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MAKING BETTER DECISIONS

2006 Colorado Winter Wheat Variety
Performance Trials

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2006 and 2007 UVPT and IVPT Trial Locations

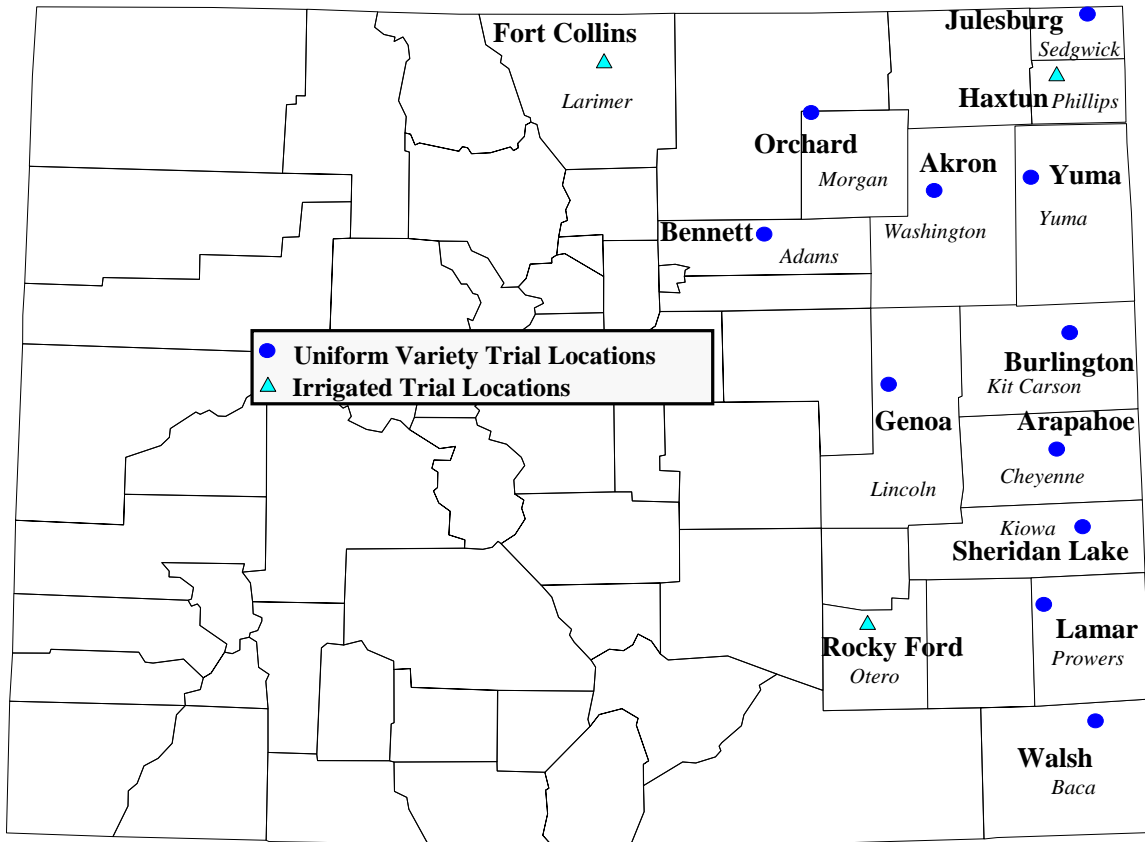


Table of Contents

<i>Authors</i>	i
<i>Valuable Wheat Information Resources</i>	i
<i>Eastern Colorado Cooperative Extension Wheat Educators</i>	ii
Table 2: Colorado Dryland Winter Wheat Variety Performance Trial Summary For 2006.	10
<i>Colorado Dryland Winter Wheat 3-Yr and 2-Yr Variety Performance Trial Summary</i>	11
<i>Colorado Irrigated Winter Wheat Variety Performance Trial Summary For 2006</i>	12
<i>Colorado Irrigated Winter Wheat 3-Yr and 2-Yr Variety Performance Trial Summary</i>	13
<i>2006 Collaborative On-Farm Tests (COFT) Performance Trial Results</i>	14
<i>Variety Performance in the 2006 Collaborative On-Farm Test</i>	15

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Colorado State University Winter Wheat Breeding and Genetics Program

Status Report - Spring 2007

The primary goals of the CSU Wheat Breeding and Genetics Program are to: a) **develop improved wheat cultivars and germplasm** adapted for the diverse production conditions in Colorado and the west central Great Plains and b) **conduct applied-basic research** to improve understanding of genetic and environmental factors that affect wheat yield and end-use quality. Multiple field, laboratory, and greenhouse-based activities contribute to the overall breeding effort. The core of this effort can be likened to a “**pipeline**” with materials entering the pipeline at the beginning (e.g., new crosses) and new cultivar or germplasm releases leaving the pipeline at the end. Materials are subject to vigorous testing, screening, and selection activities all along the pipeline.

New Cultivar Releases

One new winter wheat cultivar was released in fall 2006. The new cultivar, named '**Ripper**', is a hard red winter wheat with very high dryland yields, excellent drought and high temperature tolerance, and excellent milling and baking quality characteristics. In four years of statewide testing in the dryland Colorado Uniform Variety Performance Trial (UVPT), Ripper was the top yielding entry in the trials – about 7% (1.8 bu/a) higher than the next closest entry and 13% (3.2 bu/a) higher than Prairie Red. Ripper will be an excellent replacement for other stress tolerant, early-maturing cultivars in Colorado, particularly TAM 107 and Prairie Red, which tend to perform better in dry years yet have a marketing penalty due to their poor milling and baking quality. Ripper was selected from the cross CO940606/TAM107-R2. CO940606 is an unreleased sib-selection of KS94WGRC29, a germplasm release from Kansas State University with the pedigree PI 220127/P5//TAM-200/KS87H66. TAM107R-2 is an unreleased sib-selection of Prairie Red. Ripper is an awned, white-chaffed, early maturing, semidwarf with heading date about one day later than Prairie Red and three days earlier than Hatcher. Plant height of Ripper is about one inch taller than both Prairie Red and Hatcher with most of this difference occurring in 2005 and 2006 when drought stress was most severe (i.e., suggesting that Ripper may maintain its plant height better under drought stress conditions). Ripper has a medium-long coleoptile (similar to Prairie Red, slightly longer than Hatcher), good shattering tolerance (similar to Prairie Red and Hatcher), and good straw strength (similar to Prairie Red, slightly better than Hatcher). Test weight of Ripper is slightly below average (similar to Jagger and Yuma) and grain protein content is slightly below average (similar to Prairie Red and Hatcher). Ripper is moderately resistant to prevalent races of stem rust, resistant to the virulent *Ug-99* race of stem rust identified in Africa, susceptible to both stripe and leaf rust, moderately susceptible to wheat streak mosaic virus, resistant to biotype 1 Russian wheat aphid (RWA), and susceptible to biotype 2 RWA. Comprehensive milling and baking quality evaluations (using Above, Ankor, and Hatcher as check entries) have shown that Ripper has superior values for both milling-related and baking-related variables compared to the check entries.

