6-6-2005

Economic impact of soybean aphid

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Abstract
Since its introduction to Iowa in 2000, the soybean aphid has firmly established itself as a pest of soybean. In 2003, the largest infestations of this pest occurred in Iowa. Current research is examining accurate sampling methods, refining economic thresholds, and providing farmers with effective management options. In addition, research has been conducted to determine the economic impact of this insect pest, especially during an outbreak year.

Keywords
Entomology

Disciplines
Agricultural Economics | Agricultural Science | Agriculture | Entomology

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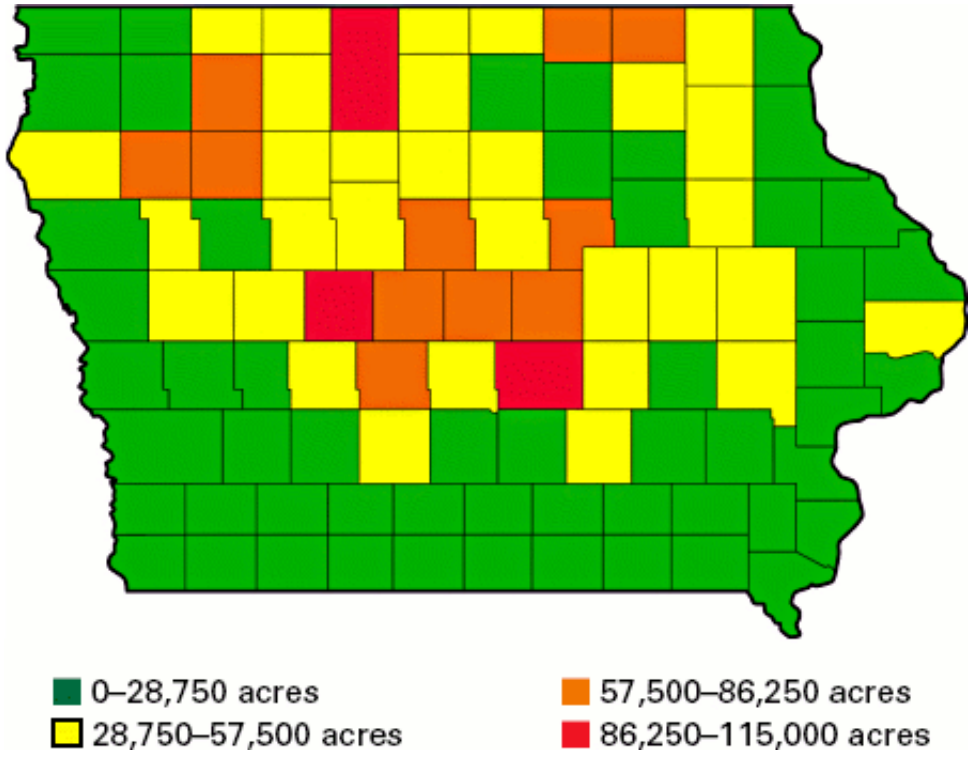
Since its introduction to Iowa in 2000, the soybean aphid has firmly established itself as a pest of soybean. In 2003, the largest infestations of this pest occurred in Iowa. Current research is examining accurate sampling methods, refining economic thresholds, and providing farmers with effective management options. In addition, research has been conducted to determine the economic impact of this insect pest, especially during an outbreak year.

Following the 2003 season, three surveys of farmers and agricultural service providers were conducted to determine the economic impact of the soybean aphid. These surveys asked questions to determine the statewide incidence of the soybean aphid, timing of insecticide applications, insecticide selection, and perceived yield losses. The first survey was a phone survey administered by the Iowa Agricultural Statistics Service to 2,481 Iowa soybean producers. The second survey was a mail survey administered to 1,053 farmers who attended the 2004 Crop Advantage meetings. The third survey was administered by Todd Vagts, Iowa State University Extension field specialist in crops, to 501 farmers who attended private pesticide applicator continuing instructional courses.

