Evaluation of Insecticide, Fungicide and BioForge Foliar Treatments on Soybean Yields

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Objective

To determine soybean yield response to added foliar treatments.

Background

Crop Year:	2011	Soil Test:	pH=6.2, Buffer=6.9, CEC= 6.8, ppm-P=72, ppm K=150, OM=2.4
Location:	Delta, OH		
County:	Fulton County		
Soil Type:	Granby, Tedrow, Ottokee (Loamy Fine Sands)	SCN Count:	2760 eggs/100 cc of soil
		Planting Date:	May 12, 2011
Drainage:	Subsurface Drainage 50 ft spacing	Seeding Rate:	175,000 seeds per acre
		Row Width:	15 inches
Previous Crop:	Corn	Variety:	Pioneer 93Y03 SCN-R
Tillage:	Disk	Harvest Date:	October 6, 2011

Methods

This study was designed with three treatments and an untreated control which were replicated three times in a randomized complete block design. Treatments were:

1. Non-treated Check
2. Asana (6 oz/A) at R5.5
3. Asana (6 oz/A) at R5.5 + Headline (6 oz/A) at R2
4. Bioforge (16oz/A) Prior to R1, Asana at R5.5 +Headline (6 oz/A) at R2

These plots were established as an additive study to address conditions throughout the growing season in an attempt to maximize yield. The first product applied was BioForge produced by Stoller USA's which is advertised as the only stress-reducing yield enhancer that up-regulates specific genes associated with root development and ethylene reduction for significantly improved yield, quality and return on investment. Bioforge was applied just prior to the initiation of flowering on June 29 with Roundup application. The soil types in this field are loamy fine sands subject to drought. Headline Fungicide was applied due to wet conditions during the month of July. Insecticide applications occurred late in the season on August 8 due to a continuing soybean aphid presence of 100 aphids per plant and other foliar feeding insects.

The entire treatment area was planted to Pioneer 93Y03. The variety is rated a 3.0 maturity soybean with Phytophthora Rsp1K resistance gene and 5 partial resistance, 4 for sudden death syndrome, 5 for frogeye leaf spot, 4 for brown stem rot and 4 for Sclerotinia. The variety has a soybean aphid antibiosis rating of A. The disease scale in company supplied literature is 9=excellent and 1=Poor.

The plot was harvested with an IH 2366 combine equipped with a calibrated Ag Leader 3000 yield monitor. Two swath widths consisting of the center 40 feet of each 80 foot wide plot were separated from the harvest yield file to determine yield. The data was post processed with ArcView GIS 3.3 software and Enhanced Farm Research Analyst Version 1.12 module.

Results

Soybean Yield Response to Insecticide, Fungicide and Foliar Fertilizer Application

Treatment	Yield (bu/A)	Moisture (%)
Non-treated Check	63.5	10.8
Asana XL (6.4 oz/A) plus Lorsban (6 oz/A)	64.5	10.3
Asana XL (6.4 oz/A) plus Lorsban (6 oz/A) + Headline (6 oz)	65.8	10.5
BioForge (16 oz/A) + Asana XL (6 oz/A) + Headline (6 oz/A)	64.6	9.9
LSD (P<0.10)	NS	NS
CV%	8.1	6.0

Weather Data for 2011, Toledo Express Airport (7 miles from test site)

Month	Precipitation	Departure from Normal Precipitation	Average Temperature	Departure from Normal Temperature
April	6.33	3.09	48.1	-0.2
May	5.88	2.74	61.1	1.5
June	0.51	-3.29	70.8	2.0
July	3.34	0.54	78.8	5.8
August	3.19	0.04	71.7	0.2
September	6.51	3.73	62.8	-1.3
October	3.16	0.56	52.4	0.1

Summary

No yield differences were noted. Overall yields for the field were very good for the soil type when compared to historical farm averages. No foliar or root disease was observed during the growing season. A lingering soybean aphid population was first observed in the field on July 15th. The population built to 100 per plant along with populations of beanleaf beetle and other foliar feeders by growth stage R5.5 and treatment was made. The site is managed with soybeans every fourth year in the rotation due to the SCN management plan implemented on the farm.

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