



HIGH POPULATIONS IN MID-SOUTH CORN PRODUCTION

There is considerable discussion about corn yield potential in the Mid-South. Modern corn brands are allowing alterations in agronomic practices, such as higher populations, which can help increase yield potential. This demonstration was done to evaluate how the optimal population can help maximize yield potential across a group of corn brands. This demonstration clearly illustrates the changes in yield response of various brands with different planting populations.

STUDY GUIDELINES

Testing was conducted at the Monsanto Learning Center at Scott, Mississippi in 2011 to evaluate populations and row configurations for maximizing yield potential among corn brands. Four brands were planted in large plots (150 feet long by four rows wide) with two replications. Row configurations were single and twin row, both on 38 inch centers. Standard agronomic practices for the area were implemented, except for fertility, which can typically be a yield limiting factor. Fertilizer was applied to achieve a higher than normal yield goal. Phosphorus (P) and potassium (K) were applied at approximately twice the standard recommended rate. Nitrogen (N) was applied for a 300 bushel corn crop, using 1.3 pounds of N per bushel for a total of approximately 400 pounds of N/acre. Plots were monitored for emergence and harvested for yield.

RESULTS

Overall.

Across brands and populations, greater than 98% of all seeds emerged and made a healthy plant. Three of the four brands tested averaged over 225 bushels/acre. DKC67-88 brand likely had lower yields as a result of lodging issues.

Effect of Row Configuration.

Twin rows yielded slightly more than single rows across populations and brands (Figure 1).

Effect of Population.

Across brands, yields reached a plateau at approximately 42,000 plants/acre (ppa) (Figure 2).

Effect of Brand.

The brand response to population seemed independent of row configuration (data not shown). Brands responded

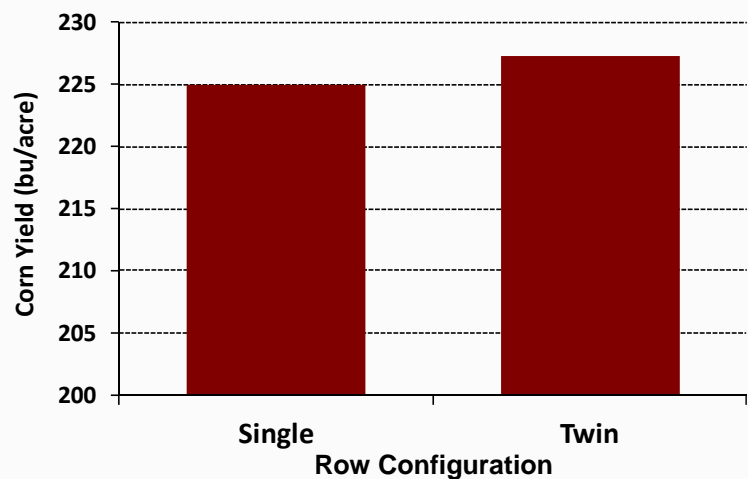


Figure 1. Effect of row configuration on corn yield across brands and populations.

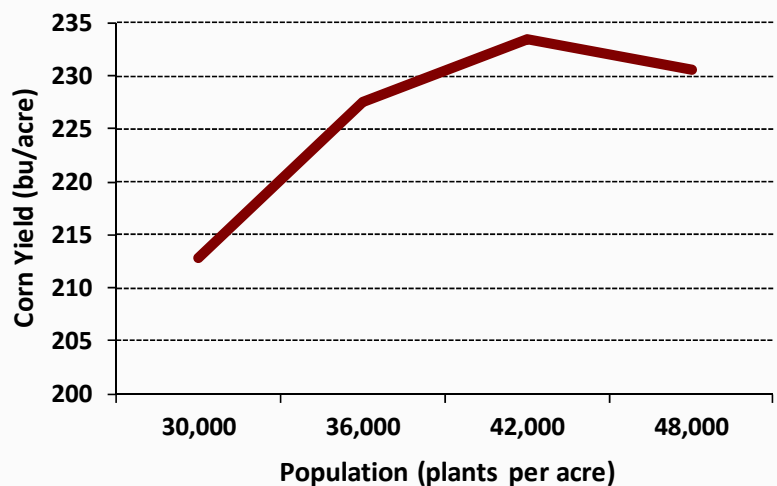


Figure 2. Effect of population on corn yield across brands and row configurations.

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differently to increases in populations (Figure 3). DKC64-69 brand showed very little yield response above 36,000 ppa. DKC66-96 brand still had positive yield responses at 48,000 ppa. DKC67-88 brand showed a negative yield response when planted above 42,000 ppa, and had considerable lodging issues. DKC68-05 brand responded positively up to 42,000 ppa, and decreased yield at 48,000 ppa.

SUMMARY COMMENTS

Results from this demonstration illustrate the need for specific placement and population recommendations for individual brands to help maximize yield potential. When working towards increased corn yield potential, significant increases in planting population should only be made after careful consideration. Attention to details such as nutrient management should be made to help minimize the potential risks of lodging, mal-adaptation, and/or yield loss.

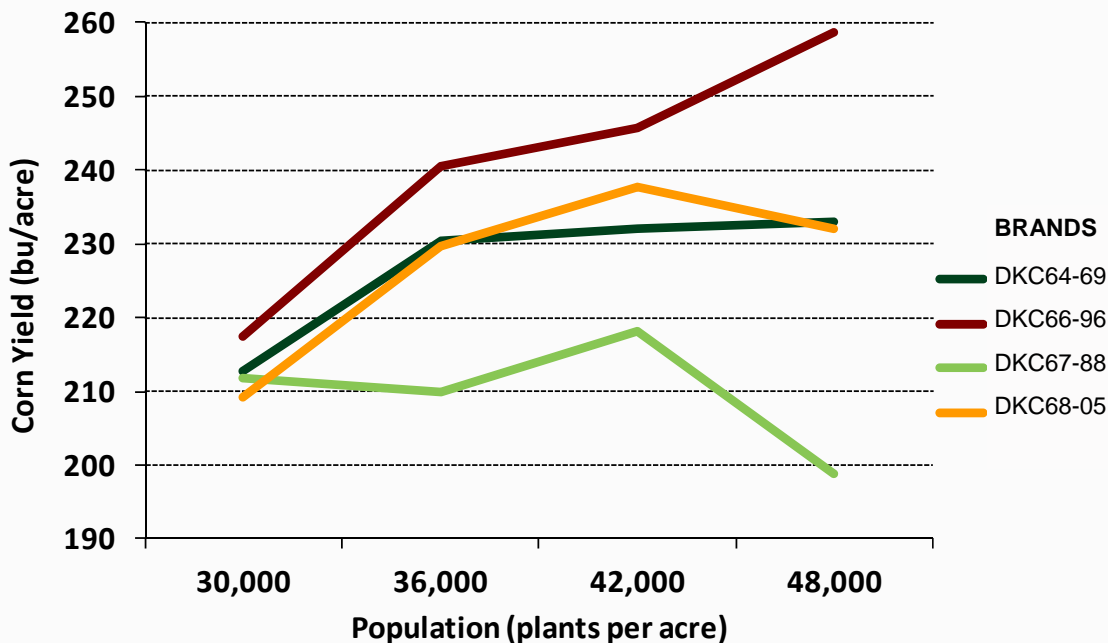


Figure 3. Effect of brand and population on corn yield.

The information discussed in this report is from a single site, non-replicated, one-year 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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