR: Barney Gordon, agronomist

TEST YIELDS:

TEST SITE: Harrey silt loam

Avg. (lbs/a): 996

Grain Sorghum 2000, Fallow 2001

Range (lbs/a): 623 - 1315

FERTILIZATION: 100-50-0

LSD (lbs/a): 159

PLANTING DATE: 6/12/02

CV (%): 12

BLOOM DATES: -

2002 GROWING CONDITIONS

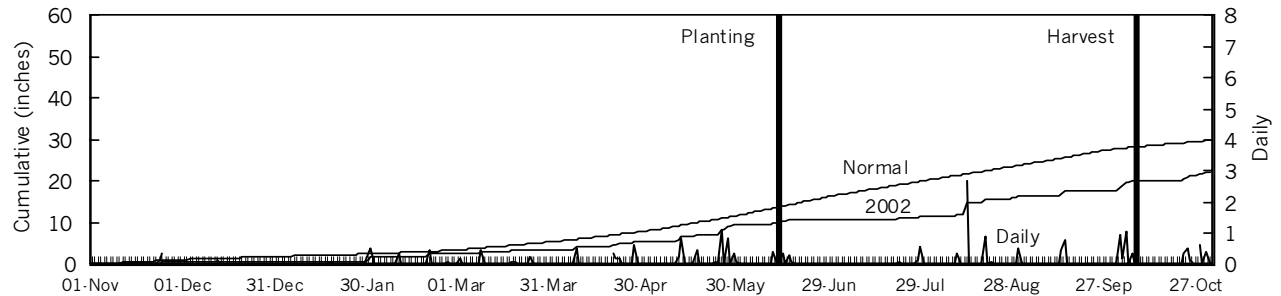
HARVEST DATE: 10/7/02

The test was planted on the Mark Studer farm 9 miles N.E. of Beloit. Good stands were established in all plots, however the summer was very dry. There were few insect or disease problems.

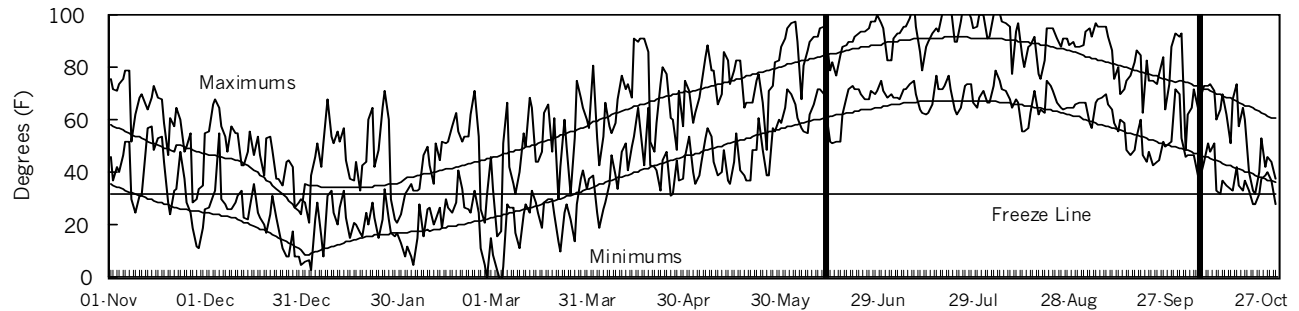
PEST CONTROL:

Prowl

PRECIPITATION



DAILY TEMPERATURES



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2002	Normal	2002	Normal
April	2.0	2.5	55	53
May	4.1	4.0	61	64
June	1.3	4.6	78	74
July	0.8	3.8	82	79
August	4.6	3.7	79	77
Sep.	1.2	3.9	70	67
Oct.	4.6	2.0	50	56
Totals	18.7	24.5	68	67

Table 7. Beloit Dryland Oilseed Sunflower Test, 2000-2002.

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2002	2001	2000	2-Yr. AVG.	3-Yr. AVG.	2002	2001	2000	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 380NS	989	--	--	--	--	99	--	--	44.5	--	--	440	--	--
CROPLAN GENETICS CL 385NS	1034	1026	--	1030	--	104	124	--	43.7	39.9	--	452	411	--
DEKALB DK 3900	893	885	1760	889	1180	90	107	107	44.4	40.9	41.6	396	363	495
DEKALB DK F 29-90	847	--	--	--	--	85	--	--	45.5	--	--	385	--	--
DEKALB DK F 33-33NS	623	--	--	--	--	63	--	--	44.7	--	--	278	--	--
DEKALB DKF 31-01NS	799	634	--	717	--	80	77	--	44.5	41.0	--	356	296	--
DEKALB DKF 36-40NS	1104	435	--	769	--	111	52	--	44.1	40.5	--	487	324	--
GARST/INTERSTATE 971136 NS	1104	995	1800	1049	1299	111	120	109	46.0	41.9	42.1	508	441	549
GARST/INTERSTATE HYSUN 450	1315	626	1325	970	1088	132	76	80	44.8	41.3	41.5	589	412	460
GARST/INTERSTATE HYSUN 521	845	1119	--	982	--	85	135	--	45.4	41.1	--	384	398	--
GARST/INTERSTATE IS 4049	1036	969	2164	1003	1390	104	117	131	44.8	41.1	41.8	464	413	588
GARST/INTERSTATE IS 4340	1074	910	1976	992	1320	108	110	120	45.1	41.5	42.1	484	415	561
GARST/INTERSTATE IS 5331	1197	1153	1658	1175	1336	120	139	101	44.9	41.0	42.4	537	482	571
GARST/INTERSTATE IS 6767	1220	793	1404	1007	1139	123	96	85	45.0	41.1	42.2	549	422	489
MYCOGEN 8488NS	871	1028	1661	949	1187	87	124	101	45.0	41.1	41.3	392	386	490
MYCOGEN 8N421	1198	--	--	--	--	120	--	--	45.0	--	--	539	--	--
PIONEER 63A70	777	717	1396	747	963	78	87	85	46.4	41.7	43.0	361	313	421
PIONEER 63M80	1039	667	--	853	--	104	80	--	46.0	41.6	--	478	363	--
PIONEER 63M91	800	825	1535	813	1054	80	100	93	45.2	41.1	41.9	362	333	445
PIONEER XF 4735	963	--	--	--	--	97	--	--	45.0	--	--	433	--	--
TRIUMPH 636	916	884	--	900	--	92	107	--	45.7	41.6	--	418	374	--
TRIUMPH 658	1081	892	--	986	--	109	108	--	45.8	41.5	--	495	413	--
TRIUMPH 665	1174	901	--	1037	--	118	109	--	45.6	41.5	--	535	436	--
AVERAGES	996	828	1649	912	1158	100	100	100	45.1	41.2	41.4	449	378	482
CV(%)	12	10	11	--	--	--	--	--	--	--	--	--	--	--
LSD(0.05)**	159	94	210	--	--	16	11	13	--	--	--	--	--	--

BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 380NS	--	--	--	38	--	--	12	--	--	33.1	--	--	8.6	--	--
CROPLAN GENETICS CL 385NS	--	--	--	35	43	--	13	18	--	33.8	32.5	--	8.5	8.6	--
DEKALB DK 3900	--	--	--	31	43	41	17	15	11	31.8	31.5	30.7	8.0	8.9	8.2
DEKALB DK F 29-90	--	--	--	41	--	--	10	--	--	32.5	--	--	7.7	--	--
DEKALB DK F 33-33NS	--	--	--	32	--	--	10	--	--	33.6	--	--	8.4	--	--
DEKALB DKF 31-01NS	--	--	--	40	49	--	12	27	--	33.7	32.3	--	8.5	9.1	--
DEKALB DKF 36-40NS	--	--	--	46	50	--	13	21	--	33.4	32.4	--	8.1	8.9	--
GARST/INTERSTATE 971136 NS	--	--	--	42	51	47	7	9	7	32.8	32.0	31.6	8.6	8.8	8.2
GARST/INTERSTATE HYSUN 450	--	--	--	43	49	44	9	17	13	32.8	32.1	31.2	8.9	9.3	8.8
GARST/INTERSTATE HYSUN 521	--	--	--	36	39	--	10	16	--	32.9	32.1	--	8.9	9.2	--
GARST/INTERSTATE IS 4049	--	--	--	38	51	47	9	12	10	32.2	31.8	31.3	8.5	8.8	8.8
GARST/INTERSTATE IS 4340	--	--	--	42	48	43	12	19	13	33.7	32.5	31.6	7.7	8.5	8.4
GARST/INTERSTATE IS 5331	--	--	--	30	40	39	14	19	14	32.1	31.7	30.9	8.6	8.9	8.4
GARST/INTERSTATE IS 6767	--	--	--	40	43	40	12	23	16	33.6	32.4	31.6	9.6	9.6	8.8
MYCOGEN 8488NS	--	--	--	40	47	43	16	16	11	32.4	31.9	31.3	8.4	8.5	8.0
MYCOGEN 8N421	--	--	--	46	--	--	14	--	--	32.8	--	--	8.5	--	--
PIONEER 63A70	--	--	--	38	48	44	11	21	15	31.8	31.7	31.0	8.5	9.6	8.9
PIONEER 63M80	--	--	--	40	41	--	9	24	--	31.9	31.6	--	8.3	8.6	--
PIONEER 63M91	--	--	--	43	43	39	6	18	12	32.2	31.9	31.2	8.2	8.6	8.1
PIONEER XF 4735	--	--	--	45	--	--	13	--	--	31.4	--	--	8.9	--	--
TRIUMPH 636	--	--	--	40	48	--	8	14	--	31.4	31.2	--	8.4	8.6	--
TRIUMPH 658	--	--	--	39	41	--	7	17	--	31.2	31.1	--	9.4	9.7	--
TRIUMPH 665	--	--	--	39	49	--	9	16	--	33.5	32.4	--	7.4	8.9	--
AVERAGES	--	--	--	39	45	42	11	17	12	32.6	31.9	31.3	8.5	9.0	8.4
CV(%)	--	--	--	2	--	--	50	--	--	2.5	--	--	--	--	--
LSD(0.05)**	--	--	--	1	--	--	8	--	--	1.1	--	--	--	--	--

** 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 Exp. Field, Hutchinson POPULATION: 22,000 plants/a

COOPERATOR: William Heer, agronomist

TEST SITE: Ost silt loam

Wheat 2000, Fallow 2001

FERTILIZATION: 51-73-640

PLANTING DATE: 5/30/02

BLOOM DATES: 7/19/02 - 7/29/02

HARVEST DATE: 9/28/02

PEST CONTROL:

Treflan, Prowl

TEST YIELDS:

Avg. (lbs/a): 374

Range (lbs/a): 294 - 528

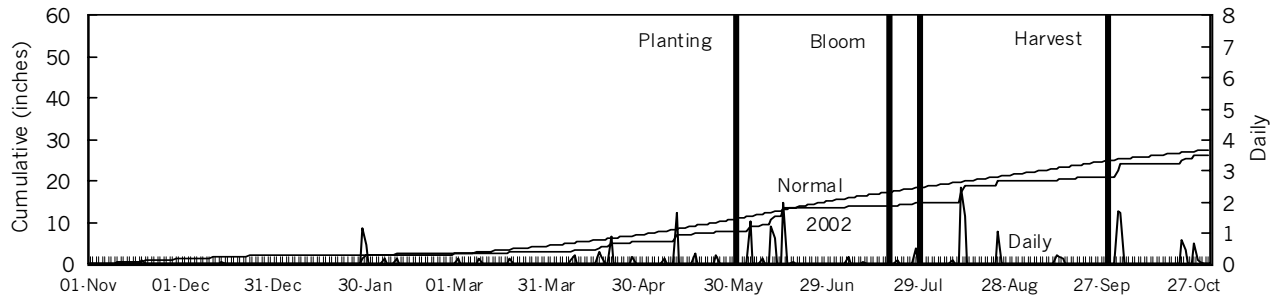
LSD (lbs/a): 135

CV (%): 30

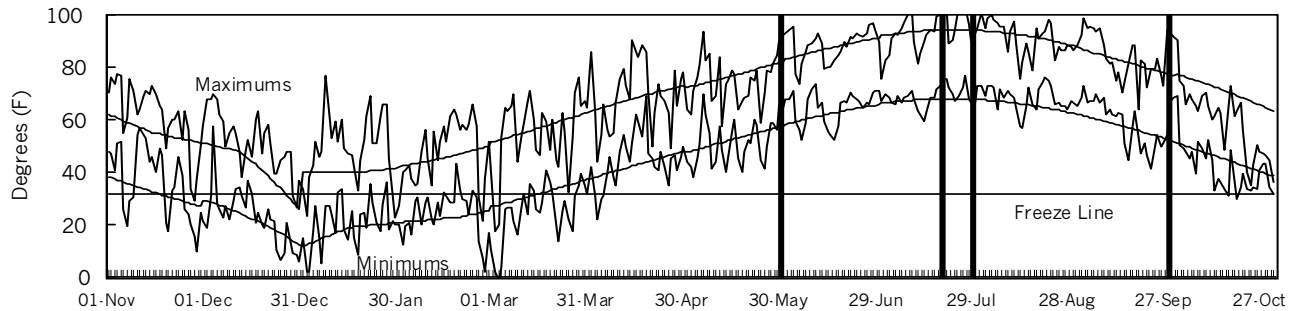
2002 GROWING CONDITIONS

Good stands were established, however plants were stripped by hail on June 15, causing loss of some stand. Very high wind and hail August 12 caused all plants to lay over with heads on the ground. Heads matured laying on the ground.

PRECIPITATION



DAILY TEMPERATURES



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2002	Normal	2002	Normal
April	2.3	2.6	57	56
May	2.6	3.9	64	65
June	5.7	4.3	77	75
July	1.1	3.4	81	81
August	5.2	3.1	80	79
Sep.	0.8	3.3	72	70
Oct.	5.5	2.5	51	58
Totals	23.3	23.1	69	69

Table 8. Hutchinson Dryland Oilseed Sunflower Performance Test, 2000-2002.

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2002	2001	2000	2-Yr. AVG.	3-Yr. AVG.	2002	2001	2000	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
DEKALB DK 3900	295	752	1980	523	1009	79	123	121	37.6	36.7	36.6	111	190	370
DEKALB DK F 29-90	318	--	--	--	--	85	--	--	38.6	--	--	123	--	--
DEKALB DK F 33-33NS	437	--	--	--	--	117	--	--	38.3	--	--	167	--	--
DEKALB DKF 31-01NS	321	506	--	413	--	86	83	--	37.2	34.7	--	119	141	--
DEKALB DKF 36-40NS	528	583	--	556	--	141	95	--	37.4	34.9	--	197	193	--
FONTANELLE 902 NS	313	--	--	--	--	83	--	--	38.7	--	--	121	--	--
GARST/INTERSTATE IS 4049	397	--	1749	--	--	106	--	107	39.6	--	--	157	--	--
GARST/INTERSTATE IS 5331	381	--	1305	--	--	102	--	80	37.6	--	--	143	--	--
GARST/INTERSTATE IS 6767	315	--	2296	--	--	84	--	141	39.1	--	--	123	--	--
MYCOGEN 8488NS	467	784	1875	626	1042	125	128	115	38.4	36.5	36.6	179	225	379
MYCOGEN 8N421	380	--	--	--	--	101	--	--	39.5	--	--	150	--	--
PIONEER 63A70	312	698	1630	505	880	83	114	100	39.9	38.9	38.6	124	194	337
PIONEER 63M80	294	518	2009	406	940	78	84	123	39.8	36.7	36.8	117	145	345
PIONEER 63M91	335	772	2204	553	1103	90	126	135	38.5	37.6	37.4	129	205	409
PIONEER XF 4735	404	--	--	--	--	108	--	--	38.3	--	--	155	--	--
TRIUMPH 636	351	448	--	399	--	94	73	--	39.3	37.8	--	138	150	--
TRIUMPH 658	485	565	--	525	--	130	92	--	38.9	35.7	--	189	186	--
TRIUMPH 665	405	518	--	462	--	108	85	--	39.7	37.3	--	161	171	--
AVERAGES	374	613	1631	494	873	100	100	100	38.7	36.7	36.3	145	179	314
CV(%)	30	22	17	--	--	--	--	--	--	--	--	--	--	--
LSD(0.05)**	135	163	333	--	--	36	27	20	--	--	--	--	--	--

BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
DEKALB DK 3900	57	58	57	--	--	--	--	--	--	23.2	24.3	24.9	7.9	7.6	8.7
DEKALB DK F 29-90	54	--	--	--	--	--	--	--	--	24.3	--	--	8.0	--	--
DEKALB DK F 33-33NS	52	--	--	--	--	--	--	--	--	25.6	--	--	8.1	--	--
DEKALB DKF 31-01NS	54	55	--	--	--	--	--	--	--	25.9	25.7	--	8.3	7.8	--
DEKALB DKF 36-40NS	53	54	--	--	--	--	--	--	--	25.0	25.2	--	8.7	7.9	--
FONTANELLE 902 NS	57	--	--	--	--	--	--	--	--	22.6	--	--	7.5	--	--
GARST/INTERSTATE IS 4049	56	--	--	--	--	--	--	--	--	23.0	--	--	7.7	--	--
GARST/INTERSTATE IS 5331	54	--	--	--	--	--	--	--	--	24.5	--	--	8.4	--	--
GARST/INTERSTATE IS 6767	54	--	--	--	--	--	--	--	--	24.9	--	--	8.5	--	--
MYCOGEN 8488NS	55	57	56	--	--	--	--	--	--	23.3	24.5	25.9	8.4	7.8	8.2
MYCOGEN 8N421	56	--	--	--	--	--	--	--	--	23.7	--	--	8.4	--	--
PIONEER 63A70	54	54	53	--	--	--	--	--	--	23.1	24.5	25.9	7.8	7.6	8.2
PIONEER 63M80	54	55	54	--	--	--	--	--	--	25.5	25.2	26.1	8.2	8.2	9.2
PIONEER 63M91	54	55	54	--	--	--	--	--	--	23.5	24.2	25.5	8.1	7.8	8.5
PIONEER XF 4735	56	--	--	--	--	--	--	--	--	24.3	--	--	8.3	--	--
TRIUMPH 636	55	57	--	--	--	--	--	--	--	21.9	23.0	--	8.5	7.7	--
TRIUMPH 658	57	58	--	--	--	--	--	--	--	23.4	23.8	--	8.0	7.6	--
TRIUMPH 665	56	58	--	--	--	--	--	--	--	24.4	24.7	--	8.0	8.5	--
AVERAGES	55	56	56	--	--	--	--	--	--	24.0	24.6	25.3	8.2	7.9	8.4
CV(%)	2	--	--	--	--	--	--	--	--	8.2	--	--	--	--	--
LSD(0.05)**	1	--	--	--	--	--	--	--	--	2.3	--	--	--	--	--

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

SOUTH CENTRAL KANSAS SUNFLOWER TEST

LOCATION: Harvey County Experiment Field, Hesston

POPULATION: 22,000 plants/a

COOPERATOR: Mark Claassen, agronomist

TEST YIELDS:

TEST SITE: Smolan silty clay loam

Avg. (lbs/a): 1547

Soybean 2000, Soybean 2001

Range (lbs/a): 805 - 2040

FERTILIZATION: 64-46-0

LSD (lbs/a): 380

PLANTING DATE: 6/26/02

CV (%): 21

BLOOM DATES: 8/20/02 - 8/24/02

2002 GROWING CONDITIONS

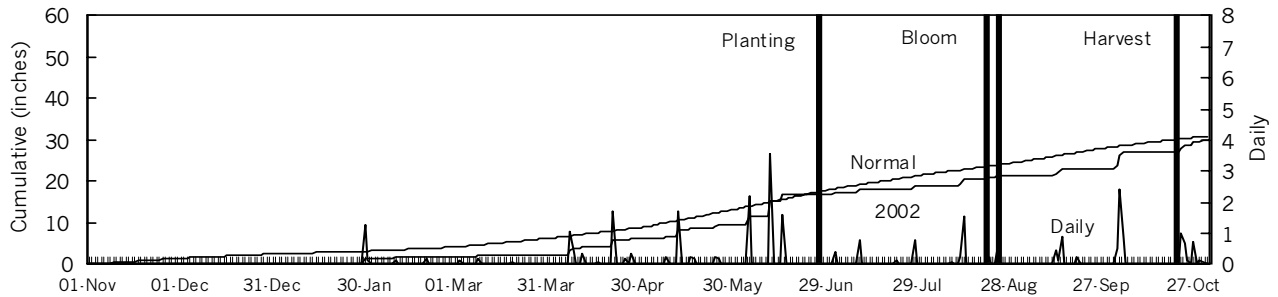
HARVEST DATE: 10/21/02

Soil condition was excellent at the first planting. Unfortunately, 3.6 inches of hard rain the following day caused severe soil crusting. The second planting on the same site was affected by dry soil. Final stands averaged 59% of the target population. Substantial late-season lodging as well as plant population was highly significant. Additionally, on average, lodging and stand irregularities accounted for 13% of yield variation beyond that attributed to hybrid effect.

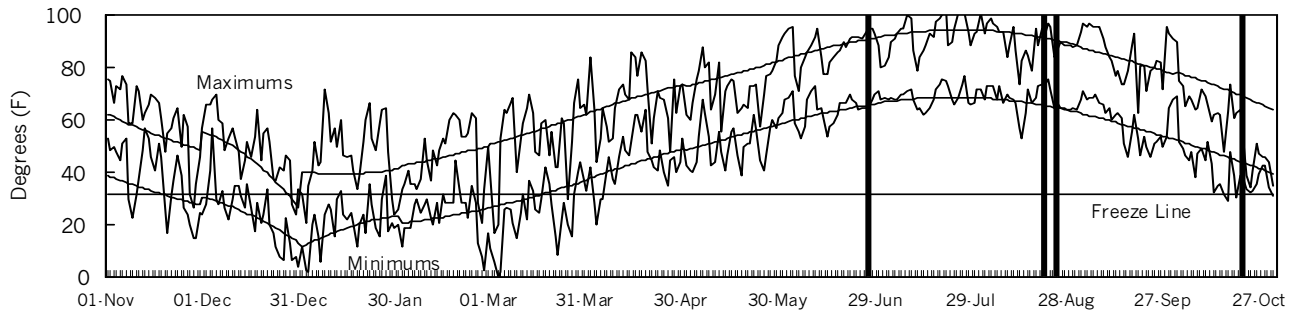
PEST CONTROL:

Treflan 5/28/02, Baythroid 8/23/02

PRECIPITATION



DAILY TEMPERATURES



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2002	Normal	2002	Normal
April	4.2	2.6	56	56
May	2.9	4.5	62	66
June	7.4	4.7	76	76
July	2.1	3.6	81	81
August	2.5	3.0	79	79
Sep.	1.8	3.7	72	71
Oct.	6.6	2.6	50	59
Totals	27.6	24.6	68	70

Table 9. Hesston Dryland Oilseed Sunflower Performance Test, 2000-2002.

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2002	2001	2000	2-Yr. AVG.	3-Yr. AVG.	2002	2001	2000	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 308	999	--	--	--	--	65	--	--	--	--	--	--	--	--
CROPLAN GENETICS CL 322NS	1470	1187	--	1329	--	95	96	--	--	--	--	--	--	--
CROPLAN GENETICS CL 345NS	1882	1374	--	1628	--	122	111	--	--	--	--	--	--	--
CROPLAN GENETICS CL 380NS	1718	1159	--	1438	--	111	94	--	--	--	--	--	--	--
CROPLAN GENETICS CL 385NS	1882	1294	--	1588	--	122	105	--	--	--	--	--	--	--
DEKALB DK 3900	2040	1459	1734	1749	1744	132	118	103	--	--	--	--	--	--
DEKALB DK F 29-90	805	--	--	--	--	52	--	--	--	--	--	--	--	--
DEKALB DK F 33-33NS	1740	--	--	--	--	112	--	--	--	--	--	--	--	--
DEKALB DKF 31-01NS	1463	985	--	1224	--	95	80	--	--	--	--	--	--	--
DEKALB DKF 36-40NS	1723	1126	--	1424	--	111	91	--	--	--	--	--	--	--
PIONEER 63A70	1673	1304	1612	1488	1530	108	106	96	--	--	--	--	--	--
PIONEER 63M80	1516	1096	1452	1306	1354	98	89	86	--	--	--	--	--	--
PIONEER 63M91	1131	1223	1700	1177	1352	73	99	101	--	--	--	--	--	--
PIONEER XF 4735	1616	--	--	--	--	104	--	--	--	--	--	--	--	--
AVERAGES	1547	1235	1684	1391	1489	100	100	100	--	--	--	--	--	--
CV(%)	21	13	9	--	--	--	--	--	--	--	--	--	--	--
LSD(0.05)**	380	226	182	--	--	25	18	11	--	--	--	--	--	--

BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 308	57	--	--	55	--	--	85	--	--	24.4	--	--	--	--	--
CROPLAN GENETICS CL 322NS	57	57	--	59	59	--	32	35	--	27.2	25.9	--	--	--	--
CROPLAN GENETICS CL 345NS	57	56	--	60	60	--	17	32	--	26.9	26.3	--	--	--	--
CROPLAN GENETICS CL 380NS	58	59	--	62	63	--	19	20	--	27.2	25.8	--	--	--	--
CROPLAN GENETICS CL 385NS	58	60	--	55	57	--	26	24	--	26.7	25.2	--	--	--	--
DEKALB DK 3900	59	60	59	55	57	54	15	15	11	27.6	26.2	25.8	--	--	--
DEKALB DK F 29-90	57	--	--	58	--	--	90	--	--	24.2	--	--	--	--	--
DEKALB DK F 33-33NS	57	--	--	56	--	--	32	--	--	25.3	--	--	--	--	--
DEKALB DKF 31-01NS	57	58	--	61	63	--	15	35	--	26.5	26.3	--	--	--	--
DEKALB DKF 36-40NS	56	57	--	59	61	--	13	31	--	27.1	26.9	--	--	--	--
PIONEER 63A70	56	56	55	56	58	55	19	24	17	26.1	25.8	24.9	--	--	--
PIONEER 63M80	57	57	56	54	58	54	25	26	18	27.9	26.6	25.8	--	--	--
PIONEER 63M91	56	57	56	60	61	58	30	39	27	26.1	26.0	25.8	--	--	--
PIONEER XF 4735	58	--	--	61	--	--	17	--	--	27.5	--	--	--	--	--
AVERAGES	57	57	57	58	60	56	31	33	23	26.5	25.9	25.3	--	--	--
CV(%)	1	--	--	2	--	--	53	--	--	5.6	--	--	--	--	--
LSD(0.05)**	1	--	--	2	--	--	20	--	--	1.8	--	--	--	--	--

** 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 TESTS

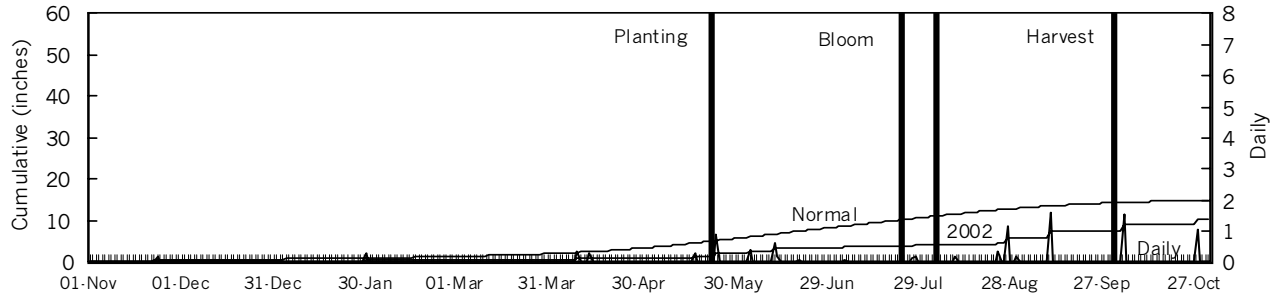
LOCATION: Southwest Res.-Ext. Center, Tribune
 COOPERATOR: Alan Schlegel, agronomist
 TEST SITE: Richfield silt loam
 Fallow 2000, Wheat 2001
 FERTILIZATION: 80-0-0
 PLANTING DATE: 5/22/02
 BLOOM DATES: 7/23/02 - 7/29/02
 HARVEST DATE: 9/30/02
 PEST CONTROL:
 Spartan

	<u>Oil</u>	<u>Confectionary</u>
POPULATION:	17,424 plants/a	17,424 plants/a
TEST YIELDS:		
Avg. (lbs/a):	1058	833
Range (lbs/a):	682 - 1514	638 - 1130
LSD (lbs/a):	363	287
CV (%):	29	30

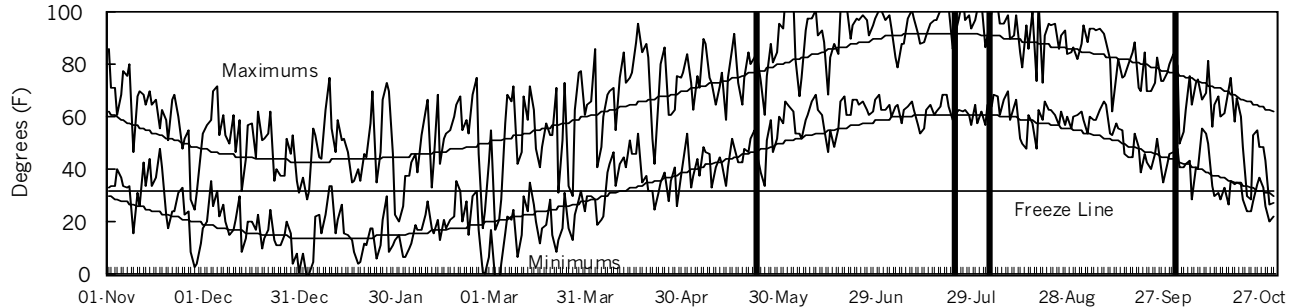
2002 GROWING CONDITIONS

Test was pre-watered to aid stand establishment. A hail storm on June 12 severely damaged plants and caused loss of population.

PRECIPITATION



DAILY TEMPERATURES



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2002	Normal	2002	Normal
April	0.7	1.3	54	50
May	1.2	2.4	62	60
June	1.3	2.5	77	70
July	0.4	2.5	79	76
August	1.9	2.2	76	74
Sep.	1.6	1.3	66	65
Oct.	2.7	0.7	47	53
Totals	9.8	12.9	66	64

Table 10. Tribune Dryland Oilseed Sunflower Performance Test, 2000-2002.

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2002	2001	1999	2-Yr. AVG.	3-Yr. AVG.	2002	2001	1999	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 380NS	1127	--	--	--	--	107	--	--	39.6	--	--	446	--	--
DEKALB DK 3900	1199	131	2482	665	1270	113	104	105	40.4	36.0	38.9	484	263	545
DEKALB DK F 29-90	886	--	--	--	--	84	--	--	39.6	--	--	351	--	--
DEKALB DK F 33-33NS	904	--	--	--	--	85	--	--	38.1	--	--	344	--	--
DEKALB DKF 31-01NS	971	59	--	515	--	92	47	--	39.5	36.6	--	383	202	--
DEKALB DKF 36-40NS	741	136	--	439	--	70	108	--	37.4	34.8	--	277	161	--
FONTANELLE 902 NS	1198	--	--	--	--	113	--	--	39.7	--	--	476	--	--
GARST/INTERSTATE 971136 NS	1234	128	1766	681	1043	117	102	75	38.2	36.9	38.6	471	259	420
GARST/INTERSTATE HYSUN 450	1259	89	2231	674	1193	119	71	94	38.5	35.6	37.6	485	257	481
GARST/INTERSTATE HYSUN 521	1047	142	--	594	--	99	113	--	38.6	35.1	--	404	225	--
GARST/INTERSTATE IS 4049	1164	128	2657	646	1316	110	102	112	37.8	36.1	38.0	440	242	532
GARST/INTERSTATE IS 4340	1337	127	--	732	--	126	101	--	39.5	36.7	--	528	286	--
GARST/INTERSTATE IS 5331	1017	157	--	587	--	96	124	--	39.2	35.0	--	399	223	--
GARST/INTERSTATE IS 6767	1053	88	2829	571	1323	100	70	120	39.2	35.6	38.9	413	220	575
KAYSTAR 2020NS	1173	--	--	--	--	111	--	--	38.6	--	--	453	--	--
KAYSTAR 9404	1085	167	2918	626	1390	103	132	123	37.3	35.0	37.0	405	229	554
KAYSTAR 9501	1089	81	2369	585	1180	103	65	100	36.6	35.3	36.5	398	213	450
MYCOGEN 8488NS	806	188	2153	497	1049	76	149	91	39.9	36.8	38.2	321	192	422
MYCOGEN CAVALRY	938	112	--	525	--	89	89	--	40.2	37.3	--	377	208	--
MYCOGEN SF 187	982	123	2610	552	1238	93	97	110	37.5	35.0	37.0	368	204	494
PIONEER 63A70	819	93	--	456	--	77	74	--	39.7	36.0	--	325	177	--
PIONEER 63M80	682	160	--	421	--	64	127	--	38.7	35.2	--	264	157	--
PIONEER 63M91	956	84	1808	520	949	90	67	77	38.8	36.2	38.4	371	200	391
PIONEER XF 4735	1128	--	--	--	--	107	--	--	38.6	--	--	435	--	--
TRIUMPH 636	1199	107	--	653	--	113	85	--	39.3	37.0	--	471	254	--
TRIUMPH 658	1514	66	--	790	--	143	53	--	38.0	35.5	--	575	299	--
AVERAGES	1058	126	2363	592	1182	100	100	100	38.8	35.9	38.2	410	226	489
CV(%)	29	72	19	--	--	--	--	--	--	--	--	--	--	--
LSD(0.05)**	363	107	522	--	--	34	85	22	--	--	--	--	--	--

BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
CROPLAN GENETICS CL 380NS	66	--	--	57	--	--	4	--	--	29.7	--	--	14.1	--	--
DEKALB DK 3900	67	64	63	49	51	54	46	43	--	29.9	29.6	29.3	14.1	10.5	10.8
DEKALB DK F 29-90	64	--	--	49	--	--	35	--	--	28.0	--	--	14.0	--	--
DEKALB DK F 33-33NS	63	--	--	48	--	--	16	--	--	29.0	--	--	13.3	--	--
DEKALB DKF 31-01NS	64	61	--	55	57	--	31	32	--	29.8	27.7	--	15.1	11.1	--
DEKALB DKF 36-40NS	64	60	--	50	54	--	29	34	--	28.9	27.4	--	14.6	10.8	--
FONTANELLE 902 NS	67	--	--	55	--	--	22	--	--	28.9	--	--	14.7	--	--
GARST/INTERSTATE 971136 NS	65	62	61	50	53	58	18	24	--	29.3	28.2	28.3	14.5	11.3	11.1
GARST/INTERSTATE HYSUN 450	67	63	63	46	48	51	3	6	--	29.8	28.2	28.7	14.6	10.7	10.4
GARST/INTERSTATE HYSUN 521	63	59	--	42	45	--	34	28	--	29.7	28.3	--	14.0	10.5	--
GARST/INTERSTATE IS 4049	66	63	63	56	57	60	13	24	--	29.3	28.2	28.7	13.8	10.8	10.8
GARST/INTERSTATE IS 4340	68	65	--	50	50	--	9	12	--	30.4	28.7	--	15.8	11.4	--
GARST/INTERSTATE IS 5331	66	61	--	45	47	--	13	20	--	29.0	26.8	--	15.5	11.8	--
GARST/INTERSTATE IS 6767	65	62	61	46	50	56	40	47	--	30.2	28.4	29.2	15.2	11.4	11.5
KAYSTAR 2020NS	66	--	--	42	--	--	3	--	--	29.0	--	--	13.9	--	--
KAYSTAR 9404	65	62	61	48	52	57	7	21	--	29.0	27.5	28.6	14.7	11.0	10.8
KAYSTAR 9501	66	64	63	57	57	61	11	31	--	30.4	28.8	29.4	14.7	10.9	10.9
MYCOGEN 8488NS	66	62	61	54	54	59	21	31	--	28.3	27.3	27.7	14.9	10.9	10.8
MYCOGEN CAVALRY	66	63	--	56	56	--	14	20	--	30.1	28.0	--	15.0	10.9	--
MYCOGEN SF 187	65	62	62	42	47	50	24	30	--	28.9	27.6	28.1	14.8	10.8	10.8
PIONEER 63A70	63	59	--	52	53	--	16	31	--	28.5	26.4	--	15.0	11.3	--
PIONEER 63M80	65	60	--	48	49	--	25	33	--	29.7	26.9	--	14.2	10.9	--
PIONEER 63M91	65	61	60	51	52	57	15	26	--	29.9	28.1	28.2	14.2	10.7	11.0
PIONEER XF 4735	67	--	--	60	--	--	12	--	--	28.0	--	--	14.1	--	--
TRIUMPH 636	67	63	--	49	50	--	9	27	--	28.6	27.0	--	15.1	11.3	--
TRIUMPH 658	68	64	--	54	55	--	14	28	--	28.7	27.2	--	14.7	11.1	--
AVERAGES	65	62	61	50	51	56	18	26	--	29.3	27.7	28.4	14.6	10.9	10.9
CV(%)	1	--	--	8	--	--	68	--	--	3.1	--	--	--	--	--
LSD(0.05)**	1	--	--	5	--	--	15	--	--	1.1	--	--	--	--	--

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

Table 11. Tribune Dryland Confectionary Sunflower Performance Test, 2000-2002.

BRAND and HYBRID	YIELD (lbs/a)					YIELD AS % OF TEST AVERAGE			DAYS TO 1/2 BLOOM		
	2002	2001	1999	2-Yr.	3-Yr.	2002	2001	1999	2-Yr.	3-Yr.	
				AVG.	AVG.				AVG.	AVG.	
GARST/INTERSTATE IS 8048	672	547	2263	609	1160	81	120	105	65	60	59
GARST/INTERSTATE IS33139	1030	--	--	--	--	124	--	--	71	--	--
RED R. COMMODITIES 2213	1130	322	--	726	--	136	71	--	67	62	--
RED R. COMMODITIES 2582	733	493	--	613	--	88	108	--	66	62	--
RED R. COMMODITIES EX 2215	752	--	--	--	--	90	--	--	71	--	--
RED R. COMMODITIES EX 2418	877	--	--	--	--	105	--	--	70	--	--
TRIUMPH 777C	638	539	--	589	--	77	119	--	71	65	--
AVERAGES	833	454	2162	644	1150	100	100	100	69	64	62
CV(%)	28	50	21	--	--	--	--	--	2	--	--
LSD(0.05)**	287	271	563	--	--	34	60	26	1	--	--

BRAND and HYBRID	PLANT HT (in.)			LODGING (%)			TEST WEIGHT (lbs/bu)			200 SEED WT (g)		
	2002	2-Yr.	3-Yr.	2002	2-Yr.	3-Yr.	2002	2-Yr.	3-Yr.	2002	2-Yr.	3-Yr.
		AVG.	AVG.		AVG.	AVG.		AVG.	AVG.		AVG.	
GARST/INTERSTATE IS 8048	52	54	61	6	22	--	23.5	20.1	21.2	26.7	20.7	22.2
GARST/INTERSTATE IS33139	57	--	--	0	--	--	23.7	--	--	27.3	--	--
RED R. COMMODITIES 2213	60	59	--	16	32	--	24.5	21.2	--	25.2	18.7	--
RED R. COMMODITIES 2582	56	57	--	12	25	--	23.8	20.7	--	29.0	21.5	--
RED R. COMMODITIES EX 2215	56	--	--	6	--	--	23.1	--	--	26.6	--	--
RED R. COMMODITIES EX 2418	60	--	--	11	--	--	23.4	--	--	27.7	--	--
TRIUMPH 777C	58	59	--	11	25	--	23.0	20.8	--	27.2	21.2	--
AVERAGES	57	58	63	9	23	--	23.6	20.5	21.8	27.1	20.2	21.7
CV(%)	8	--	--	81	--	--	4.2	--	--	--	--	--
LSD(0.05)**	6	--	--	8	--	--	1.2	--	--	--	--	--

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

Table 12. Seed Size Distribution for Tribune Dryland Confectionary Sunflower Performance Test, 2000-2002.

