

Irrigated Soybeans Planted into Cereal Rye Cover Crop

Study ID: 0064099201901

County: Kearney

Soil Type: Coly-Kenesaw silt loam, 0-3% slope;
Hersh fine sandy loam, 0-3% slope

Planting Date: 5/13/19

Harvest Date: 10/10/19

Seeding Rate: 145,000

Row Spacing (in): 30

Variety: Stine® 27EA23

Reps: 4

Previous Crop: Corn

Tillage: No-Till

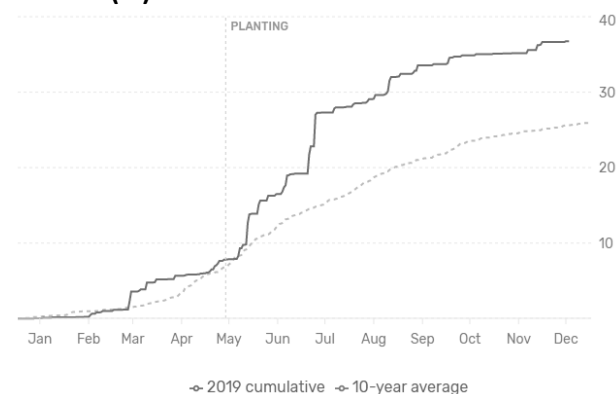
Herbicides: **Pre:** 1 qt/ac Enlist One®, and 48 oz/ac Roundup® on 5/15/2019 **Post:** 48 oz/ac Roundup®, 1.87 pt/ac Enlist One®, 1.33 pt/ac Brawl II™, and 6 oz/ac clethodim on 6/15/2019; 32 oz/ac Liberty®, and 3 pt/ac Warrant® on 7/12/2019

Seed Treatment: ILeVO® and fungicide

Fertilizer: 100 lb/ac 11-52-0 broadcast in March

Irrigation: Pivot, Total: 5"

Rainfall (in):



Introduction: This study compared the effects of a cereal rye cover crop on the following soybean crop yield. This is the third year this study has been conducted, with cereal rye cover crop strips and check strips maintained in the same location from year to year. Rye was drilled in 10" rows at 50 lb/ac following corn harvest on November 1, 2018. The rye was terminated with Roundup® on May 5, 2019. Rye was approximately 12" tall at the time of termination.

Results:

	Stand Count (plants/ac)	Moisture (%)	Soybean Yield (bu/ac)†	Marginal Net Return‡ (\$/ac)
Check	127,904 A*	11.9 A	86 B	694.94 A
Cover Crop - Rye	123,658 A	11.9 A	87 A	674.64 B
P-Value	0.233	1	0.017	0.002

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

†Bushels per acre corrected to 13% moisture.

‡Marginal net return based on \$8.10/bu soybean and \$30/ac cover crop seed and drilling cost.

Summary:

- There was no grain moisture difference between the soybeans following the rye cover crop treatment and the soybeans following the no cover crop check.
- Yield was 1.2 bu/ac higher for the soybeans following the rye cover crop; however, marginal net return was lower for the soybeans following the rye cover crop due to increased input costs for establishing cover crops.

Summary of Previous Years (Year 1 and 2)

2017

In year one (2017), cover crops were drilled on November 1, 2016. Rye was terminated with glyphosate on May 5, 2017. Soybeans were drilled in 10" rows on May 8, 2017.

Results:

	Moisture (%)	Soybean Yield (bu/ac) [†]	Marginal Net Return [‡] (\$/ac)
Check	12.0 B*	80 A	714.25 A
Cover Crop - Rye	12.1 A	81 A	692.20 B
P-Value	0.058	0.682	0.008

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

[†]Bushels per acre corrected to 13% moisture.

[‡]Marginal net return based on \$8.90/bu soybean and \$24.30 cover crop cost.

2018

In year two (2018), cover crops were drilled on October 21, 2017 following soybean harvest. Cattle pastured the rye in March and early April. The rye was terminated with glyphosate on May 6, 2018 at a height of approximately 15". Corn was planted into the strips on April 28, 2018. Due to poor stand resulting from fertilizer salt injury the field was replanted on May 17, 2018.

Results:

	Moisture (%)	Corn Yield (bu/ac) [†]	Marginal Net Return [‡] (\$/ac)
Check	15.5 A*	227 A	733.70 A
Cover Crop - Rye	15.6 A	228 A	713.43 B
P-Value	0.219	0.454	0.014

*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 \$3.23/bu corn and \$24.30 cover crop cost.

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