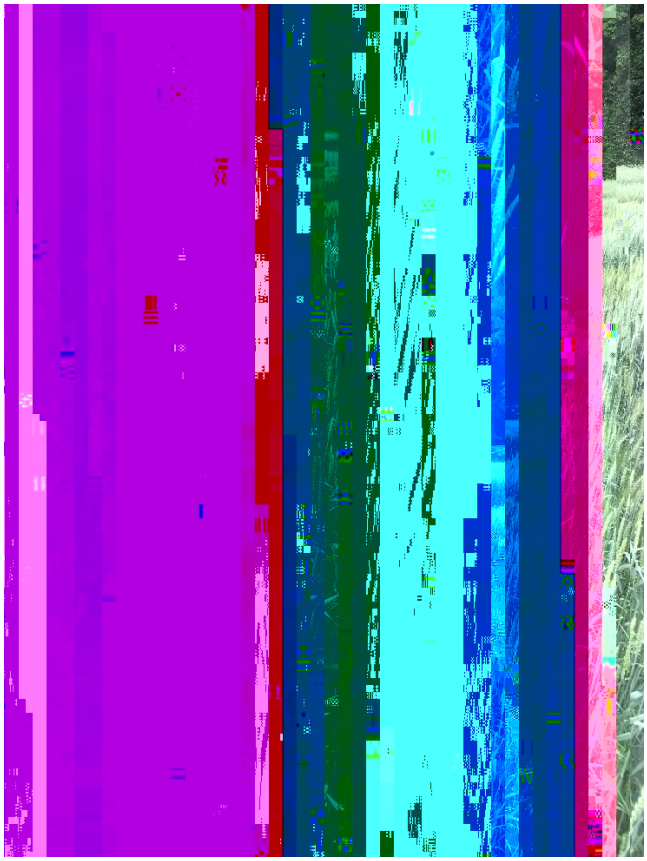
2023 Organic Winter Wheat Variety Trial



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With the revival of the small grains industry in the Northeast and the strength of the locavore movement, there is an increasing interest from craft breweries, distilleries, maltsters, and bakers for locally grown grains. In 2023, the University of Vermont Extension

Table 2. Winter wheat varietal information.

Variety	Market classÀ	Seed source
AC Morley	HRWW	

Table 3. Heirloom Winter wheat varietal information.

Variety	Market classÀ	Origin
Bluejacket	HRWW	Kansas
Clarks Cream	HWWW	Kansas
Forward	SRWW	Heirloom variety, NY
Gold Coin	SWWW	Heirloom variety, NY
Genesee Giant	SWWW	New York
Pride of Genesee	SRWW	New York
Red Chief	SRWW	New York
Wasatch	HRWW	Utah

À**HRWW** - Hard Red Winter Wheat, **SWWW -** Soft White Winter Wheat, **SRWW** - Soft Red Winter Wheat, **HWWW** – Hard White Winter Wheat

The trial was scouted for arthropod pests and plant diseases on 4 and

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 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 (LSD's) at the 10% level of probability are shown. Where the difference between two treatments 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 values. Treatments that were not significantly lower in performance than the highest value in a particular column are indicated with an asterisk. In the previous example, treatment A is significantly different from treatment C but not from treatment B. The difference between A and B is equal to 200, which is less than the LSD value of 300. This means that these treatments did not differ in yield. The difference between A and C is equal to 400, which is greater than the LSD value of 300. This means that the yields of these treatments were significantly different from one another.

RESULTS

NY99056-161	1-Jun	5-Jun	1.65	5.00	7.90	101	32.0
Overland	30-May	5-Jun	0.65*	9.70	10.4	95.9	0.00*

VA16HRW-22	5191*	14.3	55.7*	10.8	60.7	297*	1.00*
Viking 211	4765*	14.6	54.4	10.6	60.8	272	1.40*
Warthog	3794	15.6	54.3	10.0	60.2	268	1.40*
Wasatch	2137	17.1	51.5	12.6*	59.8	185	4.00
Winterhawk	4634	15.0	**56.7***	10.6	61.4*	299*	0.90*
LSD (p=0.10)	953	1.38	2.05	1.79	1.24	52.1	2.20
Trial mean	3887	14.9	54.0	11.2	60.6		

the lowest yield (1784 lbs ac^{-1}). Of the six varieties with yields under 3000 lbs ac^{-1} (Red Chief, Genesee Giant, Gold Coin, Pride of Genesee, Wasatch, and Rouge d'Ecosse), five of the six varieties also had 50% or more lodging (Wasatch was less than 50% at 47.5%). Gold Coin, Pride of Genesee, Wasatch, along with Rouge d'Ecosse were all above the DON threshold.

Eight varieties tested within the ideal range (12-15%) for crude protein for bread baking. The rest, except for IL17-23874 and IL13-1960, tested in the acceptable range, greater than 10% crude protein. Many of the varieties trialed had slightly lower than ideal quality parameters, most likely in correlation with the weather conditions this season and the stress the plants were under.

These data highlight the importance of varietal selection, but also only represent one year of data in ongoing trials. More data and other factors should be considered when making management decisions.

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