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1998 Colorado Sunflower Performance Trials



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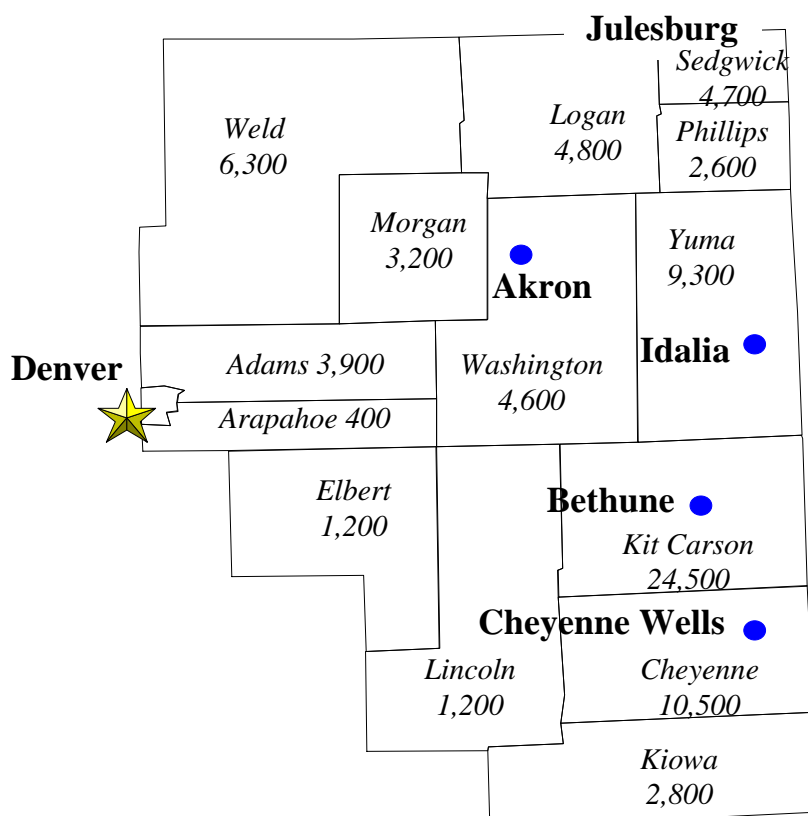
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Five Colorado sunflower trial locations and the 1997 acreage harvested for the top producing counties.



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TABLE OF CONTENTS

Introduction	1
The 1998 Sunflower Season	1
Cultural conditions for hybrid sunflower testing in 1998	
Table 1	2
Hybrid Oil Sunflower Performance Data	2
Akron Dryland Table 2-3	2
Bethune Irrigated Table 4-5	3
Cheyenne Wells Dryland Table 6	4
Idalia Dryland Table 7-8	5
Julesburg Dryland Table 9-10	6
Hybrid Confection Sunflower Performance Data	7
Akron Dryland Table 11-13	7
Cheyenne Wells Dryland Table 14-15	8
Idalia Dryland Table 16-18	9
Julesburg Dryland Table 19-21	10
Seed Company Entrants in the 1998 Colorado Sunflower Performance Trials	11
Entry Forms for 1999 Trials	11
Additional Copy Request	11

1998 COLORADO SUNFLOWER PERFORMANCE TRIALS

Introduction

Sunflowers have become an important crop in northeastern Colorado. Sunflower acreage (mostly in Kit Carson, Cheyenne, and Yuma counties) rose from almost nothing in 1990 to a high of 115,000 acres in 1995. Confection and oil sunflowers are about equally important in terms of farm receipts. The growth in Colorado sunflower acreage signifies a shift away from the predominant winter wheat/fallow cropping system to a wheat/spring crop/fallow system. Colorado State University's cropping systems research, innovative extension education in the Golden Plains Area, and commodity prices have influenced this swing toward sunflowers and other spring planted crops.

Hybrid seed is used to plant all sunflower acreage in Colorado at a cost of approximately \$1.5 million. Many commercial hybrids are available to our producers. To help our sunflower growers make better hybrid decisions, CSU personnel evaluate commercial sunflower hybrids at different locations in northeastern Colorado. These trials are the only source of unbiased hybrid performance information for Colorado sunflower growers. Participation by the seed companies in the state trials is voluntary. Commercial companies were given the opportunity to enter one or more hybrids at any location. Reference to commercial companies or hybrids is made with the understanding that no discrimination is intended and no endorsement is implied by Colorado State University.

