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Agricultural Experiment Station

Colorado State University

College of Agricultural Sciences | Department of Soil and Crop Sciences | Western Colorado Research Center | Extension

MAKING BETTER DECISIONS

2008 Colorado Sunflower Variety Performance Trials

Acknowlegments

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- Akron – USDA Central Great Plains Research Station
- Brandon - Burl Scherler
- Idalia - Dennis Towns (Triple T Farms)
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Department of Soil and Crop Sciences
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2008 Colorado Sunflower Hybrid Performance Trials

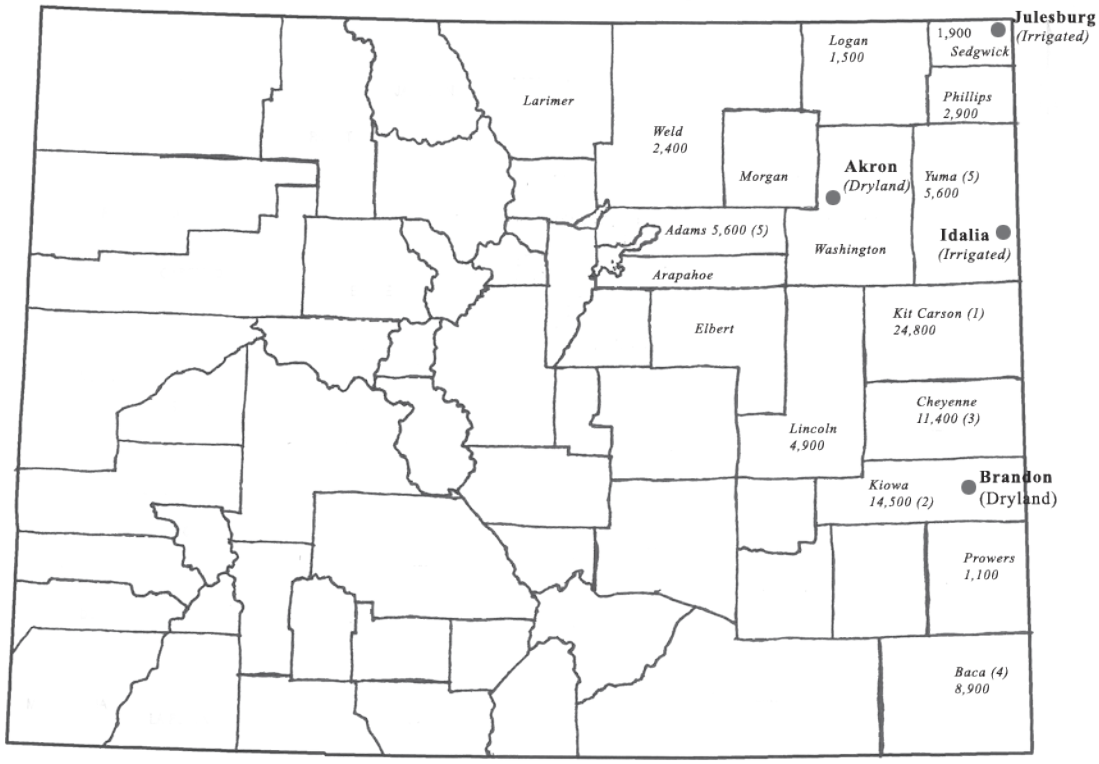
Introduction

CSU's Crops Testing personnel assists Colorado sunflower producers to make the best possible hybrid sunflower seed selection by providing unbiased and reliable yield trial results from oil and confection sunflower performance trials. Variable climatic conditions, innovations from biotechnology, acquisitions and mergers of seed companies, and rapid development of new hybrid lines means that unbiased crop performance information is increasingly important to Colorado sunflower producers.

