

2011 BARLEY VARIETY TRIALS

With the revival of the small grains industry in the Northeast and the strength of the localvore movement, craft breweries and distilleries have expressed an interest in local barley for malting. Malting barley must meet specific quality characteristics such as low protein content and high germination. Depending on the variety, barley can be planted in either the spring or fall, and both two- and six-row barley can be used for malting. Many farmers are also interested in barley as a high-energy concentrate source for their livestock. In 2010-2011, UVM Extension conducted both winter and spring barley trials to evaluate the yield and quality of publicly available malting and feed barley varieties.

MATERIALS AND METHODS

Two variety trials, one evaluating winter barley, and one evaluating spring barley were initiated at Borderview Research Farm in Alburgh, VT. Winter barley was planted on September 23, 2010. Six winter varieties (Table 1) were planted in a randomized complete block design with four replicates. The varieties McGregor and Thoroughbred are considered feed-grade barley. The seedbed was prepared by conventional tillage methods. Plots were 3' x 20' and were seeded into a Benson rocky silt loam at 125 lbs ac⁻¹ with a Kincaid cone seeder. Rows were spaced at 6". All plots were managed with practices similar to those used by producers in the surrounding areas (Table 2). Fall stand density was measured on October 25, 2010 by counting the barley population in 33 cm increments in two rows. Winter survival was evaluated on April 12, 2011 by counting the barley population in 33 cm increments in two rows. Plots were fertilized with Giroux's Poultry Manure (2-3-2) at a rate of 50 lbs of N ac⁻¹ on May 11, 2011. All varieties were harvested with an Almaco SPC50 small plot combine on July 5, 2011, with the exception of Alba, which was harvested on July 19, 2011.

Table 1. Winter barley varieties trialed at Borderview Research Farm in Alburgh, VT.

Winter barley variety	Type
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Table 2. Agronomic and trial information for winter and spring barley variety trials.

	Winter barley	Spring barley
Soil type	Benson rocky silt loam	Benson rocky silt loam
Previous crop	Forage oats	Silage corn
Tillage operations	Fall plow, disc, and spike-toothed harrow	Spring plow, disc, and spike-toothed harrow
Plot area (ft)	3 x 20	6 x 20
Row spacing (in)	6	6
Seeding rate	125 lbs ac ⁻¹	125 lbs ac ⁻¹
Replicates	4	4
Planting date	9/23/2010	5/13/2011
Harvest date	7/5/2011, 7/19/2011	8/5/2011

RESULTS

October 2010 and April and May 2011 brought excessive rainfall and floods to Vermont, saturating many fields and delaying planting and early spring growth on many farms. In mid-summer drought-like conditions were experienced. Weather data is based on National Weather Service data from cooperative observer stations in South Hero, and Burlington, VT, which are in close proximity to Borderview Farm. Historical averages are for 30 years of data (1971-2000).

Table 4

Table 5. Winter barley agronomic characteristics in Alburgh, VT.

Variety	October population plants ac ⁻¹	April population plants ac ⁻¹	Spikes spikes ft ⁻²	Weeds	Height in	Straw yield lbs ac ⁻¹
McGregor	1,428,000	1,408,000	56.3	1.25	29.8*	4588

Figure 1. Yield and crude protein for winter barley varieties trialed in Alburgh, VT.

Table 7. Spring barley agronomic characteristics, yield, and quality data in Alburgh, VT.

Variety	Population	Height	Harvest moisture	Yield at 13.5% moisture	Test weight	Crude protein at 12% moisture	DON	Germination
	plants ac ⁻¹	in	%	lbs ac ⁻¹	lbs bu ⁻¹	%	ppm	%
Rasmussen	1,106,000	26.3	11.5	1976*	43.0*	9.9	0.40	96.0*
Conlon	1,465,000	24.4	9.8*	1772*	38.0	10.6	0.17*	95.7*
Scarlett	1,292,000	23.6	11.0*	1513*	43.0*	10.9*	0.23	97.0*
Robust	826,000	27.1	13.1	1512*	42.3*	10.8*	0.23	93.7*
Newdale	1,226,000	22.4	9.2*	1093	37.0	11.2*	0.27	90.8
AC Newport	1,319,000	23.3	15.2	925	45.0*	10.2	0.30	96.5*
Famosa	1,239,000	24.0	12.8	787	40.0	11.7*	0.13*	95.5*
Pinnacle	932,000	24.5	14.7	612	35.7	10.1	0.10*	95.8*

