On-Farm Evaluation of Twin-Row Corn and Soybean in Southern Minnesota
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ABSTRACT
Growers are questioning if crops planted in twin rows, a system where crops are planted in row pairs six to eight inches apart and the center of row pairs are separated by 30 inches, yield greater than crops planted in 30-inch rows. This study was initiated to determine 1) if corn and/or soybean yield could be increased by planting in twin rows compared to 30-inch rows and 2) if the response to planting population differs in twin rows compared to 30-inch rows. Replicated trials were established by Welcome and Wilmont, MN, with two producers who had been planting crops in twin rows for a number of years. Twin rows were compared to 30-inch rows at three planting populations in corn (33,000, 38,000, and 43,000 live seeds/ac) and soybean (100,000, 140,000, and 180,000 live seeds/ac). Stand counts were taken after emergence in both crops and again in soybean prior to harvest. Grain yield and moisture were recorded at harvest. Results were analyzed by ANOVA and means separated using Fisher’s Protected LSD at the 0.05 and 0.10 significance levels.

INTRODUCTION
Narrow-row crop production has the potential to increase crop yield and profits. Planting crops in twin-rows is a variation of narrow-rows where the crop is planted in row pairs 6 to 8 inches apart and 30 inches separates the center of row pairs. A major advantage of twin-rows over 15- or 22-inch rows is that no additional major equipment modifications are needed beyond modifications to the planter. Prior to this work there was no published University research on twin-row corn and soybean production in Minnesota. This research will help growers who are considering whether or not to invest in a twin-row planter for corn or soybeans.

OBJECTIVES
This study was initiated to determine 1) if corn and/or soybean yield can be increased by planting in twin-rows compared to 30-inch rows and 2) if the response to planting population differs in twin rows compared to 30-inch rows.

MATERIALS & METHODS
 Trials in corn and soybean were initiated in 2010 in southern MN with 2 farmer cooperators who have been planting crops in twin rows for several years
 Treatments were arranged in a 2 × 3 factorial experiment in a randomized complete block design with 4 replications at each site. Treatments included two row widths (30-inch rows and 22-/8-inch twin rows) at 3 populations in corn (33,000, 38,000, and 43,000 plants per acre (ppa)) and soybean (100,000, 140,000, and 180,000 ppa).

RESULTS & DISCUSSION

OBJECTIVES

Figure 2: Corn yield as affected by population averaged across row spacing at Welcome in 2010.

Figure 3: Corn yield as affected by population \times row spacing at Wilmont in 2010.

CONCLUSIONS

- At Welcome, corn yield was maximized at 38,000 ppa. Yield was not affected by row spacing and there was no significant row spacing \times population interaction.
- At Wilmont, corn yield was greatest at the highest population in twin rows, while yield was lowest at this population in 30" rows. This indicates the potential for corn to better tolerate higher populations in twin rows than in 30-inch rows, although differences were not consistently seen.
- At both sites, soybean yield was not affected by row spacing or population, and there was no significant interaction between these two factors.
- These trials are being continued in 2011.

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