Asiatic Garden Beetle in Michigan field crops

CDD #002

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Additional pictures: Provided by Purdue University entomologists.

Asiatic garden beetle (AGB) is a relatively new early-season pest of field crops in the eastern corn belt. In the spring of 2007, Purdue University and Michigan State University first identified AGB as the cause of significant stand loss in corn fields in northern Indiana and southwestern Michigan.

Reduced stand from AGB grub feeding

Emerging AGB + emergence holes in a corn field

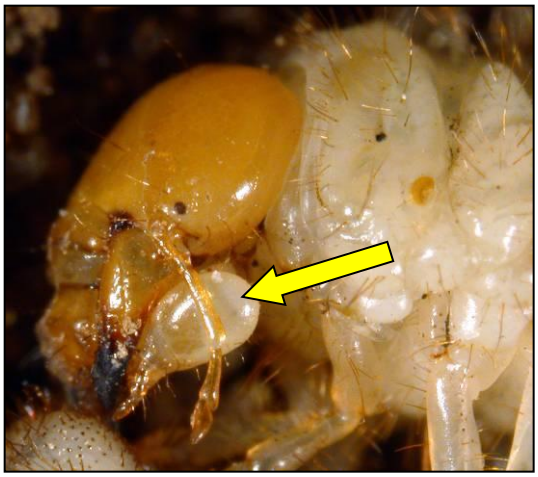
Asiatic garden beetle, as the name implies, is native to Asia. It was first found in New Jersey in 1921; Michigan and Indiana now appear to be at the westernmost edge of its current distribution. Unlike most grub species, AGB is a minor pest of turfgrass. Instead, it feeds on nursery stock, flowers, vegetables, and field crops. Adult beetles defoliate these crops, while the larvae feed underground on emerging seedlings and roots, reducing stand and stunting plants.

AGB has a single generation per year. Eggs are laid in clusters from July into early fall. Grubs are present from July, through the winter, into the following May. Reduced stand in field crops occurs as third instar grubs feed in early spring. Grubs begin to pupate in May, with the first adults emerging in June. Adults may be present into August, most noticed on warm (+ 70 ^{o}F) nights when they come to lights, mating on nearby structures and vegetation.

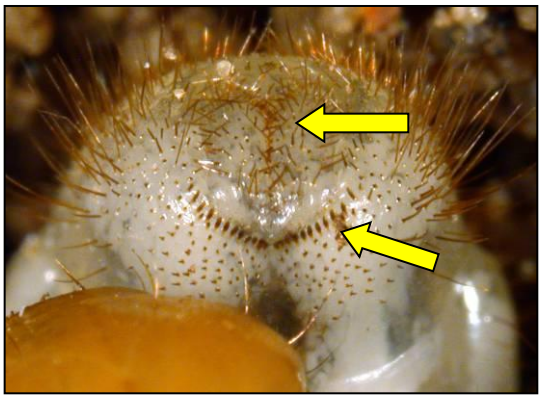
The pictures to the left show AGB accumulating under a light at the St Joseph County Extension Office in southern Michigan, in July 2007.

AGB Identification

Larva
C-shaped grub
3 stages
Up to ¾ inch



<u>Maxilla</u>
Has an enlarged structure on its maxilla, or 2nd set of jaws.This appears as a white bulbous ‘cheek’ that is obvious on the C-shaped larvae on the far left.



<u>Anal slit</u>
Y-shaped

<u>Raster pattern</u>
Smile-shaped

Adults
1/3 inch long
Chestnut brown, barrel-shaped

Last few segments of abdomen are exposed beyond wings.

Underside of each abdominal segment has a row of yellow hairs.

Asiatic garden beetle is yet another scarab species to add to our list of damaging early-season grubs. Several factors likely contribute to the recent increase in grub problems, including the use of reduced & no tillage, mild winters that enhance grub survival, earlier planting dates that expose emerging seedlings to grub feeding, and new exotic grub species (like AGB) moving into the region. Currently, the distribution AGB and its potential to damage field crops is being determined in Indiana and Michigan. In the future, we will likely face a complex of scarab species infesting fields in the fall, then damaging crops in early spring.