

# Effect of Ascend Applied on R3 Soybeans in a Modified Relay Intercrop System

Steve Prochaska, Ohio State University Extension Field Specialist, Agronomic Crops  
Jason Hartschuh, OSU Extension Crawford County, Agricultural and Natural Resources  
Program Coordinator

## Objective

To evaluate grain yield response of modified relay intercropped soybeans to Ascend (a plant growth regulator) applied at soybean growth stage R3.

## Background

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Crop Year:	2013	Row width:	10 inches
Location:	OSU Unger Farm	Fertilizer (lbs N-P-K):	95-58-78
County/Town:	Crawford	Soybean Planting Date:	June 5, 2013
Soil Type:	Blount/Pewamo	Soybean Variety:	Pioneer P93Y24
Drainage:	Systematic	Seeding Rate:	225,000 seeds/acre
Previous Crop:	Wheat	Herbicide (Post):	1 qt glyphosate (7/22)
Tillage:	No – tillage	Treatment Dates:	July 26 & Aug. 14, 2013
Soil Test:	pH 6.2, P 34 ppm, K 152 ppm	Date of Harvest:	October 29, 2013
SCN Count:	(MRI area) 1160 eggs/100cc	Rain fall:	25.57 inches (5/16-10/2)

## Methods

Soybeans were interseeded into standing wheat with 10 inch row spacing on June 5, 2103 with a Great Plains 2010P precision drill mounted on a 3 point hitch with lift assist wheels. Pioneer P93Y24 were planted at a rate of 225,000 seeds per acre. Wheat was harvested on July 12, 2013. Wheat averaged 70 bushel per acre. An application of 1 quart of glyphosate was applied on July 22.

This study, in two different trials, used a randomized complete block design with two treatments replicated 4 times to compare the treatment yield effect of Ascend @ 6 oz /acre and a control (the July 26 trial had 3 replications). Ascend is a combination of .09% Cytokinin, .03% Gibberellic Acid, and .045% Indole Butyric Acid. The two trials conducted in different areas of the field and these plots were treated on July 26 (R2- R3) and August 14, 2013 when soybeans were in the R3 growth stage. Each plot was sprayed with a CO2 small plot sprayer calibrated to deliver 15 gallons per acre at 40 PSI. Plot size was 10 feet wide by 43.3 feet for the July 26 trial and 40 feet long for the August 14 trial. Plots were trimmed 5 feet. Plots were harvested on October 29, 2013 using a Kincaid 8-XP small plot combine harvesting the center five feet of each plot.

## Treatment

- 1) Ascend @6 oz/acre
- 2) Control (No Ascend applied)

## Results

Table 1. MRI soybean yield (adj. to 13% moisture) for application of Ascend on 7/26/13

<u>Treatment*</u>	<u>Mean yield (bu/acre)</u>
Ascend	52.8
Control	58

F=10.55, Significant; P>F= .03; CV =3.52, LSD 4.4  
\* 3 replications

Table 2. MRI soybean yield (adj. to 13% moisture) for application of Ascend on 8/14/13

<u>Treatment</u>	<u>Mean yield (bu/acre)</u>
Ascend	52.4
Control	48.8

F=.68, Not Significant; CV =3.52, P>F=.44, LSD 4.4

## Summary

This study was conducted at OSU Unger Farm in north central Ohio where Modified Relay Intercropping (MRI) is practiced. In 2013 there was a significant difference in soybean yield observed between the Ascend treatment and the control. There was lower soybean yield when Ascend was applied to soybeans at R2-R3 (July 26). However, there was not any effect of treatment when applied 2 weeks later on August 14. Ascend cost \$12.09 per acre for the product and another \$10.00 for application and adjuvants for a total cost of \$ 22.09 per acre. If soybeans were at \$12.87/bushel (price at harvest), it would take 1.7 bushels of soybeans to cover the cost of material and application.

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For more information, contact:  
Name: Steve Prochaska  
Address: 222 W. Center St.  
Marion, Ohio 43302  
prochaska.1@osu.edu



For more information, contact:  
Name: Jason Hartschuh  
Address: 112 East Mansfield Street  
Suite 303  
Bucyrus, Ohio 44820  
hartschuh.11@osu.edu

