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Corn Planting Date

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Abstract

Producers continue to plant corn earlier every year, if possible. Due to wet weather in 2007, producers were not able to plant as early as desired. Fifty percent of the statewide crop was planted by approximately May 6, in contrast to April 25 in 2006. Producers tend to plant earlier for several reasons: larger acreage per producer, less spring tillage, advancements in hybrid tolerance to cold, and seed treatments. Planting the crop during the optimum window is important to achieving high yields. This research is conducted to identify that window.

Keywords

Agronomy

Disciplines

Agricultural Science | Agriculture | Agronomy and Crop Sciences

Corn Planting Date

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Introduction

Producers continue to plant corn earlier every year, if possible. Due to wet weather in 2007, producers were not able to plant as early as desired. Fifty percent of the statewide crop was planted by approximately May 6, in contrast to April 25 in 2006. Producers tend to plant earlier for several reasons: larger acreage per producer, less spring tillage, advancements in hybrid tolerance to cold, and seed treatments. Planting the crop during the optimum window is important to achieving high yields. This research is conducted to identify that window.

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 identification of overall trends. Planting date research was initiated across the state in 2006, to determine when maximum yields are realized.

Materials and Methods

Research began at the Southeast Research and Demonstration Farm in 2006 and will continue into 2008. Five planting dates were used, with approximately 10-day increments: April 20, May 1, May 10, May 21, and June 6. The research was placed in a field with a corn-soybean rotation. A Mycogen hybrid (2D673) was planted at 32,000 seeds/acre in 30-in. row spacing. The field was tilled prior to planting and weeds were controlled with pre-emergent herbicide applications.

Individual plots were 20 ft wide by 50 ft long; three center rows were harvested. All five planting dates were harvested October 5. Grain yield was adjusted to 15.0% 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

We will present and discuss 2007 grain yield data in this report. Data from 2006 is included in Table 1 to serve as a comparison to the 2007 data. The 2006 data is discussed specifically in the 2006 Annual Progress Report ISRF06-34.

In 2007, grain yield differed based on planting date; $P < 0.0001$ (significant). Overall, the highest yield was associated with an early May planting date (May 10) and the lowest yield was associated with an early June planting date (June 6) (Table 1). A difference (LSD) of 22.4 bushels/acre was needed to determine whether a planting date yielded statistically different from another planting date. The May 1 planting yielded less than expected; this planting occurred between rainfall events that caused soil crusting and poor overall seedbed conditions. Corn planted June 6 yielded statistically less than the four earlier planting dates; this is similar to the 2006 findings. Consider both the 2006 and 2007 data from this location as preliminary. This data will be compiled with other Iowa locations after the 2008 growing season. At that time we will use the research findings to adjust planting date management recommendations.

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Table 1. Planting date influence on corn grain yield.¹		
Planting date	Grain yield adjusted to 15.0% moisture bushels/acre	Grain yield significance
April 5, 2006	185.1	b
April 18, 2006	199.7	a
May 2, 2006	187.4	b
May 17, 2006	205.5	a
May 30, 2006	147.0	c
LSD=11.5		
April 20, 2007	197.0	ab
May 1, 2007	179.0	b
May 10, 2007	209.8	a
May 21, 2007	190.9	ab
June 6, 2007	114.5	c
LSD=22.4		

¹Treatment means with any letter in common are not statistically different from one another.