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

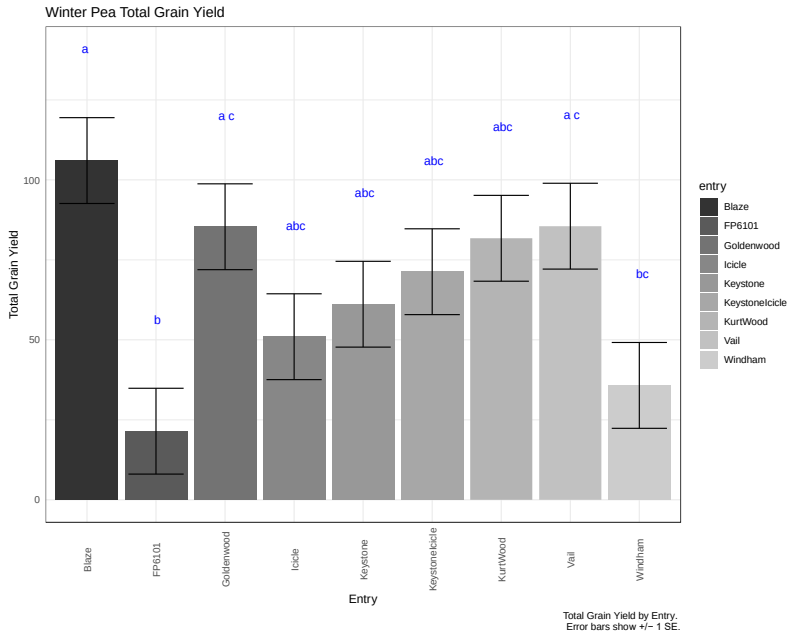
Interplanted with 'Chief' triticale

Variety means for vigor, plant height, and yield traits

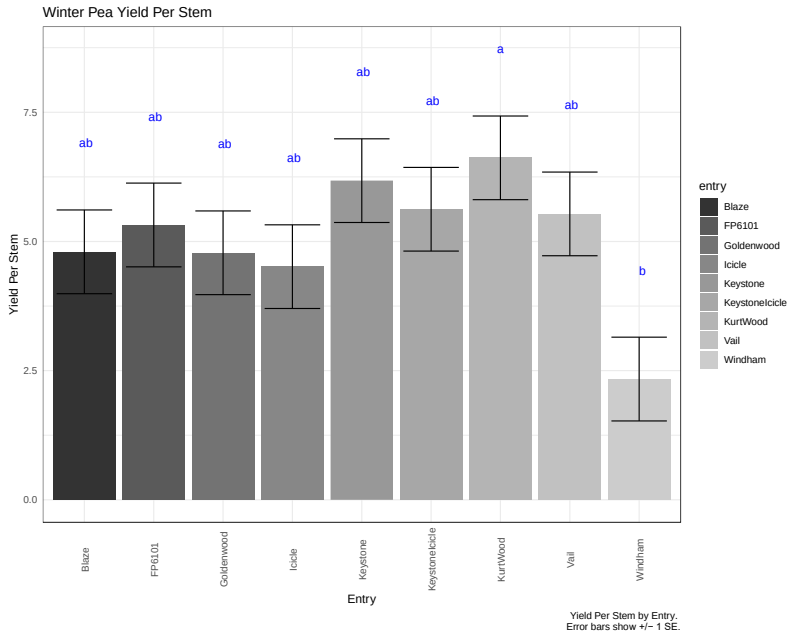
	Fall Vigor 1 = low 9 = high ***	Spring Vigor 1 = low 9 = high ***	Mean Plant Height (cm) ***	Total Grain Yield (g) **	Grain Yield per Stem (g) *	Total Pea Biomass (g) **	Pea Biomass per Stem (g) **	Weed Biomass (g) NS
Blaze	5.5	6.5	75.8	106	4.8	67.6	3.46	2.45
Vail	7.5	5	77.7	85.5	5.5	77	5	2.77
Goldenwood	7.25	7	68.2	85.3	4.8	57.4	3.14	3.27
KurtWood	7.25	7	92.6	81.8	6.6	69.3	5.8	2.73
KeystoneIcicle	7.25	9	108.1	71.3	5.6	65.6	5.09	2.77
Keystone	3.75	6	99.9	61.1	6.2	68.5	6.4	6.9
Icicle	4	5.5	108.9	51	4.5	47.3	4.31	2.62
Windham	3.5	1.5	59.1	35.8	2.3	23	1.48	4.35
FP6101	6	5.5	97.2	21.4	5.3	18.1	4.36	4.78

***, **, 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.

- Significant differences among varieties for all traits except weed biomass
- Highest yielding varieties had many stems → lower yield per stem
- Stand count data not shown due to deer browsing



- Blaze (pictured) had significantly higher total grain yield than FP6101 and Windham.
- Grain yield and total biomass highly correlated (r=0.87, $p<8.4 \times 10^{-11}$)



- Kurtwood (pictured) had significantly higher grain yield per stem than Windham.
- Grain yield and biomass per stem highly correlated (r=0.82, $p<3.8 \times 10^{-9}$)

Blaze, Vail & Goldenwood → More stems & higher overall yield

KurtWood, KeystoneIcicle & Keystone → Fewer stems but higher yield per stem

Icicle, Windham, FP6101 → Lower vigor and yield

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