New Foundation Seed Increases

One new experimental HRW line, designated as **CO01385-A1**, was advanced for Foundation Seed increase in fall 2006. Pending further yield and quality evaluations in 2006-2007, CO01385-A1 is targeted for release as a new cultivar in fall 2007. CO01385-A1 is a medium height, medium maturing hard red winter wheat with very high dryland and irrigated yields, high test weight, good resistance to both leaf and stripe rust, and above-average milling and baking quality characteristics. CO01385-A1 was derived from the cross Yumar/Arlin made in 1997. CO01385-A1 has been the highest yielding entry averaged across two years of testing in the UVPT (21 location-years), with its yield 0.8 bu/a greater than Ripper, 1.7 bu/a greater than Bond CL, and 2.9 bu/a greater than Hatcher. Test weight of CO01385-A1 was the third highest in the UVPT.

State Variety Trials: The Uniform Variety Performance Trial (UVPT)

In 2005-2006, advanced experimental lines were tested in the dryland UVPT along with released cultivars and experimental lines from various public or private breeding programs (54

total entries). Excluding Ripper, a total of 25 experimental lines from our breeding program were tested in the 2006 UVPT, some being in their first, second, or third year of statewide testing. Of these experimental lines, 6 were non-*Clearfield** HRW lines, 5 were non-*Clearfield** HWW lines, 8 were *Clearfield** HWW lines, 2 were *Clearfield** HRW lines, and 3 were Biotype 2 RWA resistant HRW lines. Selections were made for advancement of seven lines for further testing in the 2007 UVPT:

Entry	Pedigree	General Description
CO01385-A1	Yumar/Arlin	HRW, high yield and test weight, good quality
CO02W214	KS98HW423/KS96HW94	HWW, good yield, stripe rust resistant, lower sprout tolerance
CO02W237	KS98HW519/KS96HW94	HWW, good yield, stripe rust susceptible, good sprout tolerance
CO02W280	KS98HW521/KS98HW165	HWW, good yield, stripe rust resistant, lower sprout tolerance
CO03W238	KS01-5539/CO99W165	HWW <i>Clearfield*</i> wheat, stripe rust susceptible, lower sprout tolerance
CO03W239	KS01-5539/CO99W165	HWW <i>Clearfield*</i> wheat, stripe rust susceptible, lower sprout tolerance
CO03W269	KS01-5539/CO99W191	HWW <i>Clearfield*</i> wheat, stripe rust susceptible, lower sprout tolerance

Our general goal with HWW is to identify lines with yield comparable to or surpassing Avalanche (which has been the highest yielding HWW in the UVPT on two-, three-, and four-year averages) while improving baking quality and stripe rust resistance. We have dramatically increased the numbers of samples that we are evaluating for pre-harvest sprouting tolerance. Preliminary data from these sprout tests suggest that some HWW (i.e., Avalanche, Trego, Danby, Aspen, and some of our new experimental lines) carry sprout tolerance that meets or even exceeds the sprout tolerance of many of the common HRW types. With the exception of CO01385-A1, each of the lines retained for further testing and seed increase in 2007 is a hard white wheat (HWW). All were advanced for Breeder Seed increase to enable a Foundation Seed increase and potential release in 2008.

Beginning with the 2007 UVPT, the Wheat Breeding Program and the Crops Testing Program decided to reduce the number of CSU experimental lines that are tested in the UVPT to improve dryland variety recommendations for wheat producers in Colorado. Experimental lines targeted toward either Breeder or Foundation seed increase will continue to be tested in the UVPT. However, to ensure that adequate yield data are available on experimental lines prior to release, two replications of the CSU Elite trial will now be grown at each of the dryland field testing locations in Colorado (7 at breeding program sites, 6 at Crops Testing sites = 13 total locations).

CSU Elite Nursery

The CSU Elite was planted at each of our breeding locations in Colorado (Akron, Burlington, Dailey, Julesburg, Sheridan Lake, Walsh, and Fort Collins) as well as at several other locations in adjacent states (Amarillo TX, Goodwell OK, Colby KS, Healy KS, Ulysses KS, and Pierre SD). Based on data from 6 locations in Colorado, as well as yield and other observations from the other locations, 16 experimental lines tested in 2006 were retained for further testing and seed increase.

Advanced Yield Nursery (AYN)

The AYN is grown in three replications at all seven main breeding locations. The AYN was sub-divided into hard red (HRW), hard white (HWW), and *Clearfield** (both red and white types) sets to manage experimental error and seed mixing during harvest. For each subset, check entries are for comparison.

From the AYN, 49 total experimental lines were advanced for further testing in the 2007 CSU Elite. Of this total, 13 were non-*Clearfield** HRW lines, 23 were non-*Clearfield** HWW lines, and 13 were *Clearfield** lines (8 HRW and 5 HWW). Thus, the relative proportion of HRW vs. HWW lines advanced at this stage of the program was 43% HRW and 57% HWW.

Overall, strict selection was practiced for test weight in an overall effort to move test weight in our program in a more positive direction. Extensive milling and baking quality evaluations will be done on all breeding materials during the winter in the CSU Wheat Quality Lab and the USDA-ARS Hard Winter Wheat Quality Lab (Manhattan KS).

CCTA

The Colorado Conservation Tillage Association (CCTA) was founded in 1988 to serve the needs of producers searching for new ways to diversify their farms and better utilize their resources. Each year, producers, agricultural business professionals and educators from Colorado, Kansas, Nebraska and Wyoming come together to learn new techniques and the latest technology about products, equipment and research on no-till, minimum-till, conservation practices; and discuss current farming issues. Traditionally a wheat-summer fallow area of the Great Plains, the High Plains region has seen dramatic change in climate, water availability, alternative fuel use, alternative crops and cropping methods—all issues to be addressed, in part, by CCTA at the 20th Annual High Plains No-Till Conference, to be held February 5-6, 2008 at Island Grove Regional Park Events Center, Greeley, Colorado. For more information about this educational conference go to www.HighPlainsNoTill.com.



Wheat Field Days 2006 Lamar

Description of winter wheat varieties in eastern trials.

