

Small investments to battle soybean pest paying off big, says MSU researcher

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This is Michigan State University agricultural economist Scott Swinton. Credit: Scott Swinton, MSU

The small amount of money put toward fighting the tiny, yet destructive soybean aphid will pay big dividends in the coming years, said a Michigan State University economist, thanks to a research and outreach system developed during the last 50 years.

State and federal governments have spent \$17 million on [soybean aphid](#) research and education since 2003, MSU agricultural, food and resource economics professor Scott Swinton said. The net economic benefit of that integrated [pest management](#) work, or IPM, should reach \$1.3 billion

during the next 15 years, he said. That's an annual rate of return of 180 percent.

"This is an example of what a good payoff you can get as a result of long-term research," Swinton said. "There's been a half century of research into integrated pest management. In the process a lot of techniques were developed and lots of understanding was gained about the relationships between crop and pest life cycles, infestations and the weather to decide when it's necessary to control them without wasting money and creating health risks."

Integrated pest management "takes a comprehensive approach to pest management that balances economics with environmental and human safety, as well as with what makes sense on the ground in the local community," said Michael Brewer, MSU's IPM Program coordinator.

Controls, which might include chemical and [biological methods](#), are only put into action once a carefully determined cost-effectiveness threshold is crossed. Fewer than 250 aphids per plant, for example, probably won't impact soybean yield and early use of insecticides could actually kill beneficial insects such as [parasitic wasps](#).

"For me it's almost like having a good national defense system in case you're attacked in a time of war," Swinton said. "Having a good IPM research and outreach system enables you to respond rapidly to invasive species like the soybean aphid."

Soybeans are the second largest [cash crop](#) in the United States, exceeding 3 billion bushels in 2005 with sales of \$17 billion. Two-thirds of the crop goes to poultry, pig and cattle feed, and about a third is exported, according to government figures.

Soybean fields could be left insecticide-free in the Midwest until just

five or 10 years ago, when aphids began to appear in north-central states. By 2005, 22 percent of soybean acreage nationally was being treated for the sap-sucking pests, which stunt plant growth and transmit viruses. Michigan's acreage treatment rate rose to 42 percent by then, and Minnesota's to 56 percent.

Swinton and doctoral student Feng Song measured the cost of state and federal soybean aphid research and outreach programs since they began in 2003, and calculated the net benefits to growers and consumers during the next 15 years. They present their research results at the National IPM Symposium in Portland, Ore., March 24.

Source: Michigan State University ([news](#) : [web](#))

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