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:

Jerry Johnson – Extension Specialist-Crop Production, Fort Collins

Bruce Bosley – Extension Agronomist, Logan County Wilma Trujillo – Extension Agronomist, Prowers County Brian Talamantes – Extension Agronomist, Sedgwick County Ron Meyer – Extension Agronomist, Kit Carson County

25

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

2014 Varietiesa

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Antero |  | Byrd |  | Denali |  | TAM 112 | Brawl CL Plus | Snowmass | COFT Average |
|  | Test |  | Test |  | Test | Test | Test | Test | Test |

County/Nearest Town Yieldb

Weight Yieldb

Weight Yieldb

Weight Yieldb

Weight Yieldb

Weight Yieldb

Weight Yieldb

Weight

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

LSD (P<0.30) for yield = 1.0 bu/ac

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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*** |
| Significancec | A |  | B |  | B |  | C |  | C,D |  | D |  |  |  |

LSD (P<0.30) for test weight = 0.3 lb/bu

aVarieties are ranked left to right by highest average yield.

bAll yields are corrected to 12% moisture.

cSignificance: Varieties with different letters have yields that are significantly different from one another.

26