Name and Pedigree	Origin/Class	RWA	HD	HT	SS	SH	COL	WH	SR	LR	WSMV	TW	PC	MILL	BAKE	Comments
Above TAM 110*4/FS2	CSU-TX 2001 Hard red winter	S	3	4	3	4	7	4	9	9	5	5	7	4	7	CSU/Texas A&M release (2001). Clearfield* winter wheat. Early maturing semidwarf, excellent dryland yield in CO. Leaf and stripe rust susceptible.
Akron TAM 107/Hail	CSU 1994 Hard red winter	S	5	5	4	3	5	3	8	9	9	5	6	7	6	CSU release (1994). Vigorous growth pattern, closes canopy early in spring and competes well with weeds. Best adapted under higher production dryland conditions. Leaf and stripe rust susceptible.
Alice Abilene/Karl	SD 2006 Hard white winter	S	--	--	--	--	5	2	--	8	--	--	--	5	5	South Dakota State release (2006). Earlier maturing than typical South Dakota materials, good winter-hardiness. First tested in CSU trials in 2007.
Alliance Arkan/Colt//Chisholm sib	NE 1993 Hard red winter	S	5	4	4	4	4	2	6	8	9	5	8	6	7	Nebraska release (1993). Medium-early maturing semidwarf, short coleoptile, good tolerance to common dryland root rot.
Ankor Akron/Halt//4*Akron	CSU 2002 Hard red winter	R*	6	5	3	3	5	3	8	9	9	5	7	6	5	CSU release (2002). Backcross derivative of Akron with slightly higher grain yield under dryland conditions and improved straw strength. Leaf and stripe rust susceptible.
Antelope Pronghorn/Arlin	NE 2002 Hard white winter	S	5	5	2	5	5	3	2	7	8	5	5	7	7	Nebraska/USDA-ARS release (2002). Hard white wheat (HWW), best adapted under irrigation has now shown high irrigated yields in CSU irrigated trials. Good stripe rust resistance.
Aspen TAM 302/B1551W	Westbred 2006 Hard white winter	S	4	2	--	--	--	--	--	2	--	6	--	6	6	Westbred release (2006). Hard white winter wheat (HWW), good sprouting tolerance. First tested in CSU trials in 2007.
Avalanche KS87H325/Rio Blanco	CSU 2001 Hard white winter	S	5	5	4	3	5	4	8	8	5	2	5	2	5	CSU release (2001). Hard white winter wheat (HWW), sister selection to Trego. High test weight, excellent dryland yield in CO and Western KS. Leaf and stripe rust susceptible.
Bond CL Yumar//TXGH12588- 120*4/FS2	CSU 2004 Hard red winter	R*	5	5	4	2	5	4	8	5	8	7	8	7	3	CSU release (2004). Clearfield* winter wheat. Slightly later, slightly taller than Above. Excellent dryland yield in CO, very high irrigated yields, excellent baking quality, lower test weight.

Description of winter wheat varieties in eastern trials.

Name and Pedigree	Origin/Class	RWA	HD	HT	SS	SH	COL	WH	SR	LR	WSMV	TW	PC	MILL	BAKE	Comments
CO01385-A1 Yumar/Arlin	CSU EXP Hard red winter	R*	4	4	--	--	2	--	4	2	--	2	5	5	5	CSU experimental line, targeted for release in fall 2007. Highest yielding entry in both UVPT and IVPT on two-year average (2005, 2006). High test weight, good leaf and stripe rust resistance. Above average baking quality.
Danby TREGO/JGR 8W	KSU 2005 Hard white winter	S	6	4	5	3	4	4	4	5	5	2	5	2	7	KSU-Hays release (2005). Hard white wheat (HWW), similar to Trego, with improved stripe rust resistance and preharvest sprouting tolerance.
Duster WO405D/HGF112//W 7469C/HCF012	OK 2006 Hard red winter	S	6	5	--	--	2	--	8	2	--	5	--	3	5	Oklahoma State release (2006). Good yield performance in western Plains breeder trials first tested in CSU trials in 2007. Stripe rust susceptible.
Endurance HBY756A/Siouxland// 2180	OK 2004 Hard red winter	S	5	5	2	--	5	4	7	2	--	4	6	5	5	Oklahoma State release (2004). Dual-purpose (grain and grazing) wheat, excellent re-growth following grazing.
Fuller Bulk Selection	KSU 2006 Hard red winter	S	5	2	--	--	4	--	--	2	5	6	--	6	5	KSU-Manhattan release (1994). First tested in CSU trials in 2007.
Goodstreak SD3055/KS88H164//N E89646 (=COLT*2/PATRIZA NKA)	NE 2002 Hard red winter	S	7	8	3	--	9	5	5	5	8	3	4	2	8	Nebraska release (2002). Tall, long coleoptile, medium-late maturing. Good test weight, excellent dryland yield in CO and NE. Marginal baking quality.
Guymon Intrada/WI89-163W F2:8	OK 2005 Hard white winter	S	6	3	6	--	4	5	8	9	--	2	6	4	4	Oklahoma State release (2005). Hard white wheat (HWW), first tested in CSU trials in 2006. Very sprout susceptible.
Harry NE90614/NE87612	NE 2002 Hard red winter	S	7	4	5	--	5	5	7	5	8	8	7	7	7	Nebraska release (2002). Excellent dryland yield in CO and NE. Very low test weight.
Hatcher Yuma/PI 372129//TAM 200/3/4*Yuma/4/KS91 H184/Vista	CSU 2004 Hard red winter	R*	5	3	4	4	5	4	4	9	8	4	7	2	4	CSU release (2004). Medium maturing semidwarf. Good test weight, good stripe rust resistance, leaf rust susceptible. Excellent dryland and irrigated yield across the High Plains, good milling and baking quality.
Hawken Rowdy/W96-427	Agripro 2006 Hard red winter	S	3	4	--	--	5	--	2	4	--	3	--	5	6	Agripro release (2001). Targeted for northeast Colorado and further north, first tested in CSU trials in 2007. Good leaf and stripe rust resistance.
Infinity CL Windstar/3/NE94481// TXGH125888- 120*4/FS2	NE 2004 Hard red winter	S	6	5	4	--	6	2	4	3	--	4	5	--	--	Nebraska release (2005). Clearfield* winter wheat. Better baking quality than Above, good yield in 2006 CSU dryland trials.

Description of winter wheat varieties in eastern trials.

Name and Pedigree	Origin/Class	RWA	HD	HT	SS	SH	COL	WH	SR	LR	WSMV	TW	PC	MILL	BAKE	Comments
Jagalene Abilene/Jagger	Agripro 2001 Hard red winter	S	5	4	2	6	4	3	3	9	4	3	6	2	5	Agripro release (2001). Good test weight, good stripe rust resistance. Good dryland and irrigated yield in CO, has been observed to shatter in CO and KS trials. Very leaf rust susceptible.
Jagger KS82W418/Stephens	KSU 1994 Hard red winter	S	2	5	5	5	5	8	2	9	4	5	4	5	3	KSU-Manhattan release (1994). Early maturing semidwarf, excellent baking quality, good WSMV tolerance and stripe rust resistance, very leaf rust susceptible.. Breaks dormancy very early in the spring.
Keota Custer/Jagger	Westbred 2005 Hard red winter	S	6	6	4	--	5	5	2	9	5	5	4	6	6	Westbred release (2005). First tested in CSU trials in 2005. Good stripe rust resistance, leaf rust susceptible. Good dryland yields in CSU trials.
NuDakota Jagger/Romanian	Agripro 2005 Hard white winter	S	5	3	3	3	4	3	2	2	4	8	5	7	5	Agripro release (2005), first tested in CSU trials in 2006. Hard white wheat (HWW), good dryland yield record, very low test weight. Moderate sprout tolerance.
NuFrontier Pioneer bulk selection (HBK0927)	Agripro 2000 Hard white winter	S	6	6	4	4	5	4	3	5	8	4	6	4	5	Agripro release (2000). Hard white wheat (HWW), medium-late maturing, tall. Good stripe rust resistance, best adapted to dryland conditions. Very poor sprout tolerance.
NuGrain Platte/W92-456W	Agripro 2005 Hard white winter	S	6	5	4	3	5	4	8	9	5	3	5	--	--	Agripro release (2005), first tested in CSU trials in 2005 as GM10006. Hard white wheat (HWW), best adapted to irrigated conditions, though moderately susceptible to stripe rust and susceptible to leaf rust. Moderate sprout tolerance.
NuHills Abilene/Jagger	Agripro 2003 Hard white winter	S	4	3	2	3	4	5	2	8	4	6	4	2	5	Agripro release (2003). Hard white wheat (HWW), sister selection to Jagalene. Good straw strength, good stripe rust resistance. Lower sprout tolerance.
OK Bullet KS93U206//KS82W41 8/Stephens F3:9	OK 2006 Hard red winter	S	3	6	--	--	7	--	4	4	6	3	--	2	2	Oklahoma release (2006). First tested in CSU trials in 2007. Good milling and baking quality.
Overland Millennium 'S'/ND8974	NE 2006 Hard red winter	S	--	--	--	--	5	--	--	2	--	--	--	5	8	Nebraska release (2006). Official name is "Husker Genetics Brand Overland", tested in NE trials as NE01643. Has performed very well in Nebraska dryland trials, first tested in CSU trials in 2007. Poor baking quality.

