

# Brown Marmorated Stink Bug

## A New Threat to New Jersey and New England's Agriculture

**George Hamilton**

*Pest Management Specialist, Rutgers Cooperative Extension*

The brown marmorated stink bug (BMSB), *Halyomorpha halys* (Stål), is an exotic insect belonging to the order Hemiptera or true bugs. BMSB, sometimes also called the yellow-brown stink bug or East Asian stink bug, is native to China, Korea and Japan and is considered an important agricultural pest in soybeans and tree crops in Japan.

This non-native stink bug was first collected in the United States in Allentown, PA, during the fall of 1996. In New Jersey, BMSB was recovered in 1999 from a Rutgers Cooperative Extension Vegetable IPM program black light trap in Milford, NJ. Since 2000, BMSB has spread throughout Pennsylvania and New Jersey.

BMSB has also spread to other parts of the United States. Early on it

was only found in Delaware, Maryland, New Jersey and Pennsylvania. Today, in addition to these states, it is present in California, Georgia, Illinois, Indiana,



Kentucky, Mississippi, New Hampshire, New York, North Carolina, Ohio, Oregon, Rhode Island, South Carolina, Tennessee, Virginia and West Virginia.

BMSB eggs are elliptical, light green in color and are deposited in a cluster of 20 to 30 eggs on the under-side of leaves. Immatures go through five nymphal stages (instars) and range in size from 2.4 mm in the first instar to 12 mm in length during the final instar. Immatures are characterized by dark red eyes and a yellowish-red abdomen as first instars. In later instars, the abdomen gradually turns to off-white with reddish spots.

Adults are approximately 17 mm long, generally brown in color with characteristic white (or off-white) antennal segments and darker bands on the membranous, overlapping part, at the rear of the wings. They also have patches of coppery or bluish





metallic-colored punctures on the head and pronotum. Scent glands are located on the dorsal surface of the abdomen and the underside of the thorax. These glands are responsible for producing the pungent odor that characterizes “stink bugs.”

The brown marmorated stink bug is a sucking insect that uses its mouthparts to pierce the host plant to feed. Feeding results, in part, in the formation of small, necrotic areas just under the skin and sometimes on the outer surface of fruits and leaves of its hosts. In tree fruit, it can cause characteristic cat-facing injury due to early season feeding. In its native range, BMSB feeds on a variety of fruits and other host plants including apples, cherry, citrus, figs, mulberry, peach, pear, peppers, persimmon, soybeans and tomatoes. In Pennsylvania and New Jersey, BMSB

has been observed feeding on many ornamental plants, fruit trees, legumes, and vegetables and was shown to cause significant damage in pears and apples on two farms. Based on this, it was predicted that BMSB could become a significant agricultural pest.

In 2009, this prediction began to come true. That year, in the fruit growing regions of Virginia and West Virginia, BMSB caused severe late season injury to peaches and apples with some orchards exhibiting 40-50% damage. This year, the same thing happened in Virginia and West Virginia not only in tree fruit but also in vegetables. It was also seen feeding in soybeans. In addition, many growers in New Jersey, Pennsylvania, Maryland and Delaware also saw significant damage in tree fruit and peppers. It was also seen feeding in field and sweet corn and several other vegetables.

As you might imagine, researchers in the mid-Atlantic and northeastern states are very concerned. Chemicals controls for this insect in tree fruit and vegetables are available; however, their use may disrupt current IPM programs that rely on natural enemies to



keep certain pests in check. Because of this, research is currently underway to develop chemical and non-chemical alternatives to properly manage this new pest.

