2016 High Glucosinolate Mustard as a Biofumigant Trial

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Image 1. Potato scab, *Streptomyces spp.*, and *Rhizoctonia solani,* left to right, Alburgh, VT, 2016.

At High Mowing Organic Seeds, the experimental design was a randomized split plot with four replications. Main plot treatments consisted of two planting dates and split plot treatments consisted of two

Vegetable varieties planted	óYukon goldô potato	óHystyleô snap bean, susceptible to root rot óAccelerateô snap bean, resistant to root rot

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WOLCOTT, VT RESEARCH RESULTS

The impact of variety

At the High Mowing Seeds location, mustard varieties did not differ significantly in yield or nutrient concentration (Table 11).

Table 11. The impact of variety on plot characteristics and harvest yield of high glucosinolate mustard across the planting dates, Wolcott, VT, 2015.

Variety	[redacted]	Height	Population	Yield	Carbon	Nitrogen	Phosphorus	Potassium
	1 to 5 rating	cm	plants ac^{-1}	lbs ac^{-1}	%	%	mg kg^{-1}	mg kg^{-1}
Caliente 199	2.88	89.5	1480000	525	39.7	2.20	3780	22600
Terminator	2.50	96.0	1500000	515	40.1	2.18	3890	22300
LSD (0.10)	NS	NS	NS	NS	NS	NS	NS	NS
Trial mean	2.69	92.8	1490000	520	39.9	2.19	3830	22500

†Early season vigor was rated on a 1 to 5 scale with 1 = low vigor and 5 = high vigor.
NS ï

For the snap bean variety Hystyle, Terminator and Caliente 199 again had the highest populations. These varieties also outperformed the control for Hystyle bean yield, with Terminator plots yielding 4540 lbs ac^{-1} and Caliente 199 yielding 4000 lbs ac^{-1}.

Table 13. The impact of high glucosinolate mustard variety on Accelerate and Hystyle snap bean performance and weed populations across planting dates, Wolcott, VT, 2016.

	Accelerate
Variety	

Table 14. The impact of planting date on high glucosinolate mustard

Table 16. The impact of high glucosinolate mustard planting date on Accelerate

When evaluating the impact of mustard meal in comparison to incorporating whole mustard plant, the mustard meal showed a significantly lower rate of root disease infection in the Hystyle snap beans (Table 18). Contrasts that compared the impact of meal compared to whole mustard plants on weeds indicated no significant difference (data not shown).

Table 18. Contrast comparing mustard meal vs whole plant incorporation for snap bean root disease severity, Wolcott, VT, 2016.

	Accelerate root disease‡	Hystyle root disease‡
	0 to 10 rating	