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Colorado State University
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MAKING BETTER DECISIONS

2004 Colorado Corn and Sunflower Performance Trials

Acknowledgments

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2004 COLORADO CORN HYBRID PERFORMANCE TRIALS

Introduction

In October 2004, the Colorado Agricultural Statistics Service (CASS) reports the 2004 corn crop at 132 million bushels, an increase of 10 percent from last year. The average yield in Colorado, from the one million acres harvestable in 2004, will be approximately 132 bu/acre, down 3 bu from last year, but not as low as expected by some considering the poor summer climatic conditions for corn (cool, overcast, and low GDD) that prevailed in 2004.

CSU conducts hybrid performance trials to provide unbiased and reliable information to Colorado producers so they may select the best hybrids for their farming conditions. Variable climatic conditions, innovations from biotechnology, acquisitions and mergers of seed companies, and rapid evolution of new hybrid lines means that unbiased crop performance information is increasingly important to Colorado corn producers.

Colorado State University personnel evaluated commercial corn hybrids under irrigation at five Eastern Colorado locations and three Western Slope locations. A randomized complete block field design with three replicates was used at all Eastern Colorado irrigated trials. Irrigated trial plots were 36 feet long and planted at 34,000 seeds/ac while dryland trial plots were 50 feet long and planted at 14,400 seeds/ac for a target population of 12,000 plants/ac. All plots were 4 rows wide. Western Slope trials were planted at 33,500 seeds/ac. Most trials include check hybrids that are selected by the collaborating farmer where the trial is being conducted, usually the hybrid that the farmer is growing in the field around the performance trial. All corn grain yields are reported in bu/ac and adjusted to 15.5% moisture content.

Eastern Colorado Irrigated Grain Corn Performance Data

In general the 2004 corn crop had a promising beginning. Planting began during the 3rd week of April and was helped by widespread rain and snow events at the end of April and beginning May followed by a dry period that allowed much of the corn to be planted. By mid May 2004, 79% of the corn acreage had been planted by comparison to the 5-Year Average of only 69%. The 2004 dryland corn cropping season in eastern Colorado was again influenced by drought despite a promising beginning as, in July, extensive acreage in eastern Colorado failed to receive precipitation and some corn eventually wilted and died, including our trial at Stratton and partially affecting our trial at Akron. Cool, overcast conditions dominated much of eastern Colorado from mid June to the end of August which reduced the corn heat units required for rapid growth and development. Silking started in early July and had progressed to 10% by the end of the week of July 18th. However, unlike the beginning of the season, the 2004 crop was now behind the 5-Year Average and continued to lag behind this average through all subsequent growth stages of the 2004 cropping season. The months of October and November were characterized by cool and wet conditions which prevented the corn from drying down sufficiently for harvest. At the end of the week of October 24th, 37% of this year's corn was harvested by comparison to a 5-Year Average of 57%.

Below is a short synopsis of each irrigated trial:

Burlington – Preceding corn crop with high rates of ear drop led to volunteer corn. Trial stand losses resulted from cultivation efforts to assure pure plot populations for unbiased hybrid comparisons and, for some

plots, only single rows could be reliably harvested. Consequently, plant populations could not be calculated for all hybrids and are not reported.

Julesburg – Some volunteer corn led to cultivation and hand-hoeing of trial. High yields (highest, 257 bu/ac), despite late harvest due to high moisture resulting from unusually cool, moist fall 2004 conditions.

Rocky Ford – Slight damage due to hail storm on June 20 during vegetative stage as well as some sporadic damage due to birds at the end of the season.

Wiggins – Grassy weed infestation resulted in shorter corn and lower yields.

Yuma – Late planting (5/15) led to higher fall moisture and late harvest but yields were still quite good (highest, 256 bu/ac).

Trial Location	Weather Station	2004 GDD	Long Term Ave. GDD
Burlington	Burlington	2660	2675
Julesburg	Julesburg	2613	2755
Rocky Ford	Rocky Ford	2830	2839
Wiggins	Fort Morgan	2459	2670
Yuma	Yuma	2653	2617

Insect pressure in eastern Colorado for 2004 from different corn insect pests can be summarized as follows:

Corn rootworm beetles: Average

Spider mites: Above average early, declined late season. More two-spotted spider mites than usual

Western bean cutworm: Above average

European corn borer: Below average

Table 1. Irrigated corn cultural conditions in 2004.

	Burlington	Julesburg	Rocky Ford	Wiggins	Yuma
Soil Type	Keith Silt Loam	Keith Goshen Kuma Silt Loam	Rocky Ford Silty Clay	Bijou Loam Sand	Julesburg Loam Sand
Previous Crop	Corn	Corn	Sorghum	Corn	Pinto Bean
Fertilization					
N acre^{-1}	130	186	186	210	250
P_2O_5 acre^{-1}	40	33	52	60	75
K_2O acre^{-1}	20	0	0	16	20
Zn acre^{-1}	2	.25	0	0	.25
S acre^{-1}	30	3	0	0	10
Herbicide	Celebrity+	Epic Define	2,4-D + Clarity	Option II Distinct	Steadfast
Insecticide	None	Pencap	None	Aztec	None
Irrigation	Sprinkler	Sprinkler	Furrow	Sprinkler	Sprinkler

Five eastern Colorado irrigated corn trial locations in 2004 *with 2003 acreage harvested in nineteen important corn producing counties of Colorado*.

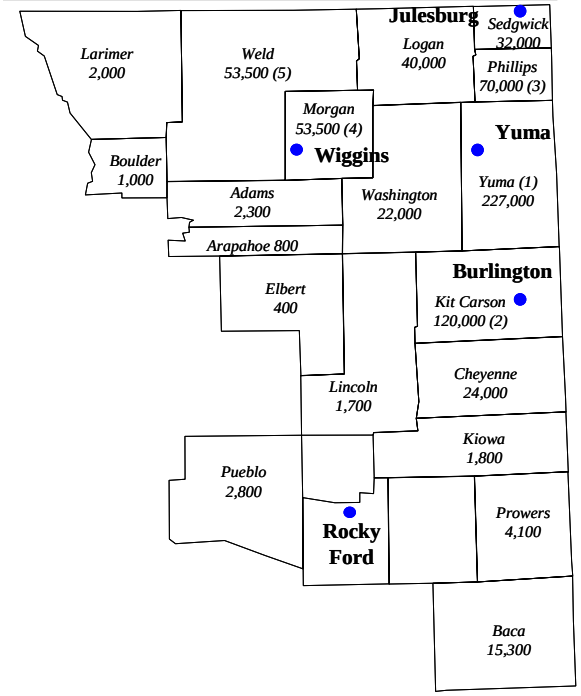


Table 2. Irrigated corn variety performance at Burlington[1] in 2004.

Hybrid	Yield	Grain Moist.	Test Wt.	Plant Ht.	Ldg.	Ear Drop
	bu/ac	%	lb/bu	in	%	%
Foundation Pilot HCS0112 (YGCB/RR)	263	17.6	54.2	90	9.7	0.0
Triumph 1416 (CB/BT)	260	16.5	55.8	87	6.0	0.0
DEKALB DKC52-47 (RR2/YGCB)	251	16.1	57.1	80	1.0	0.0
Croplan 631 (BT)	249	16.6	56.2	90	10.4	0.0
DEKALB DKC54-51 (YGCB)	244	16.4	56.9	88	12.2	0.0
DYNA-GRO 57P69	236	16.1	55.5	89	21.0	0.0
Mycogen 2P682	235	16.3	56.0	87	20.1	0.0
Trial Check*	233	17.0	54.9	86	6.2	0.0
DEKALB DKC50-20 (RR2/YGCB)	230	15.8	57.4	79	5.2	0.0
Foundation Pilot HCS0113 (YGCB/RR)	229	17.0	54.6	90	8.1	0.0
HYTEST HT7710 (BT/LL)	229	16.5	55.6	91	1.9	0.0
Trisler T-5257 (RRCB)	228	17.7	54.3	90	6.3	0.0
Foundation Pilot HCS0113 (RR)	228	17.0	55.3	88	12.2	0.0
Croplan 691 (BT/LL)	226	16.4	51.7	86	1.9	0.0
DYNA-GRO CXO 3512	225	16.3	55.9	79	9.6	0.0
Grand Valley SX1303 (YGCB/BT)	224	16.6	56.9	85	8.8	0.0
HYTEST HT7729 (HT/LL)	224	16.8	54.8	92	39.2	0.0
Foundation Pilot HCS0112 (RR)	224	17.6	55.3	87	4.7	0.0
NK Brand N67-T4 (BT/LL)	224	16.6	55.9	85	18.4	0.0
Producers Hybrids 7003 (RR/BT)	224	16.3	57.3	88	13.4	0.0
DYNA-GRO 56K44	224	16.7	56.5	85	4.1	0.0
NK Brand N72-J5	223	17.0	54.3	87	10.0	0.0
ASGROW RX752 (RR/YG)	221	17.7	56.0	88	23.3	0.0
Grand Valley GVX2378 (YGCB/BT)	220	17.5	55.4	91	9.7	0.4
LG Seeds LG 2536	218	16.1	56.3	79	5.0	0.4
NK Brand N70-T9 (BT/LL/CL)	217	17.3	55.3	91	19.2	0.4
Foundation Pilot HCS0111 (RR)	215	16.6	58.4	89	6.3	0.0
Fontanelle HC7638 (YGCB/BT)	213	16.9	55.2	87	16.2	0.3
Trisler T-5244 (RRCB)	213	17.3	54.2	84	20.8	0.0
Foundation Pilot HCS0111 (RR/YGCB)	212	16.3	57.9	89	14.2	0.0
Grand Valley GVX6178 (YGCB/BT)	212	16.9	55.5	86	20.5	0.7
Fontanelle HC7951 (YGCB/BT)	209	17.0	53.6	91	9.5	0.0
LG Seeds LG 2540 (BT)	207	16.1	57.2	84	4.8	0.0
DYNA-GRO CXO 3410	206	16.0	56.2	86	18.4	0.4
DYNA-GRO 57P93	206	17.1	55.9	84	2.9	0.0
Grand Valley SX1378 (YGCB/BT)	205	17.1	55.9	91	8.1	0.0
Triumph 3421 (RR)	205	15.8	57.2	83	7.7	0.4
Fontanelle 5282	205	17.6	54.1	92	16.5	0.0
DEKALB DKC60-17 (RR2)	204	17.1	56.5	80	17.9	0.0
DEKALB DKC52-21 (YGCB)	203	16.8	57.3	85	15.2	0.0
DEKALB DKC60-19 (RR2/YGCB)	200	17.2	57.8	79	21.1	0.0
DEKALB DKC51-45 (RR2)	193	16.0	56.4	81	7.6	0.0
Mycogen 2E705 (YGCB)	181	17.2	56.3	87	11.6	0.7
Average	221	16.8	55.8	86	11.8	0.1
$LSD_{(0.30)}$	18					

[1]Trial conducted on the Don Sircy farm; seeded 4/27 and harvested 11/19 & 12/1.