Colorado sunflower performance trials are planted annually at four dryland locations and one irrigated location. At each trial location there are separate trials for oil and for confection hybrids. In 1998, the four dryland locations were Akron, Idalia, Julesburg, and Cheyenne Wells. The irrigated location was Bethune. The 1998 data for the irrigated confection trial at Bethune is not included in this report due to low plant stands.

A randomized complete block design with four replicates was used for all trials. The center two rows of four row plots (30" spacing between rows and 40' long) were harvested for grain yield. Oil hybrids were seeded at 19,000 seeds/acre under dryland conditions and at 24,000 seeds/acre under irrigation. Confection hybrids were seeded at

15,000 seeds/acre under dryland conditions and at 17,000 seeds/acre under irrigation.

In addition to seed yields (reported in pounds per acre adjusted to 10% moisture content), test weight, moisture at harvest, plant height, lodging, plants per acre (density), oil content (for oil hybrids), and seed size (for confection hybrids) are also reported. The least significant difference (LSD) value, $\alpha=0.30$, is reported for yield. Oil content was determined by Triumph Seed Co., Inc. using NMR analysis from bulked samples. Oil content is expressed on a 10% moisture basis.

The 1998 Sunflower Season

Both sunflower head moth and banded head moth numbers were almost nonexistent this year compared to record levels in 1997. Sunflower seed weevil numbers also were lower in 1998, resulting in reduced control activities. Entomologists credit winter weather for reducing insect number during the 1998 growing season. Traditional "hot spots" for spotted sunflower stem weevil remained "hot" in 1998. Red leaf rust showed up again in 1998 but most oil types are showing continued resistance. New confection hybrids have incorporated rust resistance and only 1050 acres of rust susceptible varieties were sprayed with Folicur on the eastern Colorado plains in 1998. The growing season recorded warmer than normal temperatures and a later than normal killing frost. Above average precipitation at many locations allowed for above average dryland yields but oil contents were below average.

Information regarding sunflower production practices and pest control can be obtained from the following source: "High Plains Sunflower Production and IPM," Bulletin No. 556A, Colorado State University Cooperative Extension, Fort Collins, 80523.

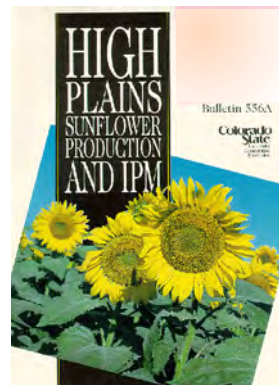


Table 1. Cultural conditions for hybrid sunflowers testing in 1998

	Akron	Bethune	Cheyenne Wells	Idalia	Julesburg
Soil Type	Kieth-Kuma Loam	Kieth Silt Loam	Santana Loam	Kuma-Kieth Silt Loam	Rago Loam
Previous Crop	Corn	Wheat	Wheat	Wheat	Wheat
Fertilization					
N acre-1	0	30	60	0	60
P2O5 acre-1	0	10	0	0	0
Zn acre-1	0	.5	0	0	0
Herbicide	Roundup	Sonalan Eptam	Sonalan	Roundup	Treflan
Insecticide	None		None	Asona Parathon	None
Irrigation	None	Furrow	None	None	None

Table 2. Dryland sunflower oil performance at Akron in 1998¹

Hybrid	Yield lb/ac	Test	Plant	Density plants/ac	Oil %
		Weight bu/ac	Height in		
Interstate IS 4049	1424	26.8	47	16604	36.9
Triumph 642	1256	26.4	47	16596	36.8
DEKALB DK3875	1153	25.5	45	15415	35.7
Pioneer brand 6338	1134	26.0	50	16244	35.3
Pioneer brand XF4714	1072	25.3	46	13022	37.4
DEKALB DK3881	1027	26.2	47	15065	33.1
Cargill X6007	1021	25.2	44	14935	34.3
Cargill X3210	999	25.1	45	16042	33.7
Cargill X3272	997	26.0	44	15487	35.7
DEKALB DK3900	989	26.7	41	14965	37.7
DEKALB DK3806	974	26.6	48	14989	35.2
DEKALB DK3868	974	25.7	40	15134	36.3
Pioneer brand XF379	952	26.8	52	16768	36.4
Triumph 562	948	25.9	53	15609	35.2
Cargill SF187	943	25.9	40	17149	34.0
Pioneer brand 6451	932	26.7	49	12889	37.3
Cargill SF270	916	25.1	45	17243	35.0
Pioneer brand XF4728	898	26.0	50	14733	37.8
Interstate IS 6767	895	26.5	47	14933	37.9
Pioneer brand 64A61	845	26.1	55	15546	38.0
Interstate IS 6077	820	25.4	49	14762	33.6
Interstate HYSUN 449	815	24.5	51	11611	34.0
Pioneer brand 63A51 (HO)	812	25.8	46	14382	35.4
Cargill SF290NL	796	25.3	42	15370	35.4
DEKALB DK3790	607	25.2	45	15201	36.7
Average	968	25.9	47	15228	36.0
CV%	28.0				
LSD _(.30)	231.9				