As of October 20, 2008 USDA NASS reports Colorado sunflower production was placed at 176.3 million pounds, up 30 percent from the 2007 crop of 135.8 million pounds. The average expected yield of 990 pounds per acre is 212 pounds below last year. Estimated harvested acreage at 178,000 acres, is up 58 percent from 113,000 acres harvested a year ago and up 20,000 acres from the June 1 forecast. Each year, Colorado sunflower producers purchase over $4 million of seed which means that good variety performance information is essential to making better sunflower variety decisions.

Colorado State University personnel evaluated commercial oil and confection sunflower hybrids under irrigation at two locations and in two dryland locations. The results from these trials are presented in the following tables which are intended to be stand-alone and self explanatory. Personnel and operational costs for conducting these trials come from Colorado State University, the Colorado Sunflower Administrative Committee, and sunflower seed company entry fees.

Four Colorado sunflower trial locations in 2008 *and the 2006 acreage harvested.*



2008 Irrigated Oil Sunflower Variety Performance Trial at Idalia[1]

Hybrid	Yield	Grain Moisture	Test Weight	Plant Height	Plant Population	Oil content
	lb/ac	%	lb/bu	in	plants/ac	%
DEKALB DKF38-45	3620	5.1	32.7	64	16768	42.6
Triumph TRXs8325	3068	5.8	34.3	57	21171	42.1
Mycogen 8N510	2864	5.3	32.2	62	20890	41.0
Monsanto MH6640	2856	5.4	34.3	61	20890	43.5
Dyna-Gro Seed FXO8340	2835	5.3	31.6	65	20984	40.9
Mycogen 8H449DM	2828	5.5	35.2	70	21639	45.0
Triumph TRXR8341	2820	5.7	32.1	67	19953	41.4
DEKALB DKF37-31	2786	5.4	31.9	62	17892	40.4
CROPLAN GENETICS 378 DMR, NS	2704	5.6	30.8	68	20422	40.1
Triumph TRX8342CL	2673	5.3	32.5	68	19672	41.1
Dyna-Gro Seed 94N82	2661	5.1	32.4	68	19579	42.3
Triumph R657	2651	5.7	28.6	73	20984	42.0
Garst NX43489	2634	5.8	34.7	70	17049	41.3
Monsanto MH7632	2622	5.5	32.2	61	19953	41.5
Dyna-Gro Seed FXO7419	2588	5.5	31.0	70	21546	37.6
Triumph 645	2585	5.2	29.4	74	21077	43.6
Fontanelle 902 NS	2574	5.0	27.1	69	19204	41.5
Pioneer 63M91	2567	5.5	34.5	66	19110	42.2
CROPLAN GENETICS 369NS	2541	5.4	32.7	70	22389	41.7
Mycogen 8N453DM	2535	5.0	34.8	66	22014	41.7
Triumph 845HO	2524	5.1	29.7	72	20890	42.8
Mycogen 8N187	2520	5.3	30.7	57	19953	39.1
Triumph TRXs7426HO	2502	5.3	33.6	62	21827	41.4
Triumph s678	2494	5.6	34.7	61	19204	42.0
CROPLAN GENETICS 3080 DMR, NS	2473	4.9	32.4	59	19953	42.1
Triumph TRXs7322	2472	5.3	33.1	42	17049	41.0
Seeds 2000 Blazer CL-NS	2423	5.3	30.8	64	19485	38.6
Triumph TRXs7425HOCL	2417	5.2	31.7	45	21921	41.3
CROPLAN GENETICS 551CL, NS	2411	6.2	31.5	66	20328	38.5
Triumph TRX7435HO	2391	6.3	30.7	68	19110	40.9
ADVANTA PACIFIC F30008NS,CL	2389	6.2	31.4	72	20890	38.6
DEKALB DKF34-33	2346	5.2	33.4	63	20703	39.6
DEKALB DKF34-80CL	2322	5.5	31.6	63	20609	40.3
Garst 4651NS	2294	5.1	30.0	68	19672	41.1
Monsanto MH7633	2263	5.2	33.9	63	20422	40.3
Monsanto MH6643	2152	5.2	32.8	63	21733	41.1
Mycogen 8N358CL	2120	5.7	32.9	67	20703	40.2
Dyna-Gro Seed 94C38	2113	6.9	30.6	65	18735	36.5
CROPLAN GENETICS 564CL, NS	2113	5.5	34.2	69	20703	42.1
DEKALB IS7120	2080	5.0	31.3	57	18548	40.7
Garst NX44166	1986	5.1	33.3	68	20515	40.8
DEKALB DKF39-80CL	1926	5.7	30.9	70	18829	37.7
Fontanelle IS 4668 NS/CL	1724	6.1	30.7	76	18923	38.6
CROPLAN GENETICS 803 DMR, NS	1523	5.2	32.1	58	17799	41.5
CROPLAN GENETICS 306 DMR, NS	1481	5.3	31.8	58	20328	40.5
Fontanelle IS 6131 NS/MD	1398	5.1	32.4	60	20047	41.5
DEKALB DKF29-30	1269	5.5	27.8	60	22014	40.7
Average	**2407**	**5.4**	**32.0**	**64**	**20087**	**40.9**
[3]$LSD_{0.30}$	366					
[3]$LSD_{0.05}$	697					

