

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 eighteen 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 reports ISRF06-34 and ISRF07-34). Research will continue in the future so that sound recommendations can be made for agronomists and producers. In this report only 2008 results are highlighted.

Materials and Methods

Four planting dates were evaluated, in approximately 15-day increments: May 6, May 19, May 29, and June 16. Planting corn prior to May 6 was not possible due to excessive spring rains. The research was conducted in a corn-soybean system, with

soybean in 2007. A 112-day hybrid (Pioneer 33T59) was selected and planted at 32,000 seeds/acre in 30 in. row spacing. The field was tilled prior to planting, and weeds were controlled with one pre-emergent herbicide application on May 9.

Individual plots were 20 ft wide (eight rows) by 50 ft long, with rows 3, 4, 5, and 6 harvested for yield. Plant population (measured October 6) and grain yield (harvested October 31) 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 differed based on planting date (Table 1). The latest planting had the highest population and the earliest planting had the lowest population. Factors such as increased seed mortality and seedling stress can sometimes cause differences in plant populations early season. Although plant population differed by planting date, the yield data appears independent of these population differences. Reduced populations for some of the planting dates may have limited their realized yield however.

Grain yield was different based on the planting date (Table 1). Corn planted May 6 yielded the most, followed by May 19. The May 29 and June 16 plantings yielded less and yielded similar to one another. Our normal expectation is to have higher yields associated with late April and early May planting dates; this data matches this general trend. Surprisingly, the May 29 and June 16 plantings yielded relatively well considering how late they were planted. This response is likely due to the excellent weather during mid- and late-season in 2008, including a late frost.

Findings from 2006–2008 research will be combined with 2009 data to finalize planting date recommendations.

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

Planting date	Final plant	Plant	Grain yield adjusted to	Grain yield
	population	population	15% moisture	significance
	plants/acre	significance	bushels/acre	
May 6	28,000	c	212.8	a
May 19	32,400	ab	201.5	b
May 29	30,000	bc	188.4	c
June 16	33,900	a	184.5	c

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