



Corn Hybrid, 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—2022

Soil type	Galva, Primghar
Previous crop	Soybean
Cultivar	DKC52-18RIB, DKC54-64RIB, P0404Q, P1039Q, W4246RIB, W5086RIB
Planting date	April 27, 2022
Rowspacing	20 in. and 30 in.
Seeding rate	30,000; 35,000; and 40,000 seeds/acre
Tillage	Finisher—April 26, 2022
Fertilizer	19-48-55 VRT application—November 17, 2021
Nitrogen	NH ₃ at 150 lb. N/acre:April 12, 2022
Harvest date	October 16, 2022
Experimental design	Randomized complete block design by corn brand
Replications	4
Treatments	Cultivar, row spacing, and seeding rate

Results

Table 1. Corn grain yields for hybrid, seeding rate, and row spacing trial main effects in 2022.

	Bayer	Covetta	Wyffels
grain yield (bushels/acre)			
Hybrid X	173.3	178.8	186.0
Hybrid Y	184.9	159.4	197.5
	P = 0.0003	P > 0.0001	P = 0.0002
30,000 seeds/ac.	176.6	172.1	194.0
35,000 seeds/ac.	176.7	171.9	193.8
40,000 seeds/ac.	185.3	163.3	187.6
	P = 0.0149	P = 0.1234	P = 0.1018
20 in. row	181.3	166.4	193.3
30 in. row	177.5	171.8	190.2
	P = 0.1603	P = 0.1708	P = 0.2455

Table 2. Corn grain yields for the Corteva hybrid × seeding rate × row spacing trial in 2021.

	Bayer		Covetta		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	175.3	171.7	179.7	177.9	187.2	184.9
Hybrid Y	186.6	183.4	153.1	165.7	199.5	195.6
	P = 0.9176		P = 0.0709		P = 0.6651	
30,000 seeds/ac	177.2	176.1	170.9	173.2	194.4	193.5
35,000 seeds/ac	179.5	173.8	170.0	173.7	194.5	193.1
40,000 seeds/ac	189.3	182.6	158.2	168.4	191.1	184.1
	P = 0.5472		P = 0.6651		P = 0.1018	

Key Takeaways

- For all three brands, hybrid difference was significant within brand.
- For Bayer, the 40,000 seeds/acre rate was significantly higher than the other rates; for the Corteva and Wyffels brands, the 40,000 seeds/acre rate were nominally lower yielding.
- The only interaction effect was the Corteva hybrid-by-row spacing where hybrid Y was higher yielding in 30-in. rows; there was no row spacing impact with hybrid X.

Acknowledgements

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