

Yellow Field Pea Variety Trial – 2026 Season

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INTRODUCTION

Field peas represent a potentially profitable alternative crop for farmers in our region. The on-going development of processing capacity for yellow field peas in the southeast corner of the state has increased interest in cultivation of this crop. Being a cool-season grain legume, field peas would provide a break in the rotation for the corn:soybean based cropping system, and being harvested in July they would provide an opportunity to plant a cover crop for fall grazing and/or soil improvement. Field peas would also be a good lead-in for a fall-planted winter rye or winter wheat grain crop. To help identify lines that are well adapted in our area, pea variety trials were established at the Southeast Research Farm in Beresford, with a farmer-cooperator at Wagner, and at the Northeast Research Farm in South Shore, South Dakota.

METHODS

Eleven lines of yellow field pea were included in the trial as follows:

<u>Line</u>	<u>Supplier</u>
AAC Beyond	Meridian Seeds
AAC IronHorse	Valesco
Goldstorm	Meridian Seeds
Inca	Meridian Seeds
LaCross	Valesco
Montech 4152	Albert Lea Seeds
Orchestra	Premier Genetics
PG Bank	Premier Genetics
PG Cash	Premier Genetics
Protin	Photosyntech
26VG1A70	Valesco

At each location, entries were direct-seeded with a small-plot drill at a 2” depth with a seed rate of 300,000 seeds per acre. Plots were seeded on 27 March at Beresford and on 28 March at Wagner. Due to wet conditions, the plots at the Northeast Research Farm in South Shore, were not seeded until 24 April. The herbicides glyphosate (28 oz/ac),

metolachlor (24 oz/ac) and saflufenacil (1 oz/ac) were applied preplant at Beresford and pre-emergence at Wagner. Glyphosate and metolachlor were applied pre-emergence at South Shore. Carfentrazone (4 oz/ac) was applied as a preharvest desiccant at Beresford. Carfentrazone (4 oz/ac) and glyphosate (30 oz/ac) were applied as desiccants at South Shore prior to harvest. Whole plot yields were measured using a small plot combine (Zurn, Model 150). Data were analyzed using SAS statistical software. Preliminary analysis showed significant site by line interactions for yield, so data were analyzed separately for each location.

RESULTS

The Beresford site started the season with dry conditions and very little moisture reserve; however, timely rains (3.91" in April, 2.63" in May, and 3.99" in June) allowed for establishment and good crop development. At South Shore, planting was delayed due to wet conditions and rainfall was heavier there than at Beresford (data not shown). The trial at Wagner was severely injured by hail on May 17th and so those plots were not harvested for grain yield. The average yield across all the lines tested was 53.4 bu/ac at Beresford (Table 1) and 31.4 bu/ac at South Shore (Table 2). Lower yields at South Shore were associated with later planting and more weed pressure. The highest yielding lines at Beresford were 'AAC Beyond', 'AAC IronHorse', 'Inca', 'Orchestra', 'Protin', and '26VG1A70'. The highest yielding lines at South Shore were 'AAC IronHorse', 'Montech 4152', 'AAC Beyond', 'Goldstorm', '26VG1A70', and 'Inca'. The lines 'AAC Beyond', 'AAC IronHorse', and 'Inca' were among the highest yielding lines at both locations.

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Table 1. Lodging score, grain moisture, test weight, 100-seed weight and grain yield of 11 lines of yellow field pea evaluated at Beresford, South Dakota, in 2026. The trial was arranged in a randomized complete block design with four replications at each site. Plots were planted on 27 March, and harvested on 23 July, 2026. Yield values marked in bold font are statistically similar to the numerically highest yielding line at this site.

Line	Lodging Score	Moisture	Test Wt.	100- Seed Wt.	Yield
	(1 to 5)	(%)	(lb/bu)	(g)	(bu/ac)
AAC Beyond	2.5	13.2	61.0	23.1	62.3
AAC IronHorse	2.3	12.8	61.1	25.5	62.2
Inca	2.5	13.1	60.0	23.0	58.1
Orchestra	2.3	12.9	60.4	29.1	57.5
Protin	2.0	12.9	60.2	31.0	56.0
26VG1A70	1.5	14.0	58.4	26.6	54.9
PG Cash	3.3	13.5	59.2	26.0	50.7
Montech 4152	2.0	13.5	60.3	27.6	50.7
PG Bank	2.3	13.1	61.3	24.9	50.5
Goldstorm	1.5	14.7	59.1	23.3	44.2
LaCross	<u>4.5</u>	<u>11.9</u>	<u>59.3</u>	<u>18.5</u>	<u>41.3</u>
<i>Mean</i>	<i>2.4</i>	<i>13.2</i>	<i>60.0</i>	<i>25.2</i>	<i>53.4</i>
<i>CV (%)</i>	<i>25.1</i>	<i>3.5</i>	<i>1.8</i>	<i>4.2</i>	<i>9.8</i>
<i>LSD (0.10)</i>	<i>2.7</i>	<i>0.6</i>	<i>1.6</i>	<i>1.5</i>	<i>7.3</i>

Table 2. Lodging score, grain moisture, test weight, 100-seed weight and grain yield of 11 lines of yellow field pea evaluated at South Shore, South Dakota, in 2026. The trial was arranged in a randomized complete block design with four replications at each site. Plots were planted on 24 April, and harvested on 7 August, 2026. Yield values marked in bold font are statistically similar to the numerically highest yielding line at this site.

<i>SOUTH SHORE</i>					
Line	Lodging Score	Moisture	Test Wt.	100- Seed Wt.	Yield
	(1 to 5)	(%)	(lb/bu)	(g)	(bu/ac)
AAC IronHorse	3.0	15.2	61.9	21.8	38.3
Montech 4152	2.3	15.6	61.2	24.5	36.9
AAC Beyond	3.2	15.0	60.4	18.8	36.6
Goldstorm	2.8	15.7	59.8	20.1	34.4
26VG1A70	2.5	16.0	60.1	22.3	34.2
Inca	1.4	15.6	61.5	20.0	32.7
LaCross	3.0	15.9	60.1	16.5	27.7
PG Bank	3.2	16.3	60.4	19.9	27.2
PG Cash	3.5	16.6	58.1	19.9	27.1
Orchestra	3.3	16.7	58.0	19.8	24.1
Protin	<u>1.7</u>	<u>16.5</u>	<u>59.5</u>	<u>21.0</u>	<u>21.6</u>
<i>Mean</i>	<i>2.7</i>	<i>15.9</i>	<i>60.1</i>	<i>20.4</i>	<i>31.4</i>
<i>CV (%)</i>	<i>30.6</i>	<i>3.2</i>	<i>2.1</i>	<i>6.7</i>	<i>19.8</i>
<i>LSD (0.10)</i>	<i>1.2</i>	<i>0.7</i>	<i>1.8</i>	<i>1.9</i>	<i>8.6</i>