*Trial check was NC+ 4824D.

Table 3. 2-yr average irrigated corn variety performance at Burlington in 2003-04.

Hybrid	Yield	Grain Moist.	Test Wt.
	bu/ac	%	lb/bu
HYTEST HT7710 (BT/LL)	222	16.6	56.6
Foundation Pilot HCS0113 (RR)	218	15.6	56.6
Foundation Pilot HCS0112 (YGCB/RR)	216	16.9	56.6
Foundation Pilot HCS0112 (RR)	213	17.0	56.7
ASGROW RX752 (RR/YG)	211	16.5	57.5
Foundation Pilot HCS0113 (YGCB/RR)	208	16.3	56.4
NK Brand N72-J5	208	16.7	56.1
Mycogen 2P682	207	15.5	56.8
NK Brand N67-T4 (BT/LL)	206	16.1	57.7
DEKALB DKC60-17 (RR2)	203	16.2	57.5
Foundation Pilot HCS0111 (RR/YGCB)	199	16.3	59.1
Fontanelle HC7638 (YGCB/BT)	198	15.6	57.0
Fontanelle 5282	197	16.6	56.2
Triumph 3421 (RR)	195	15.0	58.8
DEKALB DKC60-19 (RR2/YGCB)	192	16.2	58.6
Foundation Pilot HCS0111 (RR)	192	16.4	59.7
NK Brand N70-T9 (BT/LL/CL)	192	16.3	57.1
Mycogen 2E705 (YGCB)	189	16.7	57.1
Average	204	16.2	57.3

Table 4. Irrigated corn variety performance at Julesburg[1] in 2004.

Hybrid	Yield	Grain Moist.	Test Wt.	Plant Ht.	Density	Ldg.	Ear Drop
	bu/ac	%	lb/bu	in	plants/ac	%	%
DEKALB DKC57-01	257	16.0	56.7	85	27403	5.7	0.0
DEKALB DKC52-47 (RR2/YGCB)	241	15.1	56.6	83	28181	1.9	0.4
Fontanelle 5282	241	16.8	54.3	97	27567	7.0	0.7
Fontanelle HC7951 (YGCB/BT)	240	17.5	55.8	95	27959	2.9	0.5
LG Seeds LG 2540 (BT/RR)	239	17.2	55.1	86	27317	1.0	0.5
Mycogen 2P682	234	16.7	54.8	91	29367	2.6	0.4
LG Seeds LG 2533 (BT/RR)	233	16.8	55.0	92	26320	3.2	0.0
Trial Check*	232	17.0	58.2	93	28133	3.7	0.0
DEKALB DKC51-45 (RR2)	231	15.3	57.4	85	28408	2.8	0.0
NK Brand N59-Q9	228	16.7	56.6	96	27502	1.8	0.4
DEKALB DKC58-78 (YGCB)	227	16.6	57.1	83	26909	5.0	0.0
DEKALB DKC54-51 (YGCB)	226	16.4	58.4	93	30853	29.3	1.5
Triumph 5433 (CB/RR)	225	16.1	57.2	87	28133	0.7	0.0
DEKALB DKC60-19 (RR2/YGCB)	225	16.2	56.8	84	26835	4.2	1.1
NK Brand N43-C4 (BT/LL)	224	14.9	55.8	91	28618	0.3	0.0
Fontanelle HC7638 (YGCB/BT)	224	16.4	55.0	91	27743	5.0	0.4
DEKALB DKC50-20 (RR2/YGCB)	223	15.2	57.2	86	27095	7.7	0.0
Foundation Pilot HCS0101(YGCB/RR)	222	15.9	57.3	83	28677	2.3	0.3
Fontanelle 8N422	219	16.8	55.8	95	27679	6.6	0.3
Croplan 631 (BT)	219	16.7	55.7	91	27735	8.6	1.1
NK Brand N65-M7	216	16.7	55.7	92	27044	3.0	1.0
Croplan 501 (BT)	213	15.3	56.4	93	26127	2.2	0.4
Foundation Pilot HCS0101 (RR)	212	15.5	58.5	84	27679	1.0	0.0
Mycogen 2E705 (YGCB)	210	16.7	55.9	90	26859	4.6	1.2
DEKALB DKC52-21 (YGCB)	204	15.9	58.1	92	27491	14.8	0.4
Average	227	16.2	56.5	90	27745	5.1	0.4
$LSD_{(0.30)}$	13						

[1]Trial conducted on the Gene Bauerle farm; seeded 5/3 and harvested 12/6.
*Trial check was Pioneer 35Y67.

Table 5. 2-yr average irrigated corn variety performance at Julesburg in 2003-04.

Hybrid	Yield	Grain Moist.	Test Wt.
	bu/ac	%	lb/bu
DEKALB DKC57-01	230	15.1	57.4
Fontanelle 5282	221	16.3	55.6
Mycogen 2P682	213	16.0	55.3
DEKALB DKC58-78 (YGCB)	209	16.1	57.3
Fontanelle HC7638 (YGCB/BT)	205	15.9	56.3
NK Brand N43-C4 (BT/LL)	204	13.9	57.9
Mycogen 2E705 (YGCB)	203	16.3	56.7
NK Brand N59-Q9	202	16.1	57.4
Average	211	15.7	56.7

Table 6. Irrigated corn variety performance at Rocky Ford[1] in 2004.

Hybrid	Grain Yield	Moist.	Test Wt.	Plant Ht.	Density	Silking[2]
	bu/ac	%	lb/bu	in	plants/ac	date
Grand Valley SX1500 (YGCB/BT)	244	16.2	56.3	82	30129	197
Foundation Pilot HCS0112(YGCB/RR)	233	15.9	59.1	83	31218	195
Foundation Pilot HCS0112 (RR)	228	15.7	59.4	81	31309	195
Triumph 1536 (CB/RR)	225	16.2	59.4	80	29494	195
DYNA-GRO 57P93	225	15.9	58.9	81	30220	195
HYTEST HT7729 (HT/LL)	222	15.2	57.4	84	31672	197
Grand Valley SX1395 (YGCB/BT)	220	15.9	59.1	77	29494	196
HYTEST HT7806 (BT/RR)	218	17.4	60.0	79	30674	198
HYTEST HT7710 (BT/LL)	213	16.2	58.8	84	30220	196
Foundation Pilot HCS0111 (RR)	213	15.4	61.3	82	29675	197
NK Brand N70-T9 (BT/LL/CL)	212	15.8	59.7	77	30946	195
Mycogen 2T801 (RR/YGCB)	212	15.4	60.2	80	29766	195
Producers Hybrids 7373 (RR/BT)	210	15.9	58.8	82	28859	195
DEKALB DKC63-80 (RR2)	210	15.2	61.1	78	30129	197
Mycogen 2E705 (YGCB)	210	15.6	59.8	77	29857	195
Triumph 1416 (CB/BT)	210	15.4	59.3	80	31490	195
Producers Hybrids 7003 (RR/BT)	208	15.9	58.8	79	30220	195
Grand Valley GVX0125 (YGCB/BT)	207	16.4	58.4	90	29131	200
Foundation Pilot HCS0111(RR/YGCB)	205	15.5	60.1	81	30038	197
NK Brand N72-J5	203	15.9	59.3	81	30401	196
NK Brand N67-T4 (BT/LL)	200	15.6	60.3	80	31309	194
Foundation Pilot HCS0113(YGCB/RR)	197	15.8	59.5	79	29312	194
DEKALB DKC63-81 (RR2/YGCB)	195	16.1	61.1	77	28223	198
DYNA-GRO CXO 3512	189	14.4	59.4	71	30583	196
DEKALB DKC60-19 (RR2/YGCB)	189	15.7	60.5	73	31218	194
DYNA-GRO 57P69	189	15.5	59.4	79	30220	195
DEKALB DKC60-17 (RR2)	183	15.3	59.4	75	31490	194
DYNA-GRO CXO 3410	178	13.6	58.5	78	29948	196
Foundation Pilot HCS0113 (RR)	173	15.6	59.5	80	28133	195
DEKALB DKC53-34 (RR2/YGCB)	166	14.9	59.9	78	29857	193
DEKALB DKC53-33 (RR2)	154	14.6	59.3	78	29585	192
Average	205	15.6	59.4	79	30155	196
$LSD_{(0.30)}$	11					

[1]Trial conducted at the Arkansas Valley Research Center; seeded 5/3 and harvested 10/27.
[2]Julian date.
*Bird damage: 5 to 10%; Lodging (hail damage): 3 to 5%.

Table 7. 2-yr irrigated corn variety performance at Rocky Ford in 2003-04.

