Corn Hybrid, Seeding Rate, & Row Spacing 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 are now commonly in the 32,000 to 38,000 seeds/acre range. Additionally, grain yields are increasing at approximately 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

This experiment was conducted in 2025 at the ISU Northwest Research Farm near Sutherland, IA. These trials were conducted in 2025 using two hybrids from three different seed brands in separate trials. These trials were not designed to compare brand genetics. Each trial was set up as a randomized complete block design. The seeding rates were 30,000; 35,000; and 40,000 seeds/ac with 30-inch and 20-inch row spacing used for each hybrid.

Key Takeaways

- The only significant hybrid by row spacing difference occurred with in the Wyffels brand, where both hybrids had similar yields in the 30-in row spacing, however, Hybrid X was greater yielding in the 20-in row spacing (P = 0.0291).
- There was no row spacing by seeding rate interaction for any of the seed brands.
- All seeding rates had similar grain yield levels with no significant differences for any seed brand.
- The 20-in row spacing was significantly greater than the 30-in row spacing for the Bayer and Wyffels seed brand.

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Table 1. Management information for the corn trials in Sutherland in 2025.

Sutherland 2025	
Previous crop	Soybean
Replications	3
Fertilizer applied	180 lb of 18-46-0, 313 lb of 0-0-60, 150 lb N as 28% UAN
Tillage	Field cultivator (spring)
Crop planting date	04/30/2025
Hybrid	Per protocol
Row spacing	Per protocol
Seeding rate	Per protocol
Harvest date	10/30/2025
Harvested plot size	20ft by 400ft

Table 2. Corn grain yields for the hybrid × seeding rate × rowspacing trial in 2025.

	Bayer		Corteva		Wyffels	
	20-in. row	30-in. row	20-in. row	30-in. row	20-in. row	30-in. row
	grain yield (bushels/acre)					
Hybrid X	224.8	213.7	203.4	204.2	177.5 a	150.1 b
Hybrid Y	209.5	204.4	179.5	180.1	161.3 b	149.8 b
	P = 0.2027		P = 0.9104		P = 0.0291	
30,000 seeds/ac	214.7	212.4	195.5	203.5	170.0	154.5
35,000 seeds/ac	217.4	211.3	189.7	187.4	169.9	151.6
40,000 seeds/ac	219.4	203.6	189.2	185.4	168.3	143.7
	P = 0.0687		P = 0.6873		P = 0.5285	

Table 3. Corn grain yields for hybrid, seeding rate, and row spacing main effects in 2025.

	Bayer	Corteva	Wyffels
	grain yield (bushels/acre)		
30,000 seeds/ac	213.5	199.5	162.3
35,000 seeds/ac	214.3	188.5	160.7
40,000 seeds/ac	211.5	187.3	156.0
	P = 0.5935	P = 0.1928	P = 0.3712
20-in. row	217.1 a	191.4	169.4 a
30-in. row	209.1 b	192.1	149.9 b
	P = 0.2027	P = 0.9520	P < 0.0001