

Soybean Entomology: Management and Outreach for New & Existing Pests in North Central Region

Funding: \$500,000

Principal Investigator

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Overview of project objectives

Insects can not only reduce soybean yield but can also reduce grain quality and alter oil and protein content, leading to reduced soybean production and market value. Inefficient and inaccurate pest management further adds to a potential reduction in farm profitability.

Through this collaborative, multi-year research project, some 25 specialists are working to understand insect pest and soybean plant interactions and biology and are working to evaluate management options for controlling new and existing soybean pests across four main areas: Extension outreach and farmer feedback, insect management and profitability, aphid-resistant soybean variety development and virulence management and insect monitoring. Objectives within these areas address the following:

- Efficient, cost-effective management of defoliating insects
- The role of cover crops relative to insects in soybean production
- Documented and growing problems with aphid resistance to insecticides
- Management of *Dectes* stem borer
- Assessing ability of honeybees to improve soybean yield
- Advancing aphid-resistant soybean varieties for wide scale commercialization through a public-private partnership
- Developing regional monitoring programs for pest and beneficial insects
- Evaluating farmer priorities and needs to inform future research and disseminate project results

Key results

This project builds on past NCSRP entomology research investment in providing insect control solutions for farmers:

- Insecticide-resistant soybean aphids have been found in four states, with the problem spreading each year. Researchers are using various tools to measure this resistance and learn more about how to manage resistance.
- NCSRP's collaborative work with industry to develop aphid-resistant soybean lines is nearing fruition. Together with seed partner Corteva, soybean varieties to combat aphids are nearing commercialization.
- NCSRP research on pollinators is making progress in assessing whether honeybees can improve soybean yields.
- Researchers continue to look at the role of cover crops in pest management; finding ways to control *Dectes* stem borer and maximizing management of defoliating insects like Japanese beetle, clover worm and bean leaf beetle.

Benefit to farmers

Coordinated, collaborative research and outreach is the most efficient way to address insect pest problems that affect soybean production and profitability across the region. Researchers in the fields of entomology, agronomy and plant pathology are coordinating their evaluations of new management resources to provide solutions to farmers for existing and new and emerging pests as quickly as possible. These multi-state efforts create greater research efficiencies and make research results applicable to a broad geographic area.

USB National Soybean Checkoff Research Database link

[Soybean Entomology in the North Central Region: Management and Outreach for New and Existing Pests](#)