Hybrid	Grain Yield	Moist.	Test Wt.
	bu/ac	%	lb/bu
Foundation Pilot HCS0112 (YGCB/RR)	239	16.0	58.4
Grand Valley SX1395 (YGCB/BT)	237	16.1	58.4
Foundation Pilot HCS0112 (RR)	236	15.8	58.8
NK Brand N70-T9 (BT/LL/CL)	234	15.9	58.7
HYTEST HT7806 (BT/RR)	233	17.2	59.5
HYTEST HT7710 (BT/LL)	230	16.1	58.3
Mycogen 2E705 (YGCB)	228	15.7	58.8
Foundation Pilot HCS0113 (YGCB/RR)	220	15.8	58.6
Foundation Pilot HCS0111 (RR)	216	15.6	61.3
Foundation Pilot HCS0111 (RR/YGCB)	211	15.5	60.4
NK Brand N67-T4 (BT/LL)	211	15.7	59.4
DEKALB DKC60-17 (RR2)	210	15.3	58.7
NK Brand N72-J5	210	15.8	58.6
DEKALB DKC60-19 (RR2/YGCB)	207	15.7	59.7
Foundation Pilot HCS0113 (RR)	200	15.3	58.7
DEKALB DKC53-34 (RR2/YGCB)	180	14.2	59.4
DEKALB DKC53-33 (RR2)	170	13.9	59.0
Average	216	15.6	59.1

Table 8. Irrigated corn variety performance at Wiggins[1] in 2004.

Hybrid	Yield	Grain Moist.	Test Wt.	Plant Ht.	Density	Ldg.	Ear Drop
	bu/ac	%	lb/bu	in	plants/ac	%	%
Mycogen 2P682	215	15.4	53.1	76	28477	2.0	0.0
DYNA-GRO 56K77	214	16.6	54.8	81	28260	4.2	0.0
Foundation Pilot HCS0101 (RR)	212	15.8	57.1	78	27272	3.1	0.3
Foundation Pilot HCS0101(YGCB/RR	210	15.9	57.0	74	28452	2.0	0.3
DEKALB DKC52-47 (RR2/YGCB)	200	13.2	54.1	65	28512	0.3	0.0
DYNA-GRO CXO 3410	198	15.5	54.4	80	28265	2.4	0.0
Mycogen 2K541 (RR/YGCB)	197	15.1	56.1	77	27056	2.0	0.3
DYNA-GRO 56K44	195	15.5	57.0	70	28791	0.3	0.3
DYNA-GRO 55K27	194	15.6	56.6	71	27930	3.6	0.0
Triumph 5433 (CB/RR)	192	16.0	57.1	71	28733	1.9	0.0
Foundation Pilot HCS0110	190	15.6	56.3	72	28453	2.3	0.7
Mycogen 2R570 (HXI)	189	14.9	55.3	71	28480	3.0	1.7
DYNA-GRO 57P69	187	16.5	54.5	74	28618	1.3	0.3
DEKALB DKC54-51 (YGCB)	186	15.3	56.8	73	28223	0.0	0.0
Trial Check*	182	17.0	56.5	75	27567	0.4	0.0
Croplan 503 (BT)	182	16.1	56.5	73	27575	0.7	0.0
Croplan 501 (BT)	180	14.6	56.0	76	28214	0.3	0.3
NK Brand N65-M7	178	16.1	55.1	76	28816	1.7	0.0
NK Brand N59-Q9	177	16.3	55.2	72	29254	2.5	0.0
DEKALB DKC60-19 (RR2/YGCB)	174	16.3	56.8	69	28588	1.3	0.0
NK Brand N43-C4 (BT/LL)	165	14.5	55.0	69	27798	1.3	0.7
LG Seeds LG 2533 (BT)	165	16.1	55.1	75	29131	0.3	0.3
Foundation Pilot HCS0110 (YGCB)	162	15.6	56.5	73	27736	0.7	0.3
DYNA-GRO 55K29	161	15.8	56.1	66	29106	1.6	0.7
Average	188	15.6	55.8	73	28304	1.6	0.3
$LSD_{(0.30)}$	25						

[1]Trial conducted on the Rod Graves farm; seeded 4/20 and harvested 11/23.
*Trial check was Pioneer 34B98.

Table 9. 2-yr average irrigated corn variety performance at Wiggins in 2003-04.

Hybrid	Yield	Grain Moist.	Test Wt.
	bu/ac	%	lb/bu
Mycogen 2P682	196	14.7	53.7
Foundation Pilot HCS0101 (RR)	183	15.2	57.2
Foundation Pilot HCS0101(YGCB/RR	182	15.5	57.3
NK Brand N43-C4 (BT/LL)	174	13.4	55.8
Foundation Pilot HCS0110	170	15.8	55.9
LG Seeds LG 2533 (BT)	170	14.9	54.9
NK Brand N59-Q9	170	15.1	56.5
Foundation Pilot HCS0110 (YGCB)	156	14.8	56.7
Average	175	14.9	56.0

Table 10. Irrigated corn variety performance at Yuma[1] in 2004.

Hybrid	Grain Yield	Moist.	Test Wt.	Plant Ht.	Density	Ldg.	Ear Drop
	bu/ac	%	lb/bu	in	plants/ac	%	%
NK Brand N70-T9 (BT/LL/CL)	256	17.3	53.3	95	27508	6.3	2.2
Trisler T-5244 (RRCB)	254	16.7	54.4	95	27472	10.6	0.0
Grand Valley SX1303 (YGCB/BT)	249	16.7	54.0	92	28624	5.0	1.2
Fontanelle HC7951 (YGCB/BT)	247	17.2	52.3	93	26637	6.0	0.4
Fontanelle 8N422	238	16.6	54.3	97	26735	9.1	1.0
Trial Check*	238	17.5	57.2	88	25141	8.0	0.4
Mycogen 2P682	237	16.1	55.4	89	27571	7.9	1.7
Grand Valley GVX6178 (YGCB/BT)	237	16.5	54.6	88	25804	9.9	0.7
DEKALB DKC58-78 (YGCB)	237	16.4	56.4	87	26746	6.2	0.0
NK Brand N72-J5	235	16.3	54.8	97	27270	5.2	0.3
HYTEST HT7710 (BT/LL)	235	16.6	54.6	92	25619	13.4	1.9
Foundation Pilot HCS0101 (RR)	234	15.9	57.8	88	28286	7.4	0.6
LG Seeds LG 2633 (BT)	232	17.7	53.4	95	26945	18.9	1.0
DYNA-GRO CXO 3512	231	17.1	55.0	86	25605	5.0	0.4
Mycogen 2E705 (YGCB)	230	16.8	55.1	91	26683	4.1	0.7
Trisler T-2757 (CB)	230	16.1	56.9	84	26279	3.6	0.4
DYNA-GRO 57P93	229	17.0	54.3	98	28016	9.7	0.3
Mycogen 2T801 (RR/YGCB)	229	16.9	55.7	94	27237	4.1	0.0
Grand Valley GVX2378 (YGCB/BT)	229	16.8	54.9	98	26545	15.5	0.4
DEKALB DKC52-47 (RR2/YGCB)	228	15.3	56.5	85	27844	5.5	0.3
LG Seeds LG 2540 (BT/RR)	227	16.8	54.2	92	27415	5.9	0.0
DEKALB DKC57-01	227	16.0	56.5	89	27353	3.1	0.7
DYNA-GRO 57P69	226	16.6	55.2	93	27177	11.3	1.3
DEKALB DKC54-51 (YGCB)	226	16.2	57.8	92	26930	6.5	2.8
NK Brand N67-T4 (BT/LL)	224	16.8	56.1	92	25114	6.8	0.0
ASGROW RX752 (RR/YG)	223	17.0	56.1	90	26784	2.8	0.0
DEKALB DKC60-19 (RR2/YGCB)	223	16.5	56.5	87	27412	2.0	0.0
DEKALB DKC63-81 (RR2/YGCB)	220	17.1	55.1	91	25495	6.6	0.0
DYNA-GRO 56K44	217	15.8	57.1	93	25641	4.2	0.0
Producers Hybrids 7003 (RR/BT)	217	16.6	55.0	93	26737	6.1	1.3
Grand Valley SX1378 (YGCB/BT)	216	16.6	55.3	93	29040	8.1	0.9
LG Seeds LG 2585 (BT/RR)	209	16.3	55.4	96	26525	11.5	1.0
Foundation Pilot HCS0101(YGCB/RR)	207	16.1	58.0	85	27630	3.1	0.3
DYNA-GRO CXO 3410	202	16.2	55.7	95	27265	6.9	0.0
Fontanelle HC7638 (YGCB/BT)	197	16.6	54.2	91	26731	15.1	1.5
HYTEST HT7729 (HT/LL)	181	17.1	54.0	98	26584	12.3	0.7
Average	227	16.6	55.4	92	26900	7.6	0.7
$LSD_{(0.30)}$	18						

[1]Trial conducted on the Larry Gardner farm; seeded 5/15 and harvested 12/3.
*Trial check was Pioneer 34N42.

Table 11. 2-yr average irrigated corn variety performance at Yuma in 2003-04.

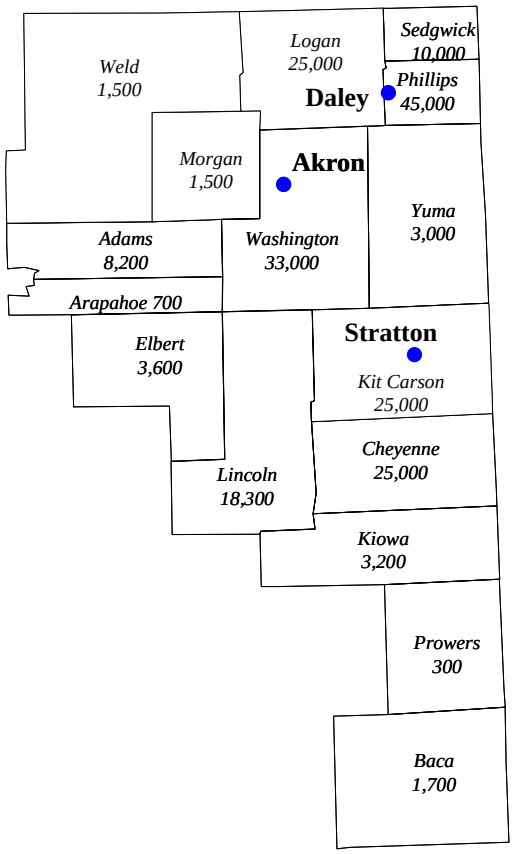
Hybrid	Grain Yield	Moist.	Test Wt.
	bu/ac	%	lb/bu
Grand Valley SX1303 (YGCB/BT)	249	16.3	55.9
Mycogen 2P682	248	15.7	56.3
NK Brand N70-T9 (BT/LL/CL)	247	16.9	55.7
NK Brand N72-J5	244	16.2	55.8
ASGROW RX752 (RR/YG)	241	16.8	56.9
Mycogen 2E705 (YGCB)	241	16.2	56.1
DEKALB DKC58-78 (YGCB)	236	16.0	57.6
NK Brand N67-T4 (BT/LL)	236	16.6	57.0
DEKALB DKC60-19 (RR2/YGCB)	235	16.1	57.8
DEKALB DKC57-01	230	15.2	57.7
Fontanelle HC7638 (YGCB/BT)	226	16.0	55.6
Average	239	16.2	56.6

Eastern Colorado Dryland Grain Corn Performance Data

Northeastern Colorado growers have been adopting more intensive dryland cropping systems as shown by increased dryland corn acreage which rose from 26,000 acres in 1990 to 340,000 acres in 2000, and 305,000 acres in 2001. The drought of 2002 severely reduced acreage and only 55,000 acres of dryland corn was harvested. Drought also affected the 2003 crop. Leading dryland corn producing counties are Phillips and Sedgwick.