¹Trial conducted on the Central Great Plains Research Center; seeded 6/12 and harvested 10/14.

Table 3. Average dryland sunflower oil performance at Akron, 1997-98

Hybrid	Yield lb/ac	Test
		Weight bu/ac
Cargill SF187	1479	24.1
Pioneer brand 6338	1441	26.0
DEKALB DK3875	1350	24.2
Cargill X6007	1350	25.2
Pioneer brand 63A51 (HO)	1306	25.1
Pioneer brand 6451	1293	25.2
Interstate IS 6767	1282	25.9
DEKALB DK3868	1282	25.6
DEKALB DK3881	1235	25.0
Interstate IS 6077	1232	25.0
DEKALB DK3790	1224	25.5
DEKALB DK3900	1222	25.4
Triumph 562	1218	24.3
Cargill SF290NL	1139	25.2
Cargill SF270	1030	25.1
Average	1281	25.1

Table 4. Irrigated sunflower oil performance at Bethune in 1998¹

Hybrid	Test		Plant		Lodging	Oil
	Yield	Weight	Height	Density		
	lb/ac	bu/ac	in	plants/ac	%	%
DEKALB DK3881	2792	30.0	55	13283	6	37.6
Pioneer brand 6300	2631	28.5	59	14397	3	39.0
DEKALB DK3900	2602	26.8	56	11460	5	35.7
Interstate IS 4049	2519	29.1	60	14066	8	39.0
Pioneer brand 6338	2518	29.6	62	14875	3	37.2
Cargill X3272	2490	28.4	52	12578	12	37.2
DEKALB DK3875	2424	28.8	53	12621	13	37.6
Cargill X6007	2395	29.1	51	13373	1	37.5
Cargill SF290NL	2330	29.3	53	14648	1	37.6
Mycogen 8468	2317	28.8	55	12717	7	35.2
Kaystar 9501	2313	28.4	62	14533	0	35.2
Triumph 573	2306	28.9	60	13895	9	38.2
Pioneer brand XF4714	2261	29.0	54	16383	5	39.4
Mycogen 8488NS	2197	29.2	62	14494	8	35.3
NK brand T45-L2	2188	29.3	60	13666	9	36.3
Triumph 562	2177	30.4	68	13075	5	37.8
Pioneer brand 6451	2171	28.1	58	14842	1	38.6
Pioneer brand 64A61	2155	27.7	63	15118	5	38.4
Pioneer brand XF4728	2152	29.6	55	13377	14	37.7
Cargill SF187	2122	27.7	50	15476	4	36.7
Mycogen 8372	2109	29.4	55	16861	10	36.4
NK brand 278	2059	27.6	58	14249	6	38.5
NK brand 231	2035	28.9	49	15287	2	37.5
Pioneer brand XF379	2006	28.1	66	14974	3	37.6
Triumph 545	2000	29.5	62	15903	4	37.1
DEKALB DK3806	1983	29.2	55	13777	11	37.3
Mycogen 7560	1981	27.6	58	14874	12	36.6
DEKALB DK3790	1953	30.5	56	13591	4	40.9
Pioneer brand 63A51 (HO)	1872	29.7	56	15065	16	36.4
Interstate IS 6767	1812	29.3	59	13129	12	39.4
DEKALB DK3868	1771	28.9	51	12763	24	38.7
Cargill X3210	1762	29.5	50	15262	13	36.4
Interstate HYSUN 449	1685	27.5	56	13995	11	35.2
Cargill SF270	1599	28.7	48	13773	5	36.6
Average	2167	28.9	57	14188	7	37.4
CV%	21.8					
LSD _(.30)	403.6					

¹Trial conducted on the George Stahlecker farm; seeded 5/20 and harvested 10/12.

