

Corn Date of Planting and Maturity in Southeast Iowa

RFR-A16111

Mark Licht, assistant professor and extension cropping systems specialist
Department of Agronomy
Myron Rees, farm superintendent

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 Southeast 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 35,600 seeds/acre was used. Data collection included growth staging, stand counts, grain yield, and grain moisture.

Results and Discussion

In all years, the corn grain yields declined with each delay in date of planting (DOP) for each hybrid (Table 1). In all years, the first two DOP in mid-April and early May were significantly higher than the subsequent DOP. The late June DOP resulted in a significant decrease in yield across all hybrids. These results suggest mid-April to early May is an ideal planting date window.

In 2014 and 2016, the 111-day P1151 had the highest yield potential (Table 1). Whereas in 2015, the 113-day P1365 had the highest yield potential. Switching maturity selection to an earlier adapted hybrid at later DOP did not consistently improve yield potential.

Acknowledgements

This project was supported by the ISU Research and Demonstration Farms and the Iowa Agriculture and Home Economics Experiment Station. Seed was provided by DuPont-Pioneer.

Table 1. Corn grain yield of three hybrids at four planting dates at the ISU Southeast Research Farm, Crawfordsville, 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)				
4/20/2014	203.3	218.2	215.9	212.5
5/8/2014	184.7	213.2	203.0	200.3
6/2/2014	152.1	172.8	159.2	161.4
6/27/2014	55.5	30.8	26.7	37.7
Average yield (bu/ac)	148.9	158.7	151.2	P < 0.0001
P = 0.0504				
4/16/2015	233.6	244.5	251.4	243.2
5/7/2015	190.0	234.5	211.8	212.1
6/3/2015	162.0	166.6	180.0	169.5
7/1/2015	33.5	97.0	102.2	77.6
Average yield (bu/ac)	154.7	185.6	186.4	P < 0.0001
P = 0.0013				
4/14/2016	227.6	234.4	219.8	226.6
5/9/2016	212.9	216.1	215.5	214.8
6/2/2016	212.1	215.8	187.5	205.1
6/29/2016	103.7	129.6	88.1	107.1
Average yield (bu/ac)	189.1	196.6	177.7	P < 0.0001
P = 0.0018				

*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 = 0.0504; 2015, P = 0.1499; 2016, P = 0.1708.