Colorado State University personnel tested dryland corn hybrids at three dryland locations in Eastern Colorado in 2004. Even though many people believed that mild, cloudy mid-summer conditions of 2004 spelled the end of the drought, much of the dryland corn areas of eastern Colorado failed to receive adequate rainfall. Drought affected two of the three dryland corn performance trials. The Stratton trial could not be harvested again in 2004, and the Akron trial was harvested but the yields were low, highly variable, and could not be statistically interpreted. From the table below it is not hard to see that the Daley trial averaged 56 bu/ac while the Akron trial averaged 24 bu/ac and the Stratton trial only had a few small ears that did not merit harvesting.

Three northeastern Colorado dryland corn trial locations in 2004 *with 2003 dryland acreage harvested.*



Trial Location	Weather Station	2004 GDD	Long Term Ave. GDD	2003 Precip. 7/15-8/25	% of normal 7/15-8/25
Akron	Akron	2459	2496	2.13	67
Daley	Fleming	2455	2548	5.96	195
Stratton	Stratton	2549	2726	1.86	55

Table 12. Dryland corn cultural conditions in 2004.

	Akron	Daley
Soil Type	Rago & Kuma Silt Loam	Rago Loam
Previous Crop	Wheat	Wheat
Fertilization		
N acre^{-1}	50	70
P_2O_5 acre^{-1}	0	20
K_2O acre^{-1}	0	0
Zn acre^{-1}	0	8
S acre^{-1}	0	5
Herbicide	Celebrity+	AAtrex & Clarity

Table 13. Dryland corn variety performance at Akron[1] in 2004.

Hybrid	Yield	Grain Moist.	Test Wt.	Cob Ht.	Density	Ear Drop	Ldg.
	bu/ac	%	lb/bu	in	plants/ac	%	%
DEKALB DKC42-95 (RR2/YGCB)	42.5	14.6	56.8	28	14773	0.3	7.1
NK Brand N3030 (BT/LL)	38.7	14.9	55.6	25	14062	0.3	3.0
DEKALB DKC50-20 (RR2/YGCB)	31.6	14.7	56.8	24	13873	0.7	15.2
HPAL C-5	27.1	14.8	56.6	27	12135	0.0	8.2
Trial Check*	26.0	14.8	56.9	27	13589	0.0	4.4
Garst 8922 (YGI)	25.3	14.2	55.1	27	14137	2.3	18.3
HPAL C-8	22.5	14.5	57.1	26	13612	0.4	12.5
Garst 8911 (RR)	22.4	14.5	56.2	27	14252	0.0	7.2
Garst 8905 (RR)	22.4	14.0	56.2	25	13731	0.4	4.1
DEKALB DKC52-47 (RR2/YGCB)	20.3	14.6	56.9	26	14110	0.0	12.7
DEKALB DKC47-10 (RR2/YGCB)	20.1	14.1	57.4	28	13399	1.0	20.1
HPAL C-2	19.4	14.7	56.4	26	12926	0.0	5.2
Garst 8881 (RR)	17.8	14.5	57.1	26	13352	0.0	8.9
HPAL C-10	15.5	14.5	54.8	27	13778	0.4	6.1
Triumph 3421 (RR)	13.5	14.1	57.2	27	14110	0.3	2.4
Average	24.3	14.5	56.5	26	13723	0.4	9.0

[1]Trial conducted at the Central Great Plains Field Station; seeded 5/6 and harvested 11/17.
*Trial check was Pioneer 38K06.
**Yields could not be interpreted statistically due to variation caused by drought, but made worse by weeds that could not be completely controlled by hand weeding.

Table 14. 2-yr average dryland corn variety performance at Akron in 2003-04.

Hybrid	Yield	Grain Moist.	Test Wt.
	bu/ac	%	lb/bu
DEKALB DKC42-95 (RR2/YGCB)	52	12.5	56.5
DEKALB DKC47-10 (RR2/YGCB)	43	12.6	57.0
Average	48	12.5	56.7

Table 15. Dryland corn rootworm and drought resistance at Akron[1] in 2004.

Hybrid	Yield	Grain Moist.	Test Wt.	Cob Ht.	Density	Ldg.	Ear Drop
	bu/ac	%	lb/bu	in	plants/ac	%	%
CS304YGCB@10K/A (BT) Skip	26.6	21.1	52.2	29	10290	11.9	0.0
CS304YGCB@15K/A (BT) with soil 4-row	19.9	24.1	51.4	27	16477	6.5	0.4
CS304YGCB@15K/A (BT) 4-row	14.3	23.7	49.0	27	16477	8.5	0.0
CS304YGPL@15K/A (YGCB/RW/BT) 4-row	13.9	20.9	50.8	23	15278	2.4	0.0
CS304YGPL@10K/A (YGCB/RW/BT) Skip	12.8	26.6	49.0	28	10353	4.3	0.6
Average	17.5	23.3	50.5	27	13775	6.7	0.2

[1]Trial conducted at the Central Great Plains Field Station; seeded 5/6 and harvested 11/17.
*Yields could not be interpreted statistically due to variation caused by drought, but made worse by weeds that could not be completely controlled by hand weeding.

Table 16. Dryland corn variety performance at Daley[1] in 2004.

Hybrid	Yield	Grain Moist.	Test Wt.	Plant Ht.	Density	Ldg.	Ear Drop
	bu/ac	%	lb/bu	in	plants/ac	%	%
DEKALB DKC50-20 (RR2/YGCB)	67	15.3	56.6	32	13021	1.5	0.8
DEKALB DKC52-47 (RR2/YGCB)	61	15.1	54.3	31	13684	3.5	0.0
Garst 8467 (RR)	60	17.3	54.8	33	14157	2.8	0.3
Garst 8579 (RR)	60	16.8	53.7	35	13257	2.0	0.0
Triumph 5433 (CB/RR)	58	16.1	55.6	31	14299	1.3	0.3
DEKALB DKC58-80 (RR2/YGCB)	58	16.6	52.8	30	15862	1.2	0.3
Trial Check*	55	15.6	54.9	34	12310	0.0	1.1
DEKALB DKC54-51 (YGCB)	53	15.9	55.3	33	12926	7.5	0.0
NK Brand N3030 (BT/LL)	52	15.9	56.3	30	13305	2.3	0.0
Garst 8424	51	17.7	54.2	34	12879	5.7	0.0
Trisler T-5244 (RRCB)	47	18.0	53.4	33	13826	3.8	0.0
Garst 8590 (RR)	47	16.5	54.2	33	14678	2.6	0.0
Average	56	16.4	54.7	32	13684	2.9	0.2
$LSD_{(0.30)}$	6						

[1]Trial conducted on the Mark and Neil Lambert farm; seeded 5/10 and harvested 10/30.
*Trial check was Triumph 2370.

Table 17. Dryland rootworm and drought resistance corn at Daley[1] in 2004.

Hybrid	Yield	Grain Moist.	Test Wt.	Plant Ht.	Density	Ldg.	Ear Drop
	bu/ac	%	lb/bu	in	plants/ac	%	%
CS304YGCB@15K/A (BT) with soil 4-row	78	18.4	53.3	31	16900	2.7	0.0
CS304YGCB@15K/A (BT) 4-row	67	19.0	52.8	32	16452	2.9	0.3
CS304YGPL@15K/A (YGCB/RW/BT) 4-row	62	17.6	53.7	30	17290	1.2	0.0
CS304YGCB@10K/A (BT) Skip	60	20.4	51.9	30	12095	2.0	0.0
CS304YGPL@10K/A (YGCB/RW/BT) Skip	54	20.3	52.3	31	10868	4.2	0.0
Average	64	19.1	52.8	31	14721	2.6	0.1
$LSD_{(0.30)}$	9						

[1]Trial conducted on the Mark and Neil Lambert farm; seeded 5/10 and harvested 10/30.

Western Slope Irrigated Grain Corn Performance Data

Over 3,000,000 bushels of corn grain are produced on some 30,000 acres of irrigated farmland on the Western Slope every year, bringing in over $8 million to local producers. Calvin Pearson of the Colorado Agricultural Experiment Station evaluates long-season and short-season corn grain hybrids to provide reliable and unbiased information to Western Slope producers.

Summer 2004 was mild compared to 2003. In 2003, there were 27 days during the summer in which temperatures exceeded 100 degrees F. Sixteen of the 27 days were consecutively above 100 degrees F. In contrast, there were only two days during 2004 in which temperatures exceeded 100 degrees F; yet, the growing season during 2004 was considerably longer than in 2003. The 2004 growing season was 207 days compared to 182 days for the 2003 growing season.

Table 18. Western Slope irrigated corn cultural conditions in 2004.