Table 5. Average irrigated sunflower oil performance at Bethune, 1997-98

Hybrid	Test	
	Yield	Weight
	lb/ac	bu/ac
DEKALB DK3881	2649	30.0
Kaystar 9501	2624	29.8
DEKALB DK3900	2621	28.5
Pioneer brand 6338	2607	29.7
Triumph 562	2511	30.7
DEKALB DK3875	2508	29.0
Pioneer brand 6451	2492	28.8
Triumph 573	2446	29.5
Cargill SF290NL	2388	29.7
NK brand T45-L2	2364	30.1
NK brand 278	2327	28.8
Cargill SF187	2312	28.1
Triumph 545	2282	29.7
NK brand 231	2254	29.1
Cargill X6007	2230	28.7
Pioneer brand 63A51 (HO)	2140	29.5
Interstate IS 6767	2119	29.7
DEKALB DK3790	2083	31.1
DEKALB DK3868	1938	29.4
Cargill SF270	1859	29.2
Average	2338	29.4

Table 6. Dryland sunflower oil performance at Cheyenne Wells in 1998¹

Hybrid	Yield lb/ac	Test	Plant	Density plants/ac	Lodging %	Oil %
		Weight bu/ac	Height in			
DEKALB DK3790	1580	25.8	47	10437	1	34.7
Kaystar 9501	1536	25.8	51	12587	1	31.7
Triumph 562	1533	23.3	53	12032	0	33.1
NK brand 278	1526	24.3	48	14792	3	33.7
Interstate HYSUN 449	1511	23.1	49	12584	2	35.4
Pioneer brand XF379	1502	24.1	57	14145	2	32.8
DEKALB DK3806	1493	25.4	49	12793	1	33.6
DEKALB DK3881	1491	24.4	48	14132	1	33.5
Cargill SF270	1489	25.0	48	14974	1	33.4
Interstate IS 6767	1476	25.1	47	12829	4	29.4
Pioneer brand 6300	1439	24.8	51	14573	1	34.7
NK brand T45-L2	1403	25.9	54	13266	6	33.5
Pioneer brand 6338	1376	26.0	53	16063	2	34.5
Cargill SF290NL	1363	24.6	47	15685	1	33.4
Pioneer brand XF4714	1354	23.8	49	14500	1	32.7
NK brand 231	1348	24.4	48	15065	2	31.3
DEKALB DK3900	1347	25.7	45	14298	3	34.0
Triumph 573	1326	24.8	53	14728	1	30.4
DEKALB DK3875	1285	25.1	43	14771	3	30.9
Cargill X6007	1239	24.3	41	15331	1	33.0
Pioneer brand 64A61	1172	24.9	58	12912	1	33.6
Interstate IS 4049	1149	25.2	50	14526	2	33.5
Cargill X3210	1147	24.8	47	13886	3	31.0
Cargill SF187	1126	24.5	46	13775	0	30.6
Pioneer brand XF4728	1097	24.9	47	13505	5	33.0
Pioneer brand 63A51 (HO)	1091	24.7	48	14576	1	34.0
Pioneer brand 6451	1081	24.4	50	13759	3	34.0
Interstate IS 6077	1077	24.4	51	13862	3	32.4
Cargill X3272	1043	25.2	48	14702	2	33.8
DEKALB DK3868	1005	24.7	43	13347	3	33.8
Average	1320	24.8	49	13948	2	33.0
CV%	21.2					
LSD _(.30)	238.8					

¹Trial conducted on the Dennis Campbell farm; seeded 6/24 and harvested 10/13.

