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Corn Twin-row by Population Demonstration

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Abstract
The project was designed to study the effect of planting corn in twin rows compared with 30-in. rows using various populations and two hybrids. There is interest in twin-row technology because it allows corn plants to be spaced farther apart without having to modify most harvest equipment. Obtaining more equidistant plant densities has become more of an issue as the seeding rates planted by corn growers has continued to increase. The demonstration was designed to determine any yield effects caused by planting in twin rows.

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Introduction

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Materials and Methods

The demonstration at the Southeast Research and Demonstration Farm in 2010 was planted in a field that was soybeans the previous year. Phosphorus and potassium levels were determined to be adequate, so none were applied. The soil pH was determined to be within an acceptable range, so no lime was applied. Anhydrous ammonia was applied in the spring prior to the 2010 growing season at a rate of 160 units of nitrogen per acre.

The demonstration was replicated but was not randomized for row spacing or hybrid, but was randomized for population. A Great Plains 40-ft Yield-Pro® 16-row planter was set to plant twin-row plots in the first half of the field followed by 30-in. rows in the second half of the field. The two rows of each twin row were spaced 8 in. apart with alternating seed placement between the two rows, and all twin-row pairs were spaced on 30-in. centers from one set of twin rows to the next set. One of the two seed bins was filled with a DeKalb DKC 62-54 hybrid, and the other bin was filled with DKC 63-42. These hybrids were planted across the field in alternating 20-ft strips. Representatives from Monsanto selected the corn hybrids that were planted.

Seeding rates were varied at planting. Stand counts were made at the V10 corn stage. These stands fell into three general stand categories as shown in Figure 1. Actual stands generally fell close to these categories.

Results and Discussion

There was a numerical yield difference between the two hybrids, but yield differences between populations and between spacings were minor as shown in Figure 1. There were from 3 to 5 replications for each treatment. Two individual plots (for DKC 63-42 in twin rows at 35,000 plants/acre) were not included in results because the yields were not representative of the hybrid's overall performance throughout the demonstration.

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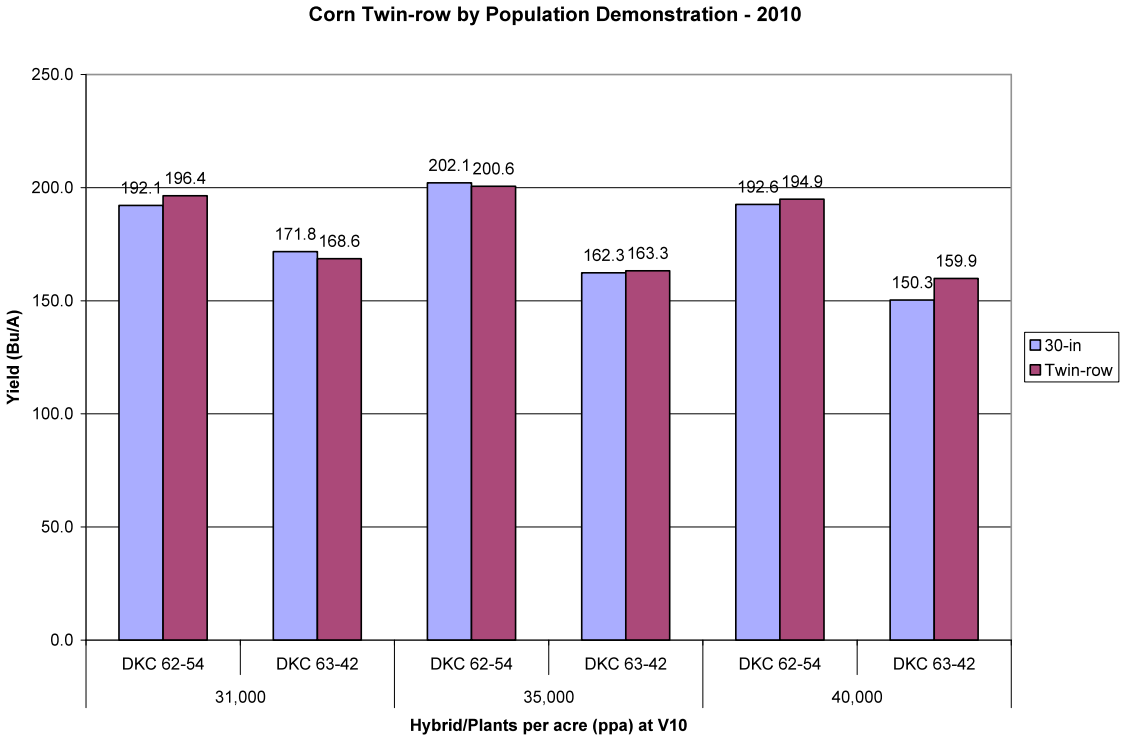

Figure 1. Corn grain yield as influenced by hybrid, row spacing, and population, Southeast Research and Demonstration Farm 2010.