Description of winter wheat varieties in eastern trials.

Name and Pedigree	Origin/Class	RWA	HD	HT	SS	SH	COL	WH	SR	LR	WSMV	TW	PC	MILL	BAKE	Comments
Platte N84-1104/Abilene	Agripro 1995 Hard white winter	S	6	2	1	4	3	5	9	9	7	3	5	3	1	Agripro release (1995). Hard white wheat (HWW), excellent test weight and milling and baking quality. Best adapted under irrigation, very susceptible to stripe rust and leaf rust. Poor sprout tolerance.
Postrock Ogallala/KSU94U261/ /Jagger	Agripro 2005 Hard red winter	S	4	4	4	--	5	5	2	2	4	3	5	3	4	Agripro release (2005), first tested in CSU trials in 2006. Good leaf and stripe rust resistance, good test weight.
Prairie Red CO850034/PI372129// 5*TAM 107	CSU 1998 Hard red winter	R*	3	3	3	3	6	4	9	9	5	5	6	4	7	CSU release (1998). Backcross derivative of TAM 107. Excellent stress tolerance, poor end-use quality reputation.
Prowers 99 CO850060/PI372129// 5*Lamar	CSU 1999 Hard red winter	R*	7	8	4	3	8	2	5	6	7	3	5	5	1	CSU release (1999), reselection from Prowers. Tall, long coleoptile, medium-late maturity, high test weight, excellent milling and baking quality characteristics.
Ripper CO940606/TAM107R- 2	CSU 2006 Hard red winter	R*	3	4	3	2	7	4	9	9	--	6	7	2	2	CSU release (2006). Excellent stress tolerance, very high dryland yields in CO, excellent milling and baking quality. Leaf and stripe rust susceptible.
RonL TREGO/CO960293	KSU 2006 Hard white winter	S	6	2	--	3	4	--	7	9	2	2	7	2	2	KSU-Hays release (2006). Hard white wheat (HWW), first tested in CSU trials in 2006. High test weight, excellent resistance to wheat streak mosaic virus.
Smoky Hill 97 8/64 MASA	Westbred 2006 Hard red winter	S	--	--	--	--	4	--	2	2	8	--	--	--	--	Westbred release (2006). First tested in CSU trials in 2007.
TAM 111 TAM- 107//TX78V3630/CTK 78/3//TX87V1233	TX 2002 Hard red winter	S	6	6	3	3	6	5	2	9	5	3	6	3	4	Texas A&M release (2002), marketed by Agripro. High test weight, good straw strength, good milling and baking quality characteristics. Good stripe rust resistance.
TAM 112 U1254-7-9-2- 1//TXGH10440	TX 2005 Hard red winter	S	4	5	7	--	7	--	9	9	5	5	--	6	6	Texas A&M release (2005), marketed by Agripro. Medium height, medium maturity. Excellent dryland performance in Western KS trials in 2006, first tested in CSU trials in 2007. Susceptible to leaf and stripe rust, moderately resistant to WSMV.
Trego KS87H325/Rio Blanco	KSU 1999 Hard white winter	S	6	3	4	3	5	4	8	9	5	2	6	2	6	KSU release (1999). Hard white winter wheat (HWW), medium-late maturity, semidwarf, high test weight.

Description of winter wheat varieties in eastern trials.

Name and Pedigree	Origin/Class	RWA	HD	HT	SS	SH	COL	WH	SR	LR	WSMV	TW	PC	MILL	BAKE	Comments
Wesley KS831936- 3//Colt/Cody	NE 1998 Hard red winter	S	5	2	2	6	7	3	3	3	7	6	1	3	4	Nebraska/USDA-ARS release (1998). Later maturing, short, excellent straw strength, good stripe rust resistance. Best adapted under irrigation has now shown high irrigated yields in CSU irrigated trials.
Yuma NS14/NS25/2/2*Vona	CSU 1991 Hard red winter	S	5	3	3	4	2	4	6	4	6	5	7	7	3	CSU release (1991). Medium maturity, semidwarf, short coleoptile, good baking quality characteristics. Tough to beat under irrigation.

Russian Wheat Aphid resistance (RWA), heading date (HD), plant height (HT), straw strength (SS), shatter (SH), coleoptile length (COL), winterhardiness (WH), stripe rust (SR), leaf rust resistance (LR), wheat streak mosaic virus tolerance (WSMV), test weight (TW), protein Content (PC), milling quality (MILL), and baking quality (BAKE).

**Rating scale: 0 - very good, very early, or very short to 9 - very poor, very late, or very tall.

***RWA rating denotes resistance to the original biotype (biotype 1) of RWA. All available cultivars are susceptible to the new biotypes of RWA.

2006 EASTERN COLORADO WINTER WHEAT VARIETY PERFORMANCE TRIALS

Colorado State University provides unbiased and reliable information to Colorado wheat producers to help them make better wheat variety decisions. Crop variety testing is only the tip of the iceberg of work in wheat improvement which includes excellent research faculty and staff, a focused breeding program, graduate and undergraduate students, and dedicated agricultural extension specialists. Wheat improvement in Colorado is made possible by the support and cooperation of the entire Colorado wheat industry.

Wheat variety performance trials represent the final stages of a wheat breeding program where experimental lines are tested under a broader range of conditions than is possible during earlier generations. On-going and strong support for a public breeding program at CSU is critical because the variety development is a long process, especially under the highly variable climatic conditions in Colorado.

Record hot temperatures in June combined with below average rainfall led to lower expected yields. 2006 trial average yields were 63% of average trial yields from 1997 through 2005. 2006 trial average precipitation was 70% of normal precipitation. Drought stress, high temperature stress often with dry winds, spring freeze injury, and the interaction among these, were the major factors influencing 2006 wheat variety trial performance. The significant precipitation (2-3+ inches in most areas) received in early October 2005, however, was extremely beneficial as this was the only appreciable precipitation received after planting in many areas. Wheat diseases, insects, and weed infestations were generally negligible in 2006, except for localized infestations of Russian wheat aphid, brown wheat mite, and wheat streak mosaic virus, the latter being widespread across the High Plains. Early reports in April of the lack of leaf and stripe rust in the southern Great Plains held true for Colorado as virtually no leaf or stripe rust pustules were observed on susceptible entries in the trials.

