

Effects of Soybean Foliar Applications on Grain Yield

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Objective

To determine the best foliar application to increase soybean yield at plant growth stage R3.

Background

Crop Year: 2013

Location: Hodge Farms

County/Town: Miami/ Tipp City

Soil Type: Brookston SiCL, with some Crosby

Drainage: Pattern tiled

Previous Crop: Corn

Tillage: No till

Soil Test: pH 6.2, BpH 6.7, CEC 19.3,
P 26ppm, K 155 ppm

Planting Date: May 14

Seeding Rate: 165,000 s/A

Harvest Date: September 24

Methods

The trial was established as a randomized complete block, with sixteen strips in the grower's field; consisting of four treatments, replicated four times. The soybean variety was Wellman W4131RR. Foliar applications were applied at R3 reproductive growth stage (July 26), treated with a 60-foot wide sprayer in strips 1016 feet long. Harvest and a yield check was made with a Gleaner combine from one 30 feet wide pass from each plot. Grain was weighed by grain cart, calibrated against the local grain elevator's certified scales. Yield was calculated in bushels/acre at 13% moisture.

The following four treatments and rates of products were evaluated.

- 1) Untreated check
- 2) Fungicide: Quadris Top (Azoxystrobin + Difenoconazole) at 12 oz/A with an insecticide: Warrior (Lambda-cyhalothrin) at 1.6 oz/A
- 3) Liquid fertilizer: InstaGro (9-18-9-1) at 3 gallons/A
- 4) Liquid fertilizer: Prudent Presto Red (6-18-5 with Mn & B plus biological) at 1 gallon/A, with Spunk (0-0-6.5-4.5) at 1 gallon/A plus sugar at 1 lb/A

Results

An ANOVA (analysis of variance) was conducted. Results are shown in Table 1.

Table 1. Soybean Yield following foliar applications at R3.

Foliar treatment	Yield (bu/A)
Untreated	58.1
Fungicide + Insecticide (Quadris Top, Warrior)	60.6
Foliar fertilizer (InstaGro 9-18-9)	56.3
Prudent Presto Red, Spunk + sugar	56.5
LSD (0.10)	2.3
C.V. (coefficient of variance)	3.1

Summary

There was a significant difference among the treatments ($p= 0.027$) as shown in Table 1. The fungicide plus insecticide treatment (Quadris Top plus Warrior) was significantly higher in yield than the remaining treatments.

While there were noted a low incidence of Frogeye leaf spot, some Bean leaf beetle feeding and a low level of soybean aphids, levels appeared similar across treatments. No late greening effects were noted at one week before harvest.

Acknowledgement

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