



Project  
GREEN

# IMPACT

*Addressing plant industry research and educational needs and sustaining Michigan's plant agriculture industry*



## Determining Best Management Practices for Control of the Soybean Aphid in Michigan

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**Project length: 1 year (fiscal year 2002)**

The soybean aphid has threatened Michigan's 2.1 million acres of soybeans since its arrival in Michigan in 2000. It was initially thought that natural enemies such as ladybird beetles and green lacewings could effectively control the pest, but preliminary field trials showed that this was not true. Preliminary data collected in 2001 indicated that there may be an advantage to chemical control of the pest, but further studies were needed to establish an economic threshold to guide growers in deciding when or if to spray.

### Objectives

- Quantify the soy yield loss caused by soybean aphid infestation.
- Quantify the effect of insecticide application timing on soy yield.
- Correlate soybean aphid populations with the yield loss.

# 2003 Field Crops

## Challenges

Very little information existed to help growers establish strategies for controlling soybean aphid damage. This could lead to unnecessary production expenses for growers and the improper use of pesticides.

## Conclusions

- Spraying for low aphid populations does not result in a soybean yield increase; therefore, growers should not apply insecticides to control populations less than one per leaflet.
- Spraying aphids early in the season is not a reliable way to prevent an aphid outbreak later in the growing season because aphid numbers cannot be predicted in advance. Current data suggests an insecticide application is warranted when aphid populations reach 300 per plant.
- Developing a statistical correlation between aphid population and yield loss was not possible because of low aphid populations in 2002.

## Industry impacts

Soybean growers should not apply insecticides to control low soybean aphid populations. If 25 percent of Michigan's 2.1 million acres of soybeans were not sprayed at low aphid numbers, growers could save more than \$5 million in pesticide costs and reduce the pesticide load on the land by more than 24,000 gallons of active ingredient.

## The future

Growers now have an aphid population threshold to determine whether it is economical to spray for infestation.

## Funding partners

Project GREEN awarded \$13,000 to this project, which secured \$1,800 of products from DuPont; \$1,200 worth of plot sprayings from several custom pesticide applicators; \$5,000 of in-kind support from Christina DiFonzo and her MSU technical support staff; and \$6,000 of in-kind support from MSU Extension for coordination of field trials. The direct support leverage factor for this project was 0.23.

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For more information on this project, visit <http://www.green.msu.edu/July03FINAL/02-039.pdf>.



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