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# **FROM THE GROUND UP**

## *Agronomy News*

### **Plant the best seed for success on your farm**

By Brad Erker, Director of Colorado Seed Programs at CSU



What's so special about certified seed?

The CSU Wheat Team traveled Eastern Colorado the week of August 13<sup>th</sup> to hold the annual Wheat Planting Decision

Meetings. One of the topics we discussed was the process used to certify wheat seed. A question that came up was "Is certified seed better than bin-run, or farmer-saved seed?"

Short answer: Good wheat seed can be grown on any farm with clean ground if the right methods are used. But it takes a lot of meticulous work to produce seed the way a certified seed grower does. The Colorado Seed Growers Association provides assurance to farmers that the certified seed they're buying is a high quality product.

The certified seed system uses limited generations to ensure that the seed farmers are purchasing is never more than three generations removed from the seed controlled by the plant breeder. The progression of seed classes goes from Breeder seed, to Foundation seed, then to Registered seed, and finally to Certified class seed, the class where enough seed has been produced to be widely available to farmers all over the state.

The process starts two to three years in advance as the seed grower plans his crop rotations. CSGA standards require at least one year of fallow, or a crop other than wheat, on a field that will be used to grow Certified class seed. Two years out of wheat are required to produce the Registered class of seed.

The next requirement seed growers must meet is to plant an approved seed source. Only Foundation or Registered seed can be planted to produce the Certified class of seed. CSGA verifies seed source on all fields by requiring proof via a bag tag or verifiable certification number.

During June and July, the CSGA office is busy inspecting each and every field that is producing certified seed. We have a team of trained inspectors that physically walk every field and assess it against CSGA standards. One of the main goals of certified seed is to maintain the characteristics designed by the breeder all the way through to

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the certified class of seed. This includes traits such as disease resistance, yield ability, and milling and baking qualities. To this end, we have an upper limit of 1:1000 other varieties. This means that we are very strict about purity – only one tenth of one percent of the plants in the field can be an off-type. We also look for noxious weeds like rye, jointed goatgrass, and bindweed. All of our field standards are publicly available and can be found on the web at [www.seeds.colostate.edu](http://www.seeds.colostate.edu) under the CSGA page. Feral rye, one of the main weed nemeses of wheat growers, has zero tolerance at the field inspection.

### FROM THE GROUND UP

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Next, the seed growers carefully manage harvesting, storage, and cleaning of the seed. Combines are cleaned down between varieties to maintain varietal purity. Seed bins are kept clean and separate from grain production, with designated bins for each different variety. The seed must be cleaned by an Approved Conditioner, a full member of CSGA whose plant has been approved by our office to clean certified seed. Seed samples are pulled to be sent in for analysis by an official lab. All of these steps require additional work and inputs on the part of the seed growers.

All certified seedlots must be tested for germination and purity by an approved seed testing laboratory. Most of the certified wheat seed gets tested by the Colorado Seed Laboratory at the CSU campus. Wheat must germinate at a rate of at least 85% to meet standards. The seeds are grown in an incubator for about a week to ensure they will sprout when you put them in your field. Seedlots are also analyzed for purity, which must be at least 98%. We also have standards for other crop seed, inert matter, noxious weeds, and many others. Any seedlot found to contain a noxious weed seed, rye, or jointed goatgrass seed is rejected. Again, the CSGA seed standards can be found at the website listed above.

Once a certified seedlot has passed all of the steps listed above, we issue a certification number. This number is generated only by our computer system, and is your proof as a consumer that the seed growers have met all of the standards. The cert number is printed on the blue Certified seed tags or Bulk Sales Certificates that you receive when you purchase Certified seed.

Growing certified seed is like passing a test where 99% is still a failing grade. It takes 100% to pass the test and get the seed certified. Remember this when you consider what seed to plant this fall.



CSGA field inspector Trent Lundquist inspects a field of Ankor wheat for Certified seed.

## Plant Variety Protection Applies to Wheat Seed

By Brad Erker, Director of Colorado Seed Programs at CSU

Plant Variety Protection, or PVP, is not a commonly used term out on the farm. I come from a wheat farm, and I spend a lot of time talking to farmers when I'm out traveling in the summer months. Things like the price of tractors and fuel, the ups and downs of the commodity markets, and the current trends in the weather usually dominate the talk around the shop.