Table 7. Dryland sunflower oil performance at Idalia in 1998¹

Hybrid	Test		Plant		Lodging	Oil
	Yield	Weight	Height	Density		
	lb/ac	bu/ac	in	plants/ac	%	%
Triumph 562	2297	24.5	66	13362	1	36.0
Interstate IS 4049	2232	26.5	65	15018	1	36.6
Pioneer brand 6338	2137	24.5	62	14905	1	35.9
DEKALB DK3868	2130	25.9	55	14687	0	38.2
Cargill SF187	2110	24.5	56	14596	1	34.5
DEKALB DK3900	2095	26.8	58	14327	1	36.9
Cargill X3210	2031	26.5	59	13697	1	35.9
Pioneer brand XF379	2015	23.7	68	15622	2	33.4
NK brand 231	2008	25.0	62	14217	1	33.9
NK brand T45-L2	1972	25.0	67	15076	1	36.1
DEKALB DK3881	1950	24.3	62	15146	1	38.3
Kaystar 9501	1931	25.3	69	13534	0	36.3
Interstate IS 6767	1922	24.9	62	13691	0	35.5
Pioneer brand XF4714	1917	25.6	61	15487	1	34.1
Pioneer brand 63A51 (HO)	1913	26.4	66	15688	1	37.2
Cargill SF270	1883	25.7	55	15511	0	35.5
Mycogen 8468	1877	23.5	62	15203	1	36.0
Interstate IS 6077	1845	24.7	64	14528	2	37.9
NK brand 278	1832	24.2	65	15347	1	32.7
DEKALB DK3875	1831	25.3	58	14336	3	34.6
Interstate HYSUN 449	1791	24.8	59	11878	7	34.4
Cargill X3272	1771	25.4	60	14330	1	34.5
DEKALB DK3790	1767	24.0	59	14515	0	37.7
Mycogen 8372	1764	25.3	65	14793	1	36.3
DEKALB DK3806	1761	25.5	61	15320	0	39.2
Pioneer brand XF4728	1728	24.7	61	14567	0	38.5
Triumph 642	1722	25.4	62	14186	3	33.4
Cargill X6007	1720	23.7	56	15562	1	38.6
Mycogen 8488NS	1664	26.0	67	15897	2	33.1
Pioneer brand 6451	1535	25.9	62	14283	1	36.2
Cargill SF290NL	1483	23.3	62	15538	2	35.3
Pioneer brand 64A61	1445	24.6	68	16281	0	35.4
Mycogen 7560	1363	24.1	66	14664	1	33.9
Average	1862	25.0	62	14721	1	35.8
CV%	13.2					
LSD _(.30)	209.4					

¹Trial conducted on the Jim Roberts farm; seeded 6/12 and harvested 10/26.

Table 8. Average dryland sunflower oil performance at Idalia, 1997-98

Hybrid	Test	
	Yield	Weight
	lb/ac	bu/ac
Triumph 562	2470	26.9
Pioneer brand 6338	2213	26.7
Kaystar 9501	2204	26.7
DEKALB DK3900	2148	28.1
Pioneer brand 6451	1991	27.2
Cargill SF187	1813	26.9
NK brand T45-L2	1759	26.3
DEKALB DK3875	1693	26.7
NK brand 278	1685	25.6
NK brand 231	1661	26.1
Pioneer brand 63A51 (HO)	1628	26.4
Interstate IS 6077	1571	25.3
DEKALB DK3881	1566	25.6
Interstate IS 6767	1554	25.9
Cargill SF290NL	1524	24.7
Cargill SF270	1511	27.2
DEKALB DK3868	1500	26.6
Cargill X6007	1475	24.9
DEKALB DK3790	1359	25.8
Average	1747	26.3

Table 9. Dryland sunflower oil performance at Julesburg in 1998¹

Hybrid	Test		Plant		Lodging	Oil
	Yield	Weight	Height	Density		
	lb/ac	bu/ac	in	plants/ac	%	%
Interstate HYSUN 449	1685	22.8	49	13665	5	35.6
Cargill X3210	1602	22.6	54	15260	1	37.1
Pioneer brand XF4714	1593	22.1	56	16426	0	37.6
Pioneer brand 6338	1555	22.0	57	16202	1	34.7
Interstate IS 6767	1510	22.4	56	15564	1	34.7
DEKALB DK3790	1487	22.1	47	15318	0	35.1
DEKALB DK3900	1487	22.5	46	14784	3	37.6
Pioneer brand XF379	1465	20.9	57	17245	1	33.8
Pioneer brand 63A51 (HO)	1447	22.0	57	16967	0	36.7
Pioneer brand 6451	1422	22.3	55	15217	1	31.6
Pioneer brand XF4728	1415	20.9	57	14996	0	35.3
Cargill SF187	1368	21.0	49	15954	1	32.2
DEKALB DK3875	1360	22.4	53	16872	1	33.4
DEKALB DK3868	1345	21.2	43	16048	1	35.5
Kaystar 9501	1334	22.2	60	15307	0	34.6
Triumph 540	1322	20.8	55	16432	0	34.9
Pioneer brand 64A61	1311	21.8	60	16973	0	33.2
Interstate IS 4049	1298	22.2	55	16786	3	35.0
Interstate IS 6077	1281	20.9	56	16015	1	35.3
Cargill SF270	1268	21.2	52	15697	0	36.3
Cargill X3272	1238	22.5	54	16695	1	34.8
Cargill X6007	1203	21.6	48	16846	0	35.3
DEKALB DK3806	1192	21.9	55	16091	1	33.9
DEKALB DK3881	1176	21.1	50	15753	0	35.5
Triumph 545	1148	22.8	51	14931	0	36.8
Triumph 562	1119	20.9	61	15634	1	33.3
Cargill SF290NL	1103	21.1	51	16146	0	32.8
Triumph 642	1042	21.4	53	15003	1	33.8
Average	1349	21.8	53	15887	1	34.9
CV%	21.5					
LSD _(.30)	248.1					

¹Trial conducted on the Richard Fryrear farm; seeded 6/15 and harvested 10/27.