$LSD_{(0.30)}$ is most useful for producers using these results to select a variety but some collaborators find $LSD_{(0.05)}$ useful.
Experimental Design: randomized complete block, 3 replications
Plot Size: 5' x 31'

Site Information

Collaborator: Dennis Towns (Triple T Farms)
Soil Type: Colby Silt Loam
Previous Crop: corn
Planting Date: 6/13/08
Seeding Rate: 25,000 seeds/ac
Irrigation: furrow
Fertilization: N-P-K (11-37-0) lb/ac
Herbicide: Trifluralin
Insecticide: none
Harvest Date: 10/30/08
Yields corrected to 10 % moisture.

2008 Irrigated Confection Sunflower Variety Performance Trial at Idalia[1]

Hybrid	Yield	Grain Moisture	Test Weight	Plant Height	Plant Population	Seed size: Above 24/64	Seed size: 23/64 to 22/64	Seed size: 21/64 to 20/64	Seed size: 19/64 to 16/64	Seed size: 14/64 to below
	lb/acre	%	lb/bu	inches	plants/ac	%	%	%	%	%
Red River 2419	2709	8.9	20.4	72	8337	18.4	26	31.8	23.2	0.6
DAHLGREN 9569	2666	8.3	20.9	75	10492	29.4	34.2	24.2	11.4	0.8
Red River 7015	2611	9.0	20.2	68	7026	29.8	32.2	27.7	9.7	0.6
CHS INC. 07EXP02	2541	10.6	21.3	70	6089	22.4	26.2	25	25.2	1.2
DAHLGREN 9530	2462	9.1	21.8	70	7494	16	22	26	20.2	15.8
Seeds 2000 Panther 11	2424	8.3	22.1	70	9461	49.6	30.8	12.2	6	1.4
Red River 2215	2375	9.0	21.3	68	10023	27	22	24.4	24.2	2.4
Triumph TRX7352C	2325	9.1	21.5	68	8431	27	26.6	31	13.2	2.2
Triumph 767C	2267	10.5	20.7	72	8806	40.2	12.4	20.2	7.2	20
Triumph 747C	2216	9.2	21.2	65	9274	46.8	29.8	15	7	1.4
Mycogen 8C451	2044	8.7	19.3	71	8244	46.4	28.6	15.6	9	0.4
SunOpta SS38A	2010	10.0	22.6	71	9461	24.4	40.2	21.8	13	0.6
Seeds 2000 Bison	2005	9.0	20.7	70	10023	15.8	33.4	33.4	17	0.4
Seeds 2000 Jaguar CL	2004	8.5	19.8	66	5433	53	25	15.2	6.4	0.4
Red River 2216	1994	8.6	20.9	70	7026	54.6	20.8	14.8	8.4	1.4
Royal Hybrid RH1121	1912	8.4	22.5	76	10398	44.2	35.8	14.6	4.6	0.8
DAHLGREN 9591EXP	1874	8.6	19.7	65	8056	27	33.8	27.6	10.4	1.2
Triumph 777C	1779	9.3	21.3	75	7494	37.4	31	19.6	11	1
DEKALB IS8048	1720	8.3	23.8	64	7963	55.6	27	10.4	6	1
Average	**2207**	**9.0**	**21.2**	**70**	**8396**	**35**	**28**	**22**	**12**	**3**
$LSD_{0.3}$	373									
$LSD_{0.05}$	719									

