

Project Title: Spring wheat blend study - 2018

Objective: To evaluate the performance of blended Vida or Tyra with Egan

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Summary:

Spring wheat cultivars Vida and Tyra were blended with Egan seeds, and planted in a randomized complete block design with three replications. The three blends were 75%, 50% and 25% Egan to Tyra or Vida, and three checks, 100% Egan, Tyra and Vida. Plants were sampled for blend accuracy in live plants, and no difference was found.

All traits besides heading date and stand count were significant for treatment effect. Yield was significant for blends and checks. The 100% Vida had the highest yield of 140 bu/A, while the lowest was 100% Egan at 114.6 bu/A. The average was 122.2 bu/A. As the blend portion of Vida and Tyra increased, yield also increased.

Protein was also significant, with an average of 14.2%. The highest protein was 100% Egan at 15.4%, and the lowest was 100% Tyra at 13%. In blending Tyra or Vida with Egan, one can be assured of protein greater than 14% if Egan is at least 50% of the blend (Fig. 2B). The grain protein increased (with linear trend) shown in Fig. 1B as Egan percentage in the blend is increased. Falling numbers followed the same trend as protein (Fig. 1C).

Falling numbers were highest at 459.7 and lowest at 318.8 seconds. Test weight, thousand seed weight and plant height were also significant. Test weight ranged from 61.8 to 62.8 lb/bu. Thousand seed weight ranged from 38.8 g to 42.1 g with an average of 39.6 g. Plant height ranged from 37.6 to 40.6 inches.

In general, mixing Egan with Tyra/Vida resulted in increased protein content and falling numbers; however, it also resulted in lowered yield, but specifically only for Vida. This lowered yield effect when mixing Egan with Tyra was not observed. Despite the linear trend shown in in Fig 1A (Tyra, closed symbols), statistically, yields are similar for the various blends between Tyra and Egan.

Detailed management information and agronomic data are shown in Tables 1 and 2, respectively.

Table 1. Management information

Seeding date:	5/2/2018	Harvest date:	8/30/2018
Julian date:	122	Julian date:	242
Seeding rate:	25 plants/ft ²	Soil type:	Creston silt loam
Previous crop:	pea	Soil nutrient residual (lb/A):	123-6-82 (Fall, 2017)
Tillage:	conventional	Nutrient fertilizer applied (lb/A):	40-40-100
Insecticide:	Warrior2	Fungicide:	Headline

