

Foliar Fertilizer to Increase Soybean Yield and Profit

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Objective

To determine the effects of an application of foliar fertilizer on soybean yield and profitability.

Background

Crop Year:	2015	Seeding Rate:	185,000 seeds/ac
Location:	Metamora, OH	Soil Test:	pH 6.7, P 23 ppm*, K 122 ppm
County:	Fulton		CEC 14.1, O.M. 2.2%
Soil Type:	Hoytville	Planting Date:	May 22, 2015
Drainage:	Systematic	Harvest Date:	October 3, 2015
Previous Crop:	Soybeans	Rainfall:	23.4" (Apr-Sept)
Tillage:	Conventional		*Reported as Mehlich III

Methods

There are many foliar fertilizer products available to producers. One such product is Kip Cullers Nutrient Compass (Conklin Co) which has an analysis of 3-4-8 with trace amounts of sulfur, boron, manganese, molybdenum and zinc. A one quart/acre rate of Nutrient Compass nets .08 lb N, .1 lb P, .2 lbs K per acre.

This research trial included a treatment with foliar fertilizer and a check treatment without. Both treatments were replicated five times in alternating strips in a complete block design. Plots were approximately 750 feet long by 60 feet wide. Soybean variety was Asgrow 2935. All other fertilizer, tillage, and herbicide operations were the same across treatments. Foliar fertilizer treatments were broadcast at a rate of 1 quart/acre at soybean growth stage R1 with a 60 foot sprayer. Plot centers were harvested with a 35 foot header on a JD 9770 combine. Yield data were collected with a calibrated Greenstar 2 yield monitor and calculated at 13% moisture content (Dry Yield). Weather data were obtained from CoCoRaHS (OH-LS 23 station).

- Treatments:
1. Nutrient Compass foliar fertilizer (1 qt/ac)
 2. Check strip with no foliar fertilizer



Results

<u>Treatment</u>	<u>Dry Yield</u>	<u>Gross Revenue</u>	<u>Fert+App Cost</u>	<u>Net Return/ac</u>
1. Nut. Compass (1 qt/ac)	54.6 a	\$491	\$9.28	\$482
2. Check	52.9 b	\$476	\$---	\$476
LSD (p<.05)	.39 bpa	CV = .41 bpa		

Economics: Gross income= yield x \$9.00/bu

Nutrient Compass cost = \$12.50/gal or \$3.13/qt (source: On-Farm Research Collaborator)

Application cost = \$6.15/ac (source: 2014 OSUE Custom Farm Rental Rates)

Discussion:

The research data showed a statistically significant difference in yield between the treatments of +1.7 bushel per acre. Based on one year of data, treatment 1 with foliar fertilizer achieved an additional \$6/ac of net returns. Further data in the form of multi-year replications will add to the validity of these results.

Acknowledgement

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