2006 Trials

There were 54 entries in the dryland performance trials (UVPT) and 40 entries in the irrigated performance trials (IVPT). All trials include a combination of public and private varieties and experimental lines from Colorado and surrounding states. Trials were planted in a randomized complete block design with four replicates (increased from three in previous years) in the dryland trials and three replicates in the irrigated trials. Yields are corrected to 13% moisture. All eleven dryland and three irrigated uniform variety performance trials were harvested. Three year and the 2006 yield summary results are presented below.

Note that individual 2006 Variety Trial Results for both dryland and irrigated trials including test weight, grain moisture, height, and lodging information will be available on the following websites:

- www.csucrops.com the CSU Crops Testing website for all Colorado crop performance results
- <http://wheat.colostate.edu/vpt.html> the CSU Wheat Breeding Program web site (downloadable wheat variety database)
- <http://www.coloradowheat.org> Colorado Wheat Administrative Committee, CAWG, and CWRF website

Table 2: Colorado Dryland Winter Wheat Variety Performance Trial Summary For 2006.

Variety ¹	2006 Trial Locations											2006 Yield	Grain Moisture	Test Weight	Plant Height
	Akron	Arapahoe	Bennett	Burlington	Genoa	Julesburg	Lamar	Orchard	Sheridan Lake	Walsh	Yuma				
	Yield (bu/ac)														
Ripper	30.7	15.0	34.7	13.1	30.5	4.8	28.8	42.3	36.5	24.7	44.7	27.8	9.7	56.9	19.7
NuDakota	39.7	16.3	35.3	19.8	28.9	8.5	24.6	40.3	29.6	21.0	41.9	27.8	9.9	56.4	20.0
Infinity CL	33.8	12.7	33.5	16.9	34.3	10.7	25.4	43.4	32.6	20.7	38.0	27.5	10.3	57.5	22.6
Goodstreak	27.3	17.0	35.8	18.7	27.5	10.5	21.5	46.5	43.9	14.0	38.3	27.4	10.3	58.6	23.3
Endurance	29.9	16.6	34.5	22.6	27.5	7.4	20.6	42.6	40.6	19.0	36.8	27.1	10.7	58.6	20.5
Harry	21.5	16.6	34.2	16.6	29.0	6.7	23.8	44.3	48.3	16.2	39.3	27.0	9.4	55.9	20.7
Keota	29.6	11.7	38.9	20.3	26.7	4.8	21.0	43.7	37.4	21.0	41.4	26.9	10.5	58.7	22.0
Hatcher	17.1	13.4	43.3	21.7	28.7	2.2	23.0	43.7	38.7	21.2	39.5	26.6	10.4	58.6	20.4
Alliance	26.1	15.8	34.5	19.5	32.2	2.9	22.4	38.0	43.5	15.9	38.2	26.3	10.3	57.8	21.7
Avalanche	28.5	13.7	35.8	17.4	27.7	7.5	26.7	37.6	35.2	19.5	39.0	26.2	10.7	58.9	21.0
Yuma	23.2	16.6	34.9	19.0	27.5	6.4	23.1	42.6	36.2	20.8	38.0	26.2	9.8	57.4	20.3
Ankor	20.8	14.7	37.6	19.8	27.6	3.8	23.9	42.0	39.3	19.2	39.6	26.2	10.4	57.6	20.7
Trego	18.3	16.1	33.8	15.2	30.2	8.3	24.8	44.2	38.1	18.8	40.1	26.2	10.7	59.5	19.9
Jagger	34.9	10.0	31.1	22.0	27.2	13.6	23.4	36.3	31.7	18.3	38.5	26.1	10.0	57.5	22.2
Bond CL	19.3	15.4	36.8	14.0	24.8	10.9	28.3	41.9	32.9	17.7	43.8	26.0	10.1	56.7	22.2
Akron	20.3	16.1	35.4	19.0	26.8	4.1	23.6	41.4	39.4	22.0	35.6	25.8	10.3	58.0	20.6
KS03HW6-6	20.3	13.8	34.1	13.3	30.1	7.5	24.9	42.4	50.3	9.0	35.3	25.5	10.4	58.1	20.0
Above	26.9	13.5	35.6	21.0	30.5	5.3	26.2	36.2	38.8	19.3	26.9	25.5	10.2	57.7	20.6
Danby	15.8	13.1	40.4	16.4	30.6	3.8	21.0	38.6	36.0	28.5	33.1	25.2	11.0	60.0	21.0
Prairie Red	27.3	10.4	30.3	19.6	28.9	6.0	25.5	36.7	30.7	20.6	35.0	24.6	10.0	57.9	20.4
Jagalene	28.4	14.2	32.2	19.0	28.2	4.3	20.9	34.1	33.0	20.1	35.6	24.5	10.5	59.3	20.9
NuHills	25.4	12.3	33.4	13.5	25.9	11.9	26.3	33.9	37.2	20.1	28.1	24.4	10.2	58.1	19.8
NuGrain	23.6	13.9	28.6	14.9	26.1	8.7	23.3	40.5	35.2	16.7	36.3	24.3	11.0	59.6	20.0
TAM 111	17.6	11.7	35.9	18.8	28.4	4.2	22.8	43.0	34.3	15.6	34.8	24.3	10.9	58.7	22.2
Guymon	24.0	14.0	28.7	14.0	23.2	8.7	23.6	40.2	39.5	16.5	31.6	24.0	10.0	59.5	19.4
NuFrontier	27.7	15.3	31.3	12.5	25.0	13.8	17.1	28.3	37.7	17.0	37.8	24.0	9.4	58.6	19.8
Prowers 99	20.4	12.6	31.4	13.8	24.8	6.7	19.1	39.5	38.3	15.3	38.2	23.6	10.3	58.9	22.6
Postrock	24.3	13.0	32.0	20.3	20.5	5.4	23.5	36.0	29.2	18.3	34.9	23.4	10.5	58.0	21.0
RonL	14.6	13.2	32.1	10.1	26.5	8.6	24.3	37.1	35.5	20.4	30.3	23.0	11.0	59.7	18.5
Average	24.7	14.1	34.4	17.3	27.8	7.2	23.6	39.9	37.2	18.9	36.9	25.6	10.3	58.2	20.8
LSD _(0.30)	4.8	2.1	2.3	2.6	3.5	3.7	2.4	3.9	3.9	2.2	5.0				

¹Varieties in table ranked by the average yield over 11 locations in 2006.



Jim Hain Crop Testing Planting Wheat (left) and Ron Meyer Wheat Extension Educator (right).

Specific comments about individual dryland variety trial locations:

- Walsh – low early soil moisture and low precipitation in May led to low trial yields. Some plots were lost to drought stress resulting from prior bindweed patches.
- Lamar – very early maturity and low April moisture lead to low yields.
- Arapahoe – looked good at the end of March but very low April-June precipitation led to very low yields.
- Burlington – poor and uneven emergence due to crusting and low April-May precipitation led to very low trial yields.
- Genoa – late emergence, average stands, and high altitude led to better yields in 2006, albeit only 72% of long term average yields.
- Akron – timely planting, excellent stands and fall growth looked terrific until May when very high tillering and drought stress led to much lower than expected yields.
- Julesburg – late planting following October moisture, stand establishment was good, but consistently low precipitation from March through May led to very low yields.
- Orchard – uniformly thin stand establishment and near average October to May precipitation led to higher than average yields.

