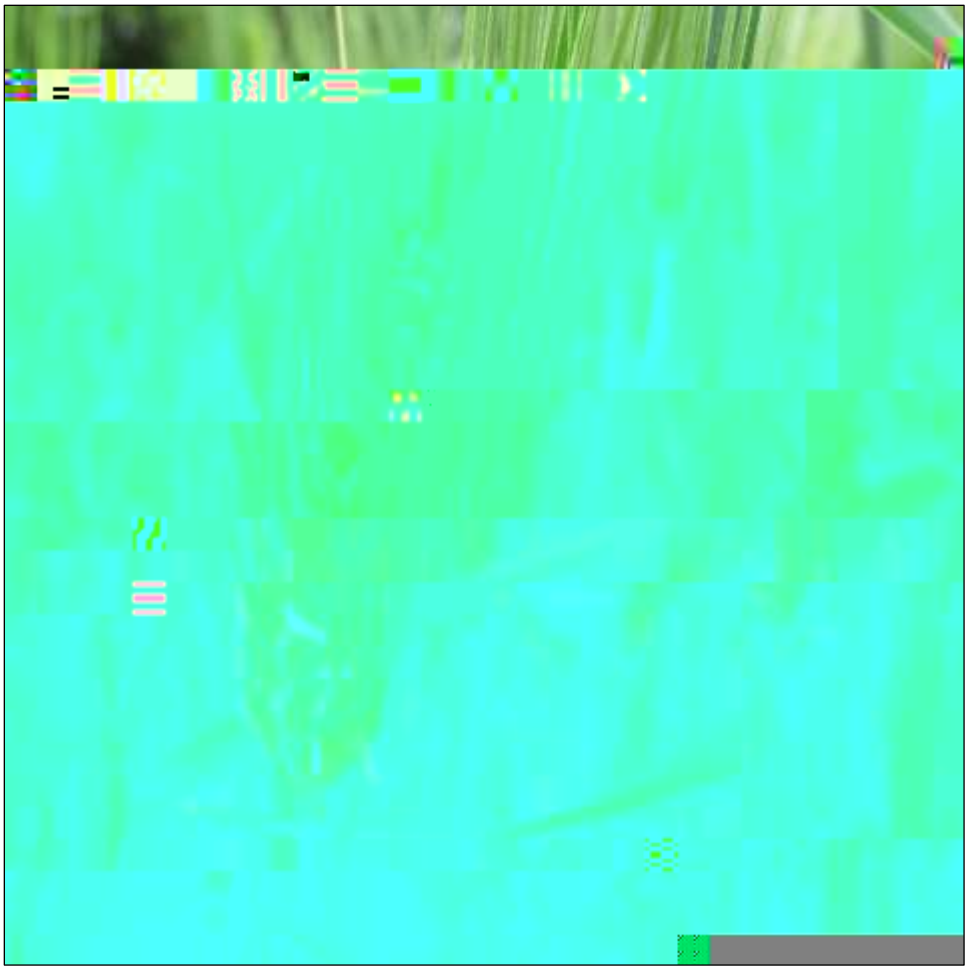
NORTHWEST CROPS & SOILS PROGRAM

# 2014 Organic Spring Barley Variety Trial



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# 2014 ORGANIC SPRING BARLEY VARIETY TRIAL

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With the revival of the small grains industry in the Northeast and the strength of the locavore movement, craft breweries and distilleries have expressed an interest in sourcing local barley for malting. Malting barley must meet specific quality characteristics such as low protein content and high germination. Many

**Table 2. 2014 agronomic and trial information for spring barley variety trial.**

| Trial Information | Borderview Research Farm<br>Alburgh, VT |
|---|---|
| Soil type | Benson rocky silt loam |
| Previous crop | sod |
| Tillage operations | Spring plow, disc, and spike tooth harrow |
| Harvest area (ft) | 5 x 20 |
| Row spacing (in) | 6 |
| Seeding rate (lbs $ac^{-1}$) | 125 |
| Replicates | 4 |
| Planting date | 25-Apr |
| Harvest date | 4-Aug |

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 varieties is real or whether it might have occurred due to other variations in the field. At the bottom of each table a LSD value is presented for each variable (e.g. yield). Least Significant Differences at the 10% level of probability are shown. Where the difference between two varieties within a column is equal to or greater than the LSD value at the bottom of the column, you can be sure in 9 out of 10 chances that there is a real difference between the two varieties. In the example below, variety A is significantly different from variety C, but not from variety B. The difference between A and B is equal to 725, which is less than the LSD value of 889. This means that these varieties did not differ in yield. The difference between A and C is equal to 1454, which is greater than the LSD value of 889. This means that the yields of these varieties were significantly different from one another. The asterisk indicates that variety B was not significantly lower than the top yielding variety.