	Delta	Fruita Long Season	Fruita Short Season
Soil Type	Mesa Clay Loam	Youngston Fine Sandy Loam	Youngston Fine Sandy Loam
Previous Crop	Sweet Corn	Oats	Oats
Fertilization			
N lb acre $^{-1}$	220	182	182
P_2O_5 acre $^{-1}$	65	184	184
Herbicide	2,4-D Clarity	Lasso	Lasso
Insecticide	Comite	Dimethoate Comite	Dimethoate Comite
Irrigation	Furrow	Furrow	Furrow

Trial Location	2004 GDD	Long Term Ave. GDD
Fruita	2828	2676
Delta	2778	2592

Two Western Slope corn grain and silage trial locations in 2004 *with 2003 acreage harvested in three important corn producing counties of the Western Slope.*

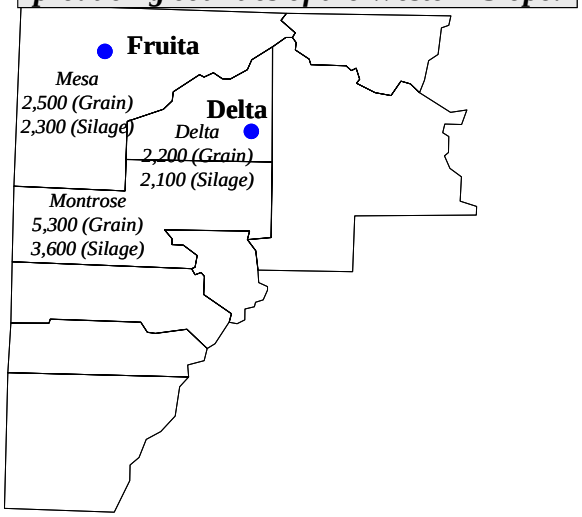


Table 19. Irrigated corn variety performance at Delta[1] in 2004.

Hybrid	Yield	Grain Moist.	Test Wt.	Density
	bu/ac	%	lb/bu	plants/ac
Grand Valley SX2248 (RR)	251	17.5	54.2	31147
HYTEST HT4602 (BT/RR)	249	17.2	53.1	31425
Grand Valley GVX0659 (YGCB/RR/BT)	235	16.4	55.9	31333
Grand Valley GVX0608	230	16.5	55.7	27717
Garst 8590 (RR)	226	17.3	52.9	31008
Garst 8715	217	15.8	55.4	27207
DEKALB DKC42-95 (RR2/YGCB)	216	16.0	56.6	29201
DEKALB DKC51-45 (RR2)	214	16.2	57.7	32909
Garst 8881 (RR)	214	16.1	56.9	34253
DEKALB DKC46-28 (RR2)	213	15.9	57.0	32491
Grand Valley SX2229 (RR)	211	16.0	55.3	25771
DEKALB DKC40-05	208	15.6	56.7	30823
Average	224	16.4	55.6	30440
$LSD_{(0.30)}$	11			

[1]Trial conducted on the Wayne Brew farm; seeded 5/6 and harvested 1/21.

Table 20. 2-yr average irrigated corn variety performance at Delta in 2003-04.

Hybrid	Yield	Grain Moist.	Test Wt.
	bu/ac	%	lb/bu
Grand Valley SX2248 (RR)	255	15.2	56.6
HYTEST HT4602	253	14.9	54.8
Garst 8590 (RR)	231	14.9	55.6
DEKALB DKC42-95(RR/YGCB)	226	13.2	57.8
Grand Valley SX2229 (RR)	211	13.4	56.7
Average	235	14.3	56.3

Table 21. Irrigated short season corn variety performance at Fruita[1] in 2004.

Hybrid	Yield	Grain Moist.	Test Wt.	Density	Ldg.	Ear Drop
	bu/ac	%	lb/bu	plants/ac	%	%
DEKALB DK63-80 (RR2)	232	21.4	54.1	33532	3.8	0.0
Grand Valley GVX6178 (YGCB/BT)	225	21.8	51.5	30764	1.3	0.0
ASGROW RX752 (RR/YG)	216	21.2	54.2	33578	4.8	0.0
Grand Valley SX1303 (YGCB/BT)	210	20.9	53.0	32625	2.3	0.0
Grand Valley GVX2378(YGCB/RR/BT)	201	20.6	54.1	32307	1.8	0.0
Grand Valley SX2248 (RR)	172	20.0	55.5	32942	5.3	0.0
DEKALB DK60-17 (RR2)	134	20.4	54.5	33441	10.3	0.0
DEKALB DKC58-80 (RR2/YGCB)	132	19.8	54.5	28405	2.3	0.3
Average	190	20.7	53.9	32199	3.9	0.0
$LSD_{(0.30)}$	26					

[1]Trial conducted at the Western Colorado Research Center; seeded 5/10 and harvested 12/7.

Table 22. 2-yr average irrigated short season corn variety performance at Fruita in 2003-04.

Hybrid	Yield	Grain Moist.	Test Wt.
	bu/ac	%	lb/bu
Grand Valley SX2248(RR)	208	14.1	58.7

Table 23. Irrigated long season corn variety performance at Fruita[1] in 2004.

Hybrid	Yield	Grain Moist.	Test Wt.	Density	Ldg.
	bu/ac	%	lb/bu	plants/ac	%
DEKALB DKC67-06 (YGCB)	241	23.1	53.6	32897	1.3
DEKALB DKC66-80 (RR2)	214	23.1	52.5	33804	0.8
HYTEST HT7806 (BT/RR)	212	24.6	52.4	34440	0.5
HYTEST HT7710 (BT/LL)	210	22.6	51.5	30719	1.0
DEKALB DKC69-72 (RR2)	203	23.1	52.6	31944	0.0
Average	216	23.3	52.5	32761	0.7
$LSD_{(0.30)}$	21				

[1]Trial conducted at the Western Colorado Research Center; seeded 5/10 and harvested 12/7.
*No ear drop.

Table 24. 2-yr average irrigated long season corn variety performance at Fruita in 2003-04.

Hybrid	Yield	Grain Moist.	Test Wt.
	bu/ac	%	lb/bu
HYTEST HT7806(BT/RR)	232	22.7	54.4
DEKALB DKC69-72(RR2)	218	21.7	54.7
Average	225	22.2	54.6

Corn Silage Performance Data for Eastern Colorado and the Western Slope

Colorado farmers cut 80,000 irrigated acres of corn for silage in 2003 averaging 22.5 t/ac and another 10,000 acres of non-irrigated corn averaged 8 t/ac. Corn seed required for planting this crop represents annual sales of about $3 million. Weld County produced almost half of the state's irrigated silage in 2003, 990,000 tons.

Colorado State University personnel evaluate commercial corn silage hybrids at multiple locations to provide Colorado farmers with reliable and unbiased hybrid performance information. In 2004, corn silage hybrids were evaluated at Fort Collins in eastern Colorado and at Fruita and Olathe on the Western Slope. The silage yields given below are reported in tons per acre adjusted to 70% moisture content. Trial yields in 2004 were about 5 t/ac lower than normal for the Front Range at Fort Collins due to the unusually wet and cloudy conditions with lower than normal growing degree days for early maturing silage corn. Fruita and Olathe silage yields were good to very good in 2004. The moisture content at the time of harvest is an indicator of hybrid maturity at harvest.

Trial Location	2004 GDD	Long Term Ave. GDD
Fort Collins	2178	2335
Fruita	2828	2676
Olathe (Delta)	2778	2592

Table 25. Corn silage trial cultural conditions in 2004.

	Fort Collins	Fruita	Olathe
Soil Type	Ft Collins Clay Loam	Youngston Fine Sandy loam	Sandy Loam
Previous Crop	Wheat	Oats	Silage Corn
Fertilization			
N lb acre^{-1}	110	182	53
P_2O_5 lb acre^{-1}	40	104	86
Herbicide	Prowl 3.3 EC & Outlook	Lasso	Harness
Insecticide	None	Dimethoate Comite	Comite
Irrigated	Sprinkler	Furrow	Furrow

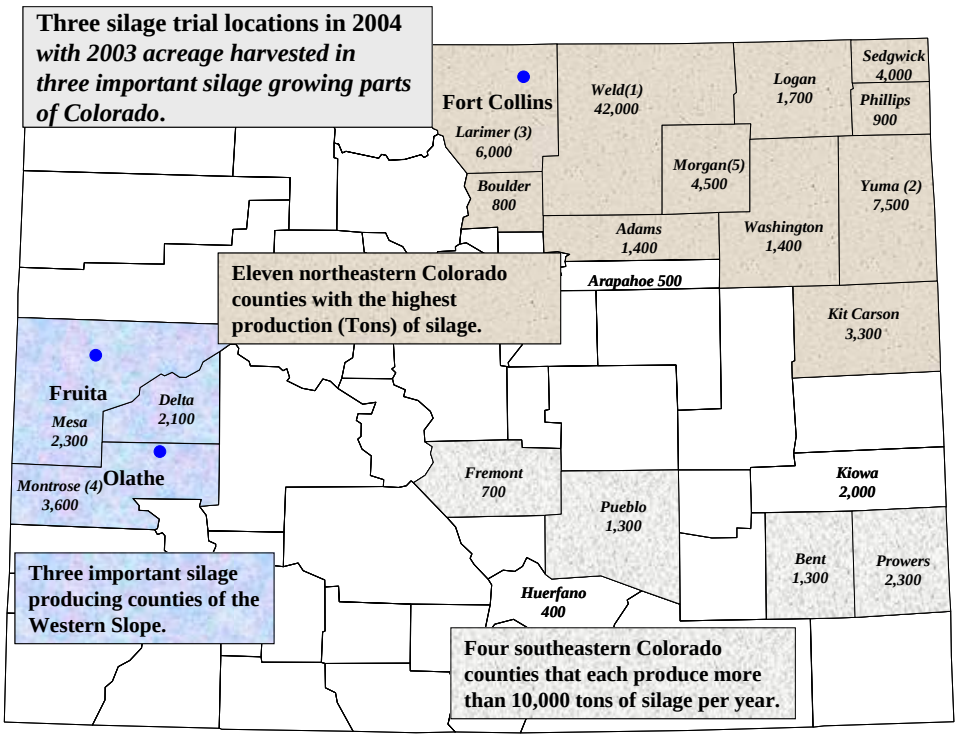


Table 26. Corn silage variety performance at Fort Collins[1] in 2004.

