

2017 Chickpea Seed Singulation and Row Spacing Trial at Minot

NC Research Ext. Center

Variety	Row Spacing	Seeding Rate	Harvest Stand	Foliar Disease*	1000 KWT	Seed Size				Seed Yield
						<10mm	10-9mm	9-8mm	>8mm	
		Seeds/A	plants/A	%	g	%	%	%	%	lbs/A
Frontier	10"	130K	38,720	3	331	4	46	36	13	1249
		175k	40,656	7	338	14	49	24	13	1789
		220k	44,528	3	335	10	45	32	13	1594
	15"	130K	36,139	15	351	10	47	30	13	1062
		175k	34,848	7	356	12	47	30	11	1160
		220k	51,627	2	365	9	54	31	7	972
B-90	10"	130K	38,720	7	294	0	4	43	53	751
		175k	40,656	7	273	0	3	32	65	1260
		220k	44,528	2	271	0	2	29	68	1217
	15"	130K	40,011	7	275	0	3	33	64	849
		175k	37,429	5	279	1	3	31	65	918
		220k	42,592	5	281	1	4	35	60	1171
C.V.%			28	88	2.8	69	10.4	14.0	12.8	20.4
LSD 5%			NS	NS	15	6	5	8	8	402

**Combined Means - Variety**

Variety	Harvest Stand	Foliar Disease*	1000 KWT	Seed Size				Seed Yield
				<10mm	10-9mm	9-8mm	>8mm	
	plants/A	%	g	%	%	%	%	lbs/A
Frontier	41,086	6	346	10	48	31.0	12.0	1304
B-90	40,656	5	279	0	3	34.0	63.0	1028
LSD 5%	NS	NS	9	2	2	NS	4	224

**Combined Means - Row Spacing**

Row Spacing	Harvest Stand	Foliar Disease*	1000 KWT	Seed Size				Seed Yield
				<10mm	10-9mm	9-8mm	>8mm	
	plants/A	%	g	%	%	%	%	lbs/A
10"	41,301	5	307	5	25	33	38	1310
15"	40,441	7	318	5	26	32	37	1022
LSD 5%	NS	NS	NS	NS	NS	NS	NS	222

**Combined Means - Seeding Rate**

Seeding Rate	Harvest Stand	Foliar Disease*	1000 KWT	Seed Size				Seed Yield
				<10mm	10-9mm	9-8mm	>8mm	
	plants/A	%	g	%	%	%	%	lbs/A
130k	38,397	8	313	3	25	35	36	978
175k	38,397	6	311	6	26	29	39	1282
220k	45,819	3	313	5	26	32	37	1239
LSD 5%	NS	4	NS	NS	NS	4	NS	280

\*Foliar Disease: Visual estimation of foliage infected with ascochyta.  
 NS = No statistical difference between treatments.

*Planting Date: May 18*

*Harvest Date: September 29*

*Soil Type: Williams Loam*

*Tillage System: Transitional No-till (2nd year)*

*Note: The trial sustained severe drought (3.6" of precip Jan 1 - July 30)*

**Summary:** The objective of this trial was to utilize seed singulation technologies to optimize plant spacing and potentially reduce the planting rate and seed cost of this crop while maintaining or improving seed quality and yield. The trial was planted with Great Plains no-till openers using Monosem seed singulation meters. The month of May was extremely dry, hindering germination and seedling growth. The trial also sustained severe drought throughout the growing season which limited growth, disease infection and yield. As would be expected, statistical differences between varieties was observed, with Frontier producing larger seeds and a higher yield than the B-90's. The only statistical difference between row spacing was for yield with the 10 inch spacing producing a higher yield than the 15 inch row spacing. Seeding rates produced similar plant stands and also showed the level of seed / seedling mortality caused by this year's unfavorable growing conditions. These similar plant stands produced somewhat similar seed yields although the 170k rate produced a statistically higher yield than the 130k rate. The 130k, 175k and 220k seeding rates correspond to 3, 4 and 5 seeds per square foot respectively, with 4 seeds per square foot being the current recommended seeding rate. This trial will need to be repeated in order to validate conclusions and to provide any additional meaningful recommendations based on seed singulation technologies for this crop.