$LSD_{(0.30)}$ is most useful for producers using these results to select a variety but some collaborators find $LSD_{(0.05)}$ useful.

Experimental Design: randomized complete block, 3 replications

Plot Size: 5' x 31'

Site Information

Collaborator: Dennis Towns (Triple T Farms)

Soil Type: Colby Silt Loam

Previous Crop: corn

Planting Date: 6/13/08

Seeding Rate: 14,000 seeds/ac

Irrigation: furrow

Fertilization: N-P-K (11-37-0) lb/ac

Herbicide: Trifluralin

Insecticide: none

Harvest Date: 10/30/08

Yields corrected to 10 % moisture

2008 Dryland Oil Sunflower Variety Performance Trial at Brandon[1]

Hybrid	Yield	Grain Moisture	Test Weight	Plant Height	Plant Population	Oil content
	lb/ac	%	lb/bu	inches	plants/ac	%
Triumph R664	1936	10.3	27.8	65	11224	37.3
Mycogen 8N187	1930	10.0	27.2	47	10213	35.7
Triumph TRXR8341	1673	9.6	28.6	58	8352	37.3
Dyna-Gro Seed 94C38	1601	9.0	25.5	57	9888	33.8
Mycogen 8H449DM	1547	9.8	31.0	54	8342	40.4
CROPLAN GENETICS 378 DMR, NS	1514	9.8	26.8	61	10736	34.9
Dyna-Gro Seed FXO8340	1487	10.2	28.6	57	9567	36.9
Monsanto MH7632	1484	8.1	29.6	48	9657	38.3
DEKALB DKF38-45	1476	7.6	29.2	48	10638	38.9
Mycogen 8N510	1466	8.0	28.4	48	9689	36.3
Dyna-Gro Seed 94N82	1465	10.1	28.7	63	8474	39.0
DEKALB DKF39-80CL	1451	8.1	27.6	59	12162	36.5
Triumph s678	1446	10.7	28.7	48	9940	37.5
DEKALB DKF29-30	1445	6.2	28.8	50	12866	37.9
Fontanelle 902 NS	1427	9.0	26.8	61	10012	37.5
Triumph 660CL	1416	9.2	28.2	62	12707	37.9
Triumph R859HOCL	1414	9.0	27.4	61	9903	35.7
Seeds 2000 Sierra HO	1409	9.1	27.3	55	11475	34.7
DEKALB IS7120	1406	8.0	28.5	44	9960	36.6
Mycogen 8N453DM	1396	8.1	31.4	56	10634	40.6
Pioneer 63M91	1395	7.8	28.6	59	8560	37.3
Monsanto MH7633	1395	7.6	29.8	56	9306	35.6
Triumph TRXs7426HO	1354	11.7	28.4	49	9494	36.2
DEKALB DKF37-31	1348	6.8	28.7	45	10051	34.1
Monsanto MH6643	1348	7.4	28.7	51	9223	36.3
Seeds 2000 Firebird Exp Sun NS	1343	10.5	27.3	52	10626	35.1
ADVANTA PACIFIC F30008NS,CL	1343	9.0	26.9	57	9614	36.0
Garst NX44166	1328	8.0	30.8	55	11964	37.0
CROPLAN GENETICS 564CL, NS	1319	9.7	30.0	61	10624	37.7
Garst NX43489	1319	8.6	30.5	60	8054	35.9
DEKALB DKF34-80CL	1317	6.7	27.7	52	12721	36.0
Dyna-Gro Seed FXO7419	1316	11.2	28.2	62	11051	36.0
Garst 4651NS	1297	10.3	26.3	62	7865	35.1
CROPLAN GENETICS 803 DMR, NS	1287	6.3	29.2	46	11003	39.6
Triumph TRX7435HO	1284	10.1	27.1	59	7961	37.0
Monsanto MH6640	1281	7.0	29.8	55	10996	38.7
Fontanelle IS 4668 NS/CL	1244	7.9	27.7	61	11618	35.7
Mycogen 8N358CL	1242	7.2	28.2	59	9479	37.4

