

2009 Demonstration Report



THE LEARNING CENTER

at Scott, Mississippi

Effect of Plant Population and Row Spacing on Corn Yield

As corn hybrids are further developed for root and stalk strength, the potential for increased planting population per acre is being realized. To maximize land use, many corn producers are increasing their planting populations and also considering twin-row configurations to help achieve desired spacing between plants. The theory behind twin-row systems is, when compared to single-row systems, twin rows allow for increased and more precise spacing between plants, which can potentially permit better water and nutrient uptake and enhanced light interception.

Study Guidelines

Testing was conducted at the Learning Centers in Leland, MS in 2007 and Scott, MS in 2008 and 2009 to evaluate if corn yield could be increased by modifying plant populations and row spacing. In 2009, four corn products with varying relative maturities (RM) were selected and planted at four different planting populations with and without irrigation. Corn plots were planted using either a 38-inch single-row or twin-row configuration. Twin rows were planted 7.5 inches apart on a 38-inch bed with Monosem® Twin-Row planter. Soil fertility, and weed control remained constant throughout all plots.

Planting Populations

Results from the three-year testing showed increased planting population resulted in an increase of the final yield for both dryland and irrigated systems. Highest yields were collected from the irrigated plots. Corn yields, when averaging irrigated plots across all three years, increased as population increased (Chart 1). The yield increase between mid/high and high planting populations was less than when compared to lower planting populations. Data from this testing shows an optimum planting population between 36,000 and 43,000 seeds/A, depending on the selected corn product and economics related to corn price and cost of production.

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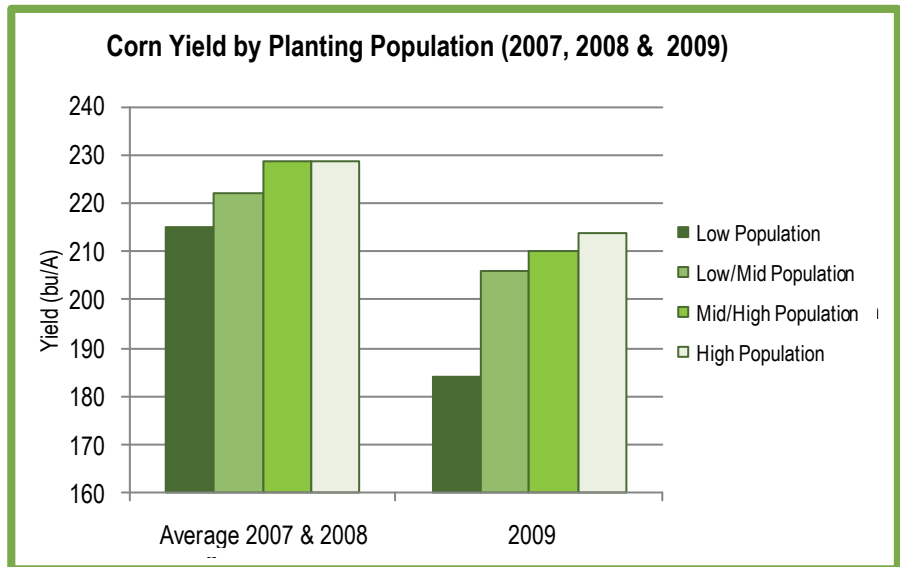


Chart 1. Corn yield by planting population, combined data from single and twin-row configurations.

Low Population 2007, 2008 & 2009 = 28,000 seeds/A	Mid/High Population 2007 & 2008 = 36,000 seeds/A
Low/Mid Population 2007 & 2008 = 32,000 seeds/A	2009 = 38,000 seeds/A
2009 = 33,000 seeds/A	High Population 2007 & 2008 = 40,000 seeds/A
	2009 = 43,000 seeds/A

