Corn and Soybean Planting Date and Cultivar Trial

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Introduction

Every year corn and soybean planting is postponed or replanted due to weather related challenges. When late planting is encountered, two questions asked are: 1) what yield can be expected, and 2) should maturities be shortened? This project continues to look at these questions across a nearly 45-day span of planting dates and the well-adapted maturity range for north central Iowa.

Materials and Methods

This trial was conducted in 2020 using four planting dates and five corn hybrids or soybean varieties shown in Tables 1 and 2. This trial was set up as a randomized complete block design using management practices typical of the region.

Results and Discussion

The April 21 and May 13 planting dates had higher soybean yields (65.5 and 64.0 bu/acre, respectively) compared with the May 1 and June 1 planting dates (61.3 and 62.9 bu/acre, respectively, Table 1). There also was a soybean variety effect where varieties ranged from 62.3 to 64.4 bushels/acre. There was an interaction between soybean varieties and planting date where early maturing varieties had a 2.3 bushels/acre advantage over later maturing varieties at the April 21 planting date. Likewise, the later maturing varieties had a 4.1 bushels/acre advantage over early maturing varieties at the May 13 planting date.

Corn yields were maximized at the May 13 planting date at 194 bushels/acre (Table 2). The longer maturity hybrids had higher yield potential than the 100 and 101 day (P0075AM and P0157AM) hybrids. There was not a planting date by maturity group interaction.

Acknowledgements

This trial was made possible with seed contributions from Corteva.

Table 1. Soybean grain yields for planting date by variety maturity in 2020.[1]

		DOP				Cultivar				
		21-Apr	1-May	13-May	1-Jun	P18A98X	P19A14X	P21A28X	P23A15X	P25A04X
DOP	21-Apr	65.5								
	1-May		61.3							
	13-May			64.0						
	1-Jun				62.9					
		p < 0.0001								
Cultivar	P18A98X	66.4	59.4	61.4	62.0	62.3				
	P19A14X	66.3	59.6	61.0	62.7		63.2			
	P21A28X	66.8	63.6	64.0	60.8			63.8		
	P23A15X	64.5	61.7	66.8	64.7				64.4	
	P25A04X	63.8	62.2	63.8	64.3					63.5
		p = 0.0101				**p = 0.0849**				

[1]P-values within boxes are used to compare yields of the main effects or interaction effects within each box.

Table 2. Corn grain yields for planting date by hybrid maturity in 2020.[1]

		DOP				Cultivar				
		19-Apr	1-May	13-May	1-Jun	P0075AM	P0157AM	P0589AM	P0963AM	P1197AM
DOP	19-Apr	188.3								
	1-May		187.3							
	13-May			194.0						
	1-Jun				185.3					
		p = 0.0670								
Cultivar	P0075AM	175.1	179.9	184.0	180.9	180.0				
	P0157AM	193.3	187.7	194.8	177.4		188.3			
	P0589AM	196.5	186.8	192.6	192.7			192.6		
	P0963AM	181.6	188.1	192.8	187.4				187.5	
	P1197AM	194.9	193.9	203.8	188.2					195.2
		p = 0.6614				**p = 0.0018**				

[1]P-values within boxes are used to compare yields of the main effects or interaction effects within each box.