Triumph 845HO	1238	10.1	26.1	58	10059	38.4
Seeds 2000 Blazer CL-NS	1237	11.3	26.4	53	6835	34.7
Fontanelle IS 6131 NS/MD	1232	6.7	28.8	49	9124	37.4
Triumph R657	1201	10.4	26.6	64	8377	36.8
Triumph TRXs7424	1192	9.3	29.8	38	8920	38.0
Triumph TRXs8325	1174	10.3	27.5	43	8418	36.5
DEKALB DKF34-33	1109	6.3	30.3	50	10783	37.8
Triumph s672	1063	8.5	28.9	39	9986	36.2
Triumph TRXs7425HOCL	1024	7.6	28.0	34	10918	37.5
Triumph TRXs7322	953	7.1	29.0	38	9270	35.0
Average	**1366**	**8.8**	**28.4**	**53**	**9986**	**36.8**
LSD $_{0.30}$	250					
LSD $_{0.05}$	476					

$LSD_{(0.30)}$ is most useful for producers using these results to select a variety but some collaborators find $LSD_{(0.05)}$ useful.
Experimental Design: randomized complete block, 4 replications (only 3 replications used for analysis)
Plot Size: 5' x 31'

Site Information

Collaborator: Burl Scherler
Soil Type: Fort Collins Sandy Loam
Previous Crop: wheat
Planting Date: 6/30/08
Seeding Rate: 18,000 seeds/ac
Fertilization: N-P-K-S (90-15-0-10) lb/ac
Herbicide: preplant Round-up, 2,4-D, Prowl H_2O, Spartan
Insecticide: Methyl-parathion, Mustang Max
Harvest Date: 11/4/08
Yields corrected to 10 % moisture

2008 Dryland Confection Sunflower Variety Performance Trial at Brandon[1]

Hybrid	Yield	Grain Moisture	Test Weight	Plant Height	Plant Population	Seed size: Above 24/64	Seed size: 23/64 to 22/64	Seed size: 21/64 to 20/64	Seed size: 19/64 to 16/64	Seed size: 14/64 to below
	lb/ac	%	lb/bu	inches	plants/ac	%	%	%	%	%
Red River 2216	2605	10.8	19.2	59	8431	19.2	40.6	27.4	12	0.8
Red River 2215	2403	10.6	19.2	63	8501	18.4	37.2	28.6	14.4	1.4
DEKALB IS8048	2336	11.0	19.6	58	11171	39	28.4	19.8	11.8	1
Red River 2419	2301	11.6	18.9	59	10117	20	27.8	27.4	23.6	1.2
Triumph 777C	2053	11.3	18.0	65	10047	44	28.6	16.5	9	1.9
Red River 7015	2030	10.5	18.7	60	10820	11.4	20.6	32.8	32.4	2.8
Mycogen 8C451	2005	10.9	17.9	61	8431	28.4	33.2	25.4	11.4	1.6
Average	**2248**	**10.9**	**18.8**	**60**	**9645**					
$LSD_{0.30}$	237									
$LSD_{0.05}$	466									

$LSD_{(0.30)}$ is most useful for producers using these results to select a variety but some collaborators find $LSD_{(0.05)}$ useful.

