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## Soybean aphid scouting and management

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# Soybean aphid scouting and management

## **Abstract**

Management activities for most soybean insect pests consist of scouting, use of thresholds, insecticide applications when necessary, and prevention through cultural activities. Probably the most practical scouting method for soybean producers is to take soybean aphid counts on leaves. This method is useful for pest detection when insect densities are low.

## **Keywords**

Entomology

## **Disciplines**

Agricultural Science | Agriculture | Entomology

# INTEGRATED CROP MANAGEMENT

## Soybean aphid scouting and management

Management activities for most soybean insect pests consist of scouting, use of thresholds, insecticide applications when necessary, and prevention through cultural activities. Probably the most practical scouting method for soybean producers is to take soybean aphid counts on leaves. This method is useful for pest detection when insect densities are low.

Scouting methods for the soybean aphid in Iowa have not been investigated. Therefore, our recommendation could have flaws. However, scouting must be conducted to determine aphid presence and abundance. Tentatively, we suggest a program of visiting five locations per 20 acres, beginning at stage V2. At each site, five plants can be picked then leaves turned over and searched for aphids. Observations should be made weekly until flowering. If aphids are present, estimates of aphid numbers per plant should be attempted. Numbers per leaf and numbers of leaves per plant might be useful in making large-plant estimates. Because these aphids are small, a hand lens or magnifying glass would be very helpful.

Economic thresholds have been developed by Chinese entomologists from field plots infested with soybean aphids at the two-leaf stage (V2). Aphids were allowed to feed and reproduce, all plots were sprayed at flowering to eliminate late-season infestations, and yields were taken. To develop a tentative economic threshold for Iowa soybean, we used their data to fit a statistical model to determine the number of aphids per plant at the V2 stage required to produce a later damaging population for a 5 to 6 percent yield loss. With a production of 40 to 50 bushels per acre, we suggest that this percentage would offset one insecticide application. The model predicts that 3.9 aphids per plant would produce a population to cause an economic loss. This density would be the economic threshold and the aphids should average this density across the field. In other words, if action were taken against four aphids per plant at stage V2, we would not expect the aphid population to grow to a density capable of causing economic loss in yield. It is likely that insecticide applications could be made within 2 or 3 weeks of the assessment and not result in significant yield loss.

Caution needs to be applied to this recommendation, however. First and foremost, it is based on data from Chinese soybean. Iowa soybean may not respond similarly. Second, the aphid population may not have the same growth potential in Iowa as it does in China, producing error in the threshold estimate. Furthermore, the pest may transmit soybean mosaic virus in Iowa, probably resulting in much lower thresholds and different management strategies for preventing loss. Therefore, our economic threshold is submitted as a tentative estimate, one that needs to be validated with thorough field and laboratory research.

Soybean aphid will not appear on most insecticide labels. Furdan 4F has a 2(ee) label for soybean aphids with the rate at 1/2 pint per acre. Other likely candidates for early testing against soybean aphid include Ambush, Asana, Pounce, and Warrior. These pyrethroid

insecticides are labeled for use on soybean but rates for soybean aphids are not known.

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