

Sulfoxaflor found to be less harmful to insect predators than broad-spectrum insecticides

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A new study appearing in the *Journal of Economic Entomology* has found that the selective insecticide sulfoxaflor is just as effective at controlling soybean aphids (*Aphis glycines*) as broad-spectrum insecticides, without causing significant harm to some beneficial predators of the aphid.

The study provides evidence that selective insecticides like sulfoxaflor could play a larger role in [integrated pest management](#), which attempts to minimize the adverse impact on beneficial insects while effectively controlling pests.

"This study provides the first evaluation of the compatibility of novel selective [insecticide](#) with natural enemies for management of *A. glycines* in soybean production," the authors wrote. "Because management of *A. glycines* in the north central United States currently relies primarily on foliar applications of only two modes of action (pyrethroid and organophosphate insecticides), there is risk of *A. glycines* developing [insecticide resistance](#). The availability of an additional effective insecticide of a different mode of action would improve insecticide rotations for *A. glycines* management and help postpone the development of insecticide resistance."

Last fall, the U.S. Environmental Protection Agency (EPA) issued a cancellation order for products containing sulfoxaflor after the Ninth Circuit Court of Appeals ruled that the EPA had not adequately determined the pesticide's effect on honey bees. The EPA had approved the use of sulfoxaflor in May 2013. Currently, the Agency has proposed

registration of sulfoxaflor with restrictions on application to pollinator-attractive crops, while it gathers more scientific information on the effects of sulfoxaflor on bees.

The researchers conducted field experiments for two years, and they also performed laboratory experiments with three predators: the convergent lady beetle (*Hippodamia convergens*), the insidious flower bug (*Orius insidiosus*), and a green lacewing known as *Chrysoperla rufilabris*.

They found that the abundance of predators in the genus *Orius* and the family Coccinellidae was two to four times greater on soybean plants treated with sulfoxaflor compared to plants treated with broad-spectrum insecticides. However, the abundance of predators in the family Chrysopidae did not differ on plants treated with either insecticide or ones that were left untreated.

The sulfoxaflor effects were considered moderately harmful to *O. insidiosus*, harmless to slightly harmful to *H. convergens* and harmless to *C. rufilabris*, according to ratings by the International Organization for Biological Control.

More information: The full article, "Potential for Sulfoxaflor to Improve Conservation Biological Control of *Aphis glycines* (Hemiptera: Aphididae) in Soybean," is available at jee.oxfordjournals.org/content/.../016/08/14/jee.tow168

Provided by Entomological Society of America

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