Evaluation of Foliar Products on Soybean Yields

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Objective

To determine the soybean yield response to three foliar fertilizers, one foliar fungicide and one foliar insecticide both alone and in combinations.

Background

Crop Year:	2009	Planting Date:	May 11, 2009
Location:	South Charleston, OH	Seeding Rate:	203,000 seeds/acre
County:	Clark County	Variety:	Seed Consultants 9358 RR
Soil Type:	Kokomo	Harvest Date:	October 21, 2009
Soil Test:	Buffer pH 6.9, CEC 21, %OM 3.5, P 53 ppm, K 200 ppm		

Methods

This study was designed with eight treatments, replicated four times. Treatments were made in a randomized complete block. The treatments consisted of an untreated check and seven treatments consisting of combinations of foliar fertilizer, foliar insecticide and foliar fungicide. Treatments were:

1. Untreated control
2. Headline Fungicide at R2 (F)
3. F + Warrior insecticide at R2 (I)
4. F + I + 3-18-18 foliar fertilizer at V5 (VF)
5. F + I + VF + 26-0-0-0.5Boron foliar fertilizer at R3 (RF)
6. F + I + RF
7. F + I + VF + RF + Mn
8. F + I + VF + RF

The 3-18-18 fertilizer was applied foliar at a rate of 2.0 gallon per acre sprayed on June 30, 2009 with soybeans at V5 growth stage. Treatment 7 included one pint per acre of foliar manganese which was also sprayed on July 9, 2009 at growth stage V5. Headline foliar fungicide was applied at a rate of four ounces per acre to treatments 2 through 8 on July 9, 2009 at growth stage R2. Warrior foliar insecticide was applied on the same day to treatments 3 through 8 at a rate of 3.2 ounces per acre. The 26-0-0-0.5B fertilizer was applied foliar at a rate of 2.0 gallons per acre sprayed on August 3, 2009 with soybeans at R3 growth stage. All applications were applied with water as a carrier at 20 gallons of total volume applied per acre. Plot size was 10 feet wide by 40 feet.

Harvesting was accomplished with a small plot combine. Plot weights were determined by the plot combine. Harvest width was the center 6.56 feet (2 meters) and the harvest length was 40

feet. Moisture tests were taken for each plot using a hand held moisture meter. All yields were adjusted to 13% moisture.

Results

Soybean Yield (bu/A) Response to Foliar Products

Trtmt		Yield (bu/A)
1	Untreated control	70.3
2	Headline Fungicide at R2 (F)	70.4
3	F + Warrior insecticide at R2 (I)	69.7
4	F + I + 3-18-18 foliar fertilizer at V5 (VF)	68.7
5	F + I + VF + 26-0-0-0.5B foliar fertilizer at R3 (RF)	68.4
6	F + I + RF	68.3
7	F + I + VF + RF + Mn	71.3
8	F + I + VF + RF	70.1
	LSD (0.05)	NS

Summary

This study found no significant yield response to the foliar product applications. The fertilizer product costs were $12.50 per acre for 3-18-18 and $13.30 per acre for 26-0-0-0.5B for the application rates of 2 gallons per acre used in this study. Headline at 4 oz per acre was estimated to cost $13.12 per acre (material only) and Warrior insecticide at 3.2 oz per acre was estimated to cost $6.00 per acre (material only).

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