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Soybean Date of Planting and Maturity in South Central Iowa

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Soybean Date of Planting and Maturity in South Central 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 McNay 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 (P25T51R, P35T58, P39T67) 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 seeding rate of 140,000 seeds/acre was used. Data collection included growth staging, grain yield, and grain moisture.

Results and Discussion

Each year the April and May date of plantings (DOP) had higher yields than later DOP (Table 1). Yield potential began to decrease with the June DOP, and late June plantings resulted in significant yield reductions. 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.

Soybean maturity was not significantly different in 2014 and 2016. In 2015, yields were greater for the 3.5 and 3.9 maturity group varieties planted in late April to mid-May. The highest yields were achieved with the 3.5 maturity group in all years (Table 1). 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 McNay Research Farm, Chariton, IA, in 2014, 2015, and 2016.

Actual date of planting	P25T51 (2.5 MG)	P35T58R (3.5 MG)	P39T67R (3.9 MG)	Average yield (bu/ac)
	grain yield (bu/ac)			
5/6/2014	68.8	71.0	69.3	69.7
5/20/2014	76.4	79.6	75.7	77.2
6/12/2014	56.1	64.9	63.1	61.4
6/26/2014	46.5	48.1	46.6	47.1
Average yield (bu/ac)	61.9	65.9	63.7	P < 0.0001
	P = 0.1522			
4/30/2015	47.6	71.3	67.4	62.1
5/19/2015	53.1	62.9	67.4	61.1
6/10/2015	58.0	64.6	59.8	60.8
6/30/2015	30.7	39.6	42.2	37.5
Average yield (bu/ac)	47.3	59.6	59.2	P < 0.0001
	P < 0.0001			
5/9/2016	82.3	82.9	80.7	82.0
5/19/2016	83.3	89.7	81.7	84.9
6/9/2016	68.5	69.3	74.5	70.8
6/29/2016	55.2	54.2	57.8	55.7
Average yield (bu/ac)	72.3	74.0	73.7	P < 0.0001
	P = 0.7838			

*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 = 0.7932; 2015, P = 0.0903; 2016, P = 0.5990.