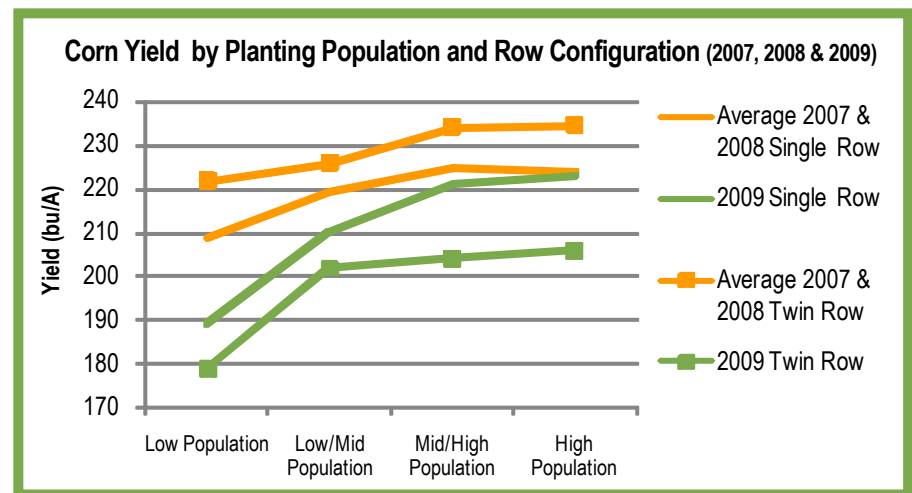


Chart 2. Corn yield by planting population and



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Single Vs. Twin-Row Configurations

While the planting population results have remained somewhat consistent over the three years of trial testing, 2009 yield results from the single- versus twin-row configurations did not align with previous year's data. Averaging the irrigated yields in 2007 and 2008 showed corn planted in twin rows yielded more than corn planted in single rows. Yield results from 2009 presented an opposing story where single rows yielded more than twin rows (Chart 2) for both irrigated and non-irrigated plots.

Conclusion

In conclusion, greater yields were observed in irrigated corn planted at higher populations. Corn yields, when averaged across all three years, increased as planting population increased. Increasing the planting population of a corn product with strong roots and stalks can provide greater yield potential than the same corn product planted at a lower population.

This three-year testing also revealed that yield potential of corn grown in single- and twin-row configurations can vary depending on the growing season and environmental conditions. In 2007 and 2008 the twin-row plots clearly out-yielded single-row plots at all planting populations, while in 2009 single rows out-yielded twin rows at all planting populations. More research will need to be conducted to further understand the ideal growing conditions for twin rows to help advise producers as to which row configuration may be best suited for their corn acres.

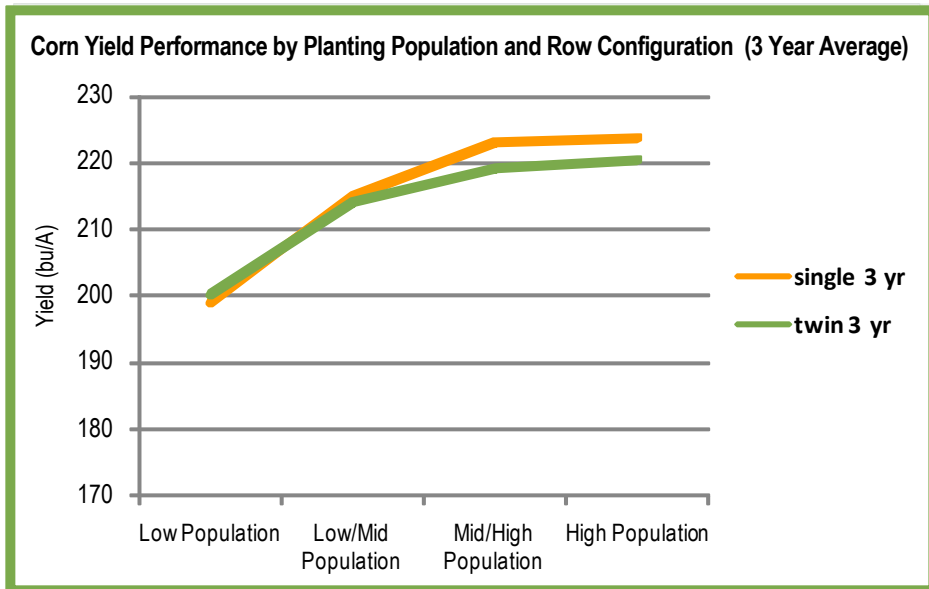


Chart 3. Three-year corn yield average by planting population and row configuration (2007, 2008 & 2009)

Scott, MS, 2009. 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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