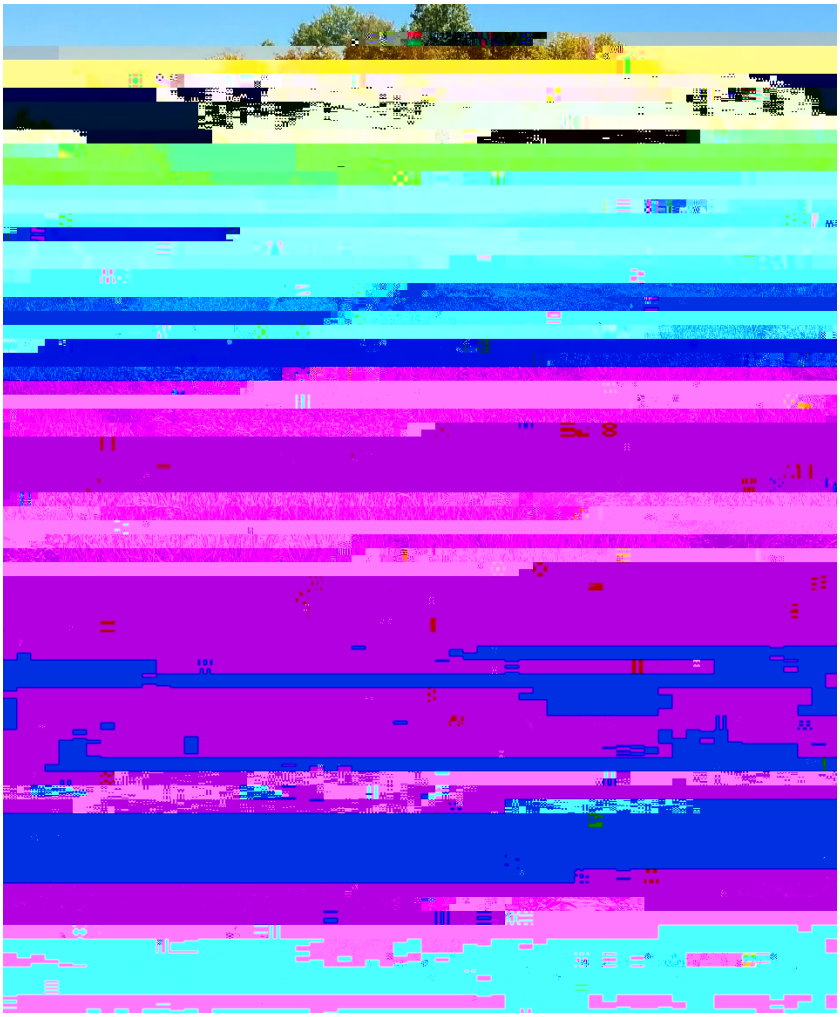
2021 Rye Variety Trial



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2021 RYE VARIETY TRIAL

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The interest in growing cereal rye for grain to be sold as cover crop seed, or to other value-added markets (distillers and bakers), has increased considerably across the Northeast region in recent years. As a result, farmers and end-users are requesting yield and quality information on cereal rye varieties. In 2020-2021, University of Vermont Extension Northwest Crops and Soils (NWCS) Program conducted a variety trial to evaluate yield and quality of cereal rye.

MATERIALS AND METHODS

The experimental design was a randomized complete block with twelve varieties replicated four timeJETQq0.0000091

indirectly measures enzymatic activity in the grain, which is typically used as an indicator of pre-harvest sprouting. It is measured by the time it takes, in seconds, for a stirrer to fall through a cooked slurry of flour and water to the bottom of the tube. Deoxynivalenol (DON) analysis was done using Veratox DON 2/3 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. DON testing was performed on 1 replication, and all samples tested were below the detectable limit for the test (data not shown).

Table 2. Winter rye varietal information, Alburgh, VT, 2020-20

RESULTS

Seasonal precipitation and temperature recorded at Borderview Research Farm in Alburgh, VT are displayed in Table 3. A cooler than average fall but warmer and drier summer led to 2705 Growing Degree Days (GDDs) accumulated April to July, which was 273 GDDs above the 30-year average for those months. The precipitation from April to July was 5.12" below normal. Overall, precipitation across the entire growing season from Sep to Jul, was 3.08" below average.

Table 3. Temperature and precipitation summary for Alburgh, VT, 2020 and 2021 growing season.

	2020			2021				
	Sep	**Oct**	**Nov**	**Mar**	**Apr**	**May**	**Jun**	**Jul**
Average temperature (°F)	68.8	59.2	48.3	19.8	33.2	48.1	58.4	70.3
Departure from normal	-1.89	-3.53	-2.01	-3.07	0.93	2.52	-0.03	2.81

average. All other varieties except Serafino which reported 6.8% damage, had statistically similar results as Akusti.

Table 4. Agronomic data by rye variety, Alburgh, VT, 2021.

	Heading date	Population	Arthropod Pest Damage	Disease	Height	Lodging
		plants m^2	% foliar surface affected	% foliar surface affected	cm	0-5[†]
Akusti	19-May	229*	**2.6***‡	22.0	143	2.75
Aroostock	17-May	248*	3.6*	11.1 *	162	4.25
Brasetto	19-May	241*	3.1*	10.3 *	132	3.00
Danko	18-May	221	2.7*	16.9	143	**0.75***
Hazlet	18-May	251*	3.8*	24.1	146	2.00*
KWS Tayo	18-May	207	4.2*	**5.6***	133	2.25*
ND Dylan	19-May	221	2.9*			

varieties were below 13.5%. Hazlet was the lowest at 18.3% along with all but three varieties being statistically similar.

Table 5. Yield and quality of winter rye varieties, Alburgh, VT, 2021.

Variety	Yield @ 13.5% moisture	Harvest moisture	Test Weight	Crude protein @ 12% moisture	Falling number
	lbs ac^{-1}	%	lbs bu^{-1}	%	seconds
Akusti	3681	19.9*†	41.9*	9.90	197
Aroostock	3419	19.7*	42.1*	12.7*†	196
Brasetto	6073*	19.6*	42.4*	9.60	**284***
Danko	4978	22.5	36.5	9.20	205
Hazlet	4463	**18.3**	**46.1***	9.20	154
KWS Tayo	**6429***	19.9*	42.0*	8.70	230
ND Dylan	3639	19.8*	40.0	10.4	173

None of the varieties reached the ideal test weight of 56 lbs bu^{-1}, with Hazlet coming the closest with a