BRAND and HYBRID	Seed Size Distribution (%)													
	2002							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
GARST/INTERSTATE IS 8048	33.9	16.5	14.2	13.3	8.2	10.7	3.2	19.2	10.7	13.0	16.8	11.3	18.2	11.4
GARST/INTERSTATE IS33139	28.5	20.1	16.0	13.2	9.0	10.0	3.1	--	--	--	--	--	--	--
RED R. COMMODITIES 2213	24.8	15.4	13.6	16.4	10.5	12.5	6.7	12.8	8.5	9.0	12.5	9.4	24.5	23.7
RED R. COMMODITIES 2582	31.2	18.3	15.9	16.7	7.3	7.7	2.9	18.6	13.7	13.9	17.6	10.3	15.0	11.2
RED R. COMMODITIES EX 2215	28.4	13.7	16.2	14.5	12.4	11.9	2.9	--	--	--	--	--	--	--
RED R. COMMODITIES EX 2418	29.9	15.0	15.2	12.4	10.0	13.9	3.5	--	--	--	--	--	--	--
TRIUMPH 777C	30.1	17.1	16.6	14.0	7.8	10.7	3.8	17.0	14.7	17.0	17.7	11.0	15.5	7.5
AVERAGES	29.5	16.6	15.4	14.4	9.3	11.1	3.7	16.2	11.3	12.7	14.4	10.8	19.1	16.0

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	
	GARST/INTERSTATE IS 8048	16.5	13.7	15.1	18.0	11.2	16.3	9.8
GARST/INTERSTATE IS33139	--	--	--	--	--	--	--	
RED R. COMMODITIES 2213	--	--	--	--	--	--	--	
RED R. COMMODITIES 2582	--	--	--	--	--	--	--	
RED R. COMMODITIES EX 2215	--	--	--	--	--	--	--	
RED R. COMMODITIES EX 2418	--	--	--	--	--	--	--	
TRIUMPH 777C	--	--	--	--	--	--	--	
AVERAGES	13.4	12.3	14.2	17.6	12.0	17.9	13.1	

NORTHWESTERN KANSAS IRRIGATED NUSUN SUNFLOWER TEST

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

COOPERATOR: Patrick Evans, agronomist

TEST SITE: Keith silt loam

Sunflower 2000, Corn 2001

FERTILIZATION: 110-25-0

PLANTING DATE: 6/14/02

BLOOM DATES: 8/3/02 - 8/11/02

HARVEST DATE: 10/8/02

PEST CONTROL:

Treflan, June 10; Parathion, August 10

TEST YIELDS:

Avg. (lbs/a): 3350

Range (lbs/a): 2192 - 3830

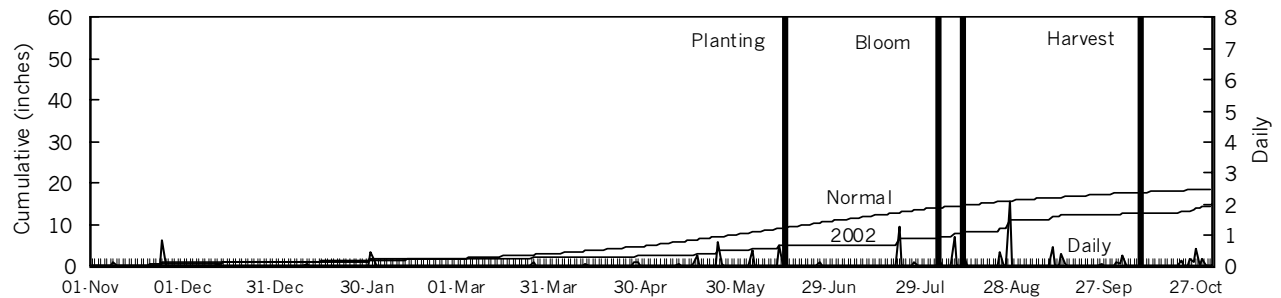
LSD (lbs/a): 393

CV (%): 10

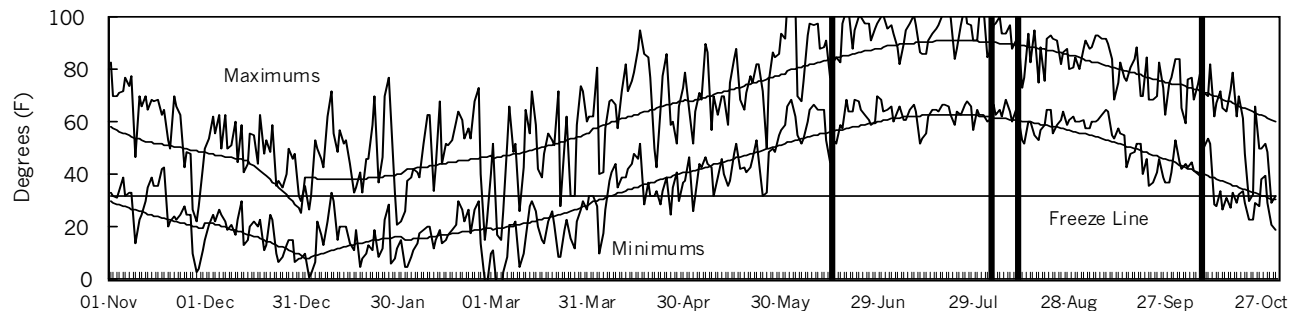
2002 GROWING CONDITIONS

The tests were preirrigated in April and watered again on July 29 and September 4; approximately 3" each time. Insect and weed control was good.

PRECIPITATION



DAILY TEMPERATURES



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.	
	2002	Normal	2002	Normal
April	0.4	1.8	52	49
May	1.4	2.9	59	60
June	1.4	3.1	77	70
July	1.5	3.0	79	76
August	4.4	2.2	75	74
Sep.	1.2	1.5	66	65
Oct.	2.0	1.1	48	53
Totals	12.3	15.6	65	64

Table 13. Colby Irrigated NUSUN Oilseed Sunflower Performance Test, 2000-2002.

