

Field Pea Seed Singulation Trial at Minot

Seeding equipment utilizing singulation technologies have been used extensively in many horticultural crops and more recently with row crops like corn. Although this technology is expensive, for some crops with high seed costs, reduced seeding rates provides substantial cost savings. Field peas are known for their ability to branch and fill in their growing space. The basic objective of this trial was to determine production responses of peas that were planted at various seeding rates with precision seeding equipment. The trial was grown during the 2017 and 2018 growing seasons. "Treasure" yellow cotyledon and "CDC Striker" green cotyledon peas were planted with a small plot planter with Great Plains no-till openers and Monosem seed singulation meters. Results are shown below.

2 Year Combined Means

Seeding Rate	Harvest Population	Seed Efficiency ¹	Days to Bloom	Days to Mature	Plant Height	Lodging	1000 KWT	Test Weight	Protein	---- Yield ----	
seeds/A	plants/A	%	DAP ²	DAP ²	inches	0-9*	g	lbs/bu	%	lbs/A	bu/A
150,000	114,224	76	52	77	22	2.3	212	66.3	25.9	1712	28.5
200,000	131,648	66	52	76	22	2.7	213	65.9	25.8	1838	30.6
250,000	131,325	53	52	76	23	2.7	207	66.2	26.2	2026	33.8
300,000	128,099	43	52	77	23	2.0	213	66.5	26.1	1884	31.4
350,000	182,307	52	52	76	22	1.7	210	66.1	26.2	2313	38.6
LSD 0.05	24,219	10	NS	NS	NS	0.6	NS	NS	NS	327	5.4

¹Seed Efficiency = % of seeds that germinate and become established plants at harvest.

² DAP = Days after planting.

*Lodging: 0 = none, 9 = lying flat on the ground.

NS = no statistical difference between seeding rates.

Planting Date: May 17, 2017 and May 9, 2018

Harvest Date: August 1, 2017 and August 3, 2018

Row Spacing: 15"

Tillage System: Minimum till

Previous Crop: 2016 = canola, 2017 = hrsw

Soil Type: Williams Loam

Summary: Seeding rates of 150,000 through 300,000 seeds/A produced statistically similar established plant populations and produced statistically similar yields. The highest seeding rate, 350,000 seeds/A, produced significantly more established plants and significantly higher yields than the other rates. Seed efficiency, which is the percentage of planted seeds that germinate and become the established plant stand, tended to level off at the 250,000 and higher seeding rates, indicating this rate to be the optimal rate under these growing conditions. The current general accepted seeding rate recommendation also happens to be 250,000 seeds/A. Agronomic and seed quality characteristics, with the exception of lodging, were not affected by seeding rates. Lodging was not a big issue with this trial, but there was a tendency for lodging to decrease with increasing seeding rates. Although this trial did not compare precision seeding with traditional seeding equipment, the practice of lowering seeding rates with precision seed placement did not enhanced field pea production.