

# Soybean Yield Response to Foliar Fertilizer

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## Objective

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

## Background

Crop Year: 2016	Soil Type: Hoytville clay loam
County: Fulton	Tillage: No-till
Location: Metamora, Ohio	Soil Test: pH 6.6
Drainage: Systematic, 40' laterals	P 30 ppm (Bray-P1)
Previous Crop: Corn	K 200 ppm
Variety: Asgrow 2836	CEC 14.2
Population: 170,000	O.M. 3.8%
Planting Date: May 28, 2016	Starter Fertilizer: applied VRT in corn year
Harvest Date: October 7, 2016	Rainfall (May - August): 13.1"
Herbicide: Roundup, Sharpen, metribuzin	

## Methods

There are many foliar fertilizer products available to producers. One such product is Finish Line (Nachurs) which has 0.8-0.4-0.6 (NPK) with trace amounts of boron, copper, manganese, and zinc. A one quart/acre rate of Finish Line nets 0.2 lb N, 0.1 lb P<sub>2</sub>O<sub>5</sub>, 0.15 lbs K<sub>2</sub>O per acre.

This research trial included a treatment with foliar fertilizer and a check treatment without. Both treatments were replicated four times in alternating strips in a complete block design. Plots were approximately 750 feet long by 90 feet wide. Soybean variety was Asgrow 2836. All other fertilizer, tillage, and herbicide operations were the same across treatments. Foliar fertilizer treatments were sprayed at a rate of 1 quart/acre at soybean growth stage R1 on June 29, with a 90 foot sprayer. Plot centers were harvested with a commercial combine, and yield data were collected with a calibrated Greenstar 3 yield monitor and calculated at 13% moisture content. Weather data were obtained from CoCoRaHS (OH-LS 23 station).

- Treatments:
1. Check strip with no foliar fertilizer
  2. Finish Line

## Results

**Table 1. Soybean Response to Foliar Fertilizer**

Treatment	Yield (bu/ac)	Return Minus Foliar Cost (\$/ac)
Check	66.8 a	\$601
Finish Line	67.3 a	\$594
LSD (P<0.05, CV 1)	1.51	

\*Based on \$9/bu soybeans, \$4.50/ac for foliar sulfur product, \$7/ac for application (Source: 2016 OSUE Custom Farm Rates)



### **Discussion:**

The research data showed no statistically significant difference in yield across the treatments in 2016. A standard economic calculation shows that the untreated check returned the greatest amount at \$601/acre. Further data in the form of multi-year replications will add to the validity of these results.

### **Acknowledgement**

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