BRAND and HYBRID	YIELD (lbs/a)					YIELD (% AVG.)			OIL (%)			OIL YIELD (lbs/a)		
	2002	2001	2000	2-Yr. AVG.	3-Yr. AVG.	2002	2001	2000	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
NuSun hybrids														
CROPLAN GENETICS CL 308	3371	--	--	--	--	101	--	--	50.3	--	--	1696	--	--
CROPLAN GENETICS CL 322NS	3156	2808	--	2982	--	94	84	--	44.5	45.6	--	1404	1358	--
CROPLAN GENETICS CL 345NS	3617	3272	--	3444	--	108	98	--	47.5	47.8	--	1718	1644	--
CROPLAN GENETICS CL 380NS	3527	3624	--	3576	--	105	109	--	45.0	46.4	--	1587	1660	--
CROPLAN GENETICS CL 385NS	3730	3324	--	3527	--	111	100	--	45.6	46.2	--	1701	1628	--
DEKALB DK F 33-33NS	3163	--	--	--	--	94	--	--	42.8	--	--	1354	--	--
DEKALB DKF 31-01NS	2192	2901	--	2547	--	65	87	--	42.5	43.9	--	932	1123	--
FONTANELLE 902 NS	3504	--	--	--	--	105	--	--	48.6	--	--	1703	--	--
GARST/INTERSTATE 971136 NS	3554	3448	--	3501	--	106	103	--	46.7	45.8	--	1660	1604	--
GARST/INTERSTATE 982727 NS	3248	3128	--	3188	--	97	94	--	47.5	47.1	--	1543	1502	--
GARST/INTERSTATE 990213 NS	3085	3696	--	3390	--	92	111	--	46.3	46.4	--	1428	1573	--
GARST/INTERSTATE F63105NS	3324	--	--	--	--	99	--	--	44.9	--	--	1493	--	--
GARST/INTERSTATE F90430NS	3295	--	--	--	--	98	--	--	46.8	--	--	1542	--	--
GARST/INTERSTATE HYSUN 450	3504	3706	--	3605	--	105	111	--	45.9	46.5	--	1608	1675	--
GARST/INTERSTATE HYSUN 521	3338	3226	--	3282	--	100	97	--	46.0	47.1	--	1535	1544	--
GARST/INTERSTATE HYSUN 530	3189	3299	--	3244	--	95	99	--	44.9	45.3	--	1432	1468	--
KAYSTAR 2020NS	3300	3438	--	3369	--	99	103	--	46.1	46.6	--	1521	1569	--
MYCOGEN 8377NS	3631	3460	--	3546	--	108	104	--	47.0	47.3	--	1707	1677	--
MYCOGEN 8488NS	3716	3510	--	3613	--	111	105	--	45.3	46.4	--	1683	1674	--
MYCOGEN 8N327	3009	--	--	--	--	90	--	--	48.8	--	--	1468	--	--
MYCOGEN 8N421	3515	--	--	--	--	105	--	--	47.8	--	--	1680	--	--
MYCOGEN X89910	3277	--	--	--	--	98	--	--	42.0	--	--	1376	--	--
NIDERA EN 1610NS	3325	--	--	--	--	99	--	--	47.8	--	--	1589	--	--
PIONEER 63M52	3315	--	--	--	--	99	--	--	46.9	--	--	1555	--	--
PIONEER 63M80	3499	3479	--	3489	--	104	104	--	48.5	50.2	--	1697	1750	--
PIONEER 63M91	3230	3464	--	3347	--	96	104	--	47.2	48.1	--	1525	1609	--
PIONEER XF 3119	3357	--	--	--	--	100	--	--	46.5	--	--	1561	--	--
PIONEER XF 3120	3224	--	--	--	--	96	--	--	44.7	--	--	1441	--	--
PIONEER XF 4735	3496	--	--	--	--	104	--	--	44.2	--	--	1545	--	--
SEEDS 2000 BLAZER	3419	3138	--	3279	--	102	94	--	46.5	47.1	--	1590	1542	--
SEEDS 2000 BRONCO	3551	3333	--	3442	--	106	100	--	45.7	46.5	--	1623	1598	--
TRIUMPH 636	3829	3758	--	3794	--	114	113	--	48.1	48.4	--	1842	1834	--
TRIUMPH 645	3632	3665	--	3649	--	108	110	--	47.4	48.1	--	1722	1755	--
TRIUMPH 658	3447	--	--	--	--	103	--	--	47.8	--	--	1648	--	--
TRIUMPH 665	3734	3769	--	3752	--	111	113	--	48.0	48.2	--	1792	1806	--
TRIUMPH TRX 2241CL	3198	--	--	--	--	95	--	--	44.6	--	--	1426	--	--
AVERAGES	3375	3346	--	--	--	101	100	--	46.3	--	--	1565	--	--
Traditional hybrids														
CROPLAN GENETICS CL 803	2653	--	--	--	--	79	--	--	49.3	--	--	1308	--	--
GARST/INTERSTATE IS 4049	3261	3297	--	3279	--	97	99	--	47.1	45.5	--	1536	1492	--
MYCOGEN SF 260	3383	--	--	--	--	101	--	--	48.7	--	--	1647	--	--
MYCOGEN SF 270	3003	3334	--	3169	--	90	100	--	46.3	45.7	--	1390	1445	--
PIONEER 63A81	3078	3283	--	3181	--	92	98	--	48.1	47.2	--	1481	1499	--
AVERAGES	3076	3300	--	--	--	92	99	--	47.9	--	--	1308	--	--
All hybrids														
AVERAGES	3350	3340	--	3345	--	100	100	--	46.5	46.8	--	1558	1566	--
CV(%)	10	8	--	--	--	--	--	--	1.8	--	--	--	--	--
LSD(0.05)**	469	381	--	--	--	14	11	--	1.3	--	--	218	--	--

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

Table 13. Colby Irrigated NUSUN Oilseed Sunflower Performance Test, 2000-2002, continued.

BRAND and HYBRID	DAYS TO 1/2 BLOOM			PLANT HT (in.)			LODGING (%)			TEST WEIGHT (lbs/bu)		
	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.	2002	2-Yr. AVG.	3-Yr. AVG.
	NuSun hybrids											
CROPLAN GENETICS CL 308	51	--	--	59	--	--	3	--	--	30.0	--	--
CROPLAN GENETICS CL 322NS	53	53	--	62	60	--	2	3	--	29.3	29.0	--
CROPLAN GENETICS CL 345NS	53	53	--	65	65	--	1	1	--	28.3	27.9	--
CROPLAN GENETICS CL 380NS	55	55	--	62	63	--	6	4	--	29.5	29.6	--
CROPLAN GENETICS CL 385NS	56	56	--	58	58	--	3	4	--	29.5	29.3	--
DEKALB DK F 33-33NS	53	--	--	61	--	--	4	--	--	29.3	--	--
DEKALB DKF 31-01NS	54	54	--	68	69	--	4	4	--	29.5	30.0	--
FONTANELLE 902 NS	55	--	--	61	--	--	2	--	--	26.8	--	--
GARST/INTERSTATE 971136 NS	54	55	--	64	64	--	5	--	--	29.8	28.1	--
GARST/INTERSTATE 982727 NS	55	55	--	61	61	--	2	2	--	29.8	29.2	--
GARST/INTERSTATE 990213 NS	56	56	--	60	62	--	5	4	--	30.0	29.3	--
GARST/INTERSTATE F63105NS	55	--	--	64	--	--	3	--	--	30.5	--	--
GARST/INTERSTATE F90430NS	57	--	--	63	--	--	3	--	--	28.3	--	--
GARST/INTERSTATE HYSUN 450	56	56	--	58	59	--	2	1	--	29.8	29.2	--
GARST/INTERSTATE HYSUN 521	51	51	--	55	53	--	2	2	--	30.3	30.0	--
GARST/INTERSTATE HYSUN 530	53	54	--	62	61	--	4	6	--	29.8	29.0	--
KAYSTAR 2020NS	56	56	--	57	59	--	8	4	--	29.3	29.1	--
MYCOGEN 8377NS	52	53	--	64	63	--	0	1	--	28.3	28.4	--
MYCOGEN 8488NS	55	55	--	63	63	--	2	1	--	29.8	29.8	--
MYCOGEN 8N327	53	--	--	62	--	--	7	--	--	29.3	--	--
MYCOGEN 8N421	55	--	--	65	--	--	1	--	--	28.5	--	--
MYCOGEN X89910	53	--	--	63	--	--	4	--	--	26.8	--	--
NIDERA EN 1610NS	55	--	--	66	--	--	4	--	--	27.5	--	--
PIONEER 63M52	54	--	--	63	--	--	3	--	--	27.5	--	--
PIONEER 63M80	54	55	--	63	64	--	1	2	--	29.0	28.4	--
PIONEER 63M91	53	54	--	67	68	--	2	2	--	29.5	29.5	--
PIONEER XF 3119	55	--	--	59	--	--	3	--	--	26.3	--	--
PIONEER XF 3120	54	--	--	63	--	--	3	--	--	27.8	--	--
PIONEER XF 4735	56	--	--	65	--	--	3	--	--	26.3	--	--
SEEDS 2000 BLAZER	55	56	--	56	57	--	2	1	--	29.8	28.6	--
SEEDS 2000 BRONCO	55	56	--	58	57	--	2	2	--	29.5	28.9	--
TRIUMPH 636	55	56	--	59	59	--	2	2	--	26.0	25.4	--
TRIUMPH 645	56	56	--	58	59	--	0	2	--	26.0	25.5	--
TRIUMPH 658	56	--	--	61	--	--	1	--	--	26.5	--	--
TRIUMPH 665	55	56	--	63	63	--	2	2	--	29.3	28.3	--
TRIUMPH TRX 2241CL	53	--	--	64	--	--	3	--	--	28.8	--	--
AVERAGES	54	--	--	61	--	--	3	--	--	28.7	--	--
Traditional hybrids												
CROPLAN GENETICS CL 803	52	--	--	63	--	--	9	--	--	30.0	--	--
GARST/INTERSTATE IS 4049	55	57	--	65	67	--	3	2	--	29.0	28.0	--
MYCOGEN SF 260	54	--	--	59	--	--	4	--	--	28.8	--	--
MYCOGEN SF 270	52	52	--	57	58	--	4	--	--	29.3	28.9	--
PIONEER 63A81	55	56	--	64	64	--	5	3	--	27.8	26.3	--
AVERAGES	54	--	--	61	--	--	5	--	--	29.0	--	--
All hybrids												
AVERAGES	54	55	--	61	61	--	3	3	--	28.7	28.5	--
CV(%)	1	--	--	4	--	--	112	--	--	2.1	--	--
LSD(0.05)**	1	--	--	3	--	--	4	--	--	0.8	--	--

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

Table 14. Fatty Acid Percentage of Randomly Selected Heads from Colby Irrigated NUSUN Oilseed Sunflower Performance Test, 2000-2002.

