



BUG BIZ

Pest Management and Insect Identification Series



Halyomorpha halys, Brown Marmorated Stink Bug (Hemiptera: Pentatomidae)

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Description

Adult brown marmorated stink bugs (BMSB) are brown in color with distinct alternating white and dark bands on the margin of the abdomen. Another diagnostic feature is the presence of white bands on the antennae and legs. Adult BMSBs are $\frac{1}{2}$ to $1\frac{1}{16}$ of an inch (12 to 17 mm) in length and $\frac{1}{4}$ to $\frac{3}{8}$ of an inch (7 to 10 mm) in width. Males and females are differentiated based on the genitalia located at the tips of the abdomens. Eggs are pale green in color and about $\frac{1}{15}$ of an inch (1.6 mm) in diameter. First growth stage (instar) nymphs are about $\frac{1}{16}$ of an inch (1.5 mm) in length. Small nymphs possess black or brown heads and thoraxes and orange to orange-brown abdomens with alternating brown marking down the midline and sides. Nymphs lack wings, but fifth instar nymphs may be nearly as large as adults with wing pads visible along the base of the thorax. Males are smaller in size than females.

Several other brown stink bugs are frequently misidentified as BMSB. These include the rough stink bugs (*Brochymena* sp.), members of the genus *Euschistus* and others. Suspected BMSBs should be submitted to an LSU AgCenter insect diagnostician for confirmation.

Life Cycle

After mating, females lay eggs in a clutch containing 23 to 28 eggs. Eggs are laid on the undersides of leaves of the host species. Duration of the egg stage ranges from six to seven days. Nymphs undergo five instars, and each lasts for seven to eight days. However, they may be longer during cool weather. First instar nymphs cluster around the egg mass. Starting with the second instar, nymphs disperse and seek food sources. One generation occurs annually in most parts of the U.S., with adults overwintering in sheltered areas, including in and around homes and outbuildings. The potential exists for multiple generations annually in southern parts of

the distribution. The life span from egg to adult depends on temperature and photoperiod and ranges from 40 to 60 days.



Adult brown marmorated stink bug (Dorsal View) (Mohammed El Damir, Bugwood.org. Creative commons 3.0).



Adult brown marmorated stink bug (Lateral view) (Kristie Graham, USDA ARS, Bugwood.org. Creative commons 3.0).



Brown marmorated stink bug eggs (Jennifer Carr, University of Florida, Bugwood.org, Creative Commons 3.0). (Left to Right): First instar, third instar and fifth instar nymphs of brown marmorated stink bugs (David R. Lance, USDA APHIS PPQ, Bugwood.org, Creative Commons 3.0).

Ecological Significance and Pest Status

The BMSB is native to east Asia and is an invasive species in the U.S. It was first detected in Allentown, Pennsylvania, during the mid-1990s and spread rapidly, becoming widely established in the eastern and midwestern U.S. It also occurs along the west coast of the U.S. and sporadically elsewhere. The BMSB is polyphagous and feeds on a wide variety of plants, including agricultural commodities and high-value crops in the U.S. Apples, peaches and plums are notable fruit hosts of BMSBs. The BMSB has been reported in Louisiana from northern parishes and as far south as New Orleans and Rosedale (Iberville Parish). To date, no damage to agricultural crops or nuisance infestations have been reported in Louisiana, but the species is likely to become more widespread in the near future.

Although BMSB is polyphagous, it appears to have a strong preference for agricultural hosts such as apple, pear, peach, grape, soybean and corn. This is likely due to the monocultural nature of row crops and orchards, which provide a vast amount of food over large areas. Pecans may be damaged in groves and residential areas. In addition, numerous ornamental and landscape plants may serve as host plants. Several species of stinkbugs already cause significant damage to corn and soybeans in Louisiana, and BMSBs will become yet another member of the stink bug pest complex. BMSBs use their piercing and sucking mouthparts to extract nutrients from the fruit or sap of plants. Feeding on corn kernels by BMSBs leads to discoloration and abortion. Similarly, fruit rotting and internal tissue damage may also be seen in vegetables as secondary infections. Feeding by adult BMSBs on peach and apple during early growth stages may result in damage to the fruits. Cat facing injury, a physical distortion of fruits, is typical damage caused by BMSB and other stink bugs. In addition to its status as an agricultural pest, the BMSB may become a nuisance pest due to overwintering aggregations of adults in residential areas, where they produce an unpleasant odor and stain surfaces. The common name “stink bug” is due to strong-smelling aldehydes produced

by glands on the thoraxes and abdomens of the insects in response to attack by predators or other disturbances.

Control

Monitoring. Scouting fields and monitoring is the first step in management of the BMSB. Large pyramid traps can be used to monitor BMSBs and other stink bugs. An attract-and-kill strategy may be utilized to attract adult BMSBs to a location where they can be killed using insecticides. In areas where BMSBs build dense populations, sealing structures is necessary to prevent access by overwintering adults.

Biological control. For biological control, the samurai wasp, *Trissolcus japonicus*, a parasitoid in the family Scelionidae, may reduce populations of BMSBs by parasitizing eggs. In addition, wasp parasitoids in the genera *Anastatus* (Eupelmidae), *Telenomus* (Platygastridae) and *Ooencyrtus* (Encyrtidae) are reported to parasitize BMSB eggs.

Chemical control. Insecticides such as neonicotinoids, thiomethoxam and phosmet cause mortality of nymphs and adults. Management in organic settings requires nonsynthetic insecticides such as pyrethrins and azadirachtin. Chemical insecticides should be used as a last strategy to reduce impacts on environment. For current chemical control recommendations, see the current LSU AgCenter Insect Pest Management Guide. Always follow legally mandated label directions.

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Contact Us: For advice about arthropod identification or diagnosis, contact the LSU AgCenter Department of Entomology. Reach the department through the Contact Us webpage: <https://bit.ly/36c4awm>.



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