

## 2002 Collaborative On-Farm Testing Results

*Jerry Johnson*

In the fall of 2001, twenty-eight eastern Colorado wheat producers planted collaborative on-farm tests (COFT) in Baca, Prowers, Kiowa, Lincoln, Kit Carson, Washington, Phillips, Arapahoe, Adams, Morgan, and Weld counties. The objective was to compare performance of the newly-released varieties, Avalanche (HWW) and Above (HRW CLEARFIELD\*), with the performance of the popular HRW variety, Akron, and the high-yielding HWW variety Trego. With the help of Federico Pardina, a graduate student in the wheat breeding program, we also hoped to use the COFT results to map eastern Colorado for yield and wheat quality characteristics. From two HRW wheat varieties and two HWW wheat varieties we hoped to deduce the optimum areas for adoption of hard white wheat in Colorado from the COFT results. We had originally planned to spray Beyond herbicide on the CLEARFIELD\* wheat variety, Above, in each test in order to demonstrate the efficacy of the CLEARFIELD\* package but that objective became operationally impossible and Above was grown under the same conditions as the other varieties.

Working alongside local Extension agents, each producer/collaborator received 100 pounds seed of each variety and planted the four varieties in side-by-side strips. The 2001-02 season was the fifth year of winter wheat variety on-farm testing and many collaborating producers have conducted tests each of the five years.

Thanks to 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. Agents get experience with new varieties before the varieties are commonly available and share this experience with growers who are not COFT participants. The whole wheat community benefits from reliable and unbiased COFT results. Multiple COFT farm environments offer insights into variety performance to the wheat breeding program that might not be obtained from

the small-plot trials. Farmers acquainted with COFT results tend to rely more on COFT results than on the traditional replicated small-plot results.

The 2002 COFT results are divided into three geographic groups- primarily for ease of understanding the results. Twenty-one test results are reported. The overall average performance of all four varieties was remarkable similar and there were no statistical differences among varieties. Conclusions should not be drawn from a single on-farm test. All tests suffered from winter, spring, and early summer drought. Some locations were severely affected by winter freezes and some tests barely survived the late May freeze. None of the varieties performed less well than any other variety under drought conditions so severe that they are reportedly only expected to occur once in 100 years. For example, some people feared that the variety Akron with its long head would not survive as well as other varieties in extreme drought conditions- which proved to be unfounded. The white wheat varieties, Avalanche and Trego, were not any more susceptible to loss by severe drought and freezing than their hard red cousins. No unexpected agronomic flaws were found in the new CLEARFIELD\* wheat variety, Above.

Colorado State University Cooperative Extension agents 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 plot and measuring yields and collecting grain samples for quality analyses. I am very thankful for the cooperation of so many dedicated and conscientious wheat producers throughout eastern Colorado. Even under the most stressful conditions, there was never an unkind or harsh word heard. This year, more than in the past, the successful harvest and conclusion of the COFT program was due to the long hours of hard work by our Cooperative Extension agents listed below. This is truly a collaborative on-farm testing program.

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

Name	Title	Office Location
Bruce Bosley	Platte River agronomist	Sterling
Tim Macklin	SE Area agronomist	Lamar
Ron Meyer	Golden Plains agronomist	Burlington
Bruce Frickenger	Kiowa County agent	Eads
Thaddeus Gourd	Adams County agent	Brighton
Jerry Alldredge	Weld County agent	Greeley
Leonard Pruett	SE Area leader	Lamar
Dwight Rus	Lincoln County agent	Hugo
Assefa Gebre-Amlak	Golden Plains entomologist	Akron

**Table 14. Colorado Collaborative On-Farm Test (COFT) results in 2002.**

Test Location	Variety (Yields in bu/ac @ 13% moisture)			
	Above	Akron	Avalanche	Trego
	Yield	Yield	Yield	Yield
NE Phillips	29.3	28.3	29.0	30.9
SE Phillips	29.2	22.7	24.4	23.6
SE Washington	36.1	37.4	36.9	37.4
NE Kit Carson	12.4	8.0	10.5	9.3
Central Kit Carson	20.3	19.6	14.2	14.6
SE Kit Carson	25.4	22.5	24.3	23.0
NE Lincoln	43.7	43.5	39.6	40.3
<b>Golden Plains Avg</b>	<b>28.0</b>	<b>26.0</b>	<b>25.5</b>	<b>25.6</b>
	Above	Akron	Avalanche	Trego
NW Weld	25.3	23.3	24.2	24.4
NW Morgan	28.2	32.4	27.9	32.5
SE Weld	35.2	32.6	32.8	33.9
South Weld	24.6	27.4	26.9	27.1
SW Morgan	28.3	28.9	28.5	26.6
SW Adams	24.1	24.8	18.2	25.0
South Adams	15.6	16.3	15.0	14.8
NE Arapahoe	27.1	27.6	27.4	28.4
<b>Front Range Avg</b>	<b>26.1</b>	<b>26.7</b>	<b>25.1</b>	<b>26.6</b>
	Above	Akron	Avalanche	Trego
NE Kiowa	8.5	11.6	8.7	9.0
East Kiowa	3.5	4.8	3.0	3.1
NE Prowers	6.2	3.4	11.4	11.2
North Central Prowers	24.2	22.4	23.8	23.2
SW Baca	8.7	10.3	5.6	13.3
East Baca	11.8	15.8	10.9	15.2
<b>SE Colorado Avg</b>	<b>10.5</b>	<b>11.4</b>	<b>10.6</b>	<b>12.5</b>
	Above	Akron	Avalanche	Trego
<b>Overall Average</b>	<b>22.3</b>	<b>22.1</b>	<b>21.1</b>	<b>22.2</b>