

Soybean Date of Planting and Maturity in Southeast Iowa

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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 Southeast 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 (P25T51, P35T58, P39T67R) 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/acre was used. Data collection included growth staging, grain yield, and grain moisture.

Results and Discussion

In all three years, the early to mid-May dates of planting (DOP) had higher yields than subsequent DOP (Table 1). These results support the ISU Extension and Outreach planting date recommendations of planting in late April or early May as long as soil temperature and the weather forecast are favorable.

In all years, the highest yield was achieved with the 3.9 maturity (Table 1). In 2014 and 2016, the yield was significantly different between the early maturing variety and later maturing varieties. Yield potential was not improved by switching to shorter season varieties at later planting dates.

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Table 1. Soybean grain yield of three varieties at four planting dates at the ISU Southeast Research Farm, Crawfordsville, IA, in 2014, 2015, and 2016.

Actual date of planting	P25T51R (2.5 MG)	P35T58R (3.5 MG)	P39T67R (3.9 MG)	Average yield (bu/ac)
grain yield (bu/ac)				
5/5/2014	65.1	71.3	74.2	70.2
5/19/2014	59.3	70.5	70.5	66.8
6/12/2014	54.4	56.7	61.8	57.6
6/27/2014	44.7	43.2	47.0	45.0
Average yield (bu/ac)	55.9	60.4	63.4	P < 0.0001
P = 0.0010				
5/4/2015	60.4	63.2	63.9	62.5
5/19/2015	50.8	60.3	57.1	56.0
6/10/2015	48.3	51.1	50.9	50.1
7/1/2015	44.9	47.8	44.9	45.8
Average yield (bu/ac)	51.1	55.6	54.2	P < 0.0001
P = 0.1618				
5/9/2016	60.9	69.8	70.9	67.2
5/22/2016	58.2	68.8	66.1	64.4
6/9/2016	46.4	55.7	59.9	54.0
6/29/2016	34.3	32.6	37.7	34.9
Average yield (bu/ac)	49.9	56.7	58.7	P = 0.0001
P = 0.0001				

*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 = 0.3326; 2015, P = 0.9220; 2016, P = 0.0683.