From these surveys, 76 percent of producers reported finding soybean aphids in their fields, and soybean aphids were reported from every Iowa county during the 2003 growing season. Growers who reported spraying for this pest said that they sprayed 28 percent of their 491,529 acres. To gain a more accurate estimate of the total acres treated throughout the state, data were examined on a county-by-county basis. These results estimate that a total of 2.9 million acres were sprayed with an insecticide for soybean aphid in Iowa in 2003 (see Figure 1).

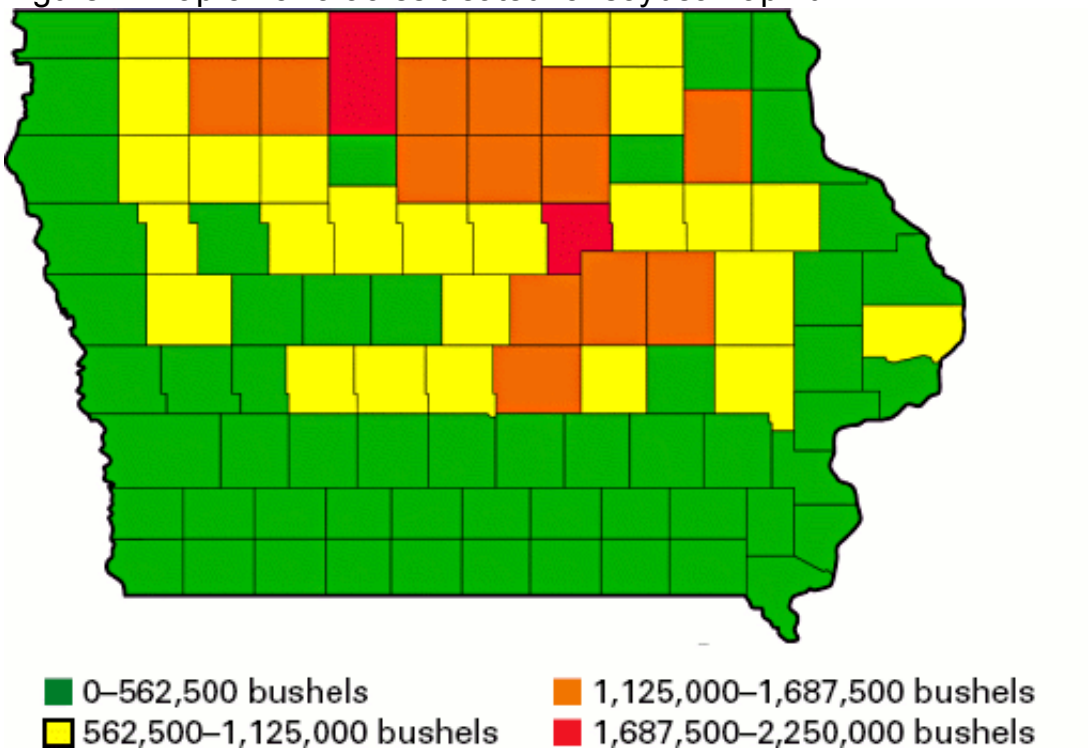
When asked if they experienced yield loss, 48 percent of the growers responded "yes." In addition, these growers reported an average yield loss of 11.1 bushels per acre. Data were then examined on a county-by-county basis. From these data, soybean aphids reduced production by more than 57 million bushels in 2003 (see Figure 2).

Results from these surveys provide information on the economic importance of the soybean aphid during an outbreak year. This pest has the potential to cause approximately 3 million acres to be sprayed and to cause losses of more than 55 million bushels, meaning an economic impact of more than one-quarter billion dollars in an outbreak year. These results reinforce the need for scouting to accurately determine the soybean aphid populations in your fields and emphasize the use of current threshold recommendations to justify the costs of applying insecticides. These steps are key to saving dollars in the management of soybean aphids.



[1]

Figure 1. Map of Iowa acres treated for soybean aphid



[2]

Figure 2. Estimated yield loss (total bushels) from soybean aphid

This article originally appeared on page Page 2 of the IC-494(13) -- June 6, 2005 issue.

Links:
[1] http://www.ipm.iastate.edu/ipm/icm/node/51
[2] http://www.ipm.iastate.edu/ipm/icm/node/52

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