Selling PVP protected wheat varieties is illegal and something you need to be aware of. Details about the Plant Variety Protection Act can be found in the Colorado Seed Growers Association Certified Seed Directory (call 970-491-6202 to get a free copy), or on the PVP website at: [www.ams.usda.gov/Science/PVPO/PVPindex.htm](http://www.ams.usda.gov/Science/PVPO/PVPindex.htm)

Here are the basics. Essentially all wheat varieties commonly grown in Colorado and released within the past 20 years are PVP protected. As a farmer, you are allowed to save seed to plant on your own holdings – land you own, lease, or rent. However, it is illegal and a violation of the PVP to sell seed of that variety, unless it is a class of certified seed. Advertising seed as VNS, or “Variety Not Stated” does not get you around the law and is still a violation of the PVP.

Clearfield wheat varieties have an additional restriction. They are protected by both PVP and by a patent. Clearfield wheats such as Above, Bond CL, or AP502CL can be used by farmers only if they sign a BASF Clearfield Stewardship Agreement for the year in which they will grow Clearfield wheat. The agreement requires that the farmer use Clearfield wheat seed solely for planting a single commercial crop. Saving seed is not allowed; you need to purchase new certified seed each year.

Variety owners have in the past, and will continue to enforce their PVP rights. Last year the Colorado Wheat Research Foundation entered into a Consent Judgement and Injunction with a Colorado farmer for \$74,250, with future inspection rights and injunction against selling or marketing CWRF's federally protected wheat varieties. The variety at issue was Prairie Red.

Our seed system in the U.S. is very good. Buying certified seed gives you assurances of quality, and the royalties paid on purchases of certified seed go back into local breeding programs to keep bringing out newer, better genetics. If you choose to grow your own seed, keep it just for your own farm, and don't save seed of the Clearfield varieties. Don't take the chance of being the next one caught illegally selling seed.

### For past issues of the Agronomy News on agricultural topics such as:

- Colorado Pesticide Issues
- Bio-Pharming
- Wheat Variety Trial Results
- Drought
- Forages
- Beans
- Sensors in Agriculture
- Dryland Corn
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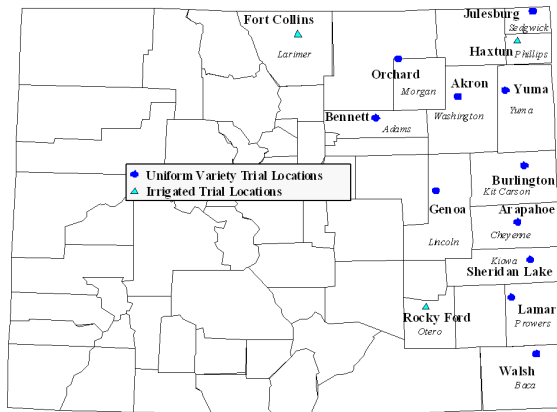
## 2007 Colorado Winter Wheat Variety Performance Trial Results

Jerry Johnson and Scott Haley (July 2007)

Colorado State University provides unbiased and reliable information to Colorado wheat producers to help them make better wheat variety decisions. Colorado State University provides excellent research faculty and staff, a focused breeding program, graduate and undergraduate students, and dedicated agricultural extension specialists. However, wheat improvement in Colorado would not be possible without the support and cooperation of the entire Colorado wheat industry. On-going and strong support for a public breeding program is critical because variety development and testing is a long process, especially under the highly variable climatic conditions in Colorado.

Our wheat variety performance trials, and collaborative on-farm testing, represent the final stages of a wheat breeding program where promising experimental lines are tested under an increasingly broad range of environmental conditions. Variation in precipitation, as well as variable fall, winter, and spring temperature regimes, hail and spring freeze events, interact with disease and insect pests and variety maturity to affect wheat yields. As a consequence of large environmental variation, Colorado State University annually conducts a large number of performance trials, which serve to guide producer variety decisions and to assist our breeding program to more reliably select and advance the most promising lines toward release as new varieties.

### 2007 Dryland and Irrigated Performance Trial Locations



### 2007 Performance Trial Information

There were 40 different entries in the dryland performance trials (UVPT) and 32 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 in the dryland trials and three replicates in the irrigated trials. Plot size was approximately 160 ft<sup>2</sup> and all varieties were planted at 600,000 viable seeds per acre for dryland trials and 1.2 million viable seeds per acre for irrigated trials (viable seed is determined by a germination test prior to planting). Yields are corrected to 13% moisture. All eleven dryland and three irrigated variety performance trials were harvested. Test weight information was obtained from cleaned grain samples from three replicates at Walsh, Burlington, Akron, Julesburg, and Fort Collins. For the remaining dryland and irrigated locations, test weight for each plot was estimated from single replicate, cleaned grain samples correlated to our Harvest Master combine test weight data.

