

Evaluation of Foliar Fertilizer on Soybean Yields

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Objective

To determine the soybean yield response to two foliar fertilizers applied alone and in combination

Background

Crop Year:	2009	Tillage:	Fall chisel, disk, harrow
Location:	Ayersville, OH	Soil Test:	pH 6.2, P 10 lbs/acre, K 193
County:	Defiance County		lbs/acre, 11/25/09
Soil Type:	Haskins Loam, Roselms silty clay, Paulding Clay	Planting Date:	May 22, 2009
Drainage:	Surface drainage	Seeding Rate:	185,000 seeds/acre
Previous Crop:	Wheat	Variety:	USA 285RR
		Harvest Date:	October 21, 2009

Methods

This study contained three treatments and a control replicated three times in a randomized complete block design. The treatments consisted of a non-treated check and three foliar applied fertilizer programs. Treatments were:

1. Non-treated control
2. 3-18-18 foliar fertilizer at V7-R1
3. 26-0-0-0.5B foliar fertilizer at R4-R5
4. 3-18-18 at V7-R1 followed by 26-0-0-0.5Boron at R4-R5

The 3-18-18 fertilizer was applied foliar at a rate of 2.0 gallon per acre sprayed on July 21, 2009 with soybeans at V7-R1 growth stage. The 26-0-0-0.5B fertilizer was applied foliar at a rate of 2.0 gallons per acre sprayed on August 14, 2009 with soybeans at R4-R5 growth stage. All applications were applied with water as a carrier at 13 gallons of total volume applied per acre. Plot size was 90' wide (one sprayer pass) by 310 feet to 1080 feet in length.

Harvesting was accomplished with a John Deere 6600 combine. Plot weights were determined with a weigh wagon. The sprayer wheel tracks were removed from the center of each plot with the 15' grain head. The harvested plot area was taken from one 15' pass on each side of the removed center. The length of both passes were measured with a ground measuring wheel and used to calculate plot area. Moistures were taken with a hand held moisture meter for each plot. All yields were adjusted to 13% moisture.

Results

Soybean Yield (bu/A) Response to Foliar Fertilizers		Yield (bu/A)
Non-treated control		31.5
3-18-18 @ V7-R1		33.4
26-0-0-0.5B @ R4-R5		28.7
3-18-18 @ V7-R1 f/b 26-0-0-0.5B @ R4-R5		35.4
f/b = followed by	LSD (0.05)	NS

Summary

This study found no significant yield response to the foliar fertilizer 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. Yields across all treatments and the control were lower than expect due to lack of timely rainfall and potentially the fields low soil test level of phosphorus and potassium.

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