

6-14-2004

Soybean aphids, natural enemies and the economic threshold

Marlin E. Rice

Iowa State University, merice@iastate.edu

Follow this and additional works at: <http://lib.dr.iastate.edu/cropnews>

 Part of the [Agricultural Science Commons](#), [Agriculture Commons](#), and the [Entomology Commons](#)

Recommended Citation

Rice, Marlin E., "Soybean aphids, natural enemies and the economic threshold" (2004). *Integrated Crop Management News*. 1582.
<http://lib.dr.iastate.edu/cropnews/1582>

The Iowa State University Digital Repository provides access to Integrated Crop Management News for historical purposes only. Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user. Users should make their own assessment of the information and whether it is suitable for their intended purpose. For current information on integrated crop management from Iowa State University Extension and Outreach, please visit <https://crops.extension.iastate.edu/>.

Soybean aphids, natural enemies and the economic threshold

Abstract

Small colonies of soybean aphids were found in eastern Iowa on June 8. Natural enemies of soybean aphids, such as lady beetles (especially the multicolored Asian lady beetle), green lacewings, insidious flower bugs and other beneficial insects occur in Iowa soybean fields and will eat aphids. These predators probably will be most helpful in June and early July when fields are most likely to have small aphid populations.

Keywords

Entomology

Disciplines

Agricultural Science | Agriculture | Entomology

INTEGRATED CROP MANAGEMENT

Soybean aphids, natural enemies and the economic threshold

Small colonies of soybean aphids were found in eastern Iowa on June 8. Natural enemies of soybean aphids, such as lady beetles (especially the multicolored Asian lady beetle), green lacewings, insidious flower bugs and other beneficial insects occur in Iowa soybean fields and will eat aphids. These predators probably will be most helpful in June and early July when fields are most likely to have small aphid populations. Their predatory feeding could help suppress early aphid populations. If you find aphids and any of these natural enemies in the field during June, give them a chance to suppress the aphid population. However, if the soybean aphid population does reach the economic threshold (see below), then an insecticide is justifiable. Observations from 2003 suggest that these predators were not able to significantly reduce the aphid population once they reached damaging levels (economic injury level).

Scouting Recommendations

Scouting methods for the soybean aphid are currently being investigated and have not been completely refined for 2004. However, scouting must be conducted to determine aphid presence and abundance. Begin scouting for soybean aphids, especially in eastern Iowa, by the last week of June (maybe earlier this year). Check the upper two to three trifoliate leaves for aphids. Scout five locations per 20 acres. Field observations should be made weekly. Aphids are most likely to concentrate in the plant terminal. Look for ants or lady beetles on the soybean plant. They are good indicators of the presence of aphids. Lady beetles feed on aphids while ants tend the aphids and "milk" them for honeydew.

Estimate aphid population size per plant. The best that can be done is to count all the aphids on several leaves and plant terminals to establish what 100 or 250 aphids looks like and then use this as a mental reference for gauging populations on other plants.



Two soybean leaflets with soybean aphids. A population of 115 soybean aphids is shown on the underside of the left leaflet.

[Enlarge](#) [1]

Management Considerations

Do not use insecticides when small populations of soybean aphids are first found in the field. Natural enemies may help suppress small aphid populations.

Determine if the aphid population is increasing or decreasing. Conditions that favor an increase in aphids are cool temperatures, plants under drought stress, and an absence of beneficial insects. Take special note of winged aphids or (broad-shouldered) nymphs that are beginning to develop wings and are nearing the adult stage. If most of the aphids are winged or nearing this stage, they will leave the plant, and maybe the field, and an insecticide may not be needed because the population will rapidly decline. Check for parasitized aphids (mummies). Do not spray the field if a majority of the aphids have turned to mummies.

Use an economic threshold of 250 aphids per plant if the population is increasing and plants are in the late vegetative or early (R1-R4) reproduction stages. This economic threshold incorporates a seven-day lead-time before the aphid population would be expected to increase to 1,000 aphids per plant, which is the economic injury level and the population size that would be expected to cause economic damage (i.e., yield loss that exceeds the cost of control). This recommendation is based on research conducted by entomologists at the University of Minnesota and has been adopted by other university entomologists throughout most of the Midwest. Spraying at the R6 stage or later (late August or early September) is unlikely to enhance soybean yield.

Control aphid populations before the symptoms of honeydew, sooty mold and stunted plants appear in the field. An insecticide may still be of value after these conditions occur but the optimum time for treatment has passed.

Heavy rains and beneficial insects may reduce low or moderate populations slightly, but insecticides may be the only option in achieving a substantial reduction if the population reaches the conditions stated above.

This article originally appeared on pages 66-67 of the IC-492(11) -- June 14, 2004 issue.

Source URL:

<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2004/6-14-2004/soythreshold.html>

Links:

[1] http://www.ent.iastate.edu/imagegal/homoptera/aphid/soybeanaphid/soybean_aphid_leaflet.html

IOWA STATE UNIVERSITY
University Extension