Complete performance results for all entries (including experimental lines) as well as additional variety information, including test weight, grain moisture, height, lodging information, and disease scores can be found on the following websites:

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

**Summary of 2007, 2-yr, and 3-yr Average Yield and Test Weight for Colorado Dryland Variety Trials.**

2007 Average				2-Yr Average			3-Yr Average		
Origin		Yield	Test Weight		Yield	Test Weight		Yield	Test Weight
Release Year	Variety	2007 bu/ac	2007 lb/bu	Variety	2006-07 bu/ac	2006-07 lb/bu	Variety	2005-07 bu/ac	2005-07 lb/bu
AP 2005	NuDakota	62.2	57.8	NuDakota	45.0	57.1	Hatcher	41.2	58.5
CSU 2004	Hatcher	61.3	59.4	Hatcher	44.0	59.0	Bond CL	40.6	57.2
AP 2006	Hawken	58.1	58.8	Infinity CL	42.0	58.1	Ripper	40.4	57.1
KSU 2006	Fuller	57.9	59.0	Keota	42.0	59.3	Keota	39.2	58.3
WB 2005	Keota	57.0	60.0	Endurance	41.5	58.8	Infinity CL	38.4	57.6
WB 2006	Smoky Hill	56.8	59.2	Bond CL	41.4	57.6	Jagger	38.4	57.6
TX 2002	TAM 111	56.8	59.3	Ripper	41.2	57.2	Endurance	37.9	58.6
CSU 2004	Bond CL	56.8	58.4	Jagger	41.2	58.2	Above	37.7	58.0
NE 2004	Infinity CL	56.6	58.7	Yuma	40.8	58.1	Yuma	37.5	57.6
OK 2006	Duster	56.5	59.7	TAM 111	40.6	59.0	Jagalene	37.2	58.8
NE 2006	Overland	56.3	58.7	Danby	40.1	60.5	Alliance	37.1	57.7
KSU 1994	Jagger	56.3	59.0	Above	40.0	57.9	Danby	37.0	59.6
TX 2005	TAM 112	56.2	58.7	Alliance	39.5	57.9	TAM 111	36.8	58.5
OK 2004	Endurance	55.9	59.1	Jagalene	39.2	59.6	NuGrain	36.8	59.5
CSU 1991	Yuma	55.4	58.9	Akron	39.1	58.2	Avalanche	36.7	59.0
KSU 2005	Danby	55.0	61.0	Ankor	39.0	57.9	Prairie Red	36.4	57.8
SD 2006	Alice	54.9	59.6	NuGrain	38.9	60.1	Ankor	35.9	57.6
CSU 2006	Ripper	54.6	57.5	Trego	38.9	59.7	NuFrontier	35.9	58.6
CSU-TX 2001	Above	54.5	58.1	Postrock	38.6	58.9	Akron	35.1	57.9
AP 2001	Jagalene	53.9	60.0	Avalanche	38.5	59.3	Goodstreak	35.0	58.9
AP 2005	Postrock	53.8	59.7	Prairie Red	38.1	57.9	Trego	34.7	59.2
AP 2005	NuGrain	53.5	60.7	NuFrontier	37.9	59.1	Prowers 99	33.8	58.8
NE 1993	Alliance	52.7	58.0	Goodstreak	37.4	59.2	<b>Average</b>	37.3	58.3
OK 2006	OK Bullet	52.5	60.0	RonL	35.4	59.5			
CSU 1994	Akron	52.4	58.4	Prowers 99	35.1	59.4			
CSU 2002	Ankor	51.9	58.1	<b>Average</b>	39.8	58.7			
AP 2000	NuFrontier	51.7	59.7						
CSU 1998	Prairie Red	51.6	58.0						
KSU 1999	Trego	51.6	60.0						
CSU 2001	Avalanche	50.8	59.7						
KSU 2006	RonL	47.8	59.3						
NE 2002	Goodstreak	47.5	59.8						
CSU 1999	Prowers 99	46.5	59.9						
	<b>Average</b>	54.5	59.2						

<sup>1</sup> Varieties ranked according to average yield in 2007, according to average 2 yr yield, and according to average 3 yr yield.

<sup>2</sup> The 2007 dryland variety performance included 40 varieties, 7 CSU experimental varieties are not included in this summary.

<sup>3</sup> All trials were planted at 500,000 seeds/acre.