Experimental Design: randomized complete block, 4 replications (only 3 replications used for analysis)

Plot Size: 5' x 31'

Site Information

Collaborator: Burl Scherler

Soil Type: Fort Collins Sandy Loam

Previous Crop: wheat

Planting Date: 6/30/08

Seeding Rate: 14,000 seeds/ac

Fertilization: N-P-K-S (90-15-0-10) lb/ac

Herbicide: preplant Round-up, 2,4-D, Prowl H_2O, Spartan

Insecticide: Methyl-parathion, Mustang Max

Harvest Date: 11/3/08

Yields corrected to 10 % moisture

2008 Dryland Oil Sunflower Performance Trial at Akron[1]

Hybrid	Yield[2]	Grain Moisture	Test Weight	Plant Height	Population Density
	lb/ac	%	lb/bu	in	plants/ac
ADVANTA PACIFIC F81015NS	1444	7.8	26.7	58	13486
ADVANTA PACIFIC F30294NS,Rust	1334	7.9	26.3	53	15404
DEKALB DKF34-33	1330	7.3	29.0	47	11223
CROPLAN GENETICS 369NS	1298	7.5	26.9	50	14212
Seeds 2000 Sierra HO	1284	8.5	25.0	47	14988
Monsanto MH7633	1252	7.0	27.9	47	12661
DEKALB DKF37-31	1227	6.9	27.6	44	12464
ADVANTA PACIFIC F81016NS	1213	7.1	29.0	55	15050
Seeds 2000 Blazer CL-NS	1199	7.0	26.9	49	15192
ADVANTA PACIFIC F30008NS,CL	1182	7.4	27.7	48	14498
DEKALB IS7120	1180	7.3	26.8	40	11935
Seeds 2000 Firebird Exp Sun NS	1178	7.4	26.7	44	12645
Dyna-Gro Seed 94C38	1171	7.3	27.6	50	13945
Mycogen 8N187	1166	7.1	27.2	38	14527
Mycogen 8N358CL	1145	7.0	28.5	47	13463
Mycogen 8N453DM	1133	7.2	30.0	48	12541
DEKALB DKF38-45	1129	6.8	28.1	39	14764
Monsanto MH7632	1127	7.3	27.7	40	14081
Pioneer 63M91	1099	7.0	28.5	49	13345
CROPLAN GENETICS 306 DMR, NS	1093	7.0	27.2	45	15444
Dyna-Gro Seed FXO8340	1081	7.5	27.1	49	13056
Mycogen 8H449DM	1073	7.1	29.5	43	13979
Dyna-Gro Seed FXO7419	1057	7.1	27.1	51	15100
CROPLAN GENETICS 551CL, NS	1054	6.9	27.7	50	13884
CROPLAN GENETICS 564CL, NS	1052	7.3	28.2	49	13414
Monsanto MH6643	1050	6.8	27.8	43	14761
CROPLAN GENETICS 378 DMR, NS	1013	7.8	26.4	49	12750
Dyna-Gro Seed 94N82	1011	7.2	28.2	48	11835
Triumph R657	992	11.7	26.3	52	9039
Mycogen 8N510	981	6.9	27.8	43	15398
Monsanto MH6640	923	7.3	27.8	47	13809
DEKALB DKF39-80CL	922	6.8	27.5	48	14009
DEKALB DKF29-30	868	6.7	28.7	37	11787
Triumph s678	863	7.6	27.4	42	15789
DEKALB DKF34-80CL	779	7.2	26.6	42	13093
Triumph TRXs7322	761	6.9	28.0	35	13615
CROPLAN GENETICS 803 DMR, NS	664	7.0	26.9	40	12562
CROPLAN GENETICS 3080 DMR, NS	658	7.3	28.1	41	12661
Average	**1079**	**7.3**	**27.6**	**46**	**13590**
$LSD_{0.30}$	210				
$LSD_{0.05}$	400				

[1]Trial conducted on the USDA experimental station; seeded 6/17 and harvested 11/17/08.

