



2015 Demonstration Report

MONSANTO LEARNING CENTER AT MONMOUTH, IL

Population Response by Corn Product

Background

In some areas, planting populations for corn have been increasing steadily by approximately 300 plants per acre per year over the past 25 years.¹ New breeding technologies have led to the accelerated improvement in the ability of corn plants to withstand the stress that results from higher plant populations. Genetic improvements, along with improved agronomic practices, have been the main drivers behind increased planting populations and the ability to maximize yield potential. The purpose of this study was to determine what effect increasing plant populations has on corn products with different genetic backgrounds.

Study Guidelines

Nine corn products with relative maturities from 105 to 113 days were planted May 13, 2015. The field was in a corn/soybean rotation with conventional tillage – fall chisel plow followed by soil finisher in the spring. Each of the nine corn products were planted at populations of: 25,000; 35,000; and 45,000 seeds per acre. Plots had 30-inch row spacing and were 300 feet long. One replication was planted with four rows of each corn product planted per treatment. Plots were harvested on October 2, 2015, and yield data was adjusted to 15% moisture content.

Results

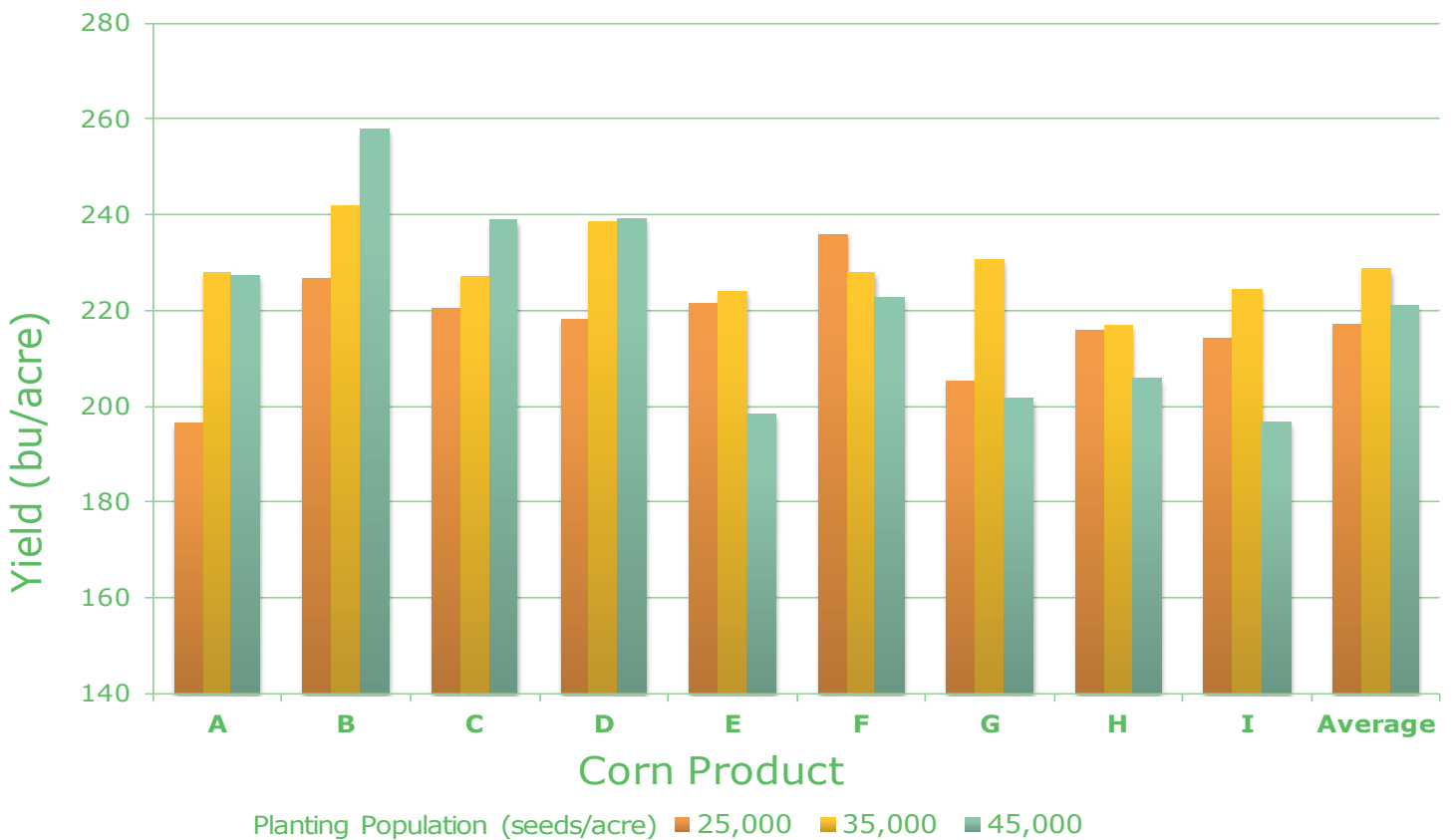


Figure 1. Population response of nine different corn products showing varying degrees of response to increased planting populations.



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TABLE 1. YIELDS OF NINE CORN PRODUCTS PLANTED AT THREE SEEDING RATES

Corn Product	25,000 seeds/acre	35,000 seeds/acre	45,000 seeds/acre
	---- bu/acre ----		
A	196	228	227
B	227	242	258
C	220	227	239
D	218	239	239
E	221	224	198
F	236	228	223
G	205	231	202
H	216	217	206
I	214	224	197
Average	217	229	221

Take Aways

On average, for the nine corn products tested in this study, a planting population of 35,000 seeds per acre was optimal. Some corn products responded positively to increasing plant populations, most likely by increasing ear size and/or kernel weight, while others responded negatively. Many factors (genetics, soil type, soil productivity, water availability, etc.) can influence the optimal planting populations for different corn products; therefore, consult your trusted seed advisor or agronomist for specific, local recommendations.

Sources

Nielsen, R.L. 2013. Thoughts about seeding rates for corn. Purdue University. <https://www.agry.purdue.edu>. Website verified 10/15/15

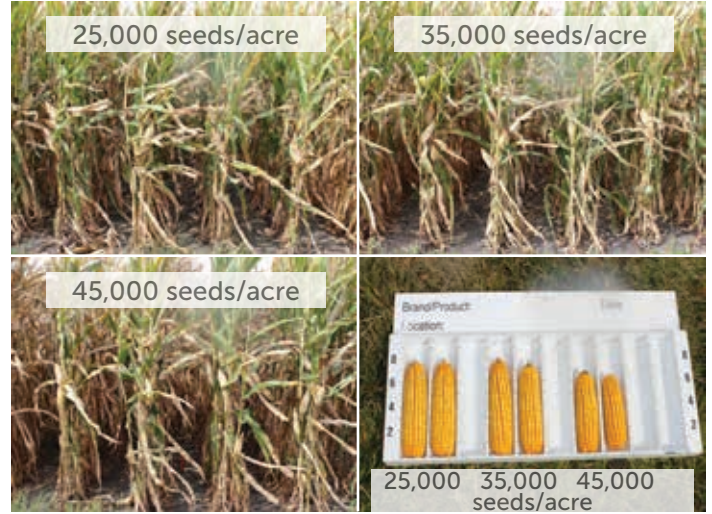


Figure 2. Pictorial representation of a corn product (Corn Product B) that maintained ear size as population increased.



Figure 3. Pictorial representation of a corn product (Corn Product I) that failed to maintain ear size as population increased.

Legals

The information discussed in this report is from a single site, single year, non-replicated demonstration. This informational piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

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