## RESULTS

Seasonal precipitation and temperature recorded at weather stations in close proximity to the 2014 site are shown in Table 3. The growing season this year was marked by lower than normal temperatures in April, July, and August and higher than normal rainfall throughout the growing season (Apr-Aug). From April

Plant populations were not significantly different between varieties (Table 4)

**Table 5. Harvest and quality results for the 15 spring barley samples trialed in Alburgh, VT, 2014.** *

| Variety | Yield @13.5% moisture | Harvest moisture | Test weight | Crude protein @ 12% moisture | Falling number @ 14% moisture | DON | Germination |
|---|---|---|---|---|---|---|---|
| | lbs $ac^{-1}$ | % | lbs $bu^{-1}$ | % | seconds | ppm | % |
| Robust | 1337* | 8.40 | 43.1 | 11.0 | 305 | 0.80 | 94.0 |
| AC Minoa | **1587*** | 13.1 | 46.6* | 11.5 | 336* | 0.33* | 81.5 |
| Conlon | 341 | 12.9 | 40.8 | 9.83 | 228 | 1.07 | 75.0 |
| Full Pint | 732 | 11.1 | 39.3 | 11.1 | 62 | 0.77 | 3.00 |
| Hanna | 572 | 14.0 | 42.8 | 11.2 | 285 | 0.67 | 87.5 |
| Lacey | 1054* | 10.0 | 43.0 | 10.5 | 291 | 1.13 | 86.5 |
| Newdale | 1167* | 11.4 | 41.1 | 10.1 | 134 | 1.00 | 40.0 |
| AC Newport | 1019 | 12.7 | **47.8*** | 10.0 | 326* | 0.83 | 90.0 |
| Quest | 1125* | 9.10 | 40.0 | 10.9 | 288 | 0.63 | 85.0 |
| Rasmussen | 1569* | 10.0 | 43.4 | 10.4 | 313 | 1.65 | 83.5 |
| Valley Malt 1 | 658 | | | | | | |

