

## Effect of Warrior Applied at the R2 or R4 Growth Stage on Soybean Grain Yield

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### Objective

To evaluate yield response of soybeans to Warrior (lambda-cyhalothrin) insecticide applied at soybean growth stages R2 or R4.

### Background

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Crop Year: 2014

Location: OSU Unger Farm

County/Town: Crawford

Soil Type: Blount/Pewamo

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: NK- S29-V2 CMV+C (twin)

Pioneer 93Y05 (10 inch)

Herbicide: 3.5 oz Canopy, 1 quart glyphosate

Post: 1 quart glyphosate

Treatment Date: July 17, 2014 or August 1, 2014

Soybean Seeding Rate: 160,000 seeds/acre -

Twins

168,000 seeds/acre-10 inch

Date of Harvest: October 2, 2014

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

### Methods

Trial A (Twins): NK S29-V2 soybeans containing SCN resistance source PI88788 to races R3 and MR14 were planted at a rate of 160,000 seeds per acre on May 11<sup>th</sup> with a Great Plains YP 425A, Twin row (rows 8 inches apart with a 22 in skip) precision planter.

Trial B (10 inch): Pioneer P93Y05 soybeans containing SCN resistance PI88788 were planted at a rate of 168,000 seeds per acre on May 10<sup>th</sup> with a Great Plains 2010P, 10 inch precision drill.

All treatments received the following burndown and pre-emergent herbicide applications 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 applications of 1 quart of glyphosate/acre, applied on July 2. The field is systematically tilled.

Treatments were Warrior (lambda-cyhalothrin) at 3.2 ounces/a applied at R2/R3, Warrior applied at 3.2 ounces/a at R4, and an untreated control. R2/R3 treatments were applied on July 17, with defoliation below 3% and grasshoppers, Japanese beetles and corn rootworm beetles present. R4 applications were made on August 1<sup>st</sup> with plant defoliation around 4 percent; the insects present included grasshoppers, bean leaf beetles, and green stink bugs. Each plot was sprayed with a CO<sub>2</sub> small plot sprayer calibrated to deliver 15 gallons per acre at 40 PSI.

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 2<sup>nd</sup> using a Kincaid 8 XP small plot combine harvesting seven and a half feet of the plot and the entire 40 foot length.

## **Treatments**

- 1) Warrior applied on July 16<sup>th</sup> at R2/R3
- 2) Warrior applied on August 1<sup>st</sup> at R4
- 3) Control

## **Results**

Table 1. Trial A (Twin row soybeans): Soybean yield adjusted to 13.5 % moisture

Treatment	Mean yield (bu/acre)
Warrior @ R2	70.8
Warrior @ R4	68.9
Control	65.8

P>F=0.099, NS; STD=4.31; CV=6.32

Table 1. Trial B(10 inch soybeans): Soybean yield adjusted to 13.5 % moisture

Treatment	Mean yield (bu/acre)
Warrior @ R2	70.7
Warrior @ R4	69.2
Control	69.0

P>F=0.84, NS; STD=3.47; CV=4.99

## **Summary**

There were no significant differences observed in yield. Defoliation levels and individual insect population levels were below threshold. In trial A there is a 5 bushel non-significant difference between the control and the R2 treatment based on the large CV we can concluded that there was a large yield variation between replications in this trial due to field variation.

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