

Timing of Cover Crop Rye Termination in No-Till Soybeans

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Objective

To determine of effects of timing of cover crop rye termination with herbicides on no-till soybean grain yield.

Background

Crop Year:	2014	Soil Test:	6.1 pH, P 32 ppm, K 127 ppm
Location:	Fayette, OH	Planting Date:	May 28, 2014
County:	Fulton	Fertility:	applied with corn
Soil Type:	Fulton-Shinrock	Seeding Rate:	150,000 seeds per acre
Drainage:	Random	Variety:	Pioneer 93Y22
Previous Crop:	Wheat	Harvest Date:	November 2, 2014
Tillage:	No-till	Rain (Apr-Sept):	10.94"

Methods

This trial was designed with three treatments replicated four times in a randomized, complete block design. As more and more producers are utilizing cover crops in their agronomic crop rotation, more questions regarding the timing of cover crop termination arise. Treatment plots were field length (over 2,000 feet) by 60 feet wide (sprayer width). All plots received the same fertilizer, seed and insecticide/fungicide treatments during the growing season in addition to 1 pint per acre of 2-4, D applied in the fall of 2013. Plots were sprayed with the rates and treatments below and 35 foot centers were harvested with a commercial combine. No additional herbicide (post) was sprayed after the treatments. Yield and moisture measurements were made with a calibrated Ag Leader monitor. Yields were adjusted to 13% moisture. Precipitation data was downloaded from weather.com.

Treatments:

1. CC rye terminated in early April with 1 pint/ac of 2-4,D, 2 pints/ac of glyphosate, 4.25 oz/ac of Glory, and 3.5 oz/ac of Envive
2. CC rye terminated 7 days preplant with 1 pint/ac of 2-4, D, 2 pints/ac of glyphosate, 4.25 oz/ac of Glory, and 3.5 oz/ac of Envive
3. CC rye terminated at planting with 2 pints/ac of glyphosate, 4.25 oz/ac of Glory and 3.5 oz/ac of Envive only.

Results

Table 1. Soybean Yield Response to Timing of CC Rye Termination

Treatment	Moisture %	Yield (lbs/A)
Termination in early April	13.7	45.7 A
Termination 7 days preplant	13.7	46.4 A
Termination at planting	13.7	46.8 A
C.V. = 4.95	LSD (0.05)	4.0



Summary

There was no significant difference among these treatments. Visual inspection of the crop approximately 3 weeks post-treatment showed a 100% control of rye in treatment 1 (6-8" tall), 100% control of rye in treatment 2 (15-18" tall) and approximately 95% control of rye in treatment 3 (boot stage). Additional data like difference in weed suppression or organic matter content could be evaluated to see the benefits of this research in the future. Further data in the form of multi-year replications will add to the validity of these results.

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