

Effect of Multiple Inputs on Soybean Grain Yield

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Objective

To evaluate yield response of soybeans to Quilt XL R2, Quilt XL R4, Warrior, and Urea.

Background

Crop Year: 2014

Location: OSU Unger Farm

County/Town: Crawford

Soil Type: Blount

Drainage: Systematic

Previous Crop: Corn

Tillage: No – tillage

Soil Test: pH 6.5, P 63 ppm, K 197 ppm

Soybean Planting Date: May 11, 2014

Soybean Variety: Pioneer P93Y05

Herbicide: 3.5 oz Canopy, 1 quart glyphosate

Post: 1 quart glyphosate

Treatment Date: July 16, 2014 or August 1, 2014

Soybean Seeding Rate: 160,000 seeds/acre

Date of Harvest: October 2, 2014

Rainfall: 12.5 inches (from 5/11-9/1)

Methods

Pioneer P93Y05 soybeans containing SCN resistance PI88788 were planted at a rate of 168,000 seeds per acre on May 11th with a Great Plains 2010P, 10 inch precision drill.

All treatments received the following burndown and pre-emergent herbicides on May 1: Canopy at a rate of 3.5 oz/acre with 1 quart/acre glyphosate. Post-emergence weed control was accomplished with one application of 1 quart of glyphosate/acre, applied on July 2. This section of the field is untilled. Treatments were Quilt XL applied at 10.5 ounces per acre at R2 ; Quilt XL applied at 10.5 ounces per acre at R4; Warrior applied at 1.6 ounces per acre at R4; and 50 pounds of actual nitrogen applied as urea at R4.

Treatments were applied on July 16th and August 1st. On July 16th plots had low insect pressure with less than 2% defoliation and only a few grasshoppers in the field. Foliar disease pressure was also low with only Frogeye Leaf Spot present with one lesion on 2% of the plants.

On August 1st insects present were: green stink bugs, bean leaf beetles, ladybugs, and grasshoppers. Defoliation was still less than 4% and none of the insects were over scouting thresholds. Foliar disease was detected with frogeye leaf spot at 1-3 spots on 4% of the plants. Quilt XL and Warrior plots were sprayed with a CO₂ small plot sprayer calibrated to deliver 15 gallons per acre at 40 PSI. Urea was spread using a hand held rotary spreader.



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This study was arranged in a randomized complete block design replicated four times. Each plot was 10 feet wide and 45 feet long. Plots were trimmed to 40 feet in length. Plots were harvested on October 2nd using a Kincaid 8 XP small plot combine harvesting 7.5feet of the plot and the entire 40 foot length.

Treatments

- 1) Quilt XL at R2
- 2) Quilt XL at R4
- 3) Warrior at R4
- 4) 50 lb/acre of nitrogen/108 lb/acre urea
- 5) Control

Results

Table 1. Soybean yield adjusted to 13.5 % moisture

Treatment	Mean yield (bu/acre)
Quilt XL @ R2	70.2 a
Quilt XL @R4	63.6 a
Warrior @ R4	69.5 a
108 # Urea	66.6 a
Control	66.4 a

P>F=0.162, NS; STD=5.94; CV=8.83

Summary

There were no significant differences observed in yield between the control and all the treatments.

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