

Optimizing Wide-Row Wheat Production

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Brief Synopsis: Wide-row wheat production may increase overall farm profitability by allowing for intercropping of soybean prior to wheat harvest which holds promise to get two crops off in the same year. Additionally, wide-row wheat allows farmers to plant wheat even if they no longer maintain a grain drill. Objectives three on-farm research trials in Fulton County, Ohio near the Lenawee County border were to identify the optimum seeding rate for wide-row wheat. In all three farm trials, the standard practice of 7.5-inch row width at 2.0 million seeds per acre yielded greater than wheat grown in 15-inch row with at 1.0 and 1.5 million seeds per acre (Figure 1). At 15-inch row width, 1.0 million seeds per acre yielded the same as 1.5 million seeds per acre at two farms and 1.0 million seeds per acre out-yielded 1.5 million seeds per acre at one farm.

Wide-row wheat is less profitable than the standard practice. However, wide-row wheat may offer seed cost savings and the opportunity to interseed soybeans in northern Ohio/southern Michigan where double cropping soybeans is difficult. Additionally, wide-row wheat can be planted without the use of a grain drill.

Details: In Ohio and Michigan, wheat acreage has decreased since the 1970s. Soft red winter wheat is an integral component of Ohio's and Michigan's economy and baking industry. Acreage is decreasing partly due to an increase in corn and soybean prices as well as a reduction in equipment inventory. However, wide-row wheat may increase overall farm profitability by allowing for modified intercropping of soybean.

The objective of this study was to identify the optimum seeding rate for wide-row wheat.

Three commercial, on-farm research plots were established in the fall of 2013 using an eleven-row 15-inch White planter (Figure 2).

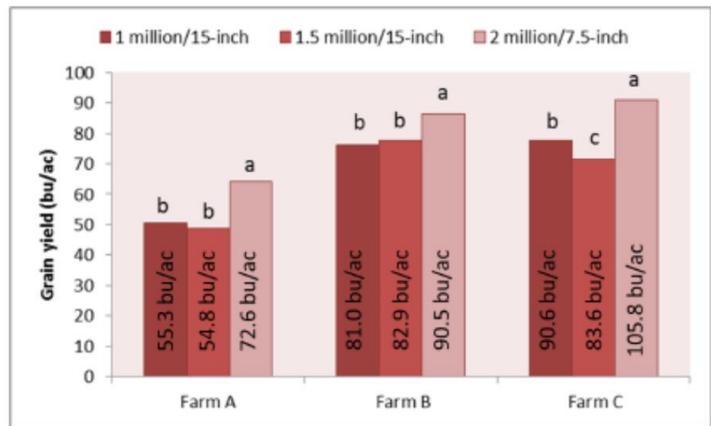


Figure 1. Wheat grain yield by comparing the standard practice of 7.5-inch row width at 2.0 million seeds/acre to 15-inch row width at 1.0 and 1.5 million seeds/acre for three on-farm trials.



Figure 2. On-farm trial showing 15- and 7.5-inch row widths.

Trials were identical, randomized complete block design with four replications of treatments. Plots were 30 feet wide by a minimum of 1,000 feet long. The standard practice of 7.5-inch row width at 2.0 million seeds/acre was compared to 15-inch row spacing at 1.0 and 1.5 million seeds/acre. Spring stand, number of heads per square foot, moisture, and yield were recorded (Table 1). Grain yield was adjusted to 13.5% moisture. Data were analyzed using the ANOVA procedure. Factors were considered statistically significant at $\alpha = 0.05$.

In all three on-farm trials, the standard practice of 7.5-inch row width at 2.0 million seeds/acre produced more heads and yielded greater than wheat grown in 15-inch row width at 1.0 and 1.5 million seeds/acre. At 15-inch row width, 1.0 million seeds/acre yielded the same as 1.5 million seeds/acre at two farms and 1.0 million seeds/acre out-yielded 1.5-million seeds/acre at one farm.

In our on-farm research, wide-row wheat is less profitable than the standard practice. However, wide row wheat may offer seed cost savings and the opportunity to interseed soybeans in northern Ohio and Michigan where double cropping soybeans is difficult. Additionally, if wide-row wheat is being planted, we recommend a seeding rate of 1.0 million seeds/acre.

	Row width	Seeding rate	Spring stand	Head count	Grain moisture
	inch	million seeds/ac	million seeds/ac	million heads/ac	%
FARM A	7.5"	2.0	1.26	4.4 a	15.3 a
	15"	1.5	1.13	3.2 b	15.2 a
	15"	1.0	0.68	2.9 b	15.2 a
FARM B	7.5"	2.0	1.32	4.2 a	14.3 b
	15"	1.5	0.93	2.5 b	14.6 a
	15"	1.0	0.78	2.7 b	14.6 a
FARM C	7.5"	2.0	1.25	4.5 a	15.7 a
	15"	1.5	1.19	3.5 b	15.8 a
	15"	1.0	0.81	3.3 c	15.8 a

Table 1. Spring stand, head count, and grain moisture for three on-farm trials by row width and seeding rate.