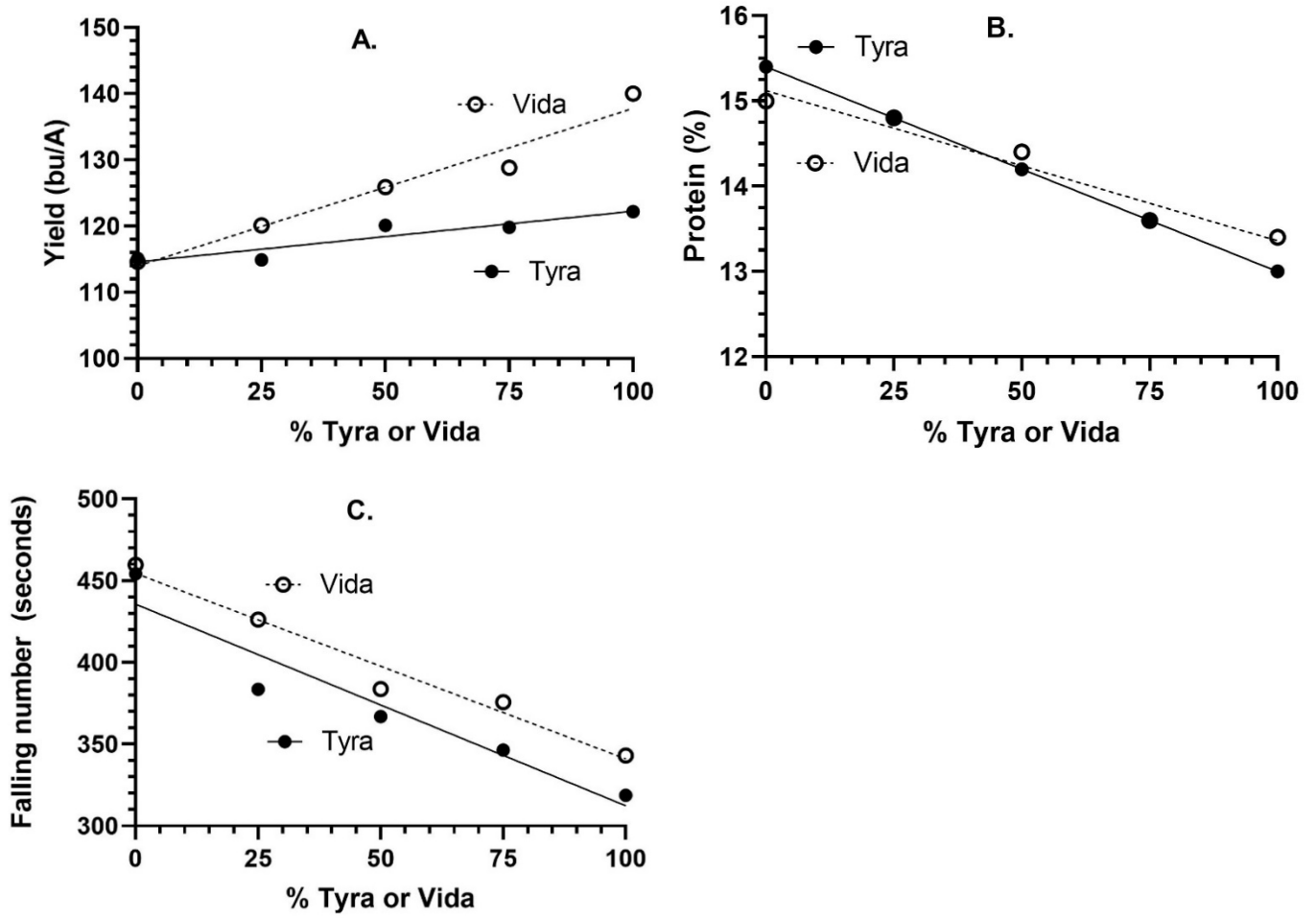


Fig. 1 Yield (A), protein (B), and falling number (C) response to blending Tyra or Vida with Egan.

Table 2. Agronomic performance of the different seed blends

Egan to Other -----%-----		HD Julian	HT in	YLD ¹ bu/A	PRO ² %	TWT ¹ lb/bu	TKW g	FN seconds
0 Egan	100 Vida	180	40.6	140	13.4	62.1	42.1	343.1
25 Egan	75 Vida	180	40.4	128.8	13.6	62.1	39.5	375.8
50 Egan	50 Vida	180	41.1	125.9	14.4	61.9	40.7	383.8
75 Egan	25 Vida	180	39.6	120.1	14.8	62	39.5	426.2
100 Egan	0 Vida	180	39.9	114.6	15	61.8	38.8	459.7
0 Egan	100 Tyra	180	34.6	122.2	13	62.8	39	318.8
25 Egan	75 Tyra	181	37.6	119.8	13.6	62.4	39.3	346.4
50 Egan	50 Tyra	180	37.7	120.1	14.2	62.3	38.9	366.9
75 Egan	25 Tyra	180	37.6	114.9	14.8	62	40	383.6
100 Egan	0 Tyra	180	39.7	115.1	15.4	61.8	38.1	454.3
Mean		180	38.9	122.2	14.2	62.1	39.6	385.9
CV		0.2	4.8	6.1	5.2	0.5	2.7	11.6
LSD		ns	2.2	10.9	0.5	0.3	1.9	27.2
Pr>F		ns	0.0003	0.0031	<.0001	<.0001	0.0209	<.0001

HD: heading date, HT: plant height, YLD: yield, PRO: protein, TWT: test weight, TKW: thousand kernel weight, FN: falling number

ns: not significant (alpha = 0.05)

¹ Adjusted to 13% moisture

² Adjusted to 12% moisture