

Corn Planting Date

Lori Abendroth, agronomy specialist
Roger Elmore, professor
Department of Agronomy

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 Northeast Research and Demonstration Farm in 2006 and will continue. Five planting dates were used, in approximately 10-day increments: April 5, April 15, April 28, May 15, and June 1. This study was placed on a corn-soybean rotation. An identical study was also placed on corn ground; these results are not shown here. Three hybrids were used: Dekalb (DKC) 60-17 (conv.), DKC 60-19 (Bt), and DKC 60-18 (Bt and RW); their responses are combined in this report. Hybrids were planted at 35,077 seeds/acre in 30-in. row spacing. Field was tilled prior to planting and weeds were controlled.

Individual plots were 15 ft wide × 50 ft long; three rows were harvested. Plant population (measured June 7), plant height, grain yield, and moisture were collected. The first four planting dates were harvested October 13; the fifth planting date was harvested October 20. 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). The May 15 planting had the highest plant population; June 1 planting had the lowest population. Generally, similar populations were established between April 5 and April 28. The yield data appears independent of population differences; yet reduced populations for some of the planting dates may have limited their realized yield.

Planting date caused a difference in yields; $P < 0.0001$ (significant). Yields were the same for planting dates April 5 to April 28 (Table 1). A difference (LSD) of 6.7 bushels/acre was needed to determine whether a planting date yielded significantly different from another planting date. Corn planted May 15 or June 1 yielded less than April 5 or April 15. Consistent yields across April are important to note, as this provides an earlier planting window for producers. Consider this data only as 'preliminary,' and do not use it in adjusting management practices at this time. More data is needed.

Acknowledgments

Appreciation is extended to Ken Pecinovsky, Northeast Research Farm for his efforts in establishing, maintaining, and harvesting the

trial. Appreciation is also extended to corn production research assistants Leslie Freehill and Lesa Andersen.

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 5	31,259	c	197.0	a
April 15	32,173	b	193.1	a
April 28	31,511	bc	190.8	ab
May 15	33,864	a	186.1	b
June 1	27,591	d	165.9	c

LSD=789

LSD=6.7

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