



Preliminary Results from 2016 Winter Wheat Variety Trials Give Snapshot of Yields

By Dr. Heather Darby and Erica Cummings, University of Vermont Extension

This year, the University of Vermont Extension Northwest Crops and Soils team conducted an organic hard red winter wheat variety trial--both heirloom and modern day varieties--to determine those that perform best in our northern climate. The following provides harvest results from the trials at Borderview Research Farm in Alburgh, Vermont.

Table 1. 20 Winter heirloom wheat varieties trialed in Alburgh, VT

Variety	Market Class†	Year	Origin
Blackhull	HRWW	1917	Kansas
Bluejacket	HRWW	1946	Kansas
Clark's Cream	HWWW	1972	Kansas
Columbia	HRWW	1955	Oregon
Coppei	SRWW	1911	Washington
Forward	SRWW	1920	New York
Genesee Giant	SWWW	1893	New York
Goldcoin	SWWW	1890	New York
Honor	SWWW	1920	New York
Kanred	HRWW	1917	Kansas
Oro	HRWW	1927	Oregon
Pride of Genesee	SRWW	1893	New York
Red Chief	SRWW	1901	New York
Red Russian	SRWW	1890	England
Relief	HRWW	1931	Utah
Rio	HRWW	1931	Oregon
Triplet	SRWW	1918	Washington
Turkey Red	HRWW	1873	United States
Ukrainka	HRWW	1926	Kiev, Ukraine
Wasatch	HRWW	1944	Utah

† HRWW-Hard Red Winter Wheat, HWWW-Hard White Winter Wheat, SRWW-Soft Red Winter Wheat, SWWW-Soft White Winter Wheat.

‡ Year of release was not always available.

Table 2. 14 Modern day winter wheat varieties trialed in Alburgh, VT

Variety	Market Class	Origin and Year of Release‡	Seed Source
10007W	HRWW	NY	Seedway, VT
112313W	HRWW	NY	Seedway, VT
Brome	HRWW	Canada	Semican, Canada
Byrd	HRWW	CO, 2011	Arrow Seeds, NE
WB-Cedar	HRWW	KS, 2011	Arrow Seeds, NE
Expedition	HRWW	SD, 2002	Albert Lea Seed House, MN
Fredrick	SWWW	Canada	Lakeview Oragincs, NY
WB-Grainfield	HRWW	KS, 2012	Arrow Seeds, NE
Overland	HRWW	NE, 2006	Albert Lea Seed House, MN
Redeemer	HRWW	Canada	C&M Seed, Canada
Redfield	HRWW	SD, 2013	Albert Lea Seed House, MN
Warthog	HRWW	Canada	Seedway, VT
Winterhawk	HRWW	KS, 2008	Arrow Seeds, NE
SyWolf	HRWW	CO, 2011	Arrow Seeds, NE

† HRWW-Hard Red Winter Wheat, HWWW-Hard White Winter Wheat, SRWW-Soft Red Winter Wheat, SWWW-Soft White Winter Wheat.

‡ Year of release was not always available.

The project evaluated 34 winter wheat varieties: 20 Heirloom (Table 1) and 14 Modern-day (Table 2). The experimental plot design was a randomized complete block with three replications. The seedbed was prepared by conventional tillage methods and the plots were managed with practices similar to those used by producers in the surrounding area. The soil type was a Benson silt loam soil. The plots were seeded with a Great Plains NT60 Cone Seeder on 25-Sep 2015 at a rate of 350 live seeds per m². The plots were harvested with an Almaco SP50 plot combine on 21-Jul 2016; the harvest area was 5' x 20'.

Table 3. Harvest results of 34 winter wheat varieties

Variety	Yield @ 13.5% moisture	Harvest moisture	Test weight
	lbs ac ⁻¹	%	lbs bu ⁻¹
10007W	3507*	15.1*	62.5*
112313W	4336*	16.2*	58.8
Blackhull	2476	17.7	61.3*
Bluejacket	2773	17.9	61.5*
Brome	3484*	20.8	59.7
Byrd	4090*	16.1*	62.5*
WB-Cedar	3524*	15.3*	61.5*
Clark's Cream	3144	17.0	60.2*
Columbia	2020	19.2	57.3
Coppei	2670	18.2	59.5
Expedition	2194	15.7*	62.8*
Forward	3966*	17.1	61.3*
Fredrick	3411*	15.5*	62.3*
Genesee Giant	2948	16.7*	61.8*
Goldcoin	2836	17.3	60.7*
WB-Grainfield	2515	15.6*	62.7*
Honor	2801	15.9*	60.0
Kanred	2253	18.3	60.0
Oro	2392	17.7	60.8*
Overland	3312	16.9	61.5*
Pride of Genesee	2696	20.7	56.5
Red Chief	3237	16.7*	61.8*
Redeemer	3323	15.9*	62.5*
Redfield	3339	16.3*	61.7*
Red Russian	2463	18.4	60.2*
Relief	2292	18.6	58.7
Rio	2505	18.9	60.7*
Triplet	2800	18.3	60.5*
Turkey Red	3240	17.4	61.2*
Ukraine	2810	16.6*	61.0*
Warthog	3382	16.7*	62.0*
Wasatch	2570	16.7*	61.5*
Winterhawk	3616*	17.4	61.7*
SY Wolf	3257	17.1	62.5*
<i>LSD (0.10)</i>	927	1.65	2.71
<i>Trial Mean</i>	3005	17.2	60.9

The highest yielding variety was 112313W at 4,336 lbs ac⁻¹ (Table 3). Other high yielding varieties include: Byrd (4,090 lbs ac⁻¹), Forward (3,966 lbs ac⁻¹), Winterhawk (3,616 lbs ac⁻¹), WB-Cedar (3,524 lbs ac⁻¹), 10007W (3,507 lbs ac⁻¹), Brome (3,484 lbs ac⁻¹), and Fredrick (3,411 lbs ac⁻¹). The lowest harvest moisture was 1007W at 15.1% moisture and the highest harvest moisture was Brome (20.8%). All of the varieties were above the 14% moisture and therefore had to be dried down for before storage.

The variety with the highest test weight was Expedition (62.8 lbs bu⁻¹). Out of the 34 varieties trialed, 28 of those met or exceeded industry standard for test weight. Additional quality measurements--protein, falling number and DON concentration--are currently being evaluated for these varieties. We will continue to compile data from this and other trials; results will be posted to our website at www.uvm.edu/extension/cropsoil/.

August 2016. Published by the University of Vermont Extension Northwest Crops and Soils Program. Learn more about the program at: www.uvm.edu/extension/cropsoil/.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. University of Vermont Extension, Burlington, Vermont. University of Vermont Extension, and U.S. Department of Agriculture, cooperating, offer education and employment to everyone without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or familial status. Any reference to commercial products, trade names, or brand names is for information only, and no endorsement or approval is intended.