

Corn Date of Planting and Maturity in Southwest Iowa

RFR-A1674

Mark Licht, assistant professor and extension cropping systems specialist
Department of Agronomy
Dan Schaben, ag specialist

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 Armstrong 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 2014, the corn grain yields declined with each delay in date of planting (DOP) for each hybrid (Table 1). In 2015 and 2016, the yields decreased with delay in DOP for the 106- and 113-day hybrid, although no difference was found in the 111-day hybrid. However, the 111-day hybrid had higher yields with the mid-May DOP in 2015 and 2016. In all three years, the latest DOP (July 3, July 1, and June 29, respectively) either saw dramatic yield declines or did not reach maturity.

In both 2014 and 2015, the 113-day P1365 had the highest yield potential (Table 1). However, if planting gets delayed into June, there is evidence an earlier maturing hybrid may be beneficial, as evidenced in 2015 and 2016.

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 Armstrong Research Farm, Lewis, 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)			
4/18/2014	215.4	235.6	240.8	230.6
5/10/2014	186.8	212.3	216.6	205.2
6/3/2014	117.3	185.8	161.3	154.8
7/3/2014	25.9	48.2	45.2	39.7
Average yield (bu/ac)	136.3	170.5	166.0	P < 0.0001
	P < 0.0001			
4/16/2015	197.7	191.0	216.8	201.8
5/13/2015	190.8	215.0	192.5	199.5
6/6/2015	171.1	187.3	168.7	175.7
7/1/2015	Did not mature			-
Average yield (bu/ac)	186.6	197.8	192.7	P = 0.0876
	P = 0.6730			
4/15/2016	236.7	225.4	235.2	232.4
5/15/2016	241.8	243.5	210.2	231.8
6/6/2016	187.1	172.0	176.3	178.5
6/29/2016	Did not mature			-
Average yield (bu/ac)	221.9	213.6	207.2	P < 0.0001
	P = 0.1568			

*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 = 0.0593; 2015, P = 0.5444; 2016, P = 0.1645.