Hybrid	Yield	Moist.	Plant Ht.	Density
	t/ac	%	in	plants/ac
Triumph 1866 (RR)	26.6	74.8	87	34075
Grand Valley SX2535 (RR)	26.5	73.0	95	34013
Mycogen 2D835	26.0	73.1	89	33507
Grand Valley SX2248 (RR)	25.9	66.4	85	34398
Garst 8270 (RR)	25.8	75.6	93	33311
Mycogen TMF 2M741 (HXI)	24.8	73.3	95	33944
HYTEST TNT-106 (RR)	24.7	70.7	87	33041
NK Brand N72-J5	24.1	70.7	85	33095
Garst 7850	24.0	72.2	86	33196
Mycogen TMF 2M696 (HXI)	23.7	70.2	91	34215
Triumph 1416 (RW/RR)	23.6	73.0	86	32954
Garst 8579 (RR)	23.3	69.8	89	32920
Mycogen 2D601 (RR)	23.2	70.4	87	33691
Croplan DS107	23.0	71.2	88	34139
Croplan DS822	20.9	76.4	85	33316
Grand Valley SX8709 (RR)	20.7	72.0	84	34078
Average	24.2	72.1	88	33618
$LSD_{(0.30)}$	1.5			

[1]Trial conducted at the Agricultural Research, Development and Educational Center; seeded 5/4 and harvested 9/27.

Table 27. 2-yr corn silage variety performance at Fort Collins in 2003-04.

Hybrid	Yield	Moist.
	t/ac	%
Triumph 1866 (RR)	27.5	74.0
Garst 7850	24.6	73.1
Mycogen 2D601 (RR)	23.5	72.5
Average	25.2	73.2

Table 28. Corn silage variety performance at Fruita[1] in 2004.

Hybrid	Yield	Moist.	Density	Plant Ht.	Ear Ht.
	t/ac	%	plants/ac	in	in
ASGROW RX940 (RR2)	34.2	69.3	33273	116	54
Grand Valley SX1602	33.6	68.7	33319	117	53
Grand Valley GVX0175 (RR)	33.5	69.0	31836	124	55
HYTEST HT7815 (RR)	31.6	69.8	32531	107	48
Grand Valley GVX0105 (RR)	31.5	66.6	30260	113	48
HYTEST HT7831 (RR)	31.4	69.3	32206	112	52
DEKALB DKC69-72 (RR2)	30.3	64.6	33967	107	43
ASGROW RX910	30.1	65.5	30863	112	42
Average	32.0	67.8	32282	114	49
$LSD_{(0.30)}$	2.4				

[1]Trial conducted at the Western Colorado Research Center; seeded 5/10 and harvested 9/15.

Table 29. 2-yr average corn silage variety performance a Fruita in 2003-04.

Hybrid	Yield	Moist.
	t/ac	%
Grand Valley SX1602	33.4	67.0
DEKALB DKC69-72 (RR2)	31.4	61.0
Average	32.4	64.0

Table 30. Corn silage variety performance at Olathe[1] in 2004.

Hybrid	Yield	Moist.	Density	Plant Ht.	Ear Ht.
	t/ac	%	plants/ac	in	in
Grand Valley SX2535 (RR)	34.0	71.2	34709	129	61
Grand Valley SX2444 (RR)	33.9	69.3	36238	121	54
AgriPro 9646	33.6	72.6	33133	122	56
Garst 8270 (RR)	32.5	73.2	34848	121	55
Grand Valley GVX0105 (RR)	31.6	70.8	30723	125	56
Garst 8579 (RR)	29.9	67.0	33643	122	54
Grand Valley GVX0638 (YGCB/RR/BT)	29.4	69.8	35821	116	52
Average	32.1	70.6	34159	122	55
$LSD_{(0.30)}$	1.5				

[1]Trial conducted on the Earl Seymour farm; seeded 5/6 and harvested 9/27.

2004 COLORADO SUNFLOWER PERFORMANCE TRIALS

Introduction

CSU's Crops Testing personnel assists Colorado sunflower producers make the best possible hybrid sunflower seed selection by providing unbiased and reliable yield trial results from oil and confection sunflower performance trials. In 2004 we took a new direction with our sunflower testing program. As a result of drought conditions in recent years we have experienced difficulty obtaining reliable results from our dryland sunflower performance trials so we reduced the number of small-plot locations from four to three and started, with the assistance of the new Colorado Sunflower Administrative Committee (CSAC), a different, experimental, strip test approach consisting of seven hybrids and a check planted in long side-by-side strips with two replications per location. The farmer-managed strip tests were planted in three locations, Brandon, Julesburg, and Wray.

For the three traditional small-plot dryland trials and one irrigated sunflower performance trial, a randomized complete block design with four replicates was used. All trials, dryland and irrigated, consisted of four row plots 50 feet long. Target plant population for dryland oil and confection hybrids was 12,000 plants/ac. Irrigated oil and confection hybrids were planted at 18,000 seeds per acre for target plant populations of 15,000 plants/ac. Seed yields are reported in pounds per acre adjusted to 10% moisture content. Oil content is reported as % oil at 10% seed moisture content.

Table 1. Sunflower cultural conditions in 2004.

	Akron	Cheyenne Wells	Haxtun	Idalia
Soil Type	Rago Silt Loam	Kieth-Richfield Silt Loam	Iliff Loam	Kuma Kieth Silt Loam
Previous Crop	Corn	Corn	Corn	Corn
Fertilization				
N acre^{-1}	50	0	50	80
P_2O_5 acre^{-1}	0	0	0	19
Herbicide	Roundup Poast	Spartan	Spartan	Trifuralan
Insecticide	Asana	None	None	None
Irrigation	None	None	None	Furrow

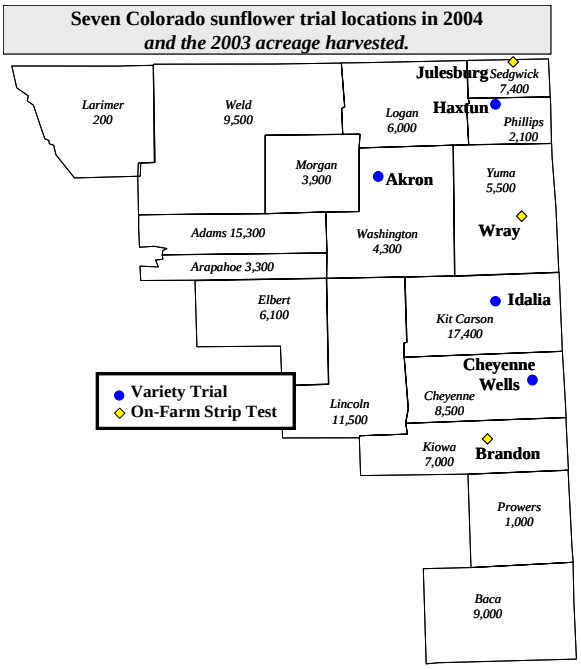


Table 2. Irrigated oil sunflower variety performance at Idalia[1] in 2004.

Hybrid	Yield	Moist.	Test Wt.	Plant Ht.	Density	Ldg.	Oil
	lb/ac	%	lb/bu	in	Plants/ac	%	%
Triumph 658	3284	8.8	29.4	66	15781	2.3	44.1
Seeds 2000 Blazer	3254	8.2	31.5	58	14916	2.4	42.6
Pioneer brand 63M80	3221	7.9	31.1	63	14784	0.9	44.5
Triumph 645	3181	8.3	29.3	65	17093	2.2	45.2
Interstate/Garst Hysun 424	3181	8.0	31.2	65	16193	0.7	43.2
Mycogen 8N421	3170	7.6	30.8	63	16193	1.4	43.3
Interstate/Garst Hysun 454	3166	9.2	30.3	65	14233	1.5	40.8
Triumph 665	3160	9.4	30.5	66	15111	1.6	43.4
Mycogen 8D310	3153	9.0	29.2	63	15538	2.3	38.3
UAP 94T90	3147	8.4	30.5	68	17329	2.0	42.9
Mycogen X83352	3147	8.8	32.5	64	15844	0.4	45.0
Triumph 636	3083	8.6	28.6	64	15608	0.4	44.1
Interstate/Garst Hysun 450	3067	8.1	30.7	63	15421	3.1	40.2
Pioneer brand 63M91	3041	9.1	31.5	65	11550	6.4	42.9
Croplan Genetics NuSun 3080 DMR	3036	8.2	31.1	59	17567	0.9	44.9
Croplan Genetics NuSun 385	2989	8.5	30.8	64	17233	1.9	41.3
Mycogen X83454	2978	7.5	29.9	60	15510	2.3	41.4
Croplan Genetics NuSun 380	2902	8.7	31.4	64	17651	1.8	41.2
Mycogen 8377 NS	2756	8.8	30.7	62	15664	1.5	43.1
Triumph s675	2707	8.2	30.9	45	16425	13.1	45.3
Triumph TRX4342CL	2691	9.4	31.5	71	15260	1.5	43.6
Triumph s667	2630	7.6	29.9	46	17760	18.0	44.8
Interstate/Garst F10016 NS	2602	8.7	29.9	55	16191	0.4	39.8
UAP Exp 93N05	2520	8.7	30.8	56	16853	0.9	39.8
Interstate/Garst 4704 NS	2410	8.2	30.9	56	16663	0.9	39.5
Triumph 650CL	2239	8.3	28.1	67	15219	1.4	36.4
Average	2950	8.5	30.5	62	15907	2.8	
$LSD_{(0.30)}$	168						

[1]Trial conducted on the Dennis Towns farm; seeded 5/20 and harvested 10/21.

Table 3. 2-yr average irrigated oil sunflower performance at Idalia, 2003-04.

Hybrid	Yield	Test Wt.
	lb/ac	lb/bu
Triumph 658	2914	28.9
Interstate/Garst Hysun 450	2902	30.8
Triumph 645	2889	28.7
Interstate/Garst Hysun 424	2873	30.9
Pioneer brand 63M91	2821	31.7
Mycogen 8N421	2784	30.9
Croplan Genetics NuSun 380	2762	31.3
Triumph 665	2748	30.1
Seeds 2000 Blazer	2732	30.0
Interstate/Garst Hysun 454	2624	29.3
Triumph 636	2621	27.6
Croplan Genetics NuSun 385	2597	31.1
Pioneer brand 63M80	2533	30.9
Triumph s667	2317	29.6
Mycogen 8377 NS	2249	31.3
Average	2691	30.2

Table 4. Irrigated confection sunflower variety performance at Idalia[1] in 2004 with the percent of seed by screen size.

