

Corn Planting Date

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Introduction

Producers continue to plant corn earlier every 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. Research was initiated across the state in 2006, to determine when maximum yields are realized.

Materials and Methods

Research began at the Northwest Research and Demonstration Farm in 2006 and will continue. Five planting dates were used, in approximately 10-day increments: April 14, April 24, May 8, May 19, and May 30. This research was placed on a corn-soybean rotation (soybeans in 2005). An identical study was also placed on corn ground; those results are not shown here. Two hybrids were used, Pioneer 36B05 HX Xtra and Fielder's Choice 7660 WPR; their responses are combined in this report. Hybrids were planted at 32,000 seeds/acre in 30-in. row spacing. Field was tilled prior to planting and weeds were controlled with pre- and post-emergent herbicide applications.

Individual plots were 20 ft wide × 50 ft long, with the center four rows harvested. Plant population (measured June 6), plant height, grain yield, and moisture (harvested October 20) 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 differed based on planting date (Table 1); $P < 0.0001$ (significant) (where P is the level of probability). In general, the earlier planting dates had reduced plant populations. Yet the May 8 planting date had a similar population as May 30. The yield data seems independent of population differences; yet reduced populations for some of the planting dates (relative to May 30) may have limited their yield potential.

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 7.4 bushels/acre was needed to determine whether a planting date yielded statistically different from another planting date. Planting dates from April 14 to May 19 yielded the same. Yet, corn planted May 30 only yielded 136.7 bushels/acre. Consistent yields from April 14 to May 19 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.

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

| Planting date | Final plant population | Plant population significance | Grain yield adjusted to 15.5% moisture | Grain yield significance |
|---------------|------------------------|-------------------------------|--|--------------------------|
| | plants/acre | | bushels/acre | |
| April 14 | 25,265 | d | 163.8 | a |
| April 24 | 26,906 | c | 162.0 | a |
| May 8 | 29,853 | a | 162.7 | a |
| May 19 | 28,474 | b | 158.9 | a |
| May 30 | 29,940 | a | 136.7 | b |

LSD=996

LSD=7.4

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