2014 Collaborative On-Farm Test (COFT) Variety Performance Results

The objective of our on farm testing program is to compare the performance of wheat varieties that are of interest to Colorado farmers. In 2014, the varieties included Antero (high yielding HWW), Byrd (very high yielding HRW), Brawl CL Plus (herbicide tolerant and high yielding HRW), Denali (high yielding HRW), Snowmass (extremely high quality HWW), and TAM 112 (stable yielding HRW). Varieties are tested under unbiased, farm field-scale conditions, with farmer equipment. The COFT program is in its 16th year and the majority of Colorado's 2014 wheat acreage is planted to winter wheat varieties that have been tested in the COFT program. On-farm testing leads to wider and faster adoption of new varieties.

In the fall of 2013, thirty-five eastern Colorado wheat producers received seed for on-farm tests across eastern Colorado. Each farmer planted the six varieties in side-by-side strips at the same time and seeding rate as they seeded their own wheat using their own wheat drills. Twenty viable harvest results were obtained from the thirty-five sets of the seed that were distributed. Failed tests were due to drought conditions and hail. The COFT results need to be interpreted based on all tests within a year and not on the basis of a single variety comparison on a single farm in one year. Results from the 20 tests this year are powerful tools for selecting varieties for this fall.

The overall average yield was 54.8 bu/ac. The highest yielding variety, Antero, was 1.5 bu/ac higher-yielding than Byrd which was 0.2 bu/ac higher-yielding than Denali. Denali yielded 3 bu/ac higher than TAM 112. Most of these varieties fit specific conditions. For example, if a farmer wants a high-yielding white wheat that does not qualify for a premium, then Antero is the variety of choice. For farmers looking for control of winter annual grasses, Brawl CL Plus is the obvious choice. Farmers wanting to grow white wheat with exceptional quality and qualify for a premium should be growing Snowmass. There were some exceptional high and low yields in this year's on farm testing. The highest yielding variety strip was 93.6 bu/ac, and the lowest was 7.9 bu/ac.

Test weights were generally high. Brawl CL Plus, Denali, and TAM 112 had significantly higher test weights than the other varieties (60.3, 60.1, and 60.2 lb/bu, respectively). Byrd and Snowmass had the lowest average test weights (59.5 and 59.4 lb/bu, respectively). Variety test weights in the strips ranged from 56.4 lb/bu up to 64 lb/bu.

Colorado extension wheat educators who conducted the COFT program:

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	2014 Varieties[a]													
	Antero		Byrd		Denali		TAM 112		Brawl CL Plus		Snowmass		COFT Average	
County/Nearest Town	Yield[b]	Test Weight	Yield[b]	Test Weight	Yield[b]	Test Weight	Yield[b]	Test Weight	Yield[b]	Test Weight	Yield[b]	Test Weight	Yield[b]	Test Weight
	bu/ac	lb/bu	bu/ac	lb/bu	bu/ac	lb/bu	bu/ac	lb/bu	bu/ac	lb/bu	bu/ac	lb/bu	bu/ac	lb/bu
Adams/Bennett N	71.8	-	69.1	-	79.2	-	68.2	-	72.1	-	70.7	-	*71.9*	-
Adams/Prospect Valley	65.0	58.5	59.9	57.5	61.8	57.5	61.1	59.5	58.8	58.0	56.6	57.5	*60.5*	*58.1*
Baca/Two Buttes	22.1	57.1	18.2	56.7	25.9	57.1	17.8	57.1	18.1	57.5	21.4	56.4	*20.6*	*57.0*
Baca/Vilas	42.1	62.3	40.5	60.9	36.2	59.5	31.5	60.6	36.4	61.5	35.4	59.4	*37.0*	*60.7*
Baca/Walsh	35.1	63.0	37.0	63.0	35.0	64.0	33.2	64.0	30.4	64.0	31.8	62.0	*33.8*	*63.3*
Cheyenne/Arapahoe	17.2	60.3	7.9	59.5	17.4	62.3	10.0	58.0	8.2	59.1	12.0	61.1	*12.1*	*60.1*
Logan/Leroy	67.8	61.5	73.0	61.0	75.8	61.5	64.3	62.0	59.6	62.5	65.0	61.0	*67.6*	*61.6*
Morgan/Orchard	63.0	59.0	60.9	58.5	55.7	60.0	55.5	60.0	59.8	59.5	53.3	57.5	*58.0*	*59.1*
Phillips/Haxtun	32.8	59.0	24.9	59.5	23.1	59.5	27.4	61.5	20.4	61.0	22.5	58.5	*25.2*	*59.8*
Prowers/Bristol	53.6	61.1	50.0	60.8	51.5	61.0	41.2	61.3	46.1	62.3	53.6	61.6	*49.3*	*61.4*
Washington/Akron	69.5	58.5	71.4	58.5	72.0	59.5	65.9	60.0	75.2	60.0	63.9	59.0	*69.7*	*59.3*
Washington/Akron S	81.5	60.0	87.7	61.0	83.8	61.5	83.7	62.0	82.2	61.5	81.3	61.0	*83.4*	*61.2*
Washington/Anton	28.0	59.5	29.3	59.0	29.4	60.0	28.7	59.0	28.3	60.0	25.0	57.0	*28.1*	*59.1*
Washington/Central	93.6	60.0	87.4	61.0	84.8	61.5	83.0	61.5	84.7	61.5	80.4	62.5	*85.6*	*61.3*
Washington/Lone Star	65.8	57.0	67.3	57.0	67.4	58.5	59.5	58.5	60.0	57.5	56.6	57.5	*62.8*	*57.7*
Weld/Keenesburg	85.8	58.7	85.2	58.0	79.4	59.4	88.5	59.3	83.6	59.6	77.2	57.6	*83.3*	*58.8*
Weld/New Raymer SE	60.3	60.5	63.6	60.5	58.6	60.0	56.8	61.5	53.0	61.0	57.2	59.5	*58.2*	*60.5*
Weld/New Raymer SW	55.5	60.0	52.9	59.5	49.5	61.5	51.7	60.5	50.5	61.0	46.2	60.0	*51.0*	*60.4*
Weld/Roggen	84.4	59.0	83.4	58.5	78.5	59.5	78.1	59.5	74.2	60.0	75.3	58.5	*79.0*	*59.2*
Yuma/Yuma	62.6	60.0	58.8	60.0	60.0	59.0	58.9	58.5	55.8	58.0	57.1	61.0	*58.9*	*59.4*
Average	**57.9**	**59.7**	**56.4**	**59.5**	**56.2**	**60.1**	**53.2**	**60.2**	**52.9**	**60.3**	**52.1**	**59.4**	***54.8***	***59.9***
Significance[c]	A		B		B		C		C,D		D			

LSD $_{(P<0.30)}$ for yield = 1.0 bu/ac

LSD $_{(P<0.30)}$ for test weight = 0.3 lb/bu

[a]Varieties are ranked left to right by highest average yield.

[b]All yields are corrected to 12% moisture.

[c]Significance: Varieties with different letters have yields that are significantly different from one another.