Colorado Dryland Winter Wheat 3-Yr and 2-Yr Variety Performance Trial Summary

Variety ¹	Averages		2006	2005	2004	3-Yr	2-Yr
	3-Yr	2-Yr					
	-----Yield (bu/ac)-----					--Twt (lb/bu)--	
Ripper	36.7	33.1	27.8	38.9	52.1	56.9	56.9
Bond CL	35.3	32.2	26.0	39.0	48.4	56.3	56.5
Hatcher	34.3	31.0	26.6	35.8	48.3	57.8	58.0
Avalanche	33.5	29.4	26.2	33.0	50.6	58.6	58.7
Jagalene	33.5	28.6	24.5	33.1	54.1	58.1	58.1
Above	33.4	29.1	25.5	33.1	51.4	57.7	58.0
Harry	33.3	29.1	27.0	31.4	51.2	54.9	55.1
Goodstreak	32.9	28.6	27.4	30.0	51.0	58.3	58.4
Jagger	32.7	29.3	26.1	32.7	47.3	56.8	56.9
Alliance	32.4	29.1	26.3	32.2	46.4	57.4	57.8
Prairie Red	32.4	28.7	24.6	33.1	48.0	57.6	57.7
Yuma	32.2	28.4	26.2	30.8	48.4	56.8	56.9
NuHills	31.9	28.1	24.4	32.2	48.1	56.5	56.3
Ankor	31.8	27.9	26.2	29.7	48.3	57.3	57.3
NuFrontier	31.5	27.8	24.0	32.0	47.3	57.8	57.9
TAM 111	31.3	26.7	24.3	29.4	50.2	57.9	58.0
Akron	30.4	26.5	25.8	27.2	46.7	57.5	57.6
Trego	30.3	26.2	26.2	26.2	47.7	59.0	58.9
Prowers 99	30.1	27.3	23.6	31.3	42.2	58.1	58.2
Varieties that have only been in the trial for two years.							
Keota		30.2	26.9	33.7			57.3
Infinity CL		29.2	27.5	31.1			57.0
Endurance		28.8	27.1	30.7			58.3
NuGrain		28.2	24.3	32.5			58.8
Danby		27.9	25.2	30.9			58.8
Average	32.6	28.8	25.8	32.1	48.8	57.4	57.6

¹Varieties in table ranked based on 3-Yr average yields.

Discussion of Dryland Wheat Variety Trial Results

The effects of drought, high temperatures, and windy conditions greatly affected 2006 trial yields and led to a compression of average variety performance which meant that, when 2006 yields are averaged with yields from 2005 and 2004, there was little change in the rank of varieties over the three years 2004-2006.

Ripper was being advanced toward variety release in fall 2006 and proved to be high yielding in the past three years as well as this year. The impressive average performance of NuDakota in the 2006 trials will need to be confirmed by trial results in future years. Avalanche has pulled away from Trego in terms of recent average yield under Colorado conditions. Producers who choose to plant Prowers 99 should expect to suffer yield loss, though Goodstreak may be a good option for those interested in a standard height (tall) wheat. Ankor, is proving to yield approximately 2 bu/ac better than Akron over the past three years even though its RWA resistance has been rendered ineffective by the prevalence of new RWA biotypes. Alliance, Prairie Red, Yuma, NuHills, TAM 111, NuFrontier, and Akron can be replaced by higher yielding varieties in Colorado.

Colorado Irrigated Winter Wheat Variety Performance Trial Summary For 2006

Variety ¹	Haxtun				Fort Collins					Rocky Ford					'06 avg Test Wt
	Yield	Grain Moist	Test Wt	Plant Ht	Yield	Grain Moist	Test Wt	Plant Ht	Head ²	Yield	Grain Moist	Test Wt	Plant Ht	Head ²	
	bu/ac	%	lb/bu	in	bu/ac	%	lb/bu	in	date	bu/ac	%	lb/bu	in	date	lb/bu
Bond CL	133.0	10.5	57.2	36	44.8	10.6	54.4	21	141	60.6	10.5	56.6	37	134	56.1
TAM 111	119.9	11.9	59.5	37	66.5	11.9	61.1	26	144	68.1	9.0	57.3	37	136	59.3
Keota	119.4	11.4	58.6	39	59.8	11.2	59.6	27	143	70.4	9.4	57.5	37	134	58.5
Danby	118.8	11.9	60.5	36	55.3	10.9	56.6	26	142	56.5	8.7	58.1	33	134	58.4
Platte	116.1	11.4	60.1	32	55.0	8.2	59.3	23	144	71.0	8.7	56.7	34	137	58.7
Ankor	115.4	11.1	57.6	33	50.7	12.4	58.6	23	143	58.1	8.6	56.1	35	134	57.5
NI03427	111.8	12.0	59.8	34	66.2	11.3	60.6	23	142	60.5	9.7	58.3	32	135	59.6
Hatcher	111.4	11.0	58.3	32	47.3	11.4	59.8	21	143	54.2	9.7	56.9	33	134	58.4
Yuma	110.4	10.9	58.5	35	45.2	10.0	58.2	20	144	60.6	9.8	56.7	33	136	57.8
Prairie Red	109.9	10.7	58.7	36	44.6	8.3	60.0	28	141	59.2	10.4	56.7	32	128	58.5
NuFrontier	107.9	11.1	59.1	38	47.7	12.2	60.0	27	142	54.4	9.2	58.0	35	136	59.0
NuDakota	106.7	10.9	57.9	34	39.5	11.0	53.7	22	141	62.0	8.7	54.3	34	136	55.3
NuGrain	105.4	11.1	59.8	32	46.1	11.1	60.8	24	142	64.9	8.8	57.5	34	135	59.4
Guymon	104.8	11.2	59.8	34	49.0	10.2	59.4	23	142	60.6	10.0	56.9	32	136	58.7
Antelope	103.6	10.9	57.9	35	43.1	10.5	58.2	23	141	58.3	9.5	56.4	31	133	57.5
NuHills	101.9	11.1	59.2	35	47.4	4.7	53.6	19	140	66.6	10.3	57.7	33	133	56.8
NI02425	101.8	10.4	58.3	34	43.4	2.4	51.4	21	141	44.3	10.8	55.7	31	132	55.1
Jagalene	99.1	11.4	58.9	35	53.1	11.0	60.5	23	142	62.1	9.1	57.8	36	132	59.1
NW98S097	98.5	10.9	59.2	35	43.9	8.8	59.3	22	146	47.6	10.4	57.2	31	137	58.6
Wesley	92.1	10.5	57.8	33	41.1	4.4	55.1	21	142	47.6	9.8	55.7	32	136	56.2
Postrock	86.5	11.0	59.1	33	50.9	9.5	60.6	22	140	60.9	9.5	56.9	35	134	58.9
Average	108.3	11.1	58.8	35	49.5	9.6	58.1	23	142	59.5	9.5	56.9	34	134	58.0
LSD _(0.30)	5.2				5.5					6.6					

¹Varieties in table ranked by the average yield at Haxtun.

²Julian date from January 1.