<sup>4</sup> 2-yr and 3-yr average yield and test weight are based on eleven 2007 trials, eleven 2006 trials, and ten 2005 trials.

<sup>5</sup> Variety origin code: CSU=Colorado State University; WB=WestBred, LLC; AP=AgriPro® COKER®; KSU=Kansas State University; TX=Texas A&M University; CSU-TX=Colorado State University/Texas A&M University release; NE=University of Nebraska; OK=Oklahoma State University SD=South Dakota State University

<sup>6</sup> More complete observations are posted with the results for each specific trial web page, as well as for the 7 CSU experimental varieties.

<sup>7</sup> Detailed analyses will be presented during the Wheat Planting Decision Meetings in Eastern Colorado, scheduled for August 14-17.

### 2007 Collaborative On-Farm Test (COFT) Results

In the fall of 2006, nineteen eastern Colorado wheat producers (including the Plainsman Research Center at Walsh) planted 22 collaborative COFT trials in Baca, Prowers, Kiowa, Cheyenne, Kit Carson, Phillips, Logan, Adams, and Weld counties. The objective of the 2007 COFT was to compare performance and adaptability of newly-released varieties to varieties they might replace in Colorado for selection of the best performing hard red variety (Hatcher and Ripper), the best hard white variety (Avalanche and Danby), or the best Clearfield\* wheat variety (Above and Bond CL).

#### Variety Performance in the 2007 Collaborative On-Farm Test

County/Town	HRW varieties		Clearfield Varieties		HWW varieties		Test Average	Comment
	Hatcher	Ripper	Bond CL	Above	Danby	Avalanche		
	Yield (bu/ac) at 13% moisture							
Adams/Byers	82.1	77.7	77.6	72.1	72.1	69.0	75.1	Deep snow cover, no-till, high fertility
Weld/Keenesburg	53.6	45.8	41.5	37.5	38.6	39.0	42.7	Variable weed infestations by variety
Weld/New Raymer	41.6	41.9	37.8	39.0	37.5	38.5	39.4	No-till, good fertility
Logan/Sterling W	57.4	53.4	59.2	49.2	55.4	51.3	54.3	No-till, good fertility, fair finishing moisture
Logan/Fleming	36.3	37.4	34.7	36.9	31.9	34.5	35.3	Low soil moisture mid May to mid June
Logan/Peetz	45.2	46.1	39.1	40.0	41.1	36.5	41.3	Good finishing moisture
Phillips/Paoli *6	51.2	51.3	52.9	58.2	50.6	52.4	52.8	Fertilized for high yield
Phillips/Haxtun *6	37.7	38.6	27.2	36.4	33.3	37.2	35.1	Wheat Steak Mosaic Virus
Phillips/Haxtun *3	33.5	32.3	29.6	41.2	31.3	32.7	33.4	Wheat Steak Mosaic Virus
Yuma/Yuma *6	30.1	38.7	29.7	33.9	31.5	29.0	32.2	Low fertility
Yuma/Yuma *3	27.4	26.8	35.1	37.9	27.2	31.7	31.0	Low fertility
Washington/Anton	22.1	17.7	14.9	11.5	17.6	9.5	15.6	Severe hail 5/14
Kit Carson/Bethune	36.1	31.5	30.9	33.6	31.2	31.2	32.4	Dry in fall 2006.
Kit Carson/Burlington	62.1	56.2	56.6	51.6	66.0	54.4	57.8	Excellent soil moisture fall 2006 and early 2007
Cheyenne/Arapahoe	60.7	69.8	60.7	58.4	54.6	43.7	58.0	Little moisture after snow, late rust
Kiowa/Haswell	27.8	22.4	21.9	17.4	15.1	13.2	19.6	Severe hail 5/29, broken & heads stems
Kiowa/Towner	49.3	40.7	50.9	48.0	49.0	45.1	47.2	Stripe & leaf rust largest factor
Prowers/Two Buttes	76.6	52.0	60.3	55.5	76.7	61.5	63.8	Great moisture, heavy stripe & leaf rust
Baca/Springfield	58.0	55.1	56.1	57.1	53.9	53.7	55.7	Little moisture after snow
Baca/Walsh I	53.4	42.7	51.5	49.5	51.5	43.1	48.6	Deep snow cover, little moisture after snow.
Baca/Walsh II	49.5	43.1	46.2	46.0	45.3	39.8	45.0	Deep snow cover, little moisture after snow.
Baca/Vilas	33.2	21.9	32.9	30.3	38.0	28.0	30.7	Spring drought, leaf and stripe rust
<b>Average Yield</b>	<b>46.6</b>	<b>42.9</b>	<b>43.1</b>	<b>42.8</b>	<b>43.2</b>	<b>39.8</b>	<b>43.0</b>	
LSD (0.30)	1.6		1.2		1.2			
Significance	A	B	NS		A	B		

