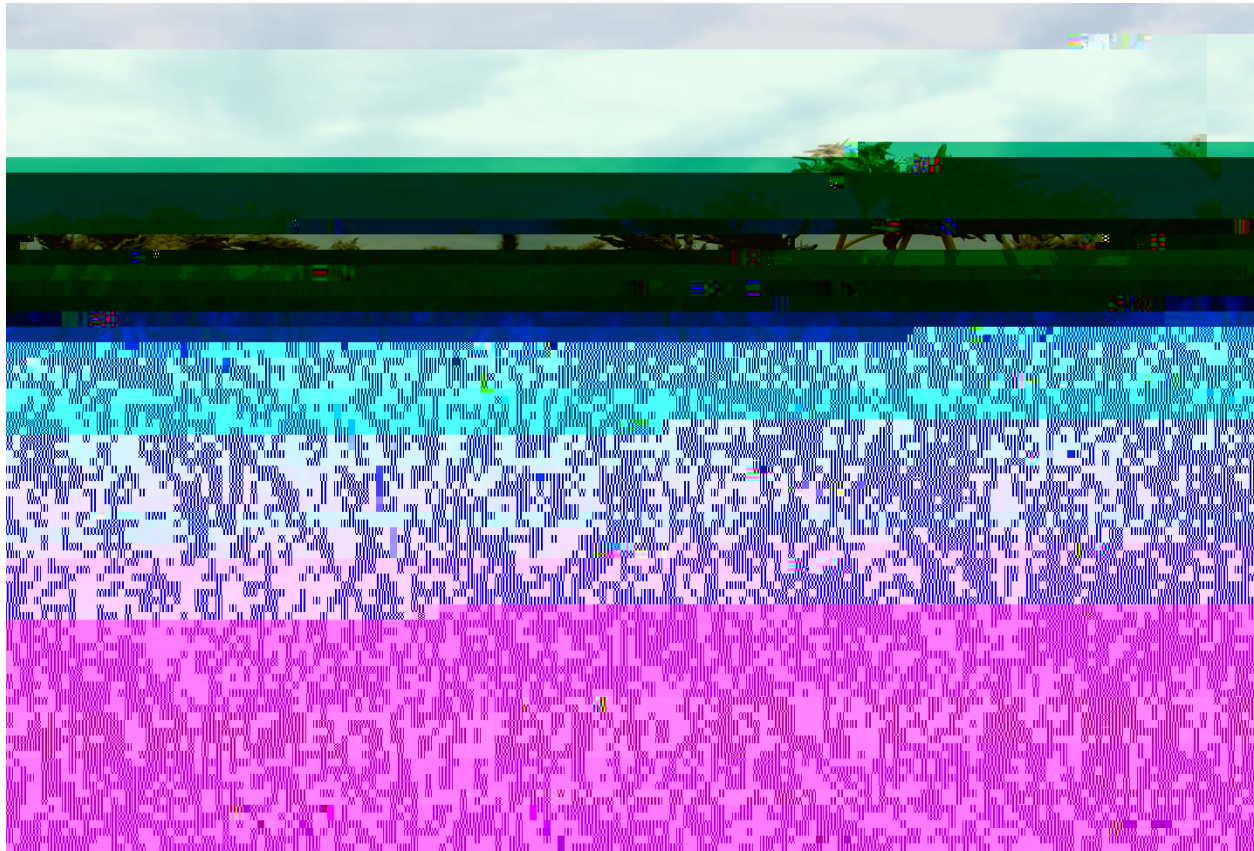


# 2013 Winter Barley Variety Trial



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**2013 WINTER BARLEY VARIETY TRIAL**  
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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

Maja	6-row	Oregon State University
Mathias	6-row	Oregon State University
McGregor	6-row	University of Minnesota
NO71DH12	6-row	Oregon State University
OR101	6-row	Oregon State University
Saturn	6-row	LimaGrain
Scala	2-row	KWS Lochow
Streaker	6-row	Oregon State University
Strider	6-row	University of Minnesota
Thoroughbred	6-row	Virginia Tech
VA06H25	6-row	Virginia Agricultural Experimental Station
VA09B-29	6-row	Virginia Tech
VA09B-34	6-row	Virginia Tech
VA10B-43	6-row	Virginia Tech
Violetta	2-row	LimaGrain
02Ab431	2-row	USDA Aberdeen
02Ab671	2-row	USDA Aberdeen
2Ab08-X05W061-208	2-row	USDA Aberdeen
6Ab08-X03W012-5	2-row	USDA Aberdeen

When the barley was in the soft dough stage, spikes in a 1.08 ft<sup>2</sup> area were counted, and a visual estimate of weed density was recorded on a 1 to 5 scale 1 representing few weeds and 5 indicating heavy weed

Analyzer. In addition, falling number for all barley varieties was determined using the AACC Method 56-81B, AACC Intl., 2000 on a Perten FN 1500 Falling Number Machine. Samples were also analyzed for Deoxynivalenol (DON) using the Veratox DON 2/3 Quantitative test from the NEOGEN Corp. This test has a detection range of 0.5 to 5 ppm. Each variety was evaluated for seed germination by incubating 100 seeds in 4.0 mL of water for 72 hours and counting the number of seeds that did not germinate.

Data was analyzed using mixed model analysis procedure of SAS (SAS Institute, 1999). Replications were treated as random effects, and treatments were treated as fixed. Mean comparisons were made using the Least Significant Difference (LSD) procedure when the F-test was considered significant ( $p < 0.10$ ). When this was not possible due to inconsistent sample size across varieties, multiple pairwise comparisons were run with the Tukey-Kramer adjustment.

Variations in yield and quality can occur because of variations in genetics, soil, weather, and other growing conditions. Statistical analysis makes it possible to determine whether a difference among hybrids is real or whether it might have occurred due to other variations in the field. Least Significant Differences (LSDs) at the 0.10 level of significance are shown. At the bottom of each table a LSD value is presented for each variable (i.e. yield). Where the difference between two treatments within a column is equal to or greater than the LSD value at the bottom of the column, you can be sure that for 9 out of 10 times, there is a real difference between the two treatments. Treatments that were not significantly lower in performance than the highest hybrid in a particular column are indicated with an asterisk. In the example below, hybrid C is significantly different from hybrid A but not from hybrid B. The difference between C and B is equal to 1.5, which is less than the LSD value of 2.0. This means that these hybrids did not differ in yield. The difference between C and A is equal to 3.0 which is greater than the LSD value of 2.0. This means that the yields of these hybrids were significantly different from one another. The asterisk indicates that hybrid B was not significantly lower than the top yielding hybrid C, indicated in bold.

Hybrid	Yield
A	6.0
B	7.5*
C	<b>9.0*</b>
<b>LSD</b>	<b>2.0</b>

## RESULTS

June 2013 brought above average rainfall to Vermont, saturating many fields at crucial developmental periods during the season. These conditions lead to poor performance, disease and fungal proliferation, and excessive mycotoxin production. Weather data (Table 3) 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 3. Weather data for winter barley variety trial in Alburgh, VT.**

	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
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Ariane

80.0

13068

**Table 5. Yield and quality data for winter barley variety trial in Alburgh, VT.**

