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Corn Planting Date

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Corn Planting Date

Abstract
Producers attempt to plant corn earlier every year. For example, in 2006, 50% of the statewide crop was planted by approximately April 25. Earlier planting dates are attributed to several causes: larger acreage per producer, less spring tillage, advancements in hybrids, and seed treatments. However, in contrast to this, Iowa producers in 2008 did not have half of Iowa's corn acreage planted until May 13 due to weather. This is 18 days later than 2006. Planting the crop during the optimum window is one management practice that is generally important in achieving high yields.

Keywords
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Disciplines
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Corn Planting Date

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Introduction

Producers attempt to plant corn earlier every year. For example, in 2006, 50% of the statewide crop was planted by approximately April 25. Earlier planting dates are attributed to several causes: larger acreage per producer, less spring tillage, advancements in hybrids, and seed treatments. However, in contrast to this, Iowa producers in 2008 did not have half of Iowa's corn acreage planted until May 13 due to weather. This is 18 days later than 2006. Planting the crop during the optimum window is one management practice that is generally important in 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 (refer to Corn Planting Guide, PM 1885). We believe that this planting window can be earlier while still achieving high yields. Planting date research requires multiple years and locations to identify overall trends and manage risk. Research has been conducted at this location since 2006 (refer to Corn Planting Date report ISRF06-22). Research will continue in the future so that sound recommendations can be made for agronomists and producers. Only 2008 results are highlighted in this report.

Materials and Methods

Five planting dates were evaluated, in approximately 10-day increments: April 23, April 30, May 9, May 22, and June 1. The research was conducted in a corn-soybean system; with soybean in 2007. A 104-day hybrid (Pioneer 36W69) was selected and planted at 35,600 seeds/acre in 30-in. row spacing. The field was tilled prior to planting, and weeds were controlled with pre- and post-emergent herbicide applications on April 23 and June 14, respectively.

Individual plots were 15 ft wide (six rows) by 50 ft long, with the three inner rows harvested. Plant population (measured June 30) and grain yield (harvested October 29) were collected. Grain yield was adjusted to 15% moisture basis. SAS PROC MIXED was the statistical program used in analyzing the data, with a significance level of $P \leq 0.05$.

Results and Discussion

Plant populations were noticeably lower with the first planting date, which may have, in part, reduced yield potential for that planting date (Table 1). Factors such as increased seed mortality and seedling stress may have contributed to or caused this reduction in plant population.

Grain yield was similar across all planting dates except for the last planting date (Table 1). Our normal expectation is to have higher yields associated with late April and early May planting dates. However, spring and early summer conditions in 2008 were cold and wet, which prevented early planting dates from maximizing yield, relative to later planting dates, as found in previous years. Excellent weather late in the season, including a late frost, likely benefitted the May 22 planting date substantially. Consider this data as 'preliminary' as it is only one location and one year.

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

Planting date	Final plant population (plant/acre)	Plant population significance	Grain yield adjusted to 15% moisture (bushels/acre)	Grain yield significance
April 23	31,135	b	179	a
April 30	34,760	a	180	a
May 9	34,635	a	178	a
May 22	34,885	a	173	a
June 1	34,135	a	157	b

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