Specific comments about individual irrigated variety trial locations

- Haxtun (Irrigated) – Early planting after pinto bean crop, good stand establishment, good fall and spring tillering, and excellent fertilizer and water management produced a superlative trial for comparing variety performance near maximum yield capability.
- Fort Collins (Irrigated) – timely planting, excellent fall stands and growth, very little spring precipitation and problems with sprinkler irrigation system resulted in drought stress and shortened plant height.
- Rocky Ford (Irrigated) – In mid-June this trial looked like it would average 100-110 bu/ac as plant stands were good, tillering was excellent, RWA was controlled by spraying and there were no diseases. Some plots were starting to lodge. However, high winds and heavy rainfall led to severe lodging subsequently causing estimated losses of 30-40 bu/ac.

Colorado Irrigated Winter Wheat 3-Yr and 2-Yr Variety Performance Trial Summary

Variety ⁴	Haxtun ¹		Variety ⁴	Fort Collins ²		Variety ⁴	Rocky Ford ³		
	2006	2-Yr ave		2006	2-Yr ave		2006	2-Yr ave	3-Yr ave
	Yield (bu/ac)			Yield (bu/ac)			Yield (bu/ac)		
Bond CL	133.0	131.8	NuGrain	46.1	69.9	NuHills	66.6	82.9	89.3
Yuma	110.4	121.9	Bond CL	44.8	69.8	TAM 111	68.1	82.8	-----
TAM 111	119.9	119.9	TAM 111	66.5	67.7	Jagalene	62.1	77.3	78.7
Ankor	115.4	118.0	Jagalene	53.1	64.2	NuGrain	64.9	76.9	-----
Hatcher	111.4	114.9	Ankor	50.7	64.0	NuFrontier	54.4	76.7	81.9
Antelope	103.6	112.6	Hatcher	47.3	63.8	Bond CL	60.6	76.3	82.5
Platte	116.1	112.0	NuFrontier	47.7	61.8	Hatcher	54.2	75.7	78.7
NuFrontier	107.9	109.8	Platte	55.0	60.2	Platte	71.0	74.4	75.3
Prairie Red	109.9	109.5	Yuma	45.2	59.7	Yuma	60.6	71.3	79.5
Jagalene	99.1	109.5	NuHills	47.4	57.1	Antelope	58.3	71.1	73.9
NuGrain	105.4	105.4	Antelope	43.1	56.6	Prairie Red	59.2	70.1	82.1
Wesley	92.1	102.9	Prairie Red	44.6	45.7	Ankor	58.1	69.8	79.0
NuHills	101.9	102.8	Wesley	41.1	42.7	Wesley	47.6	68.1	73.2
Average	109.7	113.2	Average	48.6	60.3	Average	60.4	74.9	79.5
LSD _(0,30)	5.2		LSD _(0,30)	5.5		LSD _(0,30)	6.6		

¹The irrigated trial was not conducted at Haxtun in 2005 so results from 2004 and 2006 were used for the 2-Yr averages.

²The Fort Collins 2004 trial results were not reported so data are only available for the 2005 and 2006 results.

³At Rocky Ford, 3-Yr averages could not be computed for TAM 111 and NuGrain because they were not entered in the 2004 trial.

⁴Varieties are ranked at each location according to 2-Yr average yields.

Discussion of Irrigated Wheat Variety Trial Results

The irrigated variety trial results are not averaged across years and locations like previous years. Three locations per year is a very small sample and ranking varieties according to differences among variety mean yields can easily misrepresent good performance of some varieties at specific locations where the trial has been repeated for multiple years. Each of the irrigated variety trial locations represents a very different agro-climatic environment that might account for different variety performance.

Yields at the Fort Collins trials in 2005 and 2006 are lower than what we would like to see in order to evaluate the maximum yield potential of irrigated wheat varieties on the Front Range. While we strive to manage the Fort Collins trial for high yields, the lack of natural precipitation, abnormally high

temperatures, and mechanical difficulties with the linear move irrigation system resulted in low yields. Similarly, excessive early lodging at Rocky Ford due to severe storms reduced all variety yields approximately 30-40 bu/ac below their potential yield in the Arkansas Valley. The 2004 and 2006 trials at Haxtun were indicative of the maximum irrigated yield potential in northeastern Colorado. Bond CL stands out for its superlative yield potential in these two trials followed by TAM 111, Platte, Ankor, Hatcher, and Yuma that all averaged over 110 bu/ac.

For farmers, irrigated variety selection must also take into consideration stripe rust resistance and lodging. For variety ratings for these characteristics, see the Making Better Decisions Winter Wheat Variety Selection in Colorado for Fall 2006 tables below.

2006 Collaborative On-Farm Tests (COFT) Performance Trial Results

Over half of Colorado's 2006 wheat acreage was planted to winter wheat varieties that have been tested in the COFT program which is in its eighth year of testing. With on-farm testing, wheat producers evaluate new varieties on their own farms before seed of the new varieties is available on the market to all farmers. On-farm testing directly involves agents and producers in the variety development process, thereby speeding adoption of superior, new varieties.

Colorado State University Cooperative Extension specialists have a large responsibility for the success of this program - recruiting volunteer growers, delivering seed, planning test layout and operations, helping with planting, keeping records, coordinating visits, communicating with growers and campus coordinators, coordination of weighing plots and measuring yields. Equally important, COFT would not be possible without the collaboration of so many dedicated wheat producers throughout eastern Colorado.

Eastern Colorado Cooperative Extension Wheat Educators and On-Farm Test Coordinators

<u>Name</u>	<u>Title</u>	<u>Office Location</u>
Bruce Bosley	Platte River agronomist	Sterling
Scott Brase	SE Area agronomist	Lamar
Alan Helm	Golden Plains specialist	Holyoke
Ron Meyer	Golden Plains agronomist	Burlington

In the fall of 2005, twenty eastern Colorado wheat producers planted collaborative COFT trials in Baca, Prowers, Kiowa, Cheyenne, Lincoln, Kit Carson, Phillips, Sedgwick, Logan, Morgan, Adams, and Weld counties. Working with local Extension specialists, each producer/ collaborator received 100-150 pounds seed of each variety and planted the five varieties in side-by-side strips. The objective of the 2006 COFT was to compare performance and adaptability of newly-released varieties to varieties they might replace in Colorado.

