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Corn Date of Planting and Maturity

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Corn Date of Planting and Maturity

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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 is always 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 Northwest 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 (P0407, P9526, and P0987) 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 with a John Deere finger pickup style planter. Data collection included growth staging, stand counts, grain yield, and grain moisture. The statistics were conducted at a 95 percent confidence interval.

Results and Discussion

In 2014 and 2015, the first two dates of planting (DOP) were consistently higher yielding than the third DOP (Table 1). Additionally, the last date of planting did not reach maturity. In 2016, the second DOP (early May) was higher yielding than the first and subsequent DOP. This suggests mid-April to early May is an ideal planting date window for corn in northwest Iowa, with the caveat that air and soil temperature and moisture are conducive for germination and emergence.

In all three years, the 109-day hybrid had the highest yield potential (Table 1). Switching maturity selection to an earlier adapted hybrid did not improve yield potential at later DOP.

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

Actual date of planting	P9526 (95-day)	P0407 (104-day)	P0897 (109-day)	Average yield (bu/ac)
grain yield (bushels/acre)				
4/22/2014	181.3	175.8	190.6	185.6
5/9/2014	179.3	176.0	191.5	182.2
6/6/2014	140.1	119.5	135.7	131.7
7/3/2014	----- Did not mature -----			-
Average yield (bu/ac)	166.9	157.1	172.6	P < 0.0001
P < 0.0001				
4/15/2015	201.8	227.2	238.6	222.6
5/18/2015	182.7	201.0	228.2	204.0
6/9/2015	170.4	172.3	211.2	184.6
6/30/2015	----- Did not mature -----			-
Average yield (bu/ac)	185.0	200.2	226.0	P < 0.0001
P < 0.0001				
4/15/2016	200.1	170.5	216.6	195.7
5/9/2016	224.7	227.8	239.4	230.6
6/6/2016	204.9	216.4	240.0	220.4
7/1/2016	138.3	108.6	126.0	124.3
Average yield (bu/ac)	192.0	180.8	205.5	P < 0.0001
P = 0.0051				

*The P-values below the columns indicate the main effect of variety 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 variety are as follows: 2014, P = 0.0341; 2015, P = 0.3317; 2016, P = 0.1275.