On-Farm Demonstration Trial: Crop Production Studies Planting Date–Corn

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Objective

Determine the effects of multiple planting dates on corn yields to define best management practices.

Introduction

Maximizing yield potential for farming systems is a challenge for corn and soybean farmers in Iowa. Many small changes in products, practices and timing can lead to very different results in yields. However, managing for maximum yield outputs rarely is the most economically sound investment for farmers. Striking that balance is key to success. Planting dates are being adjusted by farmers to maximize time and yield potential of their hybrids. The objective of this trial was to investigate what effect various planting dates had on corn grain yield.

Materials and Methods

Crop Year–2021

Trial	210805
Trial County	Floyd
Soil Type	
Previous Crop	Soybean
Tillage	Conventional
Current Crop	Corn
Hybrid–Variety Number	P0157AMXT, P0589AM, P1366AM
Hybrid–Variety Company	Pioneer/Corteva
Row Spacing	30 in.
Seeding Rate	34,000/ac.
Planting Date	April 5, April 24, May 13, June 1
Harvest Date	November 1
Experimental Type	On-Farm Demo
Replications	4

Results

Trial Number	Treatment	Emergence Date	75% Silking Date	Yield (bu./ac.)[a]	P-value[b]	Moisture	P-value[b]
210805	P0157AMXT April 5	May 2	July 13	240 a	0.06	18.5 a	<0.01
	P0157AMXT April 24	May 9	July 13	223 ab		18.8 b	
	P0157AMXT May 13	May 22	July 19	220 b		19.6 b	
	P0157AMXT June 1	June 6	July 27	219 b		24.2 b	
	P0589AM April 5	May 2	July 13	228 a	0.55	18.0 a	<0.01
	P0589AM April 24	May 9	July 14	228 a		18.5 a	
	P0589AM May 13	May 22	July 20	238 a		19.9 b	
	P0589AM June 1	June 6	July 28	232 a		24.6 c	
	P1366AM April 5	May 2	July 16	254 a	0.10	19.6 a	<0.01
	P1366AM April 24	May 9	July 16	246 ab		20.0 a	
	P1366AM May 13	May 22	July 22	248 ab		24.6 b	
	P1366AM June 1	June 6	July 30	224 b		27.6 c	

[a]Values denoted with the same letter within a trial are not statistically different at the significance level of 0.10.
[b]P-value = the calculated probability that the difference in yields can be attributed to the treatments and no other factors. For example, if a trial has a P-value of 0.10, then we are 90 percent confident the yield differences are in response to treatments. This is consistent for demonstration trials.

Key Takeaways

- The four planting dates showed significant yield differences in two for the three hybrids with the earliest planting date having the greatest yield.
- The multiple planting dates had a statical significant effect in the moisture of the corn at harvest. This range was approx. 7% difference in moisture from high to low.
- This decrease in moisture with the earlier planting date is not an unexpected outcome based on the standard corn maturation process.
- NOTE: The results presented are from replicated demonstration trials. Statistics are used to detect differences at a location and should not be interpreted beyond the single location.