

## **Collaborative On-Farm Tests (COFT) complement performance trial results to help Colorado wheat producers make better variety decision**

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 get to 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. 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**

<b>Name</b>	<b>Title</b>	<b>Office Location</b>
Bruce Bosley	Platte River agronomist	Sterling
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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. Comparisons of interest were:

- Compare CSU's new *CLEARFIELD*\* variety, Bond CL CSU *CLEARFIELD*\* wheat variety, Above.
- Compare the CSU's new variety, Hatcher, with all other varieties in the test, including Bond CL, Ankor, Above, and Avalanche.
- Compare Avalanche hard white wheat to four hard red wheat varieties.
- Put CSU's new releases, Hatcher and Bond CL, to a 'trial by fire' test under actual farm conditions in two-acre size strips, and multiple locations throughout eastern 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
<b>Variety Yield</b>	<b>23.6</b>	<b>23.0</b>	<b>22.8</b>	<b>22.3</b>	<b>22.5</b>	<b>22.9</b>
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.

The COFT test will be conducted in 2007 and 2008 to verify the results above under different (and hopefully more favorable) production conditions, however it seems that our small plot performance trial results and this year's COFT results indicate that Colorado producers growing Ankor and Above might consider replacing them with Hatcher and Bond CL respectively.