

Corn Planting Date

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Introduction

Producers continue to plant corn earlier each year. In 2006, 50% of the statewide crop was planted by approximately April 25. Earlier planting dates are contributed to several reasons: larger acreage per producer, less spring tillage, advancements in hybrids, and seed treatments. Planting the crop during the optimum window is important to achieving high yields.

Previous Iowa State University (ISU) recommendations for 100% maximum yield, relative to planting date, were identified as April 20 to May 19. We believe that this planting window can be earlier while still achieving high yields. Planting date research requires multiple years and locations to negate the environmental variations that exist year to year, allowing overall trends to be identified. Therefore, we initiated research across the state in 2006 to answer the question: "When is the best time to plant corn to realize maximum yields?"

Materials and Methods

Research began at the Armstrong Research and Demonstration Farm in 2006 and will continue. Five planting dates were used, in approximately 10-day increments: April 5, April 14, April 27, May 15, and June 2. This research was placed on a corn-soybean rotation (soybean in 2005). A 110-day hybrid (Wilson 1563) was selected and planted at 32,000 seeds/acre in 30-in. row spacing. Weeds were controlled with post-emergent herbicide applications. An insecticide was applied mid season to control western bean cutworm.

Individual plots were 10 ft wide (four rows) × 50 ft long, with the center two rows harvested

for grain yield. Plant population (measured June 13), plant height, leaf area, and grain yield (harvested October 8) were collected. Grain yield was adjusted to 15.5% moisture basis. SAS PROC GLM was the statistical program used in analyzing the data, with a significance level of $P \leq 0.05$.

Results and Discussion

Only the plant population and yield results are presented in this report. Plant populations did not differ based on planting date (Table 1); $P=0.7359$ (not significant) (where P is the level of probability). Although earlier planting dates can sometimes reduce plant population if the seeds or seedlings are particularly stressed, this did not occur at this location. Therefore, plant populations are not the cause for any yield variation between the planting dates.

Planting date caused a difference in yields; $P=0.0001$ (significant). Yield was reduced in the latest planting date compared with the earlier planting dates (Table 1). A difference (LSD) of 22.7 bushels/acre was needed to determine whether a planting date yielded significantly different from another planting date. Planting dates from April 5 to May 15 yielded the same. Yet, corn planted June 2 only yielded 137.9 bushels/acre. Consistent yields from April 5 to May 15 are especially important to note, as this provides a wider planting window for producers who want to plant earlier than previous ISU recommendations. Please consider this data as 'preliminary' and do not use it in adjusting management practices at this time. More data is needed.

Acknowledgments

Appreciation is extended to Jeff Butler, agricultural research specialist and Leslie Freehill and Lesa Andersen, corn production research assistants.

Table 1. Planting date influence on final plant population and grain yield.¹

Planting date	Final plant population plants/acre	Plant	Grain yield adjusted to	Grain yield
		population significance	15.5% moisture bushels/acre	significance
April 5	31,102	a	194.5	a
April 14	31,276	a	206.3	a
April 27	31,712	a	204.8	a
May 15	30,753	a	197.2	a
June 2	31,145	a	137.9	b

NS

LSD=22.7

¹Treatments means with any letter in common are not significantly (NS) different from one another.