

Identification Guide for Common Stink Bugs in Arkansas

Dr. Jeremy K. Greene
 Extension Entomologist

Dr. Donald R. Johnson
 Extension Entomologist

Dr. Gus M. Lorenz
 Extension Entomologist -
 IPM Coordinator

Dr. Glenn E. Studebaker
 Extension Entomologist

Important phytophagous (plant-feeding) and pestiferous stink bug species in Arkansas include the green stink bug, *Acrosternum hilare* (Say), the southern green stink bug, *Nezara viridula* (L.), the brown stink bug, *Euschistus servus* (Say) and the rice stink bug, *Oebalus pugnax* (F.) (Figure 1).

Figure 1



Southern green stink bug, *Nezara viridula* (L.).



Green stink bug, *Acrosternum hilare* (Say).

Southern green stink bug adults can be differentiated from green stink bug adults by the color of bands on antennae. Southern green stink bugs have red bands, while green stink bugs have black bands on the antennae. Another useful characteristic for properly identifying these two species can be observed on the ventral surface (underside) of the insects. When viewed in this aspect,

Figure 1 (cont.)



Brown stink bug, *Euschistus servus* (Say).



Rice stink bug, *Oebalus pugnax* (F.).

adult green stink bugs have a pointed spine between the base of the hind legs that projects forward toward the head (Figure 2). Adult southern green stink bugs have a more rounded spine in the same location (Figure 3).

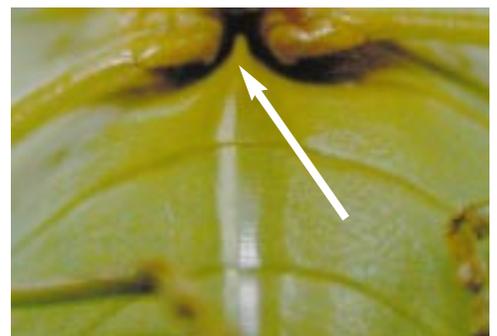


Figure 2. Pointed ventral spine of second abdominal segment of the green stink bug.

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Figure 3. Rounded ventral spine of second abdominal segment of the southern green stink bug.

The brown stink bug adult is brown and has rounded shoulders. The rice stink bug (Figure 1) is a small, tan, slender shield-shaped insect found commonly in rice and other grass hosts. It can be distinguished from other stink bugs by its slender shape and the forward-projecting spines on each side of its “shoulders” or thorax.

Stink bugs characteristically deposit their eggs on the underside of leaves in clusters with tight rows of individual barrel-shaped eggs (Figure 4). After overwintering, adult females seek out suitable hosts in early spring and typically deposit their eggs on wild host plants. Often these overwintering populations are found along field borders, particularly along tree lines near their overwintering sites. Later developing cultivated plants become more attractive when these initial wild hosts dry down, and their proximity allows easy access for stink bug colonization in crops. Shortly after egg deposition and hatching, emerging nymphs are gregarious in habit and remain on or near the egg mass. As they develop, they begin to feed and disperse. The life cycle is repeated when reproductively mature adult stink bugs locate mates and deposit new egg masses.

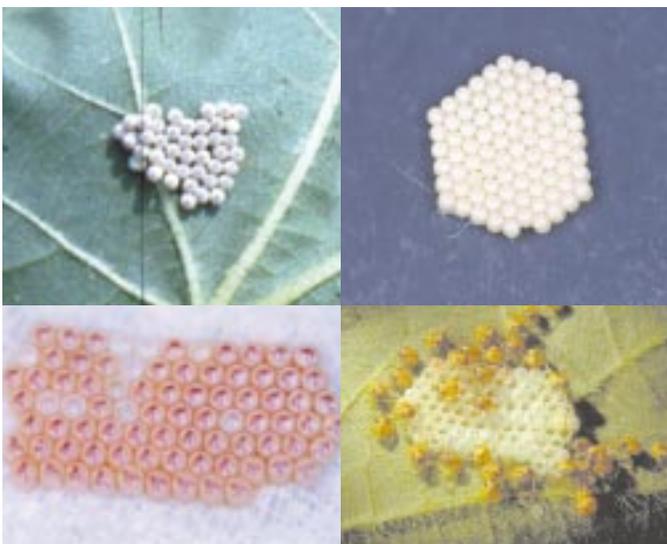


Figure 4. TOP, stink bug egg mass deposited under cotton leaf, masses showing tight arrangement of eggs and hatching of eggs.

