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Integrated Pest Management 101: Beneficial Insects of 2007

Marlin E. Rice

Iowa State University, merice@iastate.edu

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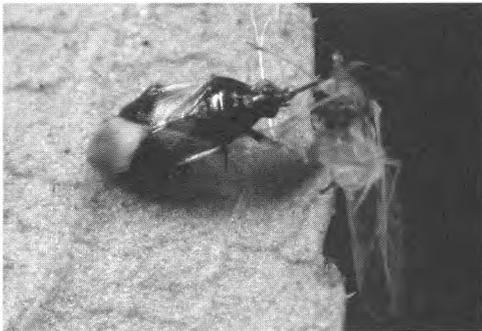
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Integrated Pest Management 101: Beneficial insects of 2007

Marlin E. Rice, Professor, Entomology, Iowa State University

One of the foundational elements of integrated pest management is the correct identification of pest and beneficial species. This presentation will provide participants an opportunity to test their skills in the arena of common beneficial insect identification. Beneficial insects, also called natural enemies, attack crop-damaging pest species and as a group are frequently common in Iowa's agro-ecosystem. Six common beneficial insects from 2007 that are found in corn, soybeans, or alfalfa will be presented in a multiple-choice format. Circle the correct letter for each insect photograph shown in the accompanying PowerPoint presentation. The key identifying characteristics are listed for each species.

Beneficial Insect #1. Purdue University entomologists have determined that this insect is the number one destroyer of soybean aphids. They have piercing-sucking mouthparts and are known to bite humans when the bugs disperse from fields harvested during the fall. This insect may be found throughout the summer, but because of their very small size, field scouts often overlook them on soybean plants. Key characteristics are a very small size (1/16 inch long), piercing-sucking mouthparts, a black head and thorax, and whitish wings and two black "triangles."



1. a pirate bug
- b insidious flower bug
- c damsel bug
- d aphid assassin

Beneficial Insect #2. This insect is a late-stage larva of a common lady beetle species. It is frequently found in soybeans and is considered to be a very important predator of soybean aphids in Iowa. This insect is not native to North America. Key characteristics are abdominal segments immediately behind the legs with five lateral yellow spots (forming a band), and abdominal spines “Y” branched.



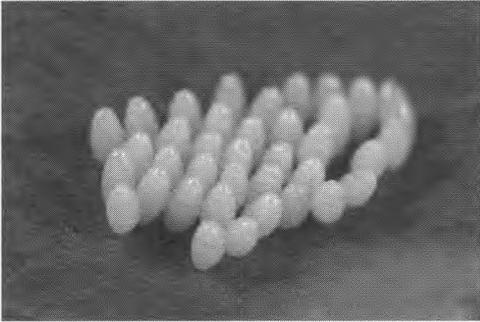
2. a seven-spotted lady beetle
- b convergent lady beetle
- c twelve-spotted lady beetle
- d multi-colored Asian lady beetle

Beneficial Insect #3. Both the adult and nymph of this insect are predators of aphids, insect eggs, and the small larvae of many insects including European corn borers, corn earworms, and alfalfa weevils. They also are known to feed on potato leafhoppers. They are more common in alfalfa and soybeans than corn. Key characteristics are the adult is ½ inch long with brownish-gray wings folded flat across the back, and piercing-sucking mouthparts.



3. a damsel bug
- b soldier bug
- c smoky-gray assassin bug
- d lacewing bug

Beneficial Insect #4. These are eggs of a common beneficial insect. They are laid in clusters with each egg standing on the narrow end. Depending on the species, a female can lay up to 1,000 eggs during a six to eight-week period. Eggs typically hatch within seven to ten days. Key characteristics are a spindle-shape, yellow or orange color, and frequently being laid in a cluster.



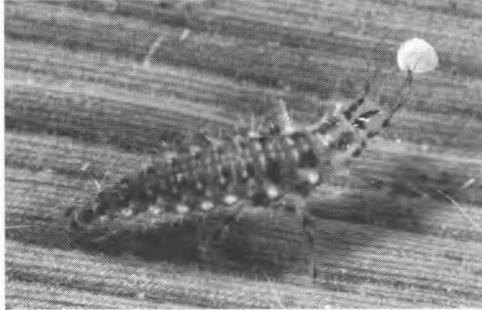
- 4. a predatory stink bug eggs
- b green lacewing eggs
- c damsel bug eggs
- d lady beetle eggs

Beneficial Insect #5. This insect is more common in alfalfa than any other crop. Both adults and larvae will feed on aphids and other insect eggs. Key characteristics are the number of spots on the wing covers and the white spots immediately behind the eyes.



- 5. a seven-spotted lady beetle
- b convergent lady beetle
- c twelve-spotted lady beetle
- d multi-colored Asian lady beetle

Beneficial Insect #6. This insect feeds primarily on aphids but will also take small caterpillars, leafhoppers, mites and insect eggs. The larvae feed for about three weeks during the summer. Key characteristics are a brownish-gray slender body with two stripes on the top of the head and needle-like mouthparts.



6. a green lacewing larva
b convergent lady beetle larva
c insidious flower bug larva
d flower fly larva