							Seed Size		
Hybrid	Yield	Moist.	Test Wt.	Density	Plant Ht.	Ldg.	Percent	Percent	Jumbo Percent
	lb/ac	%	lb/bu	plants/ac	in	%	above 20/64	below 20/64	above 22/64
Red River RRC 2215	3184	8.3	22.6	11741	59	0.4	35.6	31.2	33.2
Sigco Sun Rustler	3105	8.9	24.6	12456	58	2.4	29.1	42.7	28.2
Seeds 2000 Grizzly	2924	8.5	22.7	11394	60	1.3	30.8	27.6	41.6
Royal Hybrid 118	2904	8.9	23.0	11967	63	3.2	16.0	9.6	74.4
Sigco Sun Goliath RT	2826	9.6	22.1	10948	59	1.4	29.8	21.1	49.1
Croplan Genetics 135	2778	7.8	21.1	13225	58	1.5	25.2	17.5	57.3
CHS 04 EXP02	2768	8.2	21.4	12215	56	2.7	16.5	11.7	71.8
Croplan Genetics EX836	2767	7.6	22.2	12847	57	1.9	24.6	16.3	59.1
Seeds 2000 X3670	2762	9.5	20.0	10065	53	1.4	47.2	20.9	31.9
Interstate/Garst 8089	2717	9.1	22.4	11902	61	2.5	32.0	30.3	37.7
Red River RRC 7015	2704	8.6	21.0	11409	59	1.7	29.4	27.6	43.0
Triumph 707CLS	2624	9.3	19.7	12045	63	1.6	22.0	13.9	64.1
Interstate/Garst 8048	2620	9.0	23.8	12299	58	0.8	31.8	28.9	39.3
Triumph 777C	2552	9.9	19.8	11771	63	3.7	15.1	8.1	76.8
Triumph 700CLS+	2529	9.3	19.5	12436	60	0.8	26.3	14.8	58.9
Triumph 757C	2439	8.9	19.1	11394	57	2.6	12.1	7.3	80.6
Croplan Genetics EX822	2367	7.8	20.8	12418	59	2.0	21.6	17.9	60.5
Mycogen 8C416	2331	10.1	21.6	11005	65	1.9	34.9	21.7	43.4
CHS 04 EXP01	2221	9.5	21.5	11707	56	0.8	30.3	47.9	21.8
Average	2691	8.9	21.5	11855	59	1.8			
$LSD_{(0.30)}$	188								

[1]Trial conducted on the Dennis Towns farm; seeded 5/20 and harvested 10/21.

Table 5. 2-yr average irrigated confection sunflower performance at Idalia, 2003-04.

Hybrid	Yield	Test Wt.
	lb/ac	lb/bu
Seeds 2000 Grizzly	2683	23
Sigco Sun Goliath	2473	21
Red River RRC 2215	2431	22
Royal Hybrid 118	2318	23
Red River RRC 7015	2264	20
Triumph 777C	2246	20
Sigco Sun Rustler	2216	24
Triumph 757C	2142	19
Average	2347	21

Table 6. Dryland oil sunflower variety performance at Akron[1] in 2004.

Hybrid	Yield	Moist.	Test Wt.	Density	Plant Ht.	Ldg.	Oil
	lb/ac	%	lb/bu	plants/ac	in	%	%
Mycogen X83454	1578	6.7	26.7	14116	40	1.7	36.8
Interstate/Garst Hysun 454	1506	7.4	28.0	12081	45	1.0	39.3
Mycogen 8N421	1466	6.1	27.4	13892	44	0.0	38.8
Mycogen 8D310	1443	6.7	27.0	13789	47	0.4	35.5
DEKALB DKF33-33 NS	1387	6.1	26.2	14901	42	0.0	36.6
Pioneer brand 63M80	1364	5.8	27.5	14781	45	11.2	41.4
Interstate/Garst F10016 NS	1318	7.1	27.6	14941	38	2.4	37.7
Interstate/Garst Hysun 450	1318	7.3	27.8	15509	37	16.1	39.0
Triumph 645	1294	7.2	28.0	15883	43	2.0	41.0
Pioneer brand 63M91	1263	6.3	27.8	13633	48	1.8	41.2
Interstate/Garst Hysun 424	1126	8.2	29.3	14646	40	14.9	39.7
Interstate/Garst 4704 NS	1093	6.7	28.5	13501	36	26.8	36.6
DEKALB EXP35-10 NS	1084	7.9	29.2	9663	42	0.9	36.4
Triumph 650CL	1076	6.5	27.3	13607	44	0.5	36.7
Triumph s675	824	7.8	29.9	15930	25	36.6	38.9
Average	1276	6.9	27.9	14058	41	8.2	
$LSD_{(0.30)}$	176						

[1]Trial conducted on the Jason Shook farm; seeded 7/6 and harvested 12/15.

Table 7. 2-yr average dryland oil sunflower performance at Akron, 2003-04.

Hybrid	Yield	Test Wt.
	lb/ac	lb/bu
Interstate/Garst Hysun 454	1363	29.3
Mycogen 8N421	1209	28.0
Triumph 645	1143	27.0
Pioneer brand 63M80	1129	27.5
Pioneer brand 63M91	1072	27.7
Interstate/Garst Hysun 450	1061	28.3
Average	1163	28.0

Table 8. Dryland confection sunflower variety performance at Akron[1] in 2004 with the percent of seed by screen size.

Hybrid	Yield	Moist.	Test Wt.	Density	Plant Ht.	Ldg.	Seed Size Percent above 20/64	Percent below 20/64	Jumbo Percent above 22/64
	lb/ac	%	lb/bu	plants/ac	in	%			
Red River RRC 2215	1612	7.5	20.5	10602	43	0.6	30.8	44.4	24.8
Red River RRC 7015	1601	8.2	19.4	8532	49	0.6	26.3	51.3	22.4
Sigco Sun Rustler	1437	7.8	21.6	11850	44	0.4	22.2	58.8	19.2
Triumph 707CLS	1365	8.5	17.9	9158	48	2.2	19.0	22.4	58.6
Sigco Sun Goliath RT	1357	9.3	21.6	8406	42	0.0	30.0	39.8	30.2
Triumph 700CLS+	1345	8.4	19.0	9854	46	2.5	23.5	34.9	41.6
Interstate/Garst 8089	1340	8.4	21.6	9503	47	0.6	30.0	52.2	17.8
Triumph 757C	1059	8.6	18.8	9504	42	4.2	21.0	25.8	53.2
Interstate/Garst 8048	1040	8.2	21.2	10010	44	1.2	26.8	48.1	25.1
Average	1351	8.3	20.2	9713	45	1.3			
$LSD_{(0.30)}$	154								

[1]Trial conducted on the Jason Shook farm; seeded 7/6 and harvested 12/15.

Table 9. 2-yr average dryland confection sunflower performance at Akron, 2003-04.

Hybrid	Yield	Test Wt.
	lb/ac	lb/bu
Sigco Sun Rustler	1142	21.2
Sigco Sun Goliath RT	1038	21.3
Triumph 757C	866	18.9
Average	1015	20.5

Table 10. Dryland oil sunflower variety performance at Cheyenne Wells[1] in 2004.

Hybrid	Yield	Moist.	Test Wt.	Density	Plant Ht.	Ldg.	Oil
	lb/ac	%	lb/bu	plants/ac	in	%	%
Trial Check 1*	801	8.6	29.5	15569	52	1.7	40.0
Mycogen X83454	665	8.4	29.7	16460	44	5.0	37.4
Interstate/Garst F10016 NS	658	8.7	29.9	14172	42	2.4	36.7
Pioneer brand 63M91	658	8.8	30.0	13160	48	4.5	40.0
DEKALB EXP3880 CL	627	8.4	29.1	15354	39	1.9	35.8
Interstate/Garst Hysun 450	622	9.8	29.6	14805	43	3.5	37.6
Interstate/Garst Hysun 454	560	8.6	31.2	12950	46	4.3	39.3
Pioneer brand 63M80	558	7.9	29.2	13329	47	2.7	37.6
Interstate/Garst Hysun 424	533	8.5	29.8	14165	42	3.2	37.1
Mycogen 8377 NS	530	8.1	29.5	14093	51	2.8	38.5
Croplan Genetics NuSun 380	524	8.8	29.3	14327	51	0.7	35.9
DEKALB EXP35-10 NS	519	8.6	30.3	12229	45	3.4	36.2
DEKALB DKF33-33 NS	514	7.8	31.0	15867	39	3.6	35.7
Mycogen 8D310	511	7.5	29.0	15200	50	2.8	36.1
Croplan Genetics NuSun 385	509	8.3	29.9	15376	40	2.9	37.1
Trial Check 2*	468	8.1	31.4	16057	31	3.1	39.1
Mycogen 8N421	464	9.1	30.9	15798	48	4.1	38.3
DEKALB DKF38-30 NS	451	9.2	30.7	13066	43	3.1	37.4
Interstate/Garst 4704 NS	347	7.6	30.2	13603	39	0.3	35.2
Average	554	8.5	30.0	14504	44	2.9	

[1]Trial conducted on the Dennis Campbell farm; seeded 7/8 and harvested 11/5.
*Trial Check 1 was Triumph 645 and Trial Check 2 was Triumph 667.
**Due to unusually large variation within and among plots and blocks this trial could not be statistically interpreted.

Table 11. 2-yr average dryland oil sunflower performance at Cheyenne Wells, 2003-04.

Hybrid	Yield	Test Wt.
	lb/ac	lb/bu
Pioneer brand 63M91	637	29.3
Interstate/Garst Hysun 454	623	30.6
Mycogen 8N421	620	30.0
Pioneer brand 63M80	603	27.7
Interstate/Garst Hysun 450	546	29.8
Mycogen 8377 NS	507	28.0
Average	589	29.2

Table 12. Dryland confection sunflower variety performance at Cheyenne Wells[1] in 2004 with the percent of seed by screen size.

