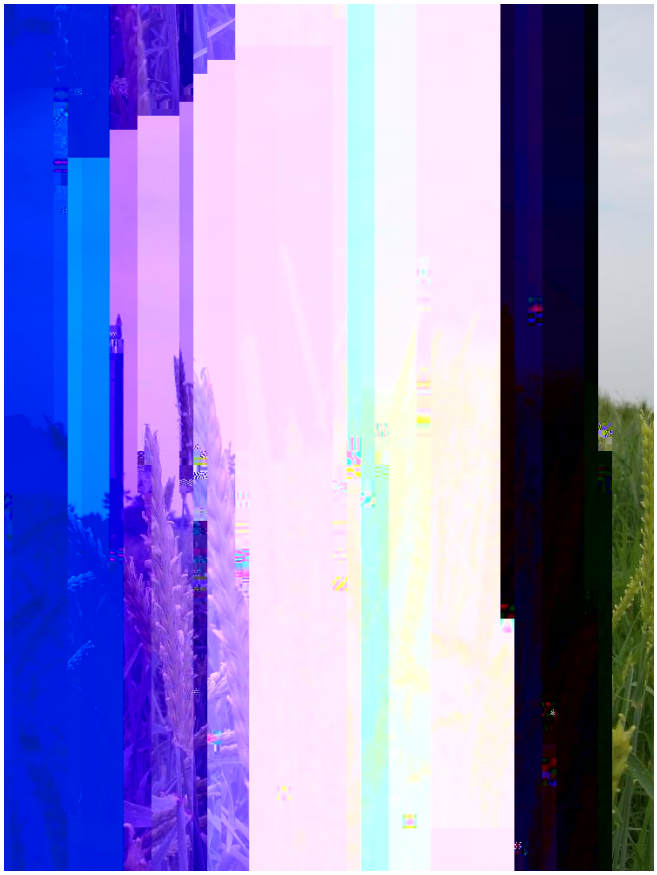
2020 Organic Spring Wheat Variety Trial



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2020 ORGANIC SPRING WHEAT VARIETY TRIAL

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In 2020, the University of Vermont Extension's Northwest Crops and Soils Program evaluated 34 spring wheat varieties to identify varieties that perform well in production systems in northern Vermont. The trial was established at the Borderview Research Farm in Alburgh, Vermont.

MATERIALS AND METHODS

The spring wheat variety trial was initiated at Borderview Research Farm in Alburgh in April 2020. Plots were managed with practices similar to those used by producers in the surrounding area. Agronomic information is displayed in Table 1. The experimental design was a randomized complete block with four replicates. The previous crop was corn silage. The field was disked and spike tooth harrowed prior to planting. The field was fertilized with 19-19-19 at a rate of 300 lb ac^{-1} prior to seeding. Plots were seeded in 5' x 20' plots with a Great Plains Cone Seeder on 8-Apr at a seeding rate of 350 live seeds m^{-2}. Thirty-four varieties were planted. Field season data were collected on all varieties. From 12-Jun to 18-Jun, heading dates were recorded. When 50% of heads were emerged in the plot, the plot was determined to be headed out. Heights were determined on 20-Jul by taking three measurements per plot.

Table 1. Trial agronomic information, Alburgh, VT, 2020.

Table 2. Thirty-four spring wheat varietal information.

Spring wheat varieties	Type	Seed source

Seed sou39.18 ref* 2696ETQ EMC /P <</MCID 26>BDC q222.29 412 0 612 792 reW* Sef1 0 0 1 G[5(y)11t-3(a)9(sa1.04 Tf1c I)16(nc..

Camaro	HR	2017 Meridian Seeds, ND
Chevello	HR	2014 Meridian Seeds, ND
CMV12638	HR	

a vomitoxin, was analyzed using Veratox DON 5/5 Quantitative test from the NEOGEN Corp. This test has a detection range of 0.5 to 5 ppm. Samples with DON values greater than 1 ppm are considered unsuitable for human consumption. One sample of each variety was run and all tested well below the threshold for human consumption (data not shown).

Stand characteristics were analyzed using mixed model analysis using the mixed procedure of SAS (SAS Institute, 1999). Replications within the trial were treated as random effects, and treatments were treated as fixed. Treatment mean comparisons were made using the Least Significant Difference (LSD) procedure when the F-test was considered significant ($p<0.10$).

Variations in project results can occur because of variations in genetics, soil, weather, and other growing conditions. Statistical analysis makes it possible to determine whether a difference among treatments is real or whether it might have occurred due

Table 4 shows heading date and harvest data for the spring wheat trial. Spring wheat varieties had an average yield of 3181 lbs ac^{-1} adjusted for 13.5% moisture, which was higher than previous years.

MS_19SW2	15-Jun	81.2[d-i]	59.5[a-d]	15.4[f-k]	3361[a-e]
ND Vitpro	15-Jun	79.6[e-i]	60.9[a]	14.9[g-k]	3096[a-e]
Pokona	16-Jun	89.1[a-c]	56.2[a-g]	18.6[c-f]	3117[a-e]
Prevail					

Chevello	13.8^{h-l}	381^{f-j}
CMV12638	13.9^{gl}	414^{a-f}
Forefront	14.1^{g-l}	398^{e-g}
Glenn	16.2^{ab}	380^{f-j}
Lang-MN	15.1^{b-g}	439^{a-c}
LCS Albany	13.5^{k-m}	344^{k}
LCS Anchor	16.1^{a-d}	424^{a-e}
LCS Breakaway	15.9^{a-e}	395^{e-g}
LCS Iquaco	15.0^{b-i}	354^{jk}
LCS Nitro	13.8^{i-l}	441^{ab}
LCS Prime	13.3^{lm}	396^{e-g}
LCS Pro	15.0^{b-h}	397^{e-g}

It is important to remember that this only represents one year of data. The weather this growing season was challenging for many crops at Borderview Research Farm, and across much of Vermont and New England. The hot and dry weather led to drought stress, disease and pest pressures. However, the cereal grains performed well overall. They are better adapted to these types of conditions than the cooler and wetter weather that is more common for this area. Though spring wheat was high yielding and most quality targets were met or exceeded this year, many years can be challenging for this crop. It is important, as you make variety choices on your farm, that you evaluate data from test sites that are as similar to your region as possible. Wheat is generally considered a specialty crop in the Northeast and it is recommended growers consider quality standards, consider post-harvest handling requirements and communicate with potential buyers during variety selection and prior to planting large acreage of grain.