



BUG BIZ

Pest Management and Insect Identification Series



Oebalus pugnax, Rice Stink Bug (Pentatomidae: Hemiptera)

Mohamed S Shaik, Forest Huval, Chris Carlton, Thomas Reagan

Description

Rice stink bug is a serious pest of cereal crops in the southern U.S. Adults are elongate shield-shaped, straw colored to brown insects, about 1/2 of an inch (12 mm) in total length. A short, pointed spine projects forward from each front angle of the thorax just behind the head. As in other members of the family Pentatomidae, the forewings are divided into tough, triangular brown areas that occupy about one-half of the base and lighter membranous parts that form the ends of the wings. A prominent triangular shield (the exposed part of the scutellum) is present between the wings. The hind wings are entirely membranous. In general, females are larger and heavier than males and can be distinguished by examining details of the undersides of the abdomens using a microscope. The abdomen of gravid females frequently appears green because of the presence of eggs.

Eggs are barrel-shaped, about 1/30 of an inch (0.84 mm) in height, and 1/40 of an inch (0.63 mm) in diameter. They are light green in color initially but become dark brown prior to nymphal hatch. Early stage nymphs are reddish brown and lack wings. A series of large, dark spots are present along the midline of the abdomen. Late stage nymphs are narrower in shape and tan in color, with visible wing pads. As with all members of the order Hemiptera, rice stink bugs possess piercing/sucking mouthparts, formed by a long beak that is held between the legs when not feeding.

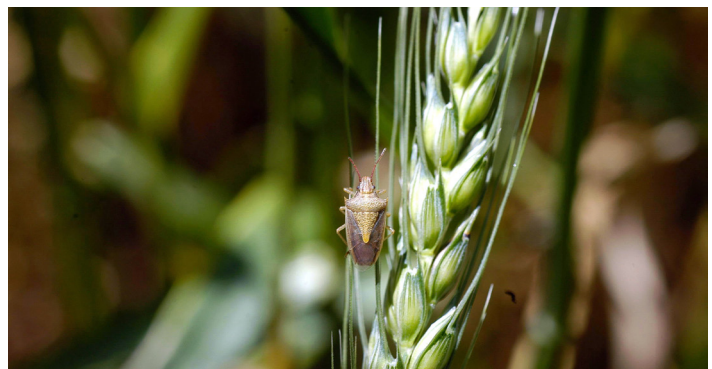
Although rice stink bug is the only member of the genus *Oebalus* so far recorded in Louisiana, two similar species are known in Florida with similar habits. These may eventually be recorded for Louisiana.

Life Cycle

Rice stink bugs undergo gradual (hemimetabolous) metamorphosis comprising three developmental stages: egg, nymph, and adult. After mating, females lay eggs on leaves, panicles and seed heads of host plants in two



Top view of adult female rice stink bug (Lindsey Seastone, Bugwood.org. Creative Commons 3.0).



Adult rice stink bug on rice head (Natalie Hummel, LSU AgCenter).

rows. Egg masses may contain anywhere from eight to 44 eggs. Egg productivity is heavily influenced by host plant. Nymphs hatch within five days typically, but hatching time may be delayed by environmental conditions like cooler temperatures. Nymphs undergo five growth stages (instars) before transforming into adults. Typical adult life spans are seven weeks for males and up to 10 weeks for females. In the southern U.S., rice stink bugs can complete up to five generations annually. Adults overwinter in organic ground litter near host plant stands.

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Feeding is accomplished by inserting the beak into host plant tissues, including endosperm of seeds, and injecting salivary enzymes. These enzymes break down plant cells and form a semifluid slurry that is sucked like a straw inserted into a milkshake. Rice stink bugs will occasionally prey on other insects, especially caterpillars.

Ecological Significance and Pest Status

Although rice is a primary crop host, rice stink bugs feed on a variety of related grasses (oligophagy), including sorghum, wheat, corn and various weeds. Rice stink bug is an economically damaging pest in all rice growing areas of Louisiana. Infestations in the state usually occur from late June to early September. Fields planted at the end of the season or close to overwintering sites may have more severe infestations. These pests cause Louisiana rice crop reductions that can reach 40%.

Rice stink bug feeding reduces plant vigor and creates wounds as entry points for pathogens, causing secondary infections. The symptom known as pecky rice is caused by feeding on rice seed endosperm tissue, producing empty or shriveled kernels and causing yellow to black discoloration commonly linked with infections at the feeding site.

Management and Control

In Louisiana and elsewhere in rice growing regions of the U.S., standardized sweep sampling is the scouting tool used to establish treatment thresholds. Typical economic threshold recommendations are three bugs per 10 sweeps for the first two weeks and 10 bugs every 10 sweeps after that.

Weed management is an important component of integrated management of rice stink bug. Reducing weedy grasses within and along peripheries of fields is helpful in reducing stink bug source populations. Grasses such as



Damage to rice caused by rice stink bug (Donald Groth, Bugwood.org. Creative Commons 3.0).

members of the genus *Panicum* serve as food plants and persistent reservoirs of rice stink bugs. Mowing along peripheries of fields and reducing organic ground cover during the winter can reduce survival of overwintering adults. Use of pathogen resistant varieties can reduce losses by secondary pathogens introduced during stink bug feeding.

Field releases of formulations based on the fungal pathogen *Beauveria bassiana* have shown promise in controlling rice stink bug. In some cases efficacy equal to a single insecticide application have been documented. The egg parasitoid *Telenomus podisi* (Scelionidae), tachinid fly parasitoids of adults, and various predators have been studied to assess natural control of rice stinkbug pests and this continues to be an active area of research.

Foliar applications of pyrethroids such as lambda-cyhalothrin and alpha-cypermethrin is highly effective in suppressing rice stink bug populations. Consult the current Louisiana Pest Management Guide for currently approved insecticides. Always follow label directions exactly.

References

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