							Seed Size		
Hybrid	Yield	Moist.	Test Wt.	Density	Plant Ht.	Ldg.	Percent	Percent	Jumbo Percent
	lb/ac	%	lb/bu	plants/ac	in	%	above 20/64	below 20/64	above 22/64
Interstate/Garst 8048	1061	9.7	23.0	14208	47	3.9	17.0	74.2	8.8
Interstate/Garst 8089	630	9.0	22.5	12031	46	3.8	17.8	75.0	7.2
Average	845	9.4	22.8	13120	47	3.8			

[1]Trial conducted on the Dennis Campbell farm; seeded 7/8 and harvested 11/5.
*Due to unusually large variation within and among plots and blocks this trial could not be statistically interpreted.

Table 13. Dryland oil sunflower variety performance at Haxtun[1] in 2004.

Hybrid	Yield	Moist.	Test Wt.	Density	Plant Ht.	Ldg.	Oil
	lb/ac	%	lb/bu	plants/ac	in	%	%
Interstate/Garst F10016 NS	1407	9.8	26.8	11707	45	7.6	35.7
Interstate/Garst Hysun 454	1346	8.8	27.5	11941	53	5.6	36.6
Mycogen 8D310	1289	7.9	26.9	12832	53	5.6	34.2
Croplan Genetics NuSun 345	1268	6.9	27.0	13657	48	9.9	38.6
Triumph 645	1264	9.2	25.3	13706	52	7.1	39.4
Mycogen 8377 NS	1158	7.1	27.4	12733	48	13.0	38.3
Pioneer brand 63M91	1150	7.2	28.6	13961	49	12.6	38.6
Croplan Genetics NuSun 385	1143	6.9	26.7	11020	41	5.2	36.0
Interstate/Garst Hysun 450	1114	7.8	27.0	12592	43	5.7	35.6
Pioneer brand 63M80	1114	8.1	26.8	12627	44	7.1	38.2
Interstate/Garst Hysun 424	1103	8.2	29.2	12511	46	8.9	35.7
Interstate/Garst 4704 NS	1096	8.0	27.1	11888	45	5.8	34.2
Trial Check*	1051	9.0	28.3	13043	38	5.3	37.8
Mycogen X83454	1005	8.9	27.9	12784	41	3.8	35.4
Mycogen 8N421	1001	7.0	28.4	12632	44	8.3	38.2
Average	1167	8.0	27.4	12642	46	7.4	
$LSD_{(0.30)}$	138						

[1]Trial conducted on the Dave Anderson farm; seeded 5/27 and harvested 10/5.
*Trial Check was Triumph 667.

Table 14. Dryland confection sunflower variety performance at Haxtun[1] in 2004 with the percent of seed by screen size.

Hybrid	Yield	Moist.	Test Wt.	Density	Plant Ht.	Ldg.	Seed Size Percent above 20/64	Seed Size Percent below 20/64	Seed Size Jumbo Percent above 22/64
	lb/ac	%	lb/bu	plants/ac	in	%			
Interstate/Garst 8048	1402	8.9	20.0	11874	55	2.8	23.3	48.9	27.8
Interstate/Garst 8089	1221	9.7	18.3	9818	55	6.3	22.3	51.0	26.7
Croplan Genetics 135	1149	8.6	18.1	9660	53	4.3	24.6	36.3	39.1
Croplan Genetics EX822	1078	8.1	18.0	11335	51	11.0	22.1	36.5	41.4
Average	1212	8.8	18.6	10672	53	6.1			
$LSD_{(0.30)}$	103								

[1]Trial conducted on the Dave Anderson farm; seeded 5/27 and harvested 10/5.

Table 15. Dryland sunflower On-Farm strip test at Brandon[1] in 2004.

					Seed Size		
Hybrid	Yield[2]	Moist.	Test Wt.	Oil	Percent	Percent	Jumbo Percent
	lb/ac	%	lb/bu	%	above 20/64	below 20/64	above 22/64
Triumph 665	2389	11.8	24.5	39.5			
UAP 94T90	2306	9.9	24.5	40.6			
Triumph 645	2198	9.8	24.0	41.3			
Triumph s675	2150	8.7	27.0	43.7			
UAP Exp 93N05	1703	8.2	24.5	35.2			
Triumph 700CLS+	1326	9.8	18.5		12.6	16.3	71.1
Triumph 757C	1061	11.4	18.5		6.9	5.6	87.5
Average	1876	9.9	23.1				

[1]Trial conducted on the Burl Scherler farm; seeded 6/30 and harvested 11/8.
[2]Yield averaged over two replications.

Table 16. Dryland sunflower On-Farm strip test at Julesburg[1] in 2004.

							Seed Size		
Hybrid	Yield[2]	Moist.	Test Wt.	Density	Plant Ht.	Oil	Percent	Percent	Jumbo Percent
	lb/ac	%	lb/bu	plants/ac	in	%	above 20/64	below 20/64	above 22/64
Triumph 665	1456	8.8	25.7	10846	53	37.3			
UAP 94T90	1424	7.0	25.2	12676	52	35.6			
Triumph s675	1306	8.8	28.1	12240	30	40.6			
Triumph 645	1269	8.9	24.3	9801	49	40.6			
UAP Exp 93N05	1209	8.7	24.4	11282	36	32.0			
Triumph 700CLS+	1113	11.0	15.8	8712	52		12.9	22.3	64.8
Trial Check*	1069	13.4	15.4	7318	53		23.4	24.5	52.1
Triumph 757C	837	10.4	14.7	6752	52		7.7	11.2	81.1
Average	1210	9.6	21.7	9953	47				

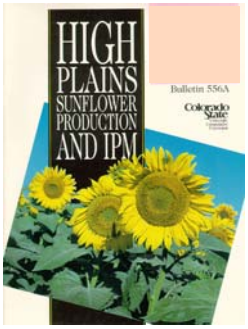
[1]Trial conducted on the Josh Lechman farm; seeded 6/2 and harvested 10/23.
[2]Yield averaged over two replications.
*Trial Check was Triumph 766 CT.

Table 17. Dryland sunflower On-Farm strip test at Wray[1] in 2004.

							Seed Size		
Hybrid	Yield[2]	Moist.	Test Wt.	Density	Plant Ht.	Oil	Percent	Percent	Jumbo Percent
	lb/ac	%	lb/bu	plants/ac	in	%	above 20/64	below 20/64	above 22/64
Triumph 645	804	9.4	27.7	10149	54	41.4			
Triumph 757C	772	15.6	18.6	4443	53		17.7	18.1	64.2
UAP 94T90	731	9.5	27.7	13112	56	40.3			
UAP Exp 93N05	730	9.5	27.2	12632	50	37.2			
Triumph 665	688	10.3	26.5	10934	54	37.4			
Trial Check*	620	9.6	27.1	11021	50	36.9			
Triumph 700CLS+	544	15.6	19.9	2962	54		12.7	19.0	68.3
Triumph s675	519	10.1	26.5	12807	30	37.3			
Average	674	11.7	24.5	9085	50				

[1]Trial conducted on the Jim Roberts farm; seeded 6/9 and harvested 10/20.
[2]Yield averaged over two replications except the Trial check that was replicated three times.
*Trial Check was Triumph 665.

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 Call CERC 970) 491-6198 (website http://cerc.colostate.edu) or the Colorado Sunflower Administrative Committee at (719) 346-5571 to order your copy.



Seed Company Entrants in the 2004 Colorado Corn and Sunflower Performance Trials

Entrant	Brand/Hybrid	Address	Telephone
CHS Sunflowers		220 Clement Ave., Grandin, ND 58038	701-484-5313
Croplan Genetics	Croplan	P.O. Box 1291, Minot, ND 58702	701-852-3556
Croplan Genetics	Croplan	P.O. Box 84281-MS, St. Paul, MN 55164-0281	800-851-8810
Fontanelle Hybrids	Fontanelle	10981 8th Street, Fontanelle, NE 68044	402-721-1410
Garst Seed Co.	Garst	2369 330th St., P.O. Box 500, Slater, IA 50244	800-831-6630
Garst/Interstate Seed	Garst	1215 Prairie Parkway, West Fargo, ND 58078	701-282-7338
Grand Valley Hybrids	Grand Valley	840 23 Road, Grand Junction, CO 81505	970-243-3115
HYTEST Seeds	HYTEST	1404 Colorado St., Suite 124, Boulder City, NV 89005	702-293-3046
LG Seeds	LG	1620 Hwy 10, Gibbon, NE 68840	308-234-4800
Monsanto	Deklab/Asgrow	800 N. Lindbergh Blvd., St. Louis, MO 63167	314-694-1000
Mycogen Seeds	Mycogen	9330 Zionsville Rd., Indianapolis, IN 46268	317-337-4662
Pioneer Hi-Bred Int'l, Inc	Pioneer brand	4050 30th Ave., South, Moorhead, MN 56560	218-299-8610
Producers Hybrids	Producers Hybrids	P.O. Box C, Battle Creek, NE 68715	402-675-2975
Red River Commodities, Inc	Red River	212 NE Loop 239, Lubbock, TX 79403	806-763-9747
SEEDS 2000	SEEDS 2000	P.O. Box 200, Breckenridge, MN 56520	218-643-2410
SIGCO Sun Products	SIGCO	90 N. 8th Street, Breckenridge, MN 56520	218-643-8467
Syngenta Seeds, Inc	NK Brand	6001 S. 58th Street, Suite D, Lincoln, NE 68516	402-420-6664
Trisler Seed Farms, Inc	Trisler	3274 E. 800 North Rd., Fairmount, IL 61841	217-288-9301
Triumph Seed Co., Inc	Triumph	P.O. Box 1050, Hwy 62 Bypass, Ralls, TX 79357	800-530-4789
UAP - Pueblo	Dyna-Gro	P.O. Box 1279, Garden City, KS 67846	620-275-6127

Entry Forms for 2005 Trials

Entry forms for 2005 trials may be obtained from the Department of Soil and Crop Sciences, Colorado State University, Cynthia Johnson, C03 Plant Science Building, Fort Collins, CO 80523-1170; telephone (970) 491-1914; fax (970) 491-2758; e-mail cynthia.johnson@colostate.edu or website http://www.csucrops.com.

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Putting Knowledge to Work

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