Table 10. Average dryland sunflower oil performance at Julesburg, 1997-98

Hybrid	Test	
	Yield	Weight
	lb/ac	bu/ac
DEKALB DK3900	1685	22.5
DEKALB DK3790	1637	22.1
Triumph 540	1626	21.2
Pioneer brand 6451	1618	22.3
Interstate IS 6767	1606	22.2
Pioneer brand 6338	1605	22.0
DEKALB DK3875	1565	22.4
Kaystar 9501	1542	22.2
Cargill SF270	1500	21.6
Interstate IS 6077	1462	21.3
Cargill SF187	1452	22.2
Pioneer brand 63A51 (HO)	1436	22.5
DEKALB DK3868	1414	21.9
DEKALB DK3881	1383	21.9
Cargill X6007	1334	21.8
Cargill SF290NL	1321	21.4
Triumph 562	1314	21.8
Average	1505	22.0

Table 11. Dryland sunflower confection performance at Akron in 1998¹

Hybrid	Yield	Test	Plant	Density
		Weight	Height	
	lb/ac	bu/ac	in	plants/ac
Red River RRC 2211	1168	17.9	56	13366
Red River RRC 3531	1054	19.5	54	12068
Red River RRC 9490	1041	19.9	54	12197
Triumph 520C	975	18.8	58	12330
Pioneer brand 6946	963	19.5	52	10957
Seeds 2000 Kodiak	949	18.4	54	13368
Pioneer brand 63C71	939	18.8	48	11602
Triumph 765C	932	17.7	57	13595
Royal Hybrid 2373	904	18.8	57	12229
Red River RRC 2331	887	18.8	51	13948
Triumph 760C	846	18.4	54	10779
Royal Hybrid 2073	751	19.1	50	11286
Red River RRC EX2413	746	18.7	53	11387
Pioneer brand EXP DE-1998	736	18.8	53	13119
Red River RRC 2213	734	18.2	55	11877
Average	908	18.8	54	12274
CV%	21.0			
LSD _(.30)	164.7			

¹Trial conducted on the Central Great Plains Research Center; seeded 6/12 and harvested 10/14.

Table 13. Seed size of dryland sunflower confection performance at Akron in 1998

Hybrid	Above 22/64	22/64	20/64	18/64	16/64
		To 20/64	To 18/64	To 16/64	To 14/64
Pioneer brand 63C71	10.6	33.6	30.4	14.6	10.8
Pioneer brand 6946	5.7	25.6	41.7	18.1	8.9
Pioneer brand EXP DE-1998	10.8	30.6	36.8	15.7	6.1
Red River RRC 2211	9.6	28.3	36.5	17.0	8.6
Red River RRC 2213	10.7	25.4	31.2	19.9	12.8
Red River RRC 2331	8.2	26.8	31.2	21.6	12.2
Red River RRC 3531	14.3	32.8	30.6	15.4	6.9
Red River RRC 9490	7.9	22.6	35.6	20.8	13.1
Red River RRC EX2413	22.9	29.6	28.0	11.6	7.9
Royal Hybrid 2073	17.2	24.1	29.4	19.3	10.0
Royal Hybrid 2373	26.9	36.0	23.6	8.7	4.8
Seeds 2000 Kodiak	15.2	29.5	27.9	17.5	9.9
Triumph 520C	12.1	31.5	31.4	16.9	8.1
Triumph 760C	19.5	33.1	28.3	12.4	6.7
Triumph 765C	8.4	26.4	33.9	18.6	12.7

Table 12. Average dryland sunflower confection performance at Akron, 1997-98

Hybrid	Yield
	lb/ac
Triumph 760C	1121
Seeds 2000 Kodiak	1081
Red River RRC 2211	1060
Red River RRC 2331	1041
Triumph 765C	1039
Red River RRC 3531	995
Triumph 520C	945
Red River RRC 2213	910
Average	1027

