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Soybean aphid invades Midwest

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Soybean aphid invades Midwest

Abstract

A new aphid pest has appeared in several Midwestern states. Initial identifications and reports suggested that this insect was the cotton aphid (also known as the melon aphid) but it has now been positively identified as the soybean aphid, *Aphis glycines*. The aphid is native to southeastern and eastern Asia and may have been in the U. S. during the past couple of years. This year it has been confirmed in eastern Minnesota, Wisconsin, northern Illinois, and Michigan. As of August 17, there were no reports of soybean aphids in Iowa but if it does occur here, it is most likely to be found in the northeastern and eastern counties.

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INTEGRATED CROP MANAGEMENT

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Most of the field problems from this aphid have been detected in Wisconsin. David Hogg and John Wedberg, entomologists at University of Wisconsin-Madison report aphid problems in Grant (which is across the river from Dubuque), Rock and Kenosha counties across the southern Wisconsin to as far north and east as Waushara and Sheboygan counties in the state. Tom Klubertanz, entomologist at UW-Rock County, counted the aphids on whole plants from an infested field. These plants were not stunted and they looked normal at a distance of several feet. But on two plants he counted over 1000 aphids per plant. Over 100 aphids per leaf was common, colonizing the whole plant including the leaves, stems, and pods. Single pods at the R3.5 stage were covered with 50 aphids. More details on the Wisconsin situation can be found at <http://ipcm.wisc.edu/wcm/00-22insect1.html> .

Kevin Steffey and Mike Gray, entomologists at the University of Illinois, report "aphids in fields of soybeans in some counties in northern Illinois, including Kane and Grundy counties. Some FS fieldmen have reported to Ria Barrido with Growmark, Inc., in Bloomington that they can find aphids in soybean fields in the northern tier of counties in Illinois."

There are no economic thresholds for this insect and Wisconsin entomologists believe that the population is declining so insecticides are unlikely to be necessary. If insecticide information is desired, consult the Illinois newsletter at <http://www.ag.uiuc.edu/cespubs/pest/articles/200020d.html> .

Entomologists Murray Fletcher and Peter Desborough, New South Wales Agriculture, Australia, have a website that discusses this aphid in detail. Excellent photographs of aphids and colonies on soybean may be found at <http://www.agric.nsw.gov.au/Hort/ascu/insects/aglycin.htm> . The following information on identification, hosts, damage, and life cycle was taken from this site:

Identification

The soybean aphid is a small insect, pale yellow in life, with black cornicles (tailpipes) and a

pale tail. No other aphid living on soybeans has the same combination of size and color. Other species of aphids on legumes that might be confused with it are the cotton aphid, *Aphis gossypii*, which has a shorter, dark tail and the cowpea aphid, *Aphis craccivora*, which has a black patch on the back of the wingless adults.

Known Hosts

In China and Japan, the soybean aphid alternates between buckthorn bushes, *Rhamnus* sp., and certain legumes, mainly soybean but also recorded from species of *Desmodium*. In Australia, the aphid has so far only been found on soybeans.

Damage

The soybean aphid is capable of causing significant reduction in growth and seed production in soybeans. A study in China found that seed yields were reduced by 27.8% and plant height decreased by 8 inches in infested plants as compared with the control. The soybean aphid is a known vector of a number of plant virus diseases including soybean mosaic and soybean stunt. In Australia, experience with soybean aphid is very new. Known infestations in crops observed are distributed sporadically through a field and in quite small areas (1 yd²). Thus they can be difficult to detect. Plant damage is in the form of leaf distortion (where very dense aphid populations occur) and severe vigor loss.

Life Cycle

The life cycle was described in Japan and China. Studies indicate that the optimum temperatures for the aphid are 68-75°F. Aphid densities peak in the vegetative plant stage and decline rapidly afterwards or towards the flowering stage.

Natural Enemies

Hover fly or flower fly larvae (Family Syrphidae) and lady beetle larvae (Family Coccinellidae) have been shown to play a role in suppression of soybean aphid populations in soybeans. A number of parasitic wasps in Asia are known to be effective in helping to control numbers of the aphid.

Any reports of large colonies or bunches of aphids in Iowa soybeans should be telephoned in to either myself or Larry Pedigo at Iowa State University (515-294-1101).

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