

Winter Grain Pea Trials: Year 1

NE SARE Partnership Grant:

'Exploring winter lentil and winter pea production in the Northeastern United States'

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Pea and triticale germplasm contributed by ProGene

Project Goals:

- Assess feasibility and profitability of winter pulse production in NY State
- Identify adapted varieties and best agronomic practices
 - Replicated trial
 - Freeville, NY
 - Planted Sept 30, 2022
 - 9 entries x 4 reps
 - On-farm unreplicated trial
 - Penn Yan, NY
 - Planted Oct 6, 2022
 - 7 entries

Interplanted with 'Chief' triticale

Year 1 Key Results:

- Significant differences among varieties for all traits except weed biomass
- Varieties with shorter stature and many stems ranked higher for grain yield & protein content
- Yield ranking is very similar between replicated & on-farm trials
- Stem count – regardless of plant height – is the trait most strongly associated with both grain and biomass yield.



Winter Pea Variety Means: Replicated Trial

	Fall Vigor 1 = low 9 = high ***	Spring Vigor 1 = low 9 = high ***	Mean Plant Height (cm) ***	Stem Count **	Total Grain Yield (g) ***	Grain Yield per Stem (g) *	Pea Biomass (g dry wt.) ***	Pea Biomass per Stem (g dry wt.) **	Weed Biomass (g dry wt.) NS	Percent Crude Protein (%) **
Blaze	5.5	6.5	75.8	20.8	106	4.8	67.6	3.46	2.45	26.1
Vail	7.5	5	77.7	16	85.5	5.53	77	5	2.77	26.4
Goldenwood	7.25	7	68.2	18.8	85.3	4.78	57.4	3.14	3.27	26.2
KurtWood	7.25	7	92.6	12.2	81.8	6.62	69.3	5.79	2.73	23.2
KeystoneIcicle	7.25	9	108.1	13.2	71.3	5.62	65.6	5.09	2.77	24.7
Keystone	3.75	6	99.9	11	61.1	6.18	68.5	6.4	6.9	25.4
Icicle	4	5.5	108.9	11.5	51	4.51	47.3	4.31	2.62	23.9
Windham	3.5	1.5	59.1	15	35.8	2.34	23	1.48	4.35	25.8
FP6101	6	5.5	97.2	5	21.4	5.32	18.1	4.36	4.78	22.4

***, **, and * indicate one-way fixed effect ANOVA tests significant at $p < 0.001$, $p < 0.01$, and $p < 0.05$, respectively.

NS indicates no significant difference among varieties. Table sorted by total grain yield. Stand count data not shown due to deer browsing.

Winter Pea Variety Means: On-Farm Trial

	Mean Plant Height (cm)	Field-dry Biomass (lb)	Grain Yield (lbs)
Blaze	63	415	20
Goldenwood	63.5	371	16
Vail	70.25	461	15
Kurtwood	66.5	390	13
Keystone	71	421	13
Icicle	83	321	6
FP6101	91.25	387	4

Blaze, Vail & Goldenwood →

Shorter stature, more stems, higher overall yield & protein content

KurtWood, KeystoneIcicle & Keystone →

Taller plants with fewer stems, moderately high yield & numerically lower protein content

Icicle, Windham, FP6101 → Lower vigor and yield, varied protein content and plant stature