Table 14. Dryland sunflower confection performance at Cheyenne Wells in 1998¹

Hybrid	Yield	Test	Plant	Density	Lodging
		Weight	Height		
	lb/ac	bu/ac	in	plants/ac	%
Triumph 760C	1209	18.3	54	9495	2
Pioneer brand 63C71	1155	19.1	44	9189	0
Triumph 520C	1154	17.8	50	10869	7
Triumph 765C	1154	18.3	52	8993	0
Pioneer brand 6946	814	18.4	53	9799	0
Pioneer brand EXP DE-1998	772	18.6	52	8806	2
Average	1043	18.4	51	9525	2
CV%	23.6				
LSD _(.30)	219.2				

¹Trial conducted on the Dennis Campbell farm; seeded 6/24 and harvested 10/13.

Table 15. Seed size of dryland sunflower confection performance at Cheyenne Wells in 1998

Hybrid	Above 22/64	22/64	20/64	18/64	16/64
		To 20/64	To 18/64	To 16/64	To 14/64
Pioneer brand 63C71	32.8	34.9	20.9	7.6	3.8
Pioneer brand 6946	16.0	34.3	34.1	12.0	3.6
Pioneer brand EXP DE-1998	19.1	33.6	32.0	12.2	3.1
Triumph 520C	29.6	34.0	25.1	8.6	2.7
Triumph 760C	29.7	38.4	20.5	7.6	3.8
Triumph 765C	35.0	30.4	19.7	9.9	5.0

Table 16. Dryland sunflower confection performance at Idalia in 1998¹

Hybrid	Yield	Test	Plant	Density	Lodging
		Weight	Height		
	lb/ac	bu/ac	in	plants/ac	%
Triumph 760C	2221	19.7	70	9273	4
Interstate IS EXP49097	2127	20.2	64	10322	1
Pioneer brand EXP DE-1998	2059	20.0	63	10753	1
Triumph 520C	1970	19.2	67	12060	5
Triumph 765C	1869	19.9	67	10919	4
Pioneer brand 63C71	1835	19.1	62	10554	1
Seeds 2000 Kodiak	1776	19.6	66	11529	5
Pioneer brand 6946	1617	19.1	64	10508	1
Mycogen 9490	1384	20.0	66	12043	2
Average	1873	19.7	66	10885	3
CV%	16.2				
LSD _(.30)	265.3				

¹Trial conducted on the Jim Roberts farm; seeded 6/12 and harvested 10/26.

Table 18. Seed size of dryland sunflower confection performance at Idalia in 1998

Hybrid	Above 22/64	22/64	20/64	18/64	16/64
		To 20/64	To 18/64	To 16/64	To 14/64
Interstate IS EXP49097	57.7	27.6	10.8	3.1	0.8
Mycogen 9490	13.4	29.9	27.9	21.4	7.4
Pioneer brand 63C71	46.0	30.6	13.9	6.6	2.9
Pioneer brand 6946	34.3	32.9	20.9	8.7	3.2
Pioneer brand EXP DE-1998	46.4	40.5	9.6	2.7	0.8
Seeds 2000 Kodiak	26.8	36.0	24.5	9.9	2.8
Triumph 520C	37.2	40.1	14.6	5.9	2.2
Triumph 760C	40.0	35.7	16.4	5.6	2.3
Triumph 765C	35.3	38.6	17.7	5.7	2.7

Table 17. Average dryland sunflower confection performance at Idalia, 1997-98

Hybrid	Yield	Test
	lb/ac	bu/ac
Triumph 760C	1563	18.0
Mycogen 9490	1351	18.9
Triumph 520C	1336	18.2
Triumph 765C	1312	18.3
Seeds 2000 Kodiak	1243	19.0
Average	1361	18.5

Table 19. Dryland sunflower confection performance at Julesburg in 1998¹

Hybrid	Yield	Test	Plant	Density	Lodging
		Weight	Height		
	lb/ac	bu/ac	in	plants/ac	%
Triumph 765C	1461	16.7	61	13434	2
Interstate IS EXP49097	1364	16.2	59	13608	1
Red River RRC 2331	1342	17.8	60	14137	0
Red River RRC 3531	1310	16.2	54	13159	0
Red River RRC 2213	1307	16.1	57	14992	2
Red River RRC EX2413	1274	17.4	58	12960	1
Triumph 520C	1251	16.7	61	13657	1
Triumph 760C	1224	16.6	58	13098	0
Pioneer brand 63C71	1197	17.1	54	14019	0
Pioneer brand EXP DE-1998	1145	17.1	58	13909	1
Red River RRC 2211	1121	16.1	61	14587	1
Red River RRC 9490	1065	16.3	60	14658	0
Pioneer brand 6946	1013	17.0	57	13959	1
Average	1237	16.7	58	13860	1
CV%	19.2				
LSD _(.30)	205.7				

¹Trial conducted on the Richard Fryrear farm; seeded 6/15 and harvested 10/27.

