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Corn Date of Planting and Maturity in Central Iowa

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Corn Date of Planting and Maturity in Central Iowa

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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 Ag Engineering and Agronomy Research Farm as well as six additional Iowa State University research farms across Iowa in 2014, 2015, and 2016. Each year the same four hybrids (P0407, P0987, 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 35,600 seeds/acre was used. Data collection included growth staging, stand counts, grain yield, and grain moisture.

Results and Discussion

In 2014, the corn grain yields were highest for the mid-May date of planting (DOP) for each hybrid except for the 111-day P1151 (Table 1). In 2015 and 2016, the first two planting dates had consistently higher yields than the later DOP across all hybrids. These results suggest mid-April to early May is an ideal planting date window. However, all years showed the latest DOP (July 8, June 30, and July 1, respectively) saw dramatic yield declines.

In 2014, the 109-day P0987 had the highest yield potential, although in 2015 and 2016 the 111-day P1151 had the highest yield potential (Table 1). Switching maturity selection to an earlier adapted hybrid did not consistently improve yield potential at later DOP.

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Table 1. Corn grain yield of four hybrids at four planting dates at the ISU Ag Engineering/Agronomy Research Farm, Boone, IA in 2014, 2015, and 2016.

Actual date of planting	P0407 (104-day)	P0987 (109-day)	P1151 (111-day)	P1365 (113-day)	Average yield (bu/ac)
grain yield (bu/ac)					
4/21/2014	127.9	137.0	147.3	124.8	134.2
5/9/2014	134.4	148.9	144.0	145.0	143.1
6/3/2014	126.0	142.7	120.7	109.7	123.6
7/8/2014	DNM	19.2	12.3	19.7	16.9
Average yield (bu/ac)	129.4	116.4	106.1	99.8	P < 0.0001
P = 0.4356					
4/15/2015	181.8	172.2	236.2	202.0	198.0
5/13/2015	174.2	196.4	220.8	219.3	202.6
6/4/2015	137.7	172.1	181.8	176.0	166.9
6/30/2015	55.3	65.2	83.2	68.5	68.1
Average yield (bu/ac)	137.2	151.5	180.5	166.4	P < 0.0001
P < 0.0001					
4/15/2016	137.3	150.8	168.4	141.7	149.5
5/16/2016	154.3	168.5	173.5	156.3	163.1
6/9/2016	120.3	117.8	128.5	108.9	118.9
7/1/2016	56.8	62.9	87.2	57.3	66.1
Average yield (bu/ac)	117.2	125.0	139.4	116.0	P < 0.0001
P = 0.0006					

*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 = 0.7745; 2015, P = 0.4212; 2016, P = 0.9159. DNM = did not mature.