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Yield Response of Planting Corn in Early April

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Abstract
Corn is planted earlier each year, which is one important component in maximizing grain yield. Earlier planting dates can be attributed to larger farms, less spring tillage, improvements in corn hybrids, improved drainage systems, and better seed treatments. Research conducted at the ISU Northwest Research Farm from 2006 through 2009 showed that the planting window for 98 percent or greater yield potential in northwest Iowa is April 15 to May 9. A 95 percent or greater yield potential can be realized from April 15 to May 18. A study was conducted from 2009 through 2011 at the Northwest Research Farm to determine how corn planted in early April compares with corn planted in the recommended planting window for the area.

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Introduction

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Materials and Methods

All plots were planted with a 7100 John Deere planter at 35,600 seeds/acre as early as field conditions would allow. Plots were no-till planted in 2009 and 2010. The plots were strip-tilled in 2011. Pioneer 35K33 was planted in 2009 on March 30, April 14, and May 11. Agrigold 6325VT3 was planted on April 1 and April 22, 2010. Agrigold 6323GT3 was seeded on April 5, April 29, and May 18, 2011. Weeds were managed with pre- and post-emergent herbicide applications. Individual plots were four rows wide by 114 ft long in 2011, 151 ft long in 2010 and 134 ft long in 2009. Harvest was completed by the middle of October each season and all four rows were harvested for yield. Yields were adjusted to 15.5 percent moisture and statistical analysis was used to analyze the yield data, with a significance level of $P \leq 0.05$.

Results and Discussion

Statistical analysis showed that planting corn in early April yielded significantly less than corn planted in mid- to late-April in 2009 and 2011 (Table 1). The mid-May planting date was statistically better than the early April planting date in 2011 (Table 1). Yields were highest in the mid- to late-April planting date in all three growing seasons, with the mid-May planting date second highest in each year that it was included in the study.

No differences in yield were noted in 2010 between the April 1 and April 22 planting date. Temperatures were much above average in April 2010 and may have negated differences between the two planting dates.

Corn planted in early April yielded much better than expected in all three years, but yields were still 8.5 bushels/acre less than the mid- to late-April planting dates and 7.7 bushels/acre less than the mid-May planting dates. There is also more risk planting corn this early in the season due to cooler and wetter soil conditions and greater chance of frost.

Table 1. Yield response of corn to planting date.

Date	2009	2010	2011	Avg.
Early April	187.0 a	227.8 a	154.9 a	189.9
Mid/Late April	197.0 b	232.9 a	165.3 b	198.4
Mid May	192.4 ab		164.9 b	
LSD	7.2	10.9	5.5	

Treatment means with any letter in common are not significantly different from one another ($P \leq 0.05$).