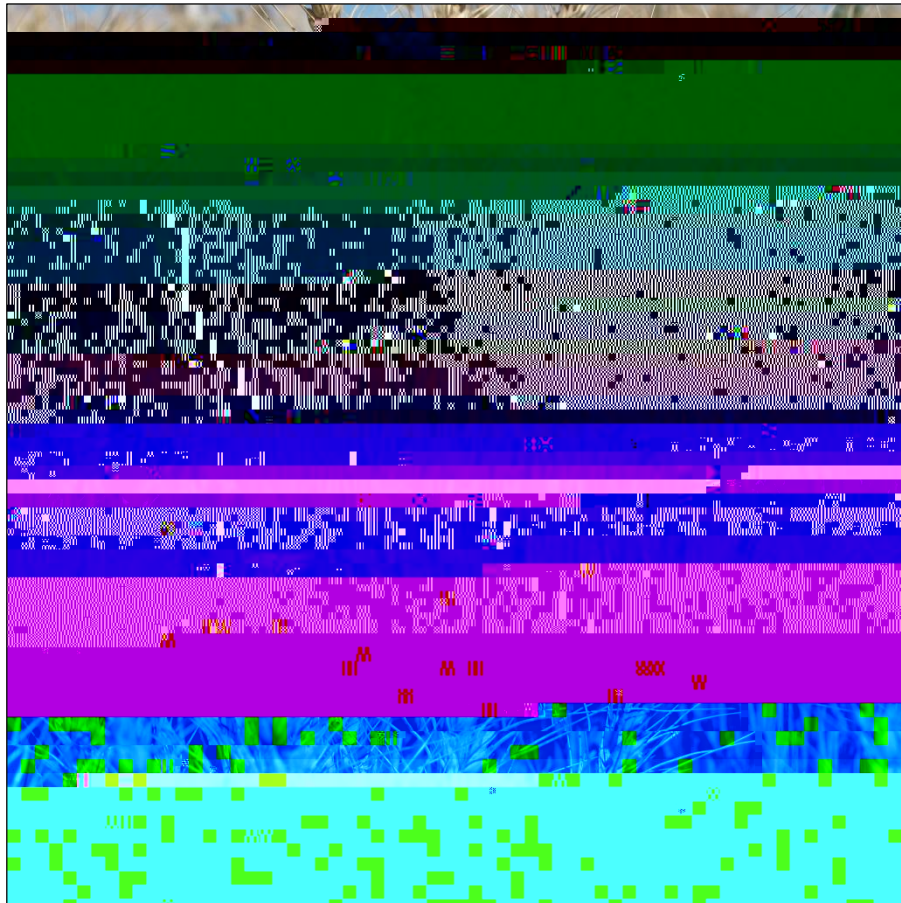


2017 Organic Spring Wheat Variety Trial



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2017 ORGANIC SPRING WHEAT VARIETY TRIAL

The seedbed in Alburgh was

moisture. The determination of falling number
(AACC Method 56-

RESULTS

Seasonal precipitation and temperature recorded at Borderview Research Farm in Alburgh, VT are displayed in Table 3. The growing season this year was marked by higher than average temperatures in April and lower than average temperatures in May, June, July and August. Throughout the growing season, there was higher than average rainfall, totaling 7.39 inches higher than normal. There were 4440 growing degree days (GDDs) from April-August in 2017, which is 51 GDDs less than the average year.

Table 3. Temperature and precipitation summary for Alburgh, VT, 2017.

Alburgh, VT	April	May	June	July	August
Average temperature (°F)	47.2	55.7	65.4	68.7	67.7
Departure from normal	2.27	-0.75	-0.39	-1.90	-1.07
Precipitation (inches)	5.20	4.10	5.60	4.90	5.50
Departure from normal	2.40	0.68	1.95	0.73	1.63

Growing De*72.024 587.260 ns.11 Tm(

Spring Wheat Yields and Quality:

(14.1%), AC Walton (13.8%), Glenn (14.4%), and LCS Anchor (13.6%). The varieties with the lowest crude protein percentages were LCS Trigger (11.0%) and LNR-0627 (11.6%). These two varieties had protein levels below industry standards of 12-14%, all others met or exceeded this standard. The variety with the highest falling number was Magog (427 seconds), the varieties with lowest falling number were Glenn and LCS Anchor (304 seconds). However, all varieties trialed met or exceeded 250-300 second optimal range for falling number. There was no significant difference in test weight among varieties. The highest test weight was Shelly with 57.9 lbs bu⁻¹ and the lowest recorded test weights were LCS Albany and LNR13-0627 (54.4 lbs bu⁻¹). Eleven of twenty-two varieties did attain the optimal 56 to 60 lbs bu⁻¹ for wheat.

Figure 1. Yield and protein concentrations of twenty-two spring wheat varieties, Alburgh, VT, 2017.
Varieties with the same letter did not differ significantly.

In the Northeast, *Fusarium* head blight (FHB) is predominantly caused by the species *Fusarium graminearum*. This disease is very destructive and causes yield loss, low test weights, low seed germination, and contamination of grain with mycotoxins. A vomitoxin called Deoxynivalenol (DON) is considered the primary mycotoxin associated with FHB. The spores are usually transported by air currents and can infect plants at flowering through grain fill. Eating contaminated grain greater than 1ppm poses a health risk to both humans and livestock. None

(2.20 ppm), Rocket (2.44 ppm), AC Walton (2.55 ppm), LNR13-0627 (2.95 ppm), Moka (2.98 ppm), and Shelly (3.00 ppm). The variety with the highest DON concentration was LCS Breakaway at 7.18 ppm.

