

Soybean Date of Planting and Maturity in Northern Iowa

RFR-A16110

Mark Licht, assistant professor and extension cropping systems specialist
Department of Agronomy
Matt Schnabel, farm superintendent

Introduction

Inevitably, every year soybean planting gets delayed or needs to be replanted because of weather somewhere in Iowa. Even if soybean planting starts and progresses in a timely manner, there always is the question of what maturity group 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 Northern Research Farm as well as six additional Iowa State University research farms across Iowa in 2014, 2015, and 2016. Every year the same three varieties (P22T69R, P25T51, 92Y75) were planted at four target planting dates (May 1, May 20, June 10, and July 1). 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 140,000 seeds per acre was used. Data collection included growth staging, grain yield, and grain moisture.

Results and Discussion

In 2014 and 2015, the early to mid-May dates of planting (DOP) had higher yields than subsequent DOP (Table 1). The same was true for 2016 except for the 2.5 maturity group. These results support the ISU Extension and Outreach planting date recommendations of planting in early May as long as soil temperature and the weather forecast are favorable.

In all years, the 2.2 maturity soybean achieved the highest yield (Table 1), although no overall maturity group was statistically significant. Yield potential was not improved by switching to shorter season varieties at later planting dates.

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. Soybean grain yield of three varieties at four planting dates at the ISU Northern Research Farm, Kanawha, IA, in 2014, 2015, and 2016.

Actual date of planting	P22T69 (2.2 MG)	P25T51 (2.5 MG)	92Y75 (2.7 MG)	Average yield (bu/ac)
	grain yield (bu/ac)			
5/7/2014	53.3	49.7	50.7	51.2
5/20/2014	52.2	52.6	50.1	51.7
6/10/2014	34.9	39.8	35.1	36.6
7/9/2014	26.9	24.9	20.8	24.2
Average yield (bu/ac)	40.3	40.4	37.6	P < 0.0001
	P = 0.7482			
5/1/2015	66.0	55.0	57.3	59.4
5/23/2015	58.2	57.6	55.2	57.0
6/10/2015	47.7	49.4	50.9	49.3
7/1/2015	44.1	51.7	52.5	49.4
Average yield (bu/ac)	54.0	53.4	54.0	P < 0.0001
	P = 0.9395			
5/6/2016	61.4	55.3	60.2	59.0
5/21/2016	56.5	56.7	59.1	57.3
6/10/2016	54.7	57.7	55.8	56.1
7/1/2016	42.2	45.5	42.1	43.3
Average yield (bu/ac)	53.7	53.8	54.0	P < 0.0001
	P = 0.9434			

*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 = 0.9872; 2015, P = 0.0183; 2016, P = 0.5734.