Table 20. Average dryland sunflower confection performance at Julesburg, 1997-98

Hybrid	Yield	Test
	lb/ac	bu/ac
Red River RRC 2331	1354	17.4
Red River RRC 3531	1299	16.3
Red River RRC 2211	1234	16.0
Red River RRC 2213	1228	16.0
Average	1289	16.4

Table 21. Seed size of dryland sunflower confection performance at Julesburg in 1998

Hybrid	Above 22/64	22/64	20/64	18/64	16/64
		To 20/64	To 18/64	To 16/64	To 14/64
Interstate IS EXP49097	43.6	26.1	17.9	8.6	3.8
Pioneer brand 63C71	30.0	28.2	25.5	10.7	5.6
Pioneer brand 6946	19.1	30.3	26.5	17.6	6.5
Pioneer brand EXP DE-1998	33.8	29.2	26.0	7.2	3.8
Red River RRC 2211	22.9	33.8	23.4	11.5	8.4
Red River RRC 2213	43.3	24.9	16.5	9.8	5.5
Red River RRC 2331	24.6	27.1	20.6	14.4	13.3
Red River RRC 3531	40.0	27.8	20.4	7.8	4.0
Red River RRC 9490	24.4	28.8	23.4	15.4	8.0
Red River RRC EX2413	36.4	30.8	17.8	10.0	5.0
Triumph 520C	32.4	27.8	26.4	10.4	3.0
Triumph 760C	38.5	25.4	21.2	9.8	5.1
Triumph 765C	46.4	33.6	13.6	5.0	1.4

Seed Company Entrants in the 1998 Colorado Sunflower Performance Trials

BRAND/HYBRID ENTRANT	ADDRESS	TELEPHONE
Royal Hybrids	Agway, Inc. PO Box 169, Grandin, ND 58038	(701) 484-5313
Cargill	Cargill Hybrid Seeds 1401 41 st Street NW, Fargo, ND 58102	(701) 282-8787
DEKALB	DEKALB Genetics Corp. 3100 Sycamore Rd., DeKalb, IL 60115	(815) 758-3461
Interstate	Interstate Payco Seed Co. 1215 Prairie Pkwy, PO Box 338, West Fargo, ND 58078	(701) 282-3373
Kaystar	Kaystar Seed 702 3 rd Street SW, PO Box 947, Huron, SD 57350	(605) 352-8791
Mycogen	Mycogen Seeds 1340 Corporate Center Curve, St. Paul, MN 55121-1428	(800) 692-6436
Northrup King	Novartis Seeds Box 959, Minneapolis, MN 55440	(612) 593-7333
Pioneer	Pioneer Hi-Bred Int'l., Inc. 210 Gateway Mall Suite-300, Lincoln, NE 68505-2449	(402) 467-5458
Pioneer	Pioneer Hi-Bred Int'l., Inc. 1616 S. Kentucky, Suite C-150, Amarillo, TX 79102	(806) 356-0160
Red River	Red River Commodities, Inc. 1320 East College Drive, Colby, KS 67701	(913) 462-3911
SEEDS 2000	SEEDS 2000 Box 101, Breckenridge, MN 56520	(218) 643-2410
SIGCO	SIGCO Sun Products, Inc. 90 North 8 th St., PO Box 331, Breckenridge, MN 56520	(218) 643-8467
Triumph	Triumph Seed Co., Inc. PO Box 1050, Hwy 62 Bypass, Ralls, TX 79357	(806) 253-2584


Entry Forms for 1999 Trials

Entry forms for 1999 trials may be obtained from the Department of Soil and Crop Sciences, Colorado State University, Cynthia Johnson, C-4 Plant Science Building, Fort Collins, CO 80523-1170; Telephone (970) 491-1914; Fax (970) 491-2758; e-mail cjohnson@agsci.colostate.edu or web site


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<http://www.colostate.edu/Depts/SoilCrop/extension/CropVar/index.html>



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