

Effect of ASCEND on Soybean Grain Yield

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Objective

To evaluate yield response of soybeans to ASCEND, a plant growth regular, when applied at soybean growth stage R3/R4.

Background

Crop Year:	2013	SCN Count 3:	1689 eggs per 100cc
Location:	OSU Unger Farm	Soybean Planting Date:	May 16, 2013
County:	Crawford	Soybean Variety:	Pioneer P93Y06
Soil Type:	Blount/Pewamo	Herbicide:	3.5 oz Canopy, 1 qt glyphosate
Drainage:	Systematic	Herbicide (Post):	1 qt glyphosate 2 times
Previous Crop:	Corn	Treatment Date:	July 25 2013
Tillage:	No – tillage	Soybean seeding rate:	168,000 seeds/acre
Soil Test: pH 5.9, P 33.5 ppm, K 146 ppm		Date of Harvest:	October 2, 2013
SCN Count 1:	0 eggs per 100cc (drained)	Rain fall:	25.57 inches (5/16-10/2)
SCN Count 2:	2920 eggs per 100cc		

Methods

Pioneer P93Y06 soybeans were planted at a rate of 168,000 seeds per acre on May 16th with a Great Plains 2010P, 10 inch precision drill. The following herbicides were applied on April 24; Canopy at a rate of 3.5 oz/acre with 1 quart/acre glyphosate. Postemergence weed control was accomplished with two applications of 1 quart of glyphosate/acre, applied on June 18 and July 22. The study was conducted both on systematically tilled ground and spot tilled ground (same field).

This study used a randomized complete block design with two treatments replicated 4 times to compare the treatment yield effects of ASCEND at 6 oz/acre treated plots and an untreated control. ASCEND is a combination of 0.09% cytokinin, 0.03% gibberellic Acid; and 0.045% indole butyric acid. Plots were treated on July 25 using 15 gal/acre of water at 40 psi. Each plot was 10 feet wide and 40 feet long. Plots were trimmed to 35 feet in length. Plots were harvested on October 2 using a Hege 140 small plot combine harvesting the center five feet of the plot and the entire 35 foot length.

Treatments

- 1) ASCEND 6 oz/acre applied in 15 gallons of water at 40 psi
- 2) Control (no ASCEND applied)

Results

Table 1. Soybean grain yield adjusted 13.5% moisture (well drained soil)

<u>Treatment</u>	<u>Mean yield (bu/acre)</u>
ASCEND 6 oz	52.8
Control	55

F=.32, NS; P>F=.59, CV =10.38

Table 2. Soybean grain yield adjusted 13.5% moisture (poorly drained soil)

<u>Treatment</u>	<u>Mean yield (bu/acre)</u>
ASCEND 6 oz	44.9
Control	49.5

F=.71 , NS,P>F= .43; CV =16.52

Summary

There is not any treatment effects observed over the two field sites (same field, but different drainage). The cost of ASCEND was \$12.09/acre and another \$10.00/acre for application and adjuvants for a total cost of \$22.09/acre. If soybeans were \$12.23/per bushel (at harvest price), it would take a 1.8 bushel/acre increase to cover costs.

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