1. \*6 - Trials planted specifically at 600,000 seeds/acre

2. \*3 - Trials planted specifically at 300,000 seeds/acre

3. LSD and Significance are specific to the intended variety comparisons

## Dryland Winter Wheat Variety Selection in Colorado for Fall 2007

Choosing a variety is a personal decision made by every farmer for every field before planting every year. This report is intended to provide information to producers so they can weigh alternative variety advantages and disadvantages and choose the variety that best fits their farm. However, we are asked to synthesize the results annually and to suggest varieties that have been proven worthy of consideration by producers. The following comments are the result of our general analysis and reflection on the 2007 results as well as the results from the past three years.

**Our first suggestion is to plant more than one variety in order to spread your risk.** The suggested varieties below focus on yield as the primary criterion for variety selection. Additional information is provided (test weight, disease resistance, or different maturity), not because additional criteria are of equal importance as yield but rather because additional criteria can provide a basis for selecting a second or third variety that spreads your risk in a rational manner.

Secondly, with the variability among trial locations in 2007, as well as variability among locations across years, **producers should consider multiple-year summary yield results** instead of single-location, or single-year results to make better variety decisions.

### **Hard red wheat varieties to compare for planting in fall 2007:**

	HRW varieties to consider			
	<u>Hatcher</u>	<u>Ripper</u>	<u>Keota</u>	<u>Jagalene</u>
UVPT 3yr Average Yield	41.2	40.4	39.2	37.2
UVPT 07 Average Yield	61.3	54.6	57	53.9
COFT 07 Average Yield	46.6	42.9		
Probability of 60+ Test Weight	31.90%	20.70%	49.20%	49.90%

Hatcher – highest yield over years, in 2007 UVPT, and in 2007 COFT trials. Test weight better than Ripper but lower than Keota and Jagalene in 2007. Better resistance to stripe rust than Ripper, similar to Jagalene and Keota.

Ripper – second highest yield over years albeit lower yielding than Hatcher and Keota in 2007 UVPT trials. Lowest test weight in 2007, though it was closer to average in previous years. Ripper has a large kernel and better quality than the other HRW varieties. Ripper is very susceptible to stripe rust.

Keota – high yield over years and second to Hatcher in 2007. Similar test weight to Jagalene and better than Hatcher and Ripper in 2007. High protein content. Good stripe rust resistance.

Jagalene – the single most planted variety in Colorado this year. Jagalene has shown average yields over years and in 2007 was lower than Hatcher, Ripper, and Keota. Jagalene has the highest test weight among the four HRW varieties and good resistance to stripe rust. Has a tendency to shatter.

**Hard white wheat varieties to compare:**

	HWW varieties to consider	
	<u>Danby</u>	<u>Avalanche</u>
UVPT 3yr Average Yield	37	36.7
UVPT 07 Average Yield	55	50.8
COFT 07 Average Yield	43.2	39.8
Probability of 60+ Test Weight	44.50%	37.20%

Danby – had significantly higher yields in 2007 though average yields over years are similar. Test weight is better than Avalanche in 2007 and as good as the highest HRW varieties. Danby distinguishes itself due to good sprout tolerance and has considerably better stripe rust resistance than Avalanche.

Avalanche – yield has been stable over years albeit significantly lower than Danby in 2007. Test weight is average to good. Susceptible to stripe rust.

NuDakota - a new Agripro hard white wheat (HWW) variety to keep your eye on. Excellent yield performance for two years but low test weight. Excellent resistance to both leaf and stripe rust. Better sprouting tolerance than many HWW, except Danby and Avalanche. We are waiting to see how it will perform in another year before making it a variety to consider for planting.

**CLEARFIELD\* wheat varieties to compare:**

	CLEARFIELD varieties to consider		
	<u>Bond CL</u>	<u>Infinity CL</u>	<u>Above</u>
UVPT 3yr Average Yield	40.6	38.4	37.7
UVPT 07 Average Yield	56.8	56.6	54.5
COFT 07 Average Yield	43.1		42.8
Probability of 60+ Test Weight	18.30%	33.50%	24.70%

Bond CL – highest yielding Clearfield\* variety over years including 2007 but low test weight, and is susceptible to stripe rust.

