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Comparison of Twin Row and 30-in. Row Corn

Ryan Rusk
Iowa State University

Joshua L. Sievers
Iowa State University, sieversj@iastate.edu

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Abstract
Producers continue to plant corn at higher plant populations each year with the introduction of more stress-tolerant hybrids. As row width stays the same, plants are growing closer together, which leads to more competition among plants. Planting corn in narrower rows allows more equidistant spacing of plants and less competition. Switching to narrow rows (15 or 20 in. rows) requires additional equipment to spray and harvest. Planting corn in twin rows that are spaced eight inches apart and centered on 30-in. rows is one system that allows more equidistant spacing and would not require changes in spraying or harvesting equipment. A study comparing twin rows to single 30-in. rows at various populations was conducted in 2010 at the Northwest Research Farm.

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Ryan Rusk, farm superintendent
Josh Sievers, ag specialist

Introduction

Producers continue to plant corn at higher plant populations each year with the introduction of more stress-tolerant hybrids. As row width stays the same, plants are growing closer together, which leads to more competition among plants. Planting corn in narrower rows allows more equidistant spacing of plants and less competition. Switching to narrow rows (15 or 20 in. rows) requires additional equipment to spray and harvest. Planting corn in twin rows that are spaced eight inches apart and centered on 30-in. rows is one system that allows more equidistant spacing and would not require changes in spraying or harvesting equipment. A study comparing twin rows to single 30-in. rows at various populations was conducted in 2010 at the Northwest Research Farm.

Materials and Methods

Agrigold 6325VT3 was planted following soybeans on April 22 in a tilled seedbed. All plots were planted with an 8-row JD 7000 planter. The twin row plots were seeded by double planting the plots with the 30-in. row planter. Seeding rates compared in this study were 32,000, 38,000, and 44,000 seeds/acre in both configurations. Pre- and post-emergent herbicide applications were made.

Individual plot size was 20 ft wide (8 single rows or 16 twin rows) by 64 ft long. Stand counts were done on September 17. Four rows (10 ft) from the single row and eight rows (10 ft) from the twin row plots were harvested for yield on October 9. Yields were adjusted to 15.5 percent moisture. Significance level was $P \leq 0.05$.

Results and Discussion

Statistical analysis showed a significant difference in the stand counts between the single row and twin rows at 32,000 seeds/acre (Table 1). The twin row population was lower, which may be why the yield was numerically lower for twin row corn at 32,000 seeds/acre.

There were no statistical differences in yield when comparing single vs. twin rows or among any of the seeding rates (Table 1.) There was a trend for the single row corn to yield 1.5 percent more than the twin row corn, but the yield differences were not statistically different. This finding agrees with the three percent yield advantage that single row corn had over twin rows in 2009 at the farm (see 2009 progress report).

No yield advantage was obtained planting corn in a twin row configuration compared with a single 30-in. row. Row spacing studies will continue, especially as corn plant populations continue to increase.

Table 1. Yield response to row spacing and plant population.

Seeding rate	Row spacing	Plant population	Population significance	Yield (bu/acre)	Yield significance
32,000	30-in	28,949	**	208.4	NS
	Twin	26,975		203.0	
38,000	30-in.	33,609	NS	208.2	NS
	Twin	32,725		206.3	
44,000	30-in.	37,521	NS	210.7	NS
	Twin	37,963		209.2	

All yields adjusted to 15.5% moisture.
** = statistical difference at $P \leq 0.05$.
NS = no statistical difference at $P \geq 0.05$.