Variety Performance in the 2006 Collaborative On-Farm Test

Location	Hatcher	Avalanche	Bond CL	Above	Ankor	Test Average
Yield (bu/ac) at 13% moisture						
SE Baca	8.5	8.2	5.6	7.1	9.3	7.7
SE Baca II	13.7	17.2	16.1	16.0	16.9	16.0
WC Baca	7.8	14.9	12.7	12.1	12.6	12.0
SE Prowers	5.0	4.2	4.6	3.8	6.7	4.9
EC Kiowa	41.9	38.9	34.6	30.7	38.9	37.0
SE Lincoln	16.6	20.2	21.7	20.1	18.2	19.4
NC Cheyenne	12.2	11.4	11.6	10.8	9.7	11.1
EC Kit Carson	20.4	26.8	26.2	24.6	24.1	24.4
NW Kit Carson	38.4	33.3	33.3	25.9	33.6	32.9
SC Kit Carson	9.8	13.3	11.7	9.5	9.5	10.8
WC Washington	41.2	38.1	37.7	38.4	35.8	38.2
NW Yuma	33.7	30.4	43.4	34.7	29.0	34.3
WC Phillips	26.5	25.1	22.3	26.1	25.5	25.1
NC Logan	36.1	35.8	35.1	38.9	37.2	36.6
SC Logan	25.8	22.9	21.9	22.0	22.7	21.7
WC Logan	19.1	17.8	15.5	17.2	15.1	16.9
NW Morgan	35.8	37.6	34.8	37.1	37.0	36.5
NW Adams	31.3	23.1	26.1	25.9	25.4	26.4
SE Adams	28.0	16.8	22.6	21.0	21.5	22.0
SW Weld	21.0	19.6	15.1	21.3	21.9	19.8
Variety Yield	23.6	23.0	22.8	22.3	22.5	22.9
Variety Test Wt	58.0	58.2	54.9	56.6	56.7	56.9
Variety % moisture	11.1	11.3	11.0	11.0	11.2	11.1

COFT Results and Discussion

Results were obtained from all of the COFT plots that were planted. This is the highest percent of success of COFT plots during the eight-year history due to the excellent collaborative efforts of extension specialists and COFT producers. All of the climatic conditions described above that influenced yields of the variety performance trials also affected COFT yields.

CSU's new *CLEARFIELD** release, Bond CL, yielded a half bu/ac more than CSU's *CLEARFIELD** wheat variety, Above, under 2006 wheat production conditions. Bond CL is a higher quality wheat than Above and it is the highest yielding irrigated wheat variety in Colorado. It seems reasonable to assume that, if normal precipitation patterns are received in future years, that Bond CL will yield well under higher dryland yield situations as it has under the dry 2006 yield conditions. Our chief concern with Bond CL is that its test weights are lower than the test weights of varieties that it might replace which should be considered by producers in making variety selections.

The newly released CSU variety Hatcher yielded relatively more (and had relatively higher test weights) than the other COFT varieties. Hatcher is also a high yielding irrigated wheat variety, implying that it, like Bond CL, might be expected to maintain relatively high yields under higher yielding dryland conditions as well when we return to normal precipitation patterns.

Avalanche white wheat performed admirably under tough conditions and is still the recommended

dryland white wheat variety for Colorado.

Finally, CSU's new releases, Hatcher and Bond CL, passed the 'trial by fire' test in 2006 with flying colors by their performance under COFT's varied farm conditions.

2006 UVPT and COFT results indicate that Colorado producers growing Ankor and Above might consider replacing them with Hatcher and Bond CL respectively.

Making Better Decisions Winter Wheat Variety Selection in Colorado for Fall 2006

Hard white wheat (HWW) - HWW represents the most promising future for wheat production and marketing in Colorado. The HWW variety, Avalanche, has performed well since it was initially tested in 2001. CSU is aggressively pursuing improved HWW variety development in its breeding program and various other public and private HWW varieties also show promise for production in Colorado. A HWW variety should be high on the list for variety selection in 2006.

CLEARFIELD* wheat - The CLEARFIELD* variety, Bond CL, has performed extremely well under dryland conditions over the past three years although lower test weight is a concern. It has also proven to be high yielding under irrigated conditions. It is important to remember that you can't save seed of CLEARFIELD* varieties - even to plant on your own farm. The Plant Variety Protection Act and a U.S. Utility Patent protect them from unauthorized sale and replanting for another commercial crop.

Selecting your variety

Dryland wheat producers: **Our first suggestion is to plant more than one variety in order to spread your risk.** Secondly, with the variability among trial locations in 2006, as well as variability among locations across years, **producers are strongly encouraged to consider multiple-year summary yield results** and other trait information instead of single-location, or single-year results to make better variety decisions. The dryland yield table below is based on three-year average performance in our trials and varieties are alphabetically ranked within a column. Under our normal low rainfall conditions, wheat streak mosaic virus will probably be a more consistent threat than stripe rust and worthy of consideration when selecting a variety.

Irrigated wheat producers: The irrigated yield table below is based the 2004 and 2006 average yields at Haxtun because these results most accurately predict the high yield potential of varieties under consistently good management. All of the varieties tested at Haxtun for these two years are capable of yielding over 100 bu/ac. Varieties are alphabetically ranked within a column. The most important variety selection criteria are yield, straw strength, and stripe rust resistance from the tables below. Some yield loss might be expected with Platte when stripe rust is a problem and is not effectively controlled with fungicides. Bond CL has performed very well and it has above average straw strength (as do Yuma and Jagalene), but lower test weight remains a concern.

2006 Colorado Winter Wheat Variety Decision Tables

High Performance Varieties for Dryland Eastern Colorado				
Higher Yielding		Intermediate		Lower Yielding
Above Avalanche Bond CL	Hatcher Jagalene	Alliance Ankor Goodstreak Harry	Jagger Prairie Red Yuma NuFrontier	Akron Prowers 99 TAM 111 Trego
High Performance Varieties for Colorado Irrigated Conditions				
Highest Yielding (over 130 bu/ac)		Intermediate (over 110 bu/ac)		Lower Yielding (over 100 bu/ac)
Bond CL		Ankor Antelope Hatcher Jagalene NuFrontier	Platte Prairie Red TAM 111 Yuma	NuGrain Wesley NuHills
Stripe Rust				
Moderately Resistant-Resistant		Intermediate	Moderately Susceptible-Susceptible	
Antelope Jagger Keota NuDakota	NuHills TAM 111 Postrock	All Others	Above Akron Ankor Avalanche Bond CL	Guymon NuGrain Platte Prairie Red Trego
Wheat Streak Mosaic Virus				
Moderately Resistant-Resistant		Intermediate	Moderately Susceptible-Susceptible	
RonL		Above Avalanche Danby Jagalene Jagger Keota	NuDakota NuGrain NuHills Postrock Prairie Red TAM 111 Trego	All Others
Test Weight				
Highest		Average	Lowest	
Avalanche Danby Guymon	RonL Trego	All Others	Bond CL Harry NuDakota NuHills Wesley	
Heading Date				
Earliest		Medium	Latest	
Above Jagger	NuHills Prairie Red	All Others	Harry Goodstreak Prowers 99	
Height				

Shortest		Medium		Tallest	
Above Danby Harry Hatcher Jagalene NuDakota NuHills	Platte Postrock Prairie Red RonL Trego Wesley Yuma	All Others		Goodstreak Prowers 99	
Coleoptile Length					
Shortest		Medium		Longest	
Alliance Danby Guymon Jagalene NuDakota	NuHills RonL Platte Yuma	All Others		Above Goodstreak Prowers 99 Wesley	
Winter Hardiness					
Good		Average		Fair	
Akron Alliance Ankor Antelope	Infinity CL Jagalene NuDakota Prowers 99 Wesley	All Others		Jagger	
Protein Content					
Highest		Average		Lowest	
Goodstreak Jagger Keota NuHills Wesley		All Others		Above Alliance Ankor Bond CL Harry	Hatcher RonL Yuma
Straw Strength (Irrigated Only)					
Best		Good		Poorer	
Antelope Endurance Jagalene NuHills	Platte Wesley	Above Ankor Goodstreak NuDakota	Prairie Red TAM 111 Yuma	All Others	



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