Infinity CL – good combination of high and stable yield, better test weight than the other two varieties and good stripe rust resistance.

Above – lower yielding than Bond CL and Infinity CL but better test weight than Bond CL. Susceptible to stripe rust but the earliest maturing CL variety.



**Summary of 2007 and 2-yr and 3-yr Average Yield and Test Weight for the Irrigated Variety Performance Trials.**

Variety Scores <sup>6</sup>			2007 Average <sup>3</sup>		2 yr Average <sup>4</sup>			3 yr Average <sup>4</sup>			
Origin <sup>5</sup> Release Year	Straw Strength <sup>7</sup> (1-9)	Stripe Rust <sup>8</sup> (1-9)	Variety <sup>1</sup>	Yield 2007 bu/ac	Test Weight 2007 lb/bu	Variety <sup>1</sup>	Yield 2006-07 bu/ac	Test Weight 2006-07 lb/bu	Variety <sup>1</sup>	Yield 2005- 07 bu/ac	Test Weight 2005-07 lb/bu
TX 2005	7	9	TAM 112	99.4	60.8	Bond CL	104.8	59.3	Bond CL	101.0	59.2
CSU 2004	4	8	Bond CL	95.4	59.7	Yuma	98.1	59.3	Hatcher	92.9	59.7
AP 2005	3	2	NuDakota	94.8	57.7	NuDakota	97.7	58.4	Yuma	91.5	59.1
CSU 1991	3	6	Yuma	94.1	59.0	TAM 111	95.3	59.2	TAM 111	91.3	59.3
CSU 2004	4	4	Hatcher	89.4	60.1	Hatcher	94.9	59.6	NuGrain	91.1	60.5
TX 2002	3	2	TAM 111	87.1	59.7	Keota	94.0	59.5	Jagalene	87.3	60.1
AP 2005	4	8	NuGrain	86.2	61.1	NuGrain	91.0	60.3	Ankor	85.9	58.4
AP 2006	2	2	Hawken	85.9	59.7	Platte	89.6	60.4	Platte	83.6	60.1
AP 2001	2	3	Jagalene	85.7	59.9	Ankor	89.1	58.9	Prairie Red	78.1	58.2
WB 2005	4	2	Keota	85.5	60.1	Jagalene	89.0	59.8	<b>Average</b>	89.2	59.4
AP 2005	4	2	Postrock	83.5	59.9	Danby	88.6	61.2			
WB 2006	1	4	Aspen	81.1	58.7	Prairie Red	85.2	59.3			
AP 1995	1	9	Platte	80.7	61.2	Postrock	84.2	59.5			
CSU 2002	3	8	Ankor	80.3	59.1	<b>Average</b>	92.4	59.6			
KSU 2005	5	4	Danby	78.5	61.4						
CSU 1998	3	9	Prairie Red	77.0	59.2						
			<b>Average</b>	86.5	59.8						

<sup>1</sup> Varieties ranked according to average yield in 2007, according to average 2 yr yield, and according to average 3 yr yield.

<sup>2</sup> The 2007 irrigated variety performance included 32 varieties, 16 CSU experimental varieties are not included in this summary.

<sup>3</sup> All trials were planted at 1.2 million seeds/acre and fertilized and irrigated to obtain or exceed 100 bu/ac.

<sup>4</sup> 2-yr and 3-yr average yield and test weight are based on three 2007 trials, one 2006 trial (Haxtun), and two 2005 trials (Rocky Ford and Fort Collins).

<sup>5</sup> Variety origin code: CSU=Colorado State University; WB=WestBred, LLC; AP=AgriPro® COKER®; KSU=Kansas State University; TX=Texas A&M University

<sup>6</sup> Average Stripe Rust and Straw Strength Scores are based on all available scores.

<sup>7</sup> Straw Strength score: 1=very good, 9=very poor

<sup>8</sup> Stripe Rust score: 1=very resistant, 9=very poor resistance

<sup>9</sup> More complete observations are posted with the results for each specific trial web page, as well as for the 16 CSU experimental varieties.

## Irrigated Winter Wheat Variety Selection in Colorado for Fall 2007

### Irrigated variety comparisons

Irrigated wheat producers: The most important variety selection criteria are yield, straw strength, and stripe rust resistance.

Bond CL – highest yielding irrigated variety over years. Low test weight is more manageable and less of a concern in irrigated conditions. It is susceptible to stripe rust but has reasonably good straw strength.