



Beneficial Insects



Pecan IPM Toolbox

Wheel Bug

Beneficial Insects

- ☞ Nymphs (immature stages) of the wheel bug *Arilus cristatus* found on pecan trees.
- ☞ Immatures have red abdomens and black heads, legs and thorax.
- ☞ Early immature stages can be found clustered together near egg cases.
- ☞ As immatures develop they disperse throughout the tree.
- ☞ Feed on a wide range of soft-bodied insects
- ☞ Wheel bugs bite. Handle with care, if at all.



A wheel bug nymph



Wheel bug adult

Damsel Bug

Beneficial Insects

- ☞ Slender, cigar-shaped insects,
- ☞ Tan to brown in color
- ☞ About one-half inch (25 mm) long
- ☞ Light smoky-colored wings
- ☞ Thick front legs made for grasping and holding prey
- ☞ Nymphs resemble adults except they have no wings and appear very fragile.
- ☞ Both adults and nymphs feed on small, soft-bodied insects, worms and eggs.



Damsel bug, egg

Damsel bug, nymph



Damsel bug, adult

All photos courtesy of Whitney Cranshaw,
Colorado State University, Bugwood.org

Bigeyed Bug

Beneficial Insects

Bigeyed bug adults are black with clear, silvery-appearing wings. They have **large conspicuous eyes on the sides of their head**. Adults are less than one-fourth inch (6mm) in length. Nymphs also have enlarged eyes, are silvery or gray in color with small, black specks on their body. Both adults and nymphs feed on small, soft-bodied insects, worms, and eggs.

Left: Bigeyed bug, nymph

Right: Bigeyed bug, adult

Photos courtesy of Russ Ottens, University of Georgia, Bugwood.org



Minute Pirate Bug

Beneficial Insects

- ☞ Minute pirate bug adults are about 1/16" (1.5 - 2 mm) long
- ☞ Mostly black with white markings on their wings.
- ☞ Adults have an "X" pattern on their backs.
- ☞ Nymphs are small, orange-colored insects with the same general body shape as the adult, but are wingless.
- ☞ Both adults and nymphs are important predators of small, soft-bodied insects, eggs and worms.



Photo top: Minute pirate bug nymph feeding on green peach aphid

Photo bottom: Adult minute pirate bug

Photos courtesy of Bradley Higbee, Paramount Farming, Bugwood.org

Lady Beetle

Beneficial Insects



Photo: Adult convergent lady beetle
Courtesy Russ Ottens, University of Georgia, bugwood.org

- ☞ Lady beetle adults are oval-shaped insects that vary in color but usually have black or orange-red spots on their wing covers.
- ☞ Larvae are elongate, spindle-shaped, with spiny backs. They are black, blue and orange in color with thick stubby legs.
- ☞ Both adults and larvae are very active and feed on small, soft-bodied insects and insect eggs. They are very effective aphid predators.
- ☞ Lady beetle eggs are yellow to orange-colored and are laid in clusters of five to twenty eggs.
- ☞ Lady beetles are the most important insect predators on pecan.

Lacewing

Beneficial Insects



- ∞ Wings of lacewing adults have many veins, giving them a net-like appearance.
- ∞ Wings are held roof-like over the back
- ∞ Adults are green or brown and some have characteristic golden eyes.
- ∞ Adults are not predaceous.
- ∞ Larvae are about ½” (12 mm) long, spindle-shaped, and have long, sharply pointed, mandibles protruding from the front of their head.
- ∞ Larvae are tan and white in color with a warty or spiny appearance.
- ∞ Lacewing larvae eat small, soft-bodied insects, eggs and worms.
- ∞ The eggs of lacewings are small, green to whitish in color and are laid on a slender, thread-like stalk.
- ∞ Lacewings are very important predators on pecan in late season.



Top left: Lacewing egg. Photo courtesy of Whitney Cranshaw, Colorado State University, Bugwood.org

Bottom left: Lacewing larvae. Photo courtesy of Bradley Higbee, Paramount Farming, Bugwood.org

Top right: Adult lacewing. Photo courtesy of Frank Peairs, Colorado State University, Bugwood.org

Syrphid Fly

Beneficial Insects

- ☞ Syrphid fly adults are generally banded or spotted with bright yellow markings on a black body.
- ☞ Often confused with wasps or bees and have a characteristic hovering flight.
- ☞ Adults are not predaceous.
- ☞ Syrphid fly larvae are tan to green, elongate, legless, slug-like maggots about 3/8" (10 mm) long.
- ☞ Larvae are important predators of aphids and other small, soft-bodied insects.

Photo top: Syrphid fly larva, courtesy of Frank Peairs, Colorado State University, Bugwood.org

Photo bottom: Adult syrphid fly, courtesy of Whitney Cranshaw, Colorado State University, Bugwood.org

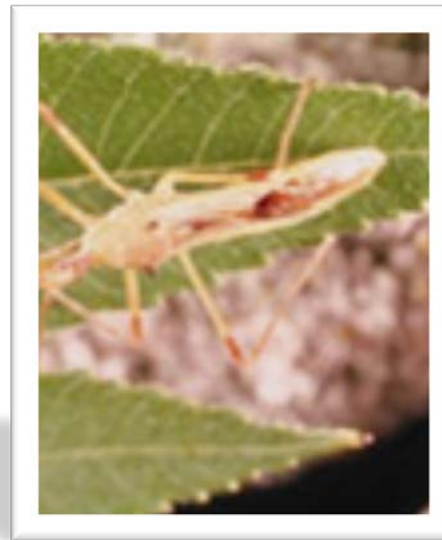


Assassin Bug

Beneficial Insects

- Assassin bug adults are flattened, oval bugs with narrow heads and a slender neck.
- Brown or black with some species having red-colored markings.
- They range in length from one-half to one and one-half inches (12-36 mm).
- Nymphs are similar in shape, form, color and habits
- Nymphs are wingless.
- Both adults and nymphs feed on small soft-bodied insects, worms and eggs.

Assassin bug nymph,
Photo courtesy of
Susan Ellis,
Bugwood.org



Adult assassin bug.
Photo courtesy of
H C Ellis, University of
Georgia, Bugwood.org

Spiders and Mites

Beneficial Insects

Spiders and mites are not insects, but these arthropods are very important predators in the orchard.

Many types of spiders are found in pecans. They vary greatly in size and color. Spiders prey on almost any insect that comes within their range.

One group of mites, *Phytoseilus* spp., are particularly helpful in controlling plant feeding mites in pecans.



Sachet containing bran and predatory mites . Photo courtesy of Whitney Cranshaw, Colorado State University, Bugwood.org



Jumping spider. Photo courtesy of Sturgis McKeever, Georgia Southern University, Bugwood.org

Beneficial Insects for Pecan - Predators, [BugwoodWiki](#), Editors *H. C. Ellis and Randy Hudson*, [UGA Extension Entomologists](#). [The University of Georgia](#), College of Agricultural and Environmental Sciences, Cooperative Extension Service, March 2000.