

# Soybean Variety, Seeding Rate, and Row Spacing Trial

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## Objective

Determine the effects of corn seeding rate and row spacing on corn yields to define best management practices.

## Materials and Methods

### Crop Year—2021

Soil Type: Galva	Galva, Primghar
Previous Crop	Corn
Variety	AG18XF1, AG24XF1, P23A15X, P27A17X
Planting Date	May 4
Row Spacing	15-in. 20-in. 30 in.
Seeding Rate	90,000; 120,000; and 150,000 seeds/acre
Tillage	Fall chisel plowed: November 4, 2020; Spring soil finisher: April 6
Fertilizer	24-60-80 VRT application: November 13, 2020
Nitrogen	UAN at 200 lb. N/acre: June 2 for all corn plots
Harvest Date	September 29
Experimental Design	Randomized complete block design by corn brand
Replications	Four
Treatments	Cultivar, row spacing, and seeding rate

**Table 1. Corn grain yields for hybrid, seeding rate, and row spacing main effects from Bayer, Corteva, and Wyffels hybrids.<sup>a</sup>**

	Bayer	Corteva
	Grain Yield (bushels/acre)	
Variety X <sup>b</sup>	83.3	81.2
Variety Y	84.4	84.9
	P = 0.3149	P < 0.0001
90,000 seeds/ac	85.2	85.1
120,000 seeds/ac	82.6	82.7
150,000 seeds/ac	83.8	81.4
	P = 0.1694	P = 0.0007
15-in. row	85.0	84.2
20-in. row	84.3	83.6
30 in. row	82.4	81.3
	P = 0.1614	P = 0.0046

<sup>a</sup>P-values within boxes are used to compare yields of the main effects or interaction effects within each box. Yields that are significantly different at P < 0.05 have different letters following the yield values within each box.

<sup>b</sup>Bayer hybrids were X = AG24XF1, Y = AG24FX1; Corteva hybrids were X = P23A15X, Y = P27A17X.

**Table 2. Corn grain yields for the hybrid x row spacing and seeding rate x row spacing interaction effects from Bayer, Corteva, and Wyffels hybrids.<sup>a</sup>**

	Bayer			Coveta		
	15-in. row	20-in. row	30 in.row	15-in. row	20-in. row	30 in.row
<b>Grain yield (bushels/acre)</b>						
Variety X <sup>b</sup>	84.6	83.6	81.8	81.5	82.0	80.0
Variety Y	85.4	84.9	83.0	87.0	85.3	82.6
	P = 0.9719			P = 0.2446		
90,000 seeds/ac	86.8	86.3	82.6	86.2	87.0	82.0
120,000 seeds/ac	83.6	82.7	81.6	83.9	82.2	82.1
150,000 seeds/ac	84.5	83.8	83.1	82.6	81.8	79.7
	P = 0.8854			P = 0.3096		

<sup>a</sup>P-values within boxes are used to compare yields of the main effects or interaction effects within each box. Yields that are significantly different at  $P < 0.05$  have different letters following the yield values within each box  
<sup>b</sup>Bayer hybrids were X = AG24XF1, Y = AG24FX1; Corteva hybrids were X = P23A15X, Y = P27A17X.

### Key Takeaways

- For both trials, yields were at or above 80 bushels per acre.
- The Bayer Asgrow trial did not have any significant yield differences associated with variety, seeding rate, or row spacing or their interactions.
- In the Corteva Pioneer trial, P27A17X, 90,000 seeds per acre, and 15 20-in. rows were higher yielding. There were no interaction effects associated with variety, seeding rate, or row spacing.

### Acknowledgements

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