

Corn Hybrid and Seeding Rate Trial

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Introduction

Corn plant populations have increased at approximately 400 plants/acre per year over the last two decades. Seeding rates now are commonly in the 32,000 to 38,000 seeds/acre range. Additionally, grain yields are increasing at 1.8 bushels/acre per year since 1996. Because corn plant populations and grain yields are increasing, there has been a renewed interest in looking at corn row spacing and seeding rate.

Materials and Methods

These trials were conducted beginning in 2018 using two Dekalb hybrids (DKC51-38 and DKC54-38) in one trial, and two Pioneer hybrids (P0574AM and P0589AM) in the

second trial. These trials were not designed to compare brand genetics. Each trial was set up as a randomized complete block design. The seeding rates of 30,000, 34,000, 38,000, and 42,000 seeds/acre with 30-in. row spacing were used for each hybrid.

Results and Discussion

In the DeKalb trial (Table 1), the effect of hybrid on yield was significant. DKC 51-38 yielded 9.3 bushels/acre more than DKC 54-38. Seeding rate was not significant and the hybrid by seeding rate interaction was not significant.

In the Pioneer trial (Table 2), the hybrid and seeding rate main effects and the hybrid by seeding rate interaction were not significant at the $P > 0.05$ level.

Acknowledgements

This project would not have been possible without seed donations from Corteva and Monsanto.

Table 1. Corn grain yields for the DeKalb hybrid x seeding rate x row spacing trial in 2018.¹

	DKC 51-38	DKC 54-38	30,000 seeds/ac	34,000 seeds/ac	38,000 seeds/ac	42,000 seeds/ac
	grain yield (bushels/acre)					
DKC 51-38	<u>208.6</u>					
DKC 54-38		199.3				
	P = 0.007					
30,000 seeds/ac	201.1	193.8	197.4			
34,000 seeds/ac	217.2	202.0		209.6		
38,000 seeds/ac	209.2	200.6			204.9	
42,000 seeds/ac	206.8	200.9				203.8
	P = 0.7116		P = 0.0785			

¹P-values within boxes are used to compare yields of the main effects or interaction effects within each box. Underlined yields are significantly higher at P < 0.05.

Table 2. Corn grain yields for the Pioneer hybrid x seeding rate x row spacing trial in 2018.¹

	P0574AM	P0589AM	30,000 seeds/ac	34,000 seeds/ac	38,000 seeds/ac	42,000 seeds/ac
	grain yield (bushels/acre)					
P0574AM	<u>201.7</u>					
P0589AM		199.0				
	P = 0.3579					
30,000 seeds/ac	199.1	198.5	198.8			
34,000 seeds/ac	202.6	202.2		202.4		
38,000 seeds/ac	200.9	197.9			199.4	
42,000 seeds/ac	204.1	197.4				200.7
	P = 0.8534		P = 0.8102			

¹P-values within boxes are used to compare yields of the main effects or interaction effects within each box. Underlined yields are significantly higher at P < 0.05.