



ROI OF SOYBEAN FOLIAR INSECTICIDES *ACTION TRIAL PROTOCOL*

In partnership with **UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN**

PROTOCOL AUTHORS – Nick Seiter, University of Illinois

Reviewed by the ISA OFTN Team

OBJECTIVE – Determine how often soybean insecticide foliar applications provide a positive return in protected yield and which insect pests are responsible when they do.

- Number of locations: 4 on-farm sites
- Geographic scope: Statewide

TREATMENTS – Comparison of commercial foliar insecticide treatment to control treatment without this insecticide applied.

Insecticide Treatment:

- Foliar insecticide application at R3

Control Requirements:

- Except for foliar insecticide being compared, all other management should be the same as the plots with insecticide treatment.

Treatment Rationale:

- The specific treatment is flexible depending on the interest of the farmer. For instance, we could test the addition of a pyrethroid insecticide to a planned fungicide application, compare a premix insecticide to a single active ingredient, or compare fungicide + insecticide seed treatment with fungicide-only.

PLOT LAYOUT – Flexible depending on equipment and field dimensions.

- Minimum field size of 40 acres.
- Trials will consist of at least 4 replications of both a control and foliar insecticide treatment (total of 8 plots), each a minimum of 60 feet wide.
- Width of plots can be adapted to farmer's equipment.
 - Must be wide enough to measure yield using farmer's harvest equipment.
 - Minimum width is the larger of either 60 ft or twice the width of the combine header (to avoid edge effect).

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EQUIPMENT NEEDED

- Appropriate equipment to apply treatment
 - Foliar spray equipment
 - Drone application service within range and able to be contracted
- Combine with a calibrated yield monitor

FIELD WORK AND MEASUREMENTS COLLECTED

- Agronomic management information - *Farmer provided*
 - Previous 3-5 years of basic management information preferred
 - More detailed current year's management information
- Field applications - *Farmer responsible*
- Baseline soil fertility sampling & analysis - *ISA responsible, spring*
- Insect counts and injury assessments, 4-8 times throughout the season - *performed by the Seiter laboratory*
- Yield monitor data - *Farmer provided, post-harvest*

FOLIAR APPLICATION PROCESS

- Insecticide will be applied to the field in replicated strips according to a plot map coordinated with ISA. This map can be imported as a shapefile into most spray drones.
- An application plan (whether applied using a ground rig or drone), including who will make the application (farmer, custom applicator, etc.) should be approved prior to enrollment in the protocol.
- The insecticide used will be chosen in consultation with the farmer based on interest, previous use, etc., but we have typically used a pyrethroid like lambda-cyhalothrin or bifenthrin.

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