

Evaluating 30" vs 60" Irrigated Corn Row Spacing for Interseeding Cover Crops

Study ID: 0359053201901

County: Dodge

Soil Type: Alcester silty clay loam, 2-6% slopes;

Zook silt loam, 0-2% slope

Planting Date: 5/15/19

Harvest Date: 10/25/19

Seeding Rate: 34,000

Row Spacing (in): 30

Variety: Stine® 9808E-0

Reps: 8

Previous Crop: Soybean

Tillage: No-Till

Herbicides: *Pre:* 8 oz/ac Verdict®, 0.5 lb/ac atrazine, 32 oz/ac glyphosate, 7.5 oz/ac 2-4D LV6 on 5/15/19 *Post:* None

Seed Treatment: Cruiser 250

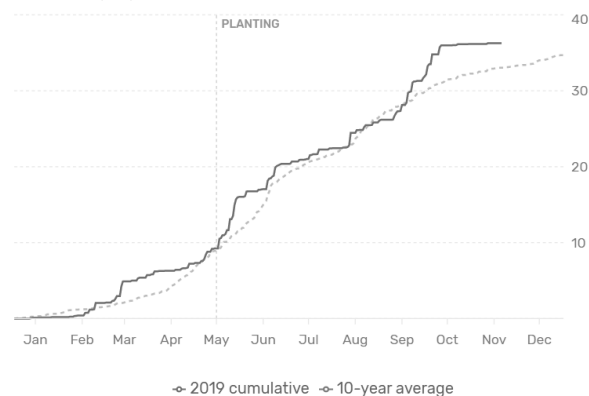
Foliar Insecticides: None

Foliar Fungicides: 4 oz/ac Priaxor®, 4 oz/ac Tilt®, and 1 gal/ac QLF Agronomy L-CBF Boost™ aerial applied on 8/3/19

Fertilizer: 110 lb/ac 11-52-0 on 04/23/19; 2 gal/ac humic acid, 3 gal/ac 6-24-6, 0.5 gal/ac 0-0-25-17S, 0.5 lb/ac Zn, 0.5 lb/ac Mn, 0.25 gal/ac Conklin® Syntose FA® as starter; 75 lb N/ac with pre-emerge on 5/15/19; 140 lb N/ac as ammonium nitrate and Sulfate on 7/2/19

Irrigation: Pivot, Total: 4"

Rainfall (in):



Introduction: Wider corn row spacing may provide a better opportunity for establishment of interseeded cover crops. This study compared row and plant spacing for establishment of interseeded cover crops. The two treatments were:

- 1) corn planted at 30" row spacing and a population of 34,000 plants/ac (6.15" between plants in the row)
- 2) corn planted at 60" row spacing and a population of 34,000 plants/ac (3.07" between plants in the row)

The interseeded cover crops were planted on June 12, 2019. The cover crop was a 12 species mix that included 3 lb/ac annual ryegrass, 16 lb/ac winter wheat, 10 lb/ac Jerry oats, 0.125 lb/ac turnips, 0.125 lb/ac rapeseed, 0.5 lb/ac daikon radish, 3 lb/ac buckwheat, 2 lb/ac lentils, 0.5 lb/ac flax, 0.25 lb/ac FIXatioN balansa clover, 1.5 lb/ac crimson clover, and 3 lb/ac common vetch. Some of the cover crops will winter kill; others died off due to shading. Soybeans will be planted into the living cover crops that overwintered.

Results:

	Moisture (%)	Yield (bu/ac) [†]	Marginal Net Return [‡] (\$/ac)
30"	19.3 A*	248 A	949.51 A
60"	18.7 B	199 B	763.36 B
P-Value	0.004	<0.0001	<0.0001

*Values with the same letter are not significantly different at a 90% confidence level.

[†]Yield values are from cleaned yield monitor data. Bushels per acre corrected to 15.5% moisture.

[‡]Marginal net return based on \$3.83/bu corn.

Summary: The 60" row spacing with higher within row plant density resulted in drier grain at harvest, reduced yield, and reduced net return.

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