

## Brown Marmorated Stinkbug (*Halyomorpha halys*) in Corn and Soybean

The brown marmorated stinkbug (*Halyomorpha halys*) (BMSB) is a pest that was introduced into the United States about ten years ago. Like many recent invasive insects, BMSB is native to Asia and likely hitchhiked to North America in shipping containers. The BMSB feeds on the fruits and seed pods of a wide range of plants, including corn and soybean.

### Identification

Like other stink bugs, BMSB are shield-shaped and have long piercing-sucking mouthparts. They often release an odor when crushed. The upper side of the body on adults is mottled shades of brown and gray and is covered with dense puncture marks (Figure 1).

The underside of the body is white, sometimes with gray or black markings. They have dark red eyes and the legs are brown with faint white banding. Broad light and dark bands on the last two antennal segments distinguish BMSB from other stink bugs.

The immature stages, called nymphs, are oval-shaped. Young nymphs are yellowish brown, mottled with black and red (Figure 2). Older nymphs are darker with light bands on dark legs and antennae, similar to the adults (Figure 3).

### Biology

The BMSB overwinters as an adult in protected areas, including buildings. In the spring, adults mate and females lay egg clusters on host plants. There are five nymphal instars that feed on host plants during the summer. The new adults also feed, then seek overwintering sites in the fall.

### Damage

The BMSB is a true bug, feeding on plant juices with a piercing-sucking mouthpart and injecting saliva as it feeds. This feeding can puncture and scar plant tissue, resulting in distortion of the growing tissue around the feeding scar. Damage may not be seen until husks and pods are opened in corn and soybean.

In corn, BMSB feeds through the husk and damages the developing ear, resulting in unfilled or shrunken kernels (Figure 4).

In soybean, BMSB feeds through the developing pod, resulting in aborted or shrunken seeds. Soybean fields may be



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Figure 1. BMSB adult. Light and dark bands on the antennae distinguish BMSB from other stink bugs.



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Figure 2. Young nymph stage of BMSB.



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Figure 3. BMSB nymph. Note the antennae markings similar to the adult.

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damaged along field borders near tree lines<sup>2</sup>. Damage can result in a 'green-stem' phenomenon along the borders where plants fail to naturally senesce, as they try to compensate for insect damage (Figure 5).

BMSB that are crushed in the chopping of silage and fed to dairy cattle may cause an off flavor in milk (a cilantro-like flavor).

### Control

The BMSB is very mobile and expected to be problematic again in 2013 in corn and soybean fields. Suspected insects or damage from BMSB can be brought to local county extension offices for identification and reporting.

Presently, entomologists are still developing thresholds for BMSB in agricultural crops. Many insecticides, including pyrethroids, are effective against BMSB; however, spray equipment needs to be adjusted to allow for adequate coverage of the product.

Damage to crops may be most severe near tree lines, and field perimeter treatments may be used to temporarily stop a BMSB invasion. Such treatments likely will limit the insect for a short time as BMSB can move in and out of fields as well as move farther into the field. While control options are currently limited and there is some evidence of resistance, research by various extension services is continuing<sup>1</sup>.

### Sources

<sup>1</sup>Rutgers University Cooperative Extension Service. 2011. How to control the brown marmorated stink bug? <http://www.njaes.rutgers.edu>. (verified 1/25/2013); <sup>2</sup>Herbert Jr. A. 2011. Brown marmorated stink bug; a confirmed new pest of soybean. Plant Management Network. [Presentation]. <http://www.plantmanagementnetwork.org> (verified 1/25/2013);

Additional references used in this article:

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Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

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**Figure 4. BMSB bug damage may not be seen until husks are removed from corn. Symptoms of BMSB damage includes shrunk and unfilled kernels.**



Photo courtesy Dr. Galen Dively, University of Maryland.

**Figure 5. 'Green-stem' phenomenon on edges of soybean field occurs when BMSB damage causes plants to remain green in order to compensate for damage<sup>2</sup>. The rest of the field naturally senesces leading to a staggered harvest problem.**