

# Cereal Rye Cover Crop Effect on Soybean Yield

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## Objective

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

## Background

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Cooperator:	O.A.R.D.C NW Branch	Variety:	Pioneer 93Y10
County:	Wood	Planting Date:	May 31, 2010
Nearest Town:	Hoytville	Planting Rate:	180,000
Drainage:	Systematic tiled	Row Width:	7.5 in.
Soil type:	Hoytville, clay	Herbicides:	Glyphomax xtra, 2,4-D, Canopy
Tillage:	notill	Harvest Date:	October 1, 2010
Previous Crop:	Corn		

## 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 5 feet. On November 6, 2009, cereal rye cover crop was drilled into corn 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. Plots were planted with a drill no-till.

## Results

Soybean Yield (bu/A) Response to Cereal Rye Cover Crop	
	Yield (bu/A)
Cereal Rye	51.0 a
No cover crop	46.1 b
LSD (0.20)	4.5

## Summary

Using a cereal rye cover crop had a significant soybean yield increase when compared to no cover crop. July and August were drier than normal and the rye residue may have behaved as a mulch preserving moisture during these dry months. Planting was delayed, so soil temperatures were warm by the time of planting so the rye residue did not interfere with warming of the soil. Less crusting occurred with the rye residue resulting in larger and more even stands than the bare soil which may have contributed to greater yields.

### Per acre economics

Value of soybean yield increase:

$$4.9 \text{ bu} \times \$12.00 / \text{bu} \text{ (soybean price)} = \$ 58.80$$

Cost of cereal rye cover crop:

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

$$\text{Net return from cover crop} = \$ 40.80$$

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