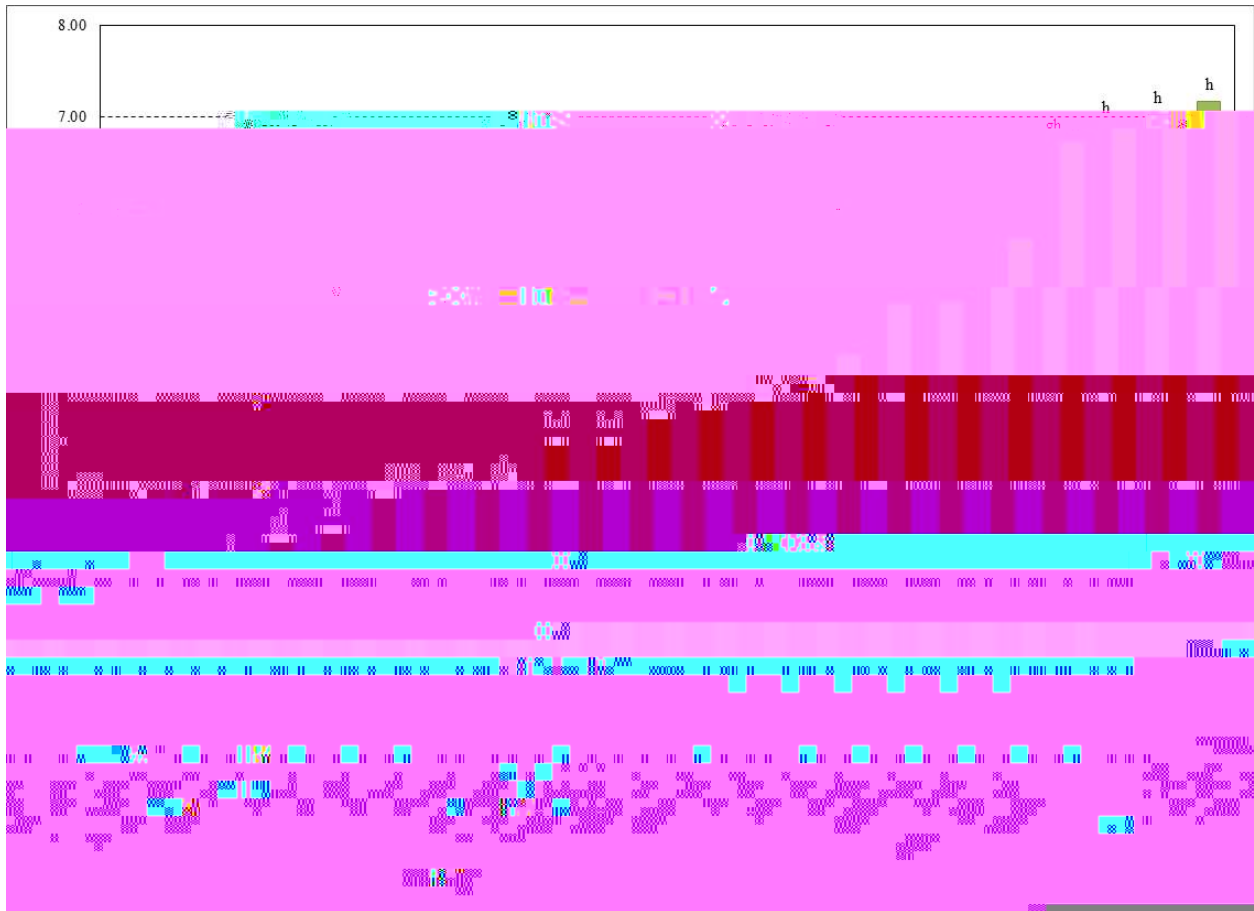


Figure 2. DON levels of twenty-two varieties trialed in Alburgh VT, 2017.
Red line shows FDA limit for DON (1ppm).

DISCUSSION

It is important to remember that the results only represent one year of data. The 2017 growing season was a challenging one due to the cool and wet weather, creating the ideal growing conditions for fungal growth. This is evident in the high DON concentrations. In the 2017 trial, DON levels were much higher than the 2016 trial. The mean DON level was 0.12 ppm in 2016 compared to the 2017 mean DON concentration of 4.11 ppm. Interestingly, yields were much higher than in previous years (Figure 3). This could be attributed to fertilization combined with high moisture making more available nitrogen for plant growth, which could have resulted in more plant tillers and higher yields.

Even in a challenging year like this one, it does provide the opportunity to observe the FHB susceptibility of the different varieties. Varieties such as LCS Trigger and AC Scotia that can maintain lower levels of FHB infection during such a year certainly indicate their strength for being grown in the northeast.

As you make variety choices on your farm, it is important that you evaluate data from test sites that are as similar to your region as possible.

Figure 3. Mean yields from spring wheat variety trials from 2012 to 2017, Alburgh, VT.

ACKNOWLEDGEMENTS

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