

Evaluation of Foliar Products on Soybean Yields

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Objective

To evaluate various inputs on soybean yield and net income.

Background

Cooperator:	O.A.R.D.C. NW Branch	Fertilizer:	150lb/ac 18-46-0 fall 2008
County:	Wood	Planting Date:	5-21-09
Nearest Town:	Hoytville	Planting Rate:	180,000 seeds/acre
Drainage:	Tile, well-drained	Row Width:	7.5 in.
Soil type:	Hoytville, clay	Herbicides:	Canopy, Showdown, 2,4-D
Tillage:	notill		Ester, Roundup Weathermax,
Previous Crop:	corn		liquid AMS
Variety:	Pioneer 93Y10	Harvest Date:	10-19-09
Soil test: CEC:	18.4, OM: 2.3, pH: 6.7, P: 55		
lb/ac, K:	360 lb/ac		

Methods

The entries were replicated four times in a randomized complete block design. Plot size- 10 x 80 feet each entry. Harvest data was collected from the center rows.

All treatments received the same tillage, herbicide, seeding rate, and pre-season fertilizer applications. On July 13, 2009 applications were made to all treatments at growth stage R2- R3.

Foliar Fungicide = Headline at 6 oz/ac

Foliar Insecticide = Mustang Max at 2.8 oz/ac

Foliar Fertilizer = Crop Booster (5 % Mn, 2.8% Sulfur) at 1 qt/ac {source: Morrall Chemical Co.}

Treatment	Foliar Fungicide	Foliar Insecticide	Foliar Fertilizer
1	none	none	none
2	R 2	none	none
3	none	R2	none
4	none	none	R 5
5	R 2	R2	none
6	none	R2	R 5
7	R 2	none	R 5
8	R 2	R2	R 5

Results Maximum Yield = Treatments 4, 6, 7, 8
 Yields followed by the same letter are not significantly different

Treatment	Foliar Fungicide	Foliar Insecticide	Foliar Fertilizer	Soybean Yield Bu/ac	
1	none	none	none	53.4	A
2	R 2	none	none	54.3	A
3	none	R2	none	53.3	A
4	none	none	R 5	59.7	C
5	R 2	R2	none	55.3	AB
6	none	R2	R 5	60.9	C
7	R 2	none	R 5	58.0	BC
8	R 2	R2	R 5	58.8	C
LSD (0.10)				2.9	

Economic Analysis

All calculations on a per acre basis

Input costs

Foliar Fungicide = \$19.69

Foliar Insecticide = \$ 6.02

Foliar Fertilizer = \$ 2.87

Treatment	Foliar Fungicide	Foliar Insecticide	Foliar Fertilizer	Total Treatment Input costs/ac
1	none	none	none	0
2	R 2	none	none	19.69
3	none	R2	none	6.02
4	none	none	R 5	2.87
5	R 2	R2	none	25.71
6	none	R2	R 5	8.89
7	R 2	none	R 5	22.56
8	R 2	R2	R 5	28.58

Income calculation = Revenue from soybean yield @ \$10.50/ bu

Treatment	Foliar Fungicide	Foliar Insecticide	Foliar Fertilizer	Total Revenue
1	none	none	none	560.70
2	R 2	none	none	570.15
3	none	R2	none	559.65
4	none	none	R 5	626.85
5	R 2	R2	none	580.65
6	none	R2	R 5	639.45
7	R 2	none	R 5	609.00
8	R 2	R2	R 5	617.40

Profit

Variable & Fixed Costs from 2009 OSU Soybean Production Budget

Treatment	Total Revenue	Variable & Fixed Costs	Total Treatment Costs	Profit \$/acre
1	560.70	459.51	0	\$ 101.19
2	570.15	459.51	19.69	\$ 90.95
3	559.65	459.51	6.02	\$ 94.12
4	626.85	459.51	2.87	\$ 164.47
5	580.65	459.51	25.71	\$ 95.43
6	639.45	459.51	8.89	\$ 171.05
7	609.00	459.51	22.56	\$ 126.93
8	617.40	459.51	28.58	\$ 129.31

Summary

The most profitable treatment was foliar fertilizer and insecticide. Next most profitable was foliar fertilizer only. The Crop Booster foliar fertilizer was a common input to treatments with significant yield increase. This location did not have significant insect feeding damage or significant foliar disease damage. No root disease was present.

Acknowledgement

Support received from the Ohio Soybean Council. Crop Booster foliar fertilizer donated by:

Morrall Companies, LLC
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