

**Soybean response to row spacing and plant canopy type, Carrington, 2017.**

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The field study continued at the NDSU Carrington Research Extension Center with support by the ND Soybean Council to examine soybean response to paired rows and plant canopy types. The study was established on a conventionally-tilled Heimdahl-Emrick loam soil with durum wheat as the previous crop. Experimental design was a randomized complete block with a factorial arrangement and four replications. Row spacing included: a) 7-inch pairs (centered on 28 inches), b) 14 inches, and c) 28 inches; and plant canopy types included: a) intermediate (Peterson Farms Seed L01-14N) and b) bush (PFS L03-12N). The Liberty Link varieties have similar maturity, yield potential, plant height and several other agronomic traits. Inoculated seed was planted on May 15. The trial was harvested with a plot combine on October 4.

Averaged across the two varieties (plant canopy types), plant stand, height and maturity; and pod height were similar among row spacings (Table). Canopy closure averaged 12 days earlier with the 14-inch vs. 7-inch paired rows (data not shown). Seed yield was similar among row spacings, but tended to be greater with 14-inch and 7-inch paired rows (Table).

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Main factor	Description	Plant							Seed				
		Emergence	Stand (June 12)	Flower	Physio-logical maturity (R8 stage)	Stand (Aug. 14)	Height (Sept. 27)	Pod height <sup>b</sup> (Sept. 27)	Yield	Test weight	Count	Oil <sup>c</sup>	Protein <sup>c</sup>
		Jday <sup>a</sup>	plants/A	Jday	Jday	plants/A	cm		bu/A	lb/bu	no/lb	%	
Row spacing	7-inch pairs	154	153,000	192	252	162,540	70	5	54.3	56.6	2,990	19.0	35.4
	14 inches	153	151,940	191	252	151,580	69	6	56.0	56.6	3,010	19.0	35.5
	28 inches	153	136,320	192	252	145,510	70	5	49.1	56.8	3,010	19.0	35.6
LSD (0.05):		1	NS	1	NS	NS	NS	NS	NS	NS	NS	NS	NS
Plant canopy type	intermediate (L01-14N)	153	149,530	187	251	158,250	70	5	51.1	55.7	2,620	19.2	34.9
	bush (L03-12N)	153	144,630	196	253	148,170	69	5	55.2	57.6	3,390	18.7	36.0
LSD (0.05):		NS	NS	1	1	NS	NS	NS	NS	0.2	94	0.1	0.2
CV %		0.3	11.0	0.2	0.3	8.2	6.6	34.6	7.6	0.4	3.6	0.7	0.8

<sup>a</sup>JDay: 153=June 2; 188=July 7; 261=September 18.

<sup>b</sup>Distance from base of pod to soil surface.

<sup>c</sup>Values at 13% moisture.

Averaged across row spacing, the varieties with contrasting canopy types had similar early and late season plant stands, plant and pod height, and yield (Table). The intermediate canopy type variety required fewer days to reach flowering and maturity versus the bush canopy type. Canopy closure averaged one day earlier with the bush compared to the intermediate canopy variety (data not shown).

Flowering dates with the row spacing by plant canopy type interaction was statistically significant (data not shown).