[2] Yields corrected to 10% of moisture.

Harvest Plot Size: 5' x 31' with 30" spacing in a randomized complete block with 3 replications.
Previous Crop: millet
Soil Type: Keith-Kuma complex
Fertilizer: 35 lb N/ac
Herbicide: Round-up, Poast

2008 Dryland Confection Sunflower Performance Trial at Akron[1]

Hybrid	Yield[2]	Moisture	Test weight	Plant Height	Plant Population
	lb/ac	%	lb/bu	in	plants/ac
Red River 2216	1583	9.6	18.4	55	11986
Mycogen 8C451	1530	9.5	17.5	51	12325
Red River 7015	1501	9.6	17.4	57	10859
Triumph 777C	1244	9.5	17.9	54	11293
Seeds 2000 Panther 11	1219	9.8	17.8	48	10773
Red River 2215	1211	9.4	18.8	48	11369
Red River 2419	1179	9.8	18.4	51	10833
DEKALB IS8048	845	9.4	20.0	43	10525
Seeds 2000 Jaguar CL	792	8.9	18.5	48	10692
Average	**1234**	**9.5**	**18.3**	**50**	**11184**
$LSD_{0.3}$	192				
$LSD_{0.05}$	374				

[1]Trial conducted on the USDA experimental station; seeded 6/17 and harvested 11/17/08.

[2] Yields corrected to 10% of moisture.

Harvest Plot Size: 5' x 31' with 30" spacing in a randomized complete block with 3 replications.
Previous Crop: millet
Soil Type: Keith-Kuma complex
Fertilizer: 35 lb N/ac
Herbicide: Round-up, Poast

2008 Limited Irrigation Oil Sunflower Performance Trial at Julesburg

[2]Hybrid	Lodging score*
ADVANTA PACIFIC F30008NS,CL	5
CROPLAN GENETICS 306 DMR, NS	5
CROPLAN GENETICS 3080 DMR, NS	6
CROPLAN GENETICS 369NS	2
CROPLAN GENETICS 378 DMR, NS	2
CROPLAN GENETICS 551CL, NS	6
CROPLAN GENETICS 564CL, NS	5
CROPLAN GENETICS 803 DMR, NS	5
DEKALB DKF29-30	3
DEKALB DKF34-33	1
DEKALB DKF34-80CL	3
DEKALB DKF37-31	4
DEKALB DKF38-45	4
DEKALB DKF39-80CL	3
DEKALB IS7120	5
Dyna-Gro Seed 94C38	4
Dyna-Gro Seed 94N82	5
Dyna-Gro Seed FXO7419	2
Dyna-Gro Seed FXO8340	2
Fontanelle 902 NS	3
Fontanelle IS 4668 NS/CL	3
Fontanelle IS 6131 NS/MD	5
Garst 4651NS	1
Garst NX43489	4
Garst NX44166	2
Monsanto MH6640	2
Monsanto MH6643	6
Monsanto MH7632	6
Monsanto MH7633	2
Mycogen 8H449DM	4
Mycogen 8N187	4
Mycogen 8N358CL	6
Mycogen 8N453DM	1
Mycogen 8N510	5
Pioneer 63M91	3
Triumph R657	2
Triumph s678	7
Triumph TRXs7322	8
Triumph TRXs7424	8

[1]Trial conducted at BLM LLC. farms; seeded 6/3/2008.
The trial suffered heavy August rain and wind causing excessive root lodging and some broken stems.
Plots were impossible to harvest with a plot combine.
Complete lodging notes were taken 10/28/2008.
*Lodging scale: 0-3= 0-30% heads harvestable, many stalks bent or broken.
4-6=40-60% heads harvestable, some stalks broken; 7-10=70-100% heads harvestable, good lodging resistance.
[2]Hybrids listed alphabetically.

