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Corn Date of Planting and Maturity in South Central Iowa

RFR-A16124

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Introduction

Inevitably, every year corn planting gets delayed or needs to be replanted because of weather somewhere in Iowa. Even if corn planting starts and progresses in a timely manner, there always is the question of what maturity should be planted. This trial was setup to determine what maturities are well suited for a given geographic location, but also how maturity selection should be adjusted as planting dates get pushed into late spring.

Materials and Methods

This project was conducted at the ISU McNay Research Farm as well as six additional Iowa State University research farms across Iowa in 2014, 2015, and 2016. Each year the same three hybrids (P0636, P1151, and P1365) were planted at four target planting dates (April 15, May 10, June 5, and June 30). The plots were setup in a split plot arrangement with four replications. Target planting date was the whole plot and hybrid was the split plot. A target seeding rate of 35,000 seeds/acre was used. Data collection included growth staging, stand counts, grain yield, and grain moisture.

Results and Discussion

In 2014 and 2015, corn grain yields for all hybrids were greatest for the second date of planting (DOP), May 9 and May 7, respectively (Table 1). In 2016, the corn grain yields declined with each delay in DOP for each hybrid. Both June DOPs were lower in 2015 and 2016 compared with 2014. However, in 2014 the June 26 planting did not reach maturity. In all years, the latest DOP (June 26, June 30, and June 30, respectively) saw dramatic yield declines. These results suggest mid-April to early May is an ideal planting date window.

Hybrid maturity was not significant in 2014 and 2015. However, in 2016 the early maturity (106-day) was higher yielding. At later planting dates, yield potential was generally not improved with earlier maturity hybrids.

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Table 1. Corn grain yield of three hybrids at four planting dates at the ISU McNay Research Farm, Chariton, IA in 2014, 2015, and 2016.

Actual date of planting	P0636 (106-day)	P1151 (111-day)	P1365 (113-day)	Average yield (bu/ac)
grain yield (bu/ac)				
5/5/2014	216.3	202.6	194.0	204.3
5/9/2014	236.2	229.9	216.6	227.6
6/12/2014	173.7	170.7	180.4	174.9
6/26/2014	81.3	109.8	100.8	97.3
Average yield (bu/ac)	176.9	178.2	172.9	P < 0.0001
P = 0.9339				
4/15/2015	182.6	163.1	206.5	184.1
5/7/2015	201.6	234.6	219.7	218.6
6/8/2015	108.9	168.1	112.7	129.9
6/30/2015	28.9	32.7	48.0	36.5
Average yield (bu/ac)	130.5	149.6	146.7	P < 0.0001
P = 0.0555				
4/18/2016	165.5	151.2	149.0	155.2
5/10/2016	148.0	149.1	145.3	147.4
6/6/2016	132.0	135.9	121.4	129.8
6/29/2016	74.8	33.0	59.4	55.8
Average yield (bu/ac)	130.1	117.3	118.8	P < 0.0001
P = 0.0104				

*The P-values below the columns indicate the main effect of hybrid on yield. The P-values to the right of the table refer to the main effect of planting date on yield. P-values for the interaction effect between planting date and hybrid are as follows 2014, P = 0.9188; 2015, P = 0.0053; 2016, P = 0.0084.