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Twin-Row Corn Study

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Abstract
Interest in narrow-row corn and, more recently, twin-row corn has increased over the last several years. Research done in the 1990s in various locations throughout the Corn Belt has demonstrated significant yield advantages of narrowing corn rows from 38 in. to 30 in., and yield results from row spacings narrower than 30 in. have indicated a greater likelihood of a yield response in the northern part of the Corn Belt. Yield increases for narrow row spacing in corn from the central to southern areas of the Corn Belt have been inconsistent. This new concept of twin-row corn has prompted many questions about row spacing in corn. One of the advantages of twin-row corn is that no major modifications of harvest or spray equipment are necessary when converting from single-row 30-in. spacing. Other potential advantages are better seed placement, more accurate plant spacing, and greater sunlight utilization. This is the fourth year we have done this study.

Disciplines
Agricultural Science | Agriculture

Twin-Row Corn Study

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Introduction

Interest in narrow-row corn and, more recently, twin-row corn has increased over the last several years. Research done in the 1990s in various locations throughout the Corn Belt has demonstrated significant yield advantages of narrowing corn rows from 38 in. to 30 in., and yield results from row spacings narrower than 30 in. have indicated a greater likelihood of a yield response in the northern part of the Corn Belt. Yield increases for narrow row spacing in corn from the central to southern areas of the Corn Belt have been inconsistent. This new concept of twin-row corn has prompted many questions about row spacing in corn. One of the advantages of twin-row corn is that no major modifications of harvest or spray equipment are necessary when converting from single-row 30-in. spacing. Other potential advantages are better seed placement, more accurate plant spacing, and greater sunlight utilization. This is the fourth year we have done this study.

Materials and Methods

In this study, a John Deere 7000 planter was used to plant both 30-in. rows and twin rows. Twin-row corn was planted in twin rows 7.5 in. apart and centered on 30 in. centers. These two-row configurations were planted in six replicated plots at approximately 32,000 seeds/acre. The replications were four rows wide and approximately 50 ft long. The plot was no-till, planted in late April. The Marshall soil has high to very high P and K fertility, and 140 lb of actual nitrogen was applied as anhydrous ammonia.

Results and Discussion

Final plant stands were very similar in both the 30-in. rows and the twin rows: approximately 29,120 for the 30-in. rows and 29,390 for the twin rows. Emergence scores were identical, as were plant height measurements taken in mid May and mid-June. Yield differences and moisture differences were not significant between row spacings. This season, the 30-in. rows yielded 227.2 bushels/acre, and the twin rows yielded 228.8 bushels/acre. In 2002, twin-row corn had a significant yield advantage of 10.7 bushels/acre in the plots. In 2003 and 2004 there were no significant differences; the 30-in. rows yielded 2 bushels/acre more in 2003, and in 2004 the twin rows yielded 2.3 bushels/acre more. In general, our yield results have been similar to other narrow-row corn research done in the middle of the Corn Belt, where the response to row spacing narrower than 30 in. has generally not been statistically significant, with the exception of our 2002 plots. When considering twin-row corn spacing based on our data, it appears that there is no yield penalty, and a small chance of a significant yield increase. We will continue this study for several more years.

Table 1. Twin-row versus 30-in. row corn spacing trial, 2005.

Row spacing	Moisture	Yield
30	17	227.2
Twin	17	228.8