2008 Limited Irrigation Confection Sunflower Performance Trial at Julesburg

[2]Hybrid	Lodging score*
CHS INC. 07EXP02	4
DAHLGREN 9530	5
DAHLGREN 9569	2
DAHLGREN 9591EXP	3
DEKALB IS8048	3
Mycogen 8C451	4
Red River 2215	6
Red River 2216	7
Red River 2419	5
Red River 7015	1
Royal Hybrid RH1121	4
Seeds 2000 Bison	1
Seeds 2000 Jaguar CL	6
Seeds 2000 Panther 11	3
Triumph 777C	1
Triumph TRX7352C	3

[1]Trial conducted at BLM LLC. farms; seeded 6/3/2008.
The trial suffered heavy August rain and wind causing excessive root lodging and some broken stems.
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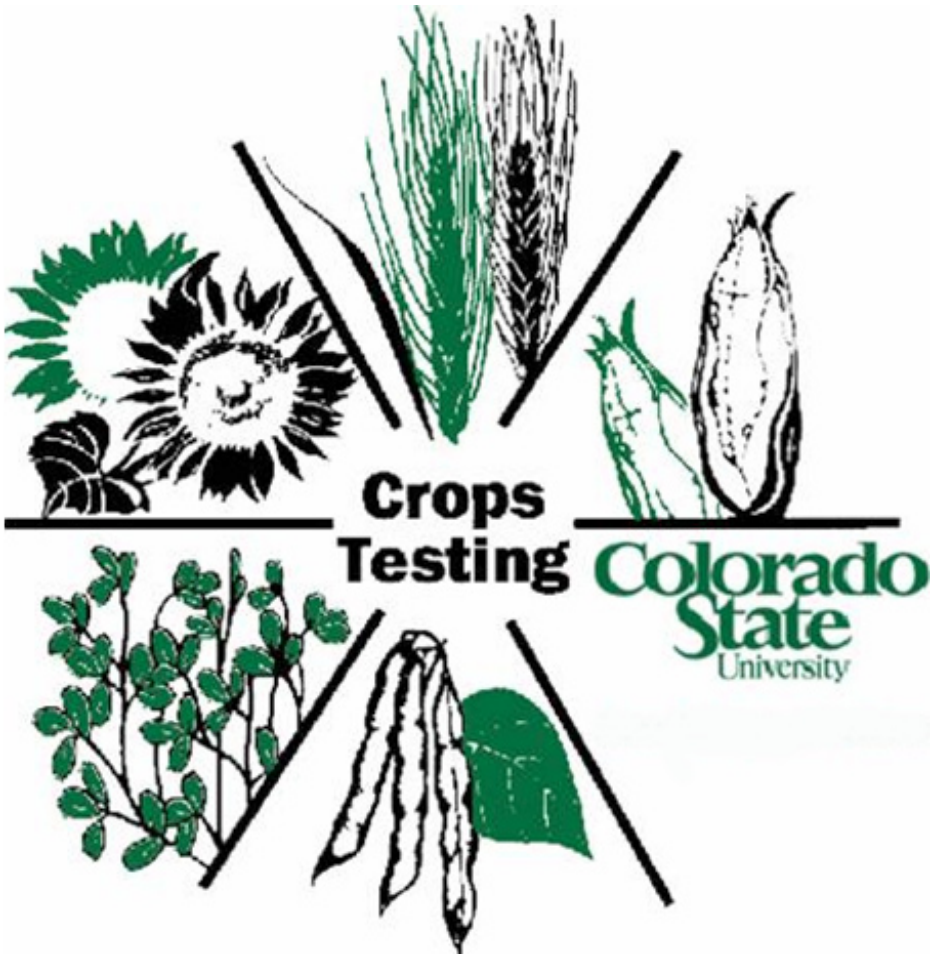
[2]Hybrids listed alphabetically.



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