BRAND and HYBRID	Fatty Acids (%)											
	2002				2-Year Average				3-Year Average			
	Palmitic	Stearic	Oleic	Linoleic	Palmitic	Stearic	Oleic	Linoleic	Palmitic	Stearic	Oleic	Linoleic
NuSun hybrids												
CROPLAN GENETICS CL 308	3.79	3.97	69.30	20.56	--	--	--	--	--	--	--	--
CROPLAN GENETICS CL 322NS	4.24	4.68	64.30	20.88	4.26	4.73	64.60	22.46	--	--	--	--
CROPLAN GENETICS CL 345NS	4.00	2.67	71.19	19.93	4.08	2.89	67.30	23.58	--	--	--	--
CROPLAN GENETICS CL 380NS	4.45	3.71	54.20	35.50	4.33	3.74	58.50	31.44	--	--	--	--
CROPLAN GENETICS CL 385NS	3.88	5.95	66.21	21.15	3.77	6.07	66.48	21.18	--	--	--	--
DEKALB DK F 33-33NS	3.91	4.21	70.77	18.48	--	--	--	--	--	--	--	--
DEKALB DKF 31-01NS	4.41	4.70	69.90	18.46	4.32	4.89	69.21	19.10	--	--	--	--
FONTANELLE 902 NS	3.68	3.35	73.00	18.22	--	--	--	--	--	--	--	--
GARST/INTERSTATE 971136 NS	4.12	4.62	66.28	22.61	4.05	4.87	67.68	21.03	--	--	--	--
GARST/INTERSTATE 982727 NS	3.90	3.68	72.26	17.83	3.90	4.18	71.14	18.56	--	--	--	--
GARST/INTERSTATE 990213 NS	3.93	6.12	68.14	18.84	3.83	6.55	69.51	17.83	--	--	--	--
GARST/INTERSTATE F63105NS	4.28	3.73	69.90	19.72	--	--	--	--	--	--	--	--
GARST/INTERSTATE F90430NS	4.06	4.18	51.35	38.09	--	--	--	--	--	--	--	--
GARST/INTERSTATE HYSUN 450	3.85	5.63	65.67	22.18	3.87	6.14	61.79	25.76	--	--	--	--
GARST/INTERSTATE HYSUN 521	4.08	3.92	68.31	21.30	4.06	4.07	66.05	23.70	--	--	--	--
GARST/INTERSTATE HYSUN 530	4.30	4.57	66.28	22.26	4.38	4.82	62.05	26.37	--	--	--	--
KAYSTAR 2020NS	3.87	5.47	65.02	23.02	3.89	5.89	62.98	24.81	--	--	--	--
MYCOGEN 8377NS	4.19	2.71	67.25	23.84	4.19	2.83	65.80	25.30	--	--	--	--
MYCOGEN 8488NS	4.52	3.45	58.60	31.26	4.18	3.66	66.26	23.74	--	--	--	--
MYCOGEN 8N327	4.30	3.84	69.48	19.16	--	--	--	--	--	--	--	--
MYCOGEN 8N421	3.76	3.13	69.85	21.14	--	--	--	--	--	--	--	--
MYCOGEN X89910	3.30	2.68	82.48	9.14	--	--	--	--	--	--	--	--
NIDERA EN 1610NS	4.35	2.20	66.23	25.18	--	--	--	--	--	--	--	--
PIONEER 63M52	4.64	3.69	58.02	31.21	--	--	--	--	--	--	--	--
PIONEER 63M80	4.25	4.04	65.36	24.16	4.15	4.10	65.94	23.77	--	--	--	--
PIONEER 63M91	4.54	2.99	55.31	34.91	4.28	3.14	61.62	29.16	--	--	--	--
PIONEER XF 3119	4.15	3.90	69.40	20.00	--	--	--	--	--	--	--	--
PIONEER XF 3120	4.43	3.52	55.86	33.68	--	--	--	--	--	--	--	--
PIONEER XF 4735	3.85	2.69	73.65	17.09	--	--	--	--	--	--	--	--
SEEDS 2000 BLAZER	4.64	3.82	53.96	34.67	4.43	3.90	53.70	35.53	--	--	--	--
SEEDS 2000 BRONCO	3.72	5.64	68.66	19.30	3.77	5.95	64.19	23.66	--	--	--	--
TRIUMPH 636	3.81	3.65	68.75	21.51	3.61	3.77	72.84	17.64	--	--	--	--
TRIUMPH 645	3.28	3.61	69.47	21.51	3.25	3.91	69.22	21.54	--	--	--	--
TRIUMPH 658	3.85	3.27	69.54	20.99	--	--	--	--	--	--	--	--
TRIUMPH 665	4.20	2.80	64.38	26.48	4.13	2.95	66.08	24.80	--	--	--	--
TRIUMPH TRX 2241CL	4.34	4.15	68.49	20.02	--	--	--	--	--	--	--	--
AVERAGES	4.08	3.92	66.30	23.17	4.03	4.19	66.07	23.44	--	--	--	--
Traditional hybrids												
CROPLAN GENETICS CL 803	5.38	4.75	30.61	57.03	--	--	--	--	--	--	--	--
GARST/INTERSTATE IS 4049	4.44	5.93	32.78	54.64	4.49	6.43	28.70	58.81	--	--	--	--
MYCOGEN SF 260	6.38	3.17	23.18	66.34	--	--	--	--	--	--	--	--
MYCOGEN SF 270	5.24	4.51	32.96	55.26	5.08	4.74	31.05	57.06	--	--	--	--
PIONEER 63A81	6.10	4.01	24.26	63.75	6.03	4.21	21.85	66.10	--	--	--	--
AVERAGES	5.51	4.47	28.76	59.40	5.36	4.89	27.79	60.16	--	--	--	--
All hybrids												
AVERAGES	4.25	3.98	61.72	27.59	4.19	4.27	61.46	27.86	--	--	--	--

Entrants and Entries in 2002 Sunflower Performance Tests

AGWAY

Agway Inc.
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Croplan Genetics
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CL 308
CL 322NS
CL 345NS
CL 380NS
CL 385NS
CL 803

DEKALB

Monsanto Seed
3100 Sycamore Road
Dekalb, IL 60115
DK 3900
DK F 29-90
DK F 33-33NS
DKF 31-01NS
DKF 36-40NS

FONTANELLE

Fontanelle Hybrid
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Fontanelle, NE 68044
902 NS

GARST/INTERSTATE

Interstate Seed Co.
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West Fargo, ND 58078
971136 NS
982727 NS
990213 NS
F63105NS
F90430NS
HYSUN 450
HYSUN 521
HYSUN 530
IS 4049
IS 4340
IS 5331
IS 6767
IS 8048
IS33139
PAC 1298

KAYSTAR

Kaysar Seed Co.
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Huron, SD 57350
2020NS
9404
9501

MYCOGEN

Mycogen Seed
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Whapeton, ND 58075
8377NS
8488NS
8N327
8N421
CAVALRY
SF 187
SF 260
SF 270
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NIDERA

Adrian Associates
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Kalamazoo, MI 49009
EN 1610NS

PIONEER

Pioneer Hi-Bred Intl Inc
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Lakewood, CO 80228
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63A81
63M52
63M80
63M91
XF 3119
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Red River Commodities
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Colby, KS 67701
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2582
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SEEDS 2000

Seeds 2000
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BLAZER
BRONCO
GRIZZLY
X 3964
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Sigco Sun Products
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Goodland, KS 67735
GOLIATH
GOLIATH RT

TRIUMPH

Triumph Seed Co., Inc.
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Ralls, TX 79357
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658
665
667
700CLS
757C
777C
TRX 2241CL
TRX 2353CLS
TRX 2354CLS
TRX 2355CLS
TRX 2445DW

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