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2023 ORGANIC WINTER MALTING 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. To be suitable for malting, barley must meet specific quality characteristics such as low protein content, high starch and high germination. In the fall of 2022, a winter malting barley trial was conducted to evaluate yield and quality of 30 winter malting barley varieties.

MATERIALS AND METHODS

In the fall of 2022, a winter malting barley variety trial was established at Borderview Research Farm in Alburgh, VT. The experimental plot design was a randomized complete block with three replications. The treatments were 30 winter malting barley varieties, listed in Table 1.

Table 1. Varietal information for the 30 winter malting barley varieties, 2022-2023.

Winter barley variety	Type	Seed source
13ARS503-1	2	USDA-ARS
13ARS514-5	2	USDA-ARS
13ARS526-8	2	USDA-ARS
2MW18_3374-001	2	University of Minnesota
2MW18_3374-036	2	University of Minnesota
2MW18_4462-011	2	University of Minnesota

All plots were managed with practices similar to those used by producers in the surrounding area (Table 2). The previous crop planted on this site was spring barley. The trial area was plowed, disked, and spike toothed harrowed before planting. The plots were seeded with a Great Plains NT60 Cone Seeder on 15-Sep 2022 with a seeding rate of 160 lbs ac^{-1} into Benson rocky silt loam. Plot size was 5' x 20'.

Table 2. General plot management, 2022-2023.

Trial information	Alburgh, VT Borderview Research Farm
Soil type	Benson rocky silt loam
Previous crop	Spring barley
Tillage operations	Fall plow, disk & spike tooth harrow
Seeding Rates (lbs ac^{-1})	160
Row spacing (in)	6
Replicates	3
Planting date	15-Sep 2022
Harvest date	12

sample per variety was run and determined that all varieties had DON concentrations less than 1 ppm (data not shown).

Standard 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 ($p<0.10$).

Wintmalt had the best winter survival at 87% (Table 4)

Figure 1. Yield and germination rate for 30 winter barley varieties, Alburgh VT 2022-2023.

Figure 2. Average winter survival, yield and germination rate for winter barley trials, Alburgh VT 2011-2023

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