The first immature stage (1st instar) of the southern green stink bug is reddish orange (Figure 5). The 2nd instar is more black in color before developing white spots on the abdomen. As immatures reach mid-size (3rd-4th instars), they turn black or green and develop pink/red markings and white spots on the abdomen. Late nymphs (4th-5th instars) usually are lighter green than adults and retain the distinctive pink and black markings and white spots on the margin of the abdomen (Figure 6).



Figure 5. From left to right, 1st - 5th instars and adult of the southern green stink bug, *Nezara viridula* (L.).



Figure 6. From left to right, egg mass, 4th and 5th instars and adult of the southern green stink bug, *Nezara viridula* (L.).

Early instars of the green stink bug are, at first, reddish brown, then light green with black and white stripes on the abdomen. Late-stage nymphs are green and have stripes on the abdomen colored yellow and black or green with black spots along the center of the abdomen (Figure 7). Usually, the anterior and lateral edges of the black thorax of a green stink bug nymph have an orange margin.



Figure 7. Early and late instars of the green stink bug, *Acrosternum hilare* (Say).

Brown stink bug nymphs are light greenish-brown and, in later stages, have brown spots down the middle of the abdomen (Figure 8).



Figure 8. Late instars of the brown stink bug, *Euschistus servus* (Say), on cotton boll and with adult.

Nymphs of the rice stink bug are red as early instars but resemble adults, with a tan color and slender shape, as late instars. Like all stink bug nymphs, they lack wings and have reddish-black markings on the abdomen.

Both adults and nymphs of plant-feeding species are capable of injuring plants. Feeding damage is caused when they insert their piercing-sucking mouthparts into the plant, inject digestive enzymes, extract plant juices and allow entry of pathogenic microorganisms. The majority of stink bug species found in North America are plant-feeding species. However, there are many predaceous species, several of which are commonly encountered in the field preying on other insects. The spined soldier bug, *Podisus maculiventris*, is the most common predatory stink bug observed (Figure 9) and gets its name from the spines that laterally protrude from the “shoulders” or thorax of adults.



Figure 9. Adults of a common predaceous stink bug, the spined soldier bug, *Podisus maculiventris* (Say).

There are distinct differences in structure and function between the mouthparts of predaceous and phytophagous (plant-feeding) species of stink bugs (Figure 10). These differences are helpful in differentiating predators from some pest species that closely resemble each other. Predators have strong, robust beaks that are about twice the width of the antenna, with musculature adapted for carrying or handling large prey items (Figure 10 and 11). Plant feeding stink bugs have a slender beak about the width of the antenna, tailored for precision probing and delivery of digestive enzymes. Phytophagous

species feed on the stems, foliage, blooms and fruiting structures of plants, but preferentially feed on fruiting forms that contain seeds. Damage is greatest when they feed on the seed in developing fruiting structures. Stink bug feeding can cause yield and quality reduction in a number of crops, including cotton, soybeans, rice and others important in Arkansas.

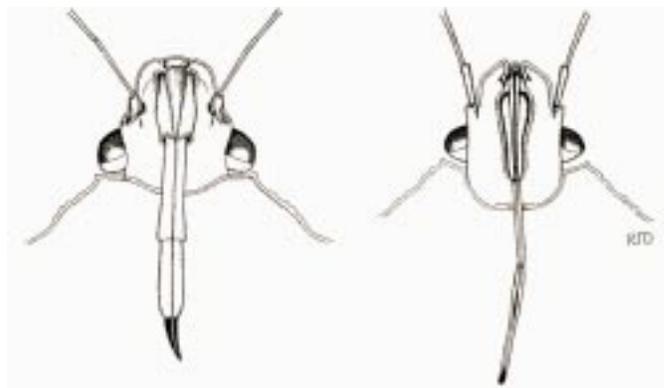


Figure 10. TOP, line drawing of beak structures of predaceous (left) and plant-feeding (right) stink bugs; CENTER, beak structure of brown stink bug (left) and spined soldier bug (right); BOTTOM, ventral view of beak of spined soldier bug.



Figure 11. Spined soldier bug nymph attacking southern armyworm larva.

Stink Bugs



Immature (5th instar) of southern green stink bug.



Immatures of southern green stink bug on soybean.



Adult brown stink bug.



Adult of southern green stink bug on cotton boll.

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DR. JEREMY K. GREENE is Extension entomologist, University of Arkansas Cooperative Extension Service, Southeast Research and Extension Center, Monticello. **DR. DONALD R. JOHNSON** is Extension entomologist, and **DR. GUS M. LORENZ** is Extension entomologist - IPM coordinator, University of Arkansas Cooperative Extension Service, Little Rock. **DR. GLENN E. STUDEBAKER** is Extension entomologist, University of Arkansas Cooperative Extension Service, Northeast Research and Extension Center, Keiser.

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