Soybean Response to Paired-row Spacing and Canopy Type

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Potential soybean seed yield increases with decreasing row width. A relatively new configuration is use of paired rows. For example, pairs with 7.5 inches between rows and centered at 30 inches. The Carrington REC conducted trials during four site-years to measure soybean performance with paired rows compared to intermediate and wide row spacing. In addition, the trials included the comparison of intermediate (medium) and bush (full) canopy plant types.

Table 1 lists soybean yield with row spacing (7-inch pairs, 14-inch and 28-inch) for individual trials and multi-year averages. Within years and the 4-year average indicate no yield advantage with paired rows compared to intermediate (14-inch) rows. A primary reason for the lack of yield response with paired rows is the delay in canopy closure (10-18 days) compared to intermediate rows. Also, note the 3-year average yield trend for paired and intermediate rows compared to wide rows.

Table 1. Soybean seed yield with paired 7-inch vs. 14- and 28-inch row spacing, Carrington, 2007, 2015-17.

Row Spacing	Seed Yield (bu/acre)					
Inches	2007	2015	2016	2017	2015-17 (3-year) average	4-year average
paired 7	54.2	20.7	50.7	54.3	41.9	45.0
14	62.6	18.7	52.5	56.0	42.4	47.5
28	x	19.6	44.6	49.1	37.8	x
LSD (0.05)	4.2	NS	NS	NS	x	x

A factor considered when selecting soybean varieties is canopy type, with most varieties having either intermediate or bush types. Canopy type selection with row spacing may have an impact on rate of canopy closure and possibly yield. The previously mentioned soybean row spacing study also included comparison of varieties of either intermediate- or bush-type canopies having similar maturity, plant height, other agronomic properties, and yield potential. Averaged across three years (2015-17) and the three row spacings, days from soybean planting to canopy closure were similar between the intermediate and bush types (Table 2). While yield differed between variety pairs (data not shown), this was likely due to plant genetics and not influenced by canopy type.

Table 2. Soybean canopy closure time between canopy types[1], Carrington, 2015-17.

	Canopy Closure	
	Intermediate	Bush
	% (August 15)	
2015	85	86
	Jday	
2016	204	206
2017	214	213

[1]Varieties (Peterson Farms Seed) used in study: 2015-16 = 12R05 RR2Y (intermediate) and 15R05N (bush); 2017 = L01-14N (intermediate) and L03-12N (bush).

Intermediate row spacing (middle) vs. paired rows on the right.

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