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Management options for soybean aphids

Marlin E. Rice

Iowa State University, merice@iastate.edu

Matthew E. O'Neal

Iowa State University, oneal@iastate.edu

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Management options for soybean aphids

Abstract

If producers need to treat for soybean aphids this year, Iowa State University (ISU) has recommendations on when and how insecticides should be used to manage this pest. Do not use insecticides when small populations of soybean aphids are first found in the field. Natural enemies may help suppress small aphid populations. Producers should determine if the aphid population is increasing or decreasing.

Keywords

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INTEGRATED CROP MANAGEMENT

Management options for soybean aphids

If producers need to treat for soybean aphids this year, Iowa State University (ISU) has recommendations on when and how insecticides should be used to manage this pest.

Do not use insecticides when small populations of soybean aphids are first found in the field. Natural enemies may help suppress small aphid populations. Producers should determine if the aphid population is increasing or decreasing.

Conditions that favor an increase in aphids are:

- cool temperatures
- plants under drought stress
- absence of beneficial insects, such as lady beetles



[1]
Large colonies of soybean aphids contain several thousand individuals per leaflet. (Marlin E. Rice)



[2]

Winged and wingless soybean aphids on a soybean leaf. (David Voegtlin)



[3]

The multicolored Asian lady beetle is a major predator of soybean aphids. (Marlin E. Rice)

Look to see if there are winged aphids or "broad-shouldered" nymphs developing wings and nearing the adult stage. If most of the aphids are winged or nearing this stage, they will leave the plant, or maybe the field, and an insecticide may not be needed because the population will rapidly decline.

Check for parasitized aphids (called mummies). Do not spray the field if a majority >of the aphids have turned to mummies.



[4]

Aphids attacked by a parasitic wasp larva transform into a "mummy" and die. The adult wasp then emerges through a circular hole chewed in the back end of the aphid. (Marlin E. Rice)

Insecticide applications made during the early soybean reproductive stages (R1-R4) have shown larger and more consistent yield protection than applications made later in the growing season. On-farm strip-trial data from several Midwestern states in 2003 showed that fields sprayed in late July or early August had larger yield gains than fields sprayed in mid-August.

For each day delay in spraying during 2003 after August 1, an average of 0.5-0.6 bushel was lost daily. Fields sprayed in late August and early September often showed no yield response to the insecticide application because most of the aphid damage had occurred by this time.

Complete coverage of a soybean plant is essential for optimum aphid control, especially because soybean aphids feed on the underside of leaves and often in the upper third of the plant canopy. If coverage is poor or an insecticide does not give effective control, then the remaining aphids will reproduce and the population could rapidly reach the economic threshold again.



[5]

Aerial application of insecticides is one approach to controlling soybean aphids. (Marlin E. Rice)

A preferred insecticide would be one that provided the greatest percent of killed aphids with the most extended control and the least environmental impact, especially the mortality of beneficial insects, at the least cost to the producer. There are no perfect insecticides, but there are performance traits that may help determine product selection.

Warrior, a pyrethroid insecticide, has provided the most consistent control among the pyrethroids in many university insecticide trials. Pyrethroid insecticide performance is enhanced during cool temperatures. Lorsban, an organophosphate insecticide, also has shown good aphid control and exhibits a vapor action, especially during high temperatures.

If an insecticide is sprayed, a small, unsprayed test strip left in the field will help to determine the real value and performance of the insecticide treatment.



[6]

Brian Lang, ISU Extension crop specialist, examines the differences in soybean plant height in late July 2001. The rows on the right were sprayed for soybean aphids and the rows on the left were unsprayed. Leaving an unsprayed test strip will determine the real value and performance of the insecticide treatment. (Marlin E. Rice)

Data from Iowa and neighboring states show that not all insecticides provide equal levels of control. The soybean aphid appears to rebound from some insecticides and a high level (98%) of control is desired. High water volume and high pressure also have been suggested as ways to improve soybean aphid control, especially in fields with a dense plant canopy.

Visit the [Iowa Soybean Aphid Task Force Web site](#) [7] for the latest on the spread of this insect in Iowa and more information on how to manage this pest.

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