

Cereal Rye Cover Crop Effect on Corn Yield

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Objective

To evaluate effect of cereal rye cover crop on corn yield.

Background

Cooperator:	O.A.R.D.C. NW Branch	Variety:	Pioneer PO518 XR
County:	Wood	Fertilizer:	150 lb/ac nitrogen, sidedress
Nearest Town:	Hoytville	Planting Date:	April 21, 2010
Drainage:	Systematic tiled	Planting Rate:	30,000 seeds/ac
Soil type:	Hoytville, clay	Row Width:	30 in.
Tillage:	no-till	Herbicides:	Lexar, Princep, 2,4-D,
Previous Crop:	Corn	Harvest Date:	September 15, 2010

Methods

The entries were replicated four times in a randomized complete block design. Plot size- 10 x 80 feet each entry. Harvest data was collected from the center 2 rows. On October 22, 2009, cereal rye cover crop was drilled into soybean residue at a rate of 1.5 bu/acre. On April 14, 2010 these cover crop plots were killed with Glyphosate, 2,4-D ester spray. Rye stand was adequate to cover the soil. Plots were planted no-till. This was the third year of continuous corn.

Results

Corn Yield (bu/A) Response to Cereal Rye Cover Crop	
	Yield (bu/A)
Cereal Rye	98.5 a
No cover crop	87.6 b
LSD (0.10)	8.2

Summary

Using a cereal rye cover crop had a significant corn yield increase when compared to no cover crop. This experiment is the third year in continuous no-till corn. A cereal rye cover crop has improved the ability of corn production in a high residue situation. Due to dry conditions in July and August, the rye may have preserved soil moisture and resulted in an increase in corn production. Yields were below normal in surrounding production fields due to dry soils. Harvest populations were similar in the comparison. Caution should be used to scout for potential corn pests when planting corn into a cereal rye cover crop.

Per acre economics

Value of corn yield increase:

$$10.9 \text{ bu} \times \$ 5.00 / \text{bu} \text{ (corn price)} = \$ 54.50$$

Cost of cereal rye cover crop:

$$1.5 \text{ bu} \times \$ 12.00 / \text{bu} \text{ (seed cost)} = \$ 18.00$$

$$\text{Net return from cover crop} = \$ 36.50$$

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