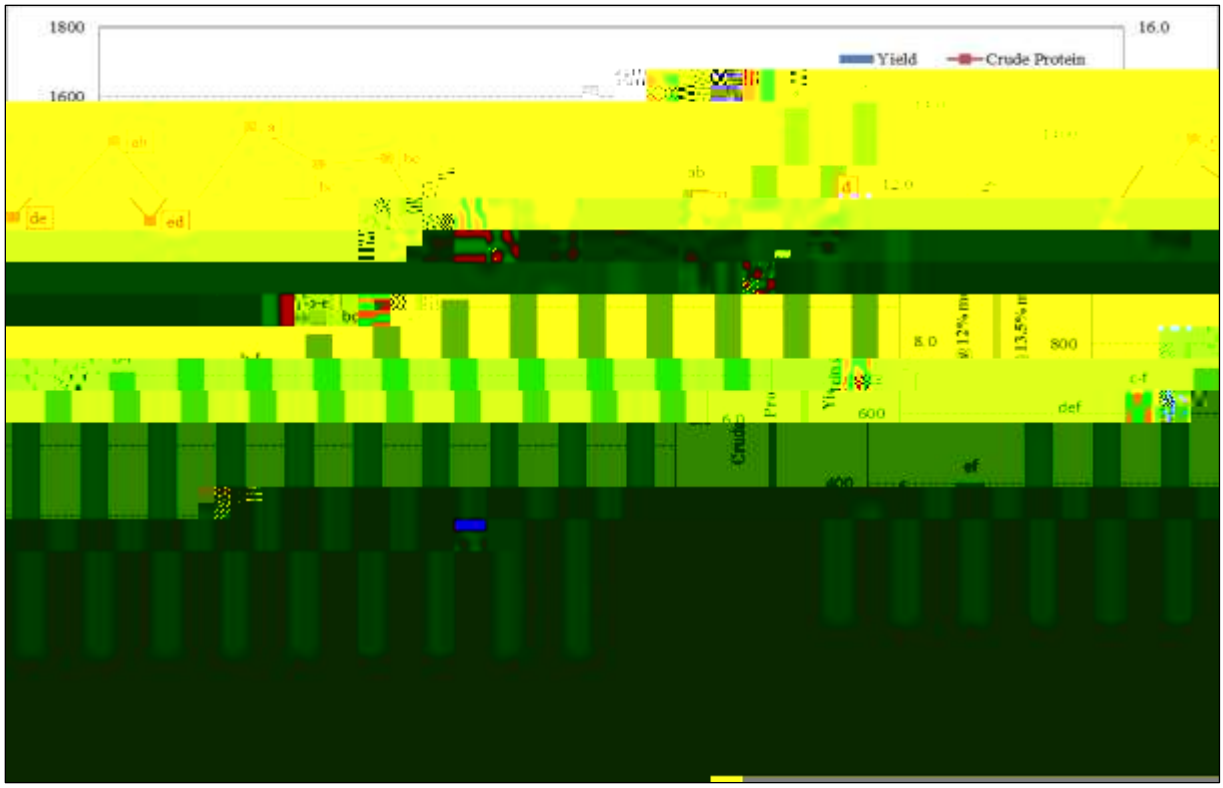


**Figure 2. Yield and crude protein for the 15 spring barley varieties trialed in Alburgh, VT.**
Varieties with the same letter did not differ significantly.

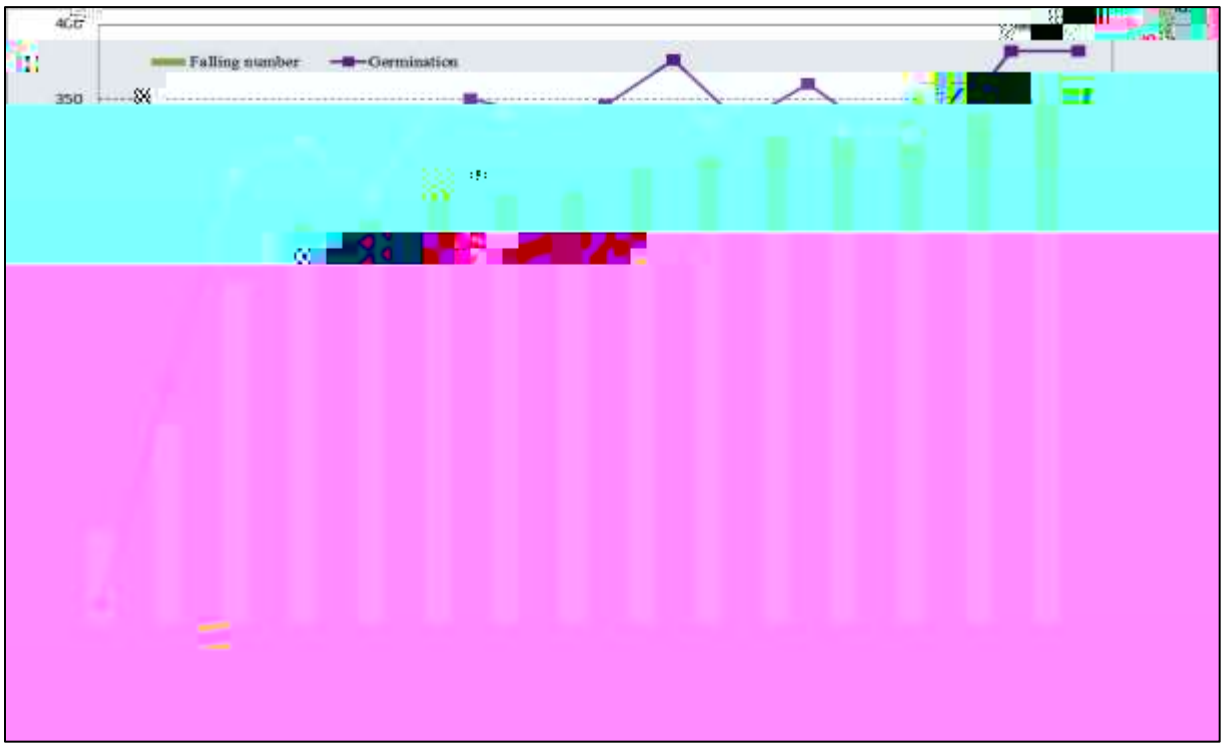


**Figure 3. Falling number and germination comparison of the 15 spring barley varieties trialed, Alburgh, VT**
Varieties with the same letter did not differ significantly.

# DISCUSSION

It is important to remember that the results only represent one year of data. 2014 was another challenging growing season. The prolonged cool and wet spring delayed barley planting and impacted stand