

EMERGING EXOTIC PEST: *BROWN MARMORATED STINK BUG (BMSB)*

Yet another exotic pest has hit the news feeds: the Brown Marmorated Stink Bug, *Halyomorpha halys* or BMSB.

The first discovery of BMSB was in Allentown, PA where it quickly spread to other Mid-Atlantic states. It is now found in 29 states across the US. Although there are no confirmed detections in WA*, BMSB appears to now be resident in northwest OR (Portland south to Corvallis and east to Hood River).

BMSB is native to China, Japan, Korea and Taiwan. It may have been introduced to the US by way of cargo shipments from Asia. It is



Image source: USDA-ARS

considered a major economic pest in Asia attacking a variety of high value crops, including tree fruit.

This insect has made its presence known by causing losses in eastern

stone fruit and apples and by becoming a late season pest in urban areas.

The devastating potential of this insect has triggered a flurry of activity by state and federal agricultural researchers. Four research priorities critical to understanding and control are:

- * Behavioral studies including host preference, movement and responses to cues;
- * Biology studies including physiology and number of generations per year;
- * Standardized sampling studies to determine best traps, lures, their placement and timing;
- * Determine which crops are susceptible and when.

* one unconfirmed discovery in Vancouver, WA

IDENTIFICATION OF BMSB

There are several stink bugs native to the Pacific Northwest that could be confused with the Brown Marmorated Stink Bug. One of the most common ones to be confused is the predator Rough Shield Stink Bug (RSSB), *Brochymena quadripustula*. Comparing key features will readily differentiate the two species. BMSB antennae are longer and the segments are banded.

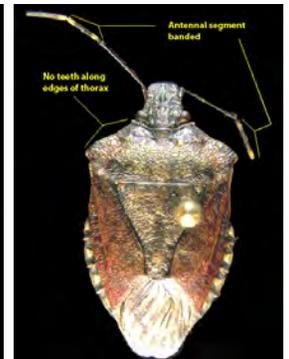
RSSB have teeth-like projections on the edges of the thorax which BMSB lacks. Also, the general body shape is different. Images to the right compare both species.

For a comparison of BMSB to other species common to this region along with additional information, please visit our web page at:

<http://pmtp.wsu.edu/BMSB.html>



Rough Shield Stink Bug



Brown Marmorated Stink Bug

(Images courtesy of: Oregon Dept. of Agriculture)

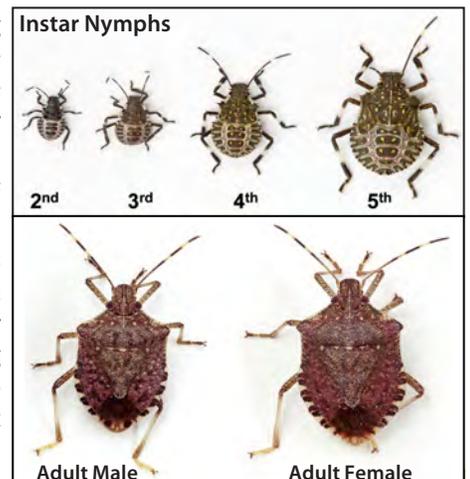
WHAT'S KNOWN ABOUT THE BIOLOGY

USDA-ARS researchers in WV have observed that there are two full generations of BMSB beginning with the previous year's overwintered adults in the Spring. These become active, move into orchards and start to feed and mate. Egg masses are laid with nymphs hatching soon afterwards. The nymphs feed

voraciously while undergoing five nymphal stages before developing into adults, ending the first cycle of the year. By September the second generation of adults are present and may begin to leave the orchard to overwinter.

In regions where BMSB is present, mass migrations of adults flood into urban areas, including homes, looking for a warm place to overwinter causing public outcry. Although harmless to people, they can emit an unpleasant odor if disturbed.

(Life cycle images courtesy of: USDA-ARS)

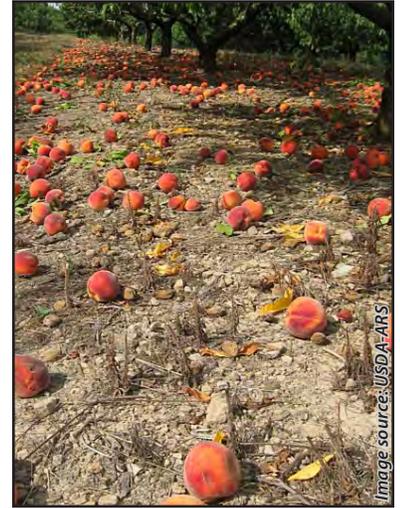




POTENTIAL FOR CROP DAMAGE

BMSB is considered a major agricultural pest in Asia damaging a wide variety of crops including tree crops, grapes and vegetables. In the Mid-Atlantic states devastating crop loss has already occurred in commercial orchards with some growers losing entire blocks of stone fruit, as shown to the right. Severe injury was also detected in apples and Asian pears.

Adults and nymphs feed on fruit beginning in the Spring and continuing through harvest. The images to the left show the effect of stink bug feeding on apple. Dimples and even cat-facing if severe enough, are exterior signs of feeding. When cut, internal damage appears as corkiness similar to bitterpit.



Pyrethroid insecticides can be used to control BMSB, however there are signs of resistance developing. Re-infestation can quickly occur from untreated areas. Other forms of control need to be developed for long term management.

RESEARCH EFFORTS

A large multi-state, multi-agency and industry working group has been established to combat this new pest threat. While the general biology of BMSB is fairly well known, details of its host preferences, behavior and control are not. This has prompted the development of a long list of research priorities addressing these issues. The top four were mentioned at the start of this newsletter.

Current research activities centered in the eastern US focus on:

- * Identifying effective chemical controls;
- * Developing effective monitoring methods to estimate pest density;

- * Finding effective natural enemies to enhance biological control;
- * Identifying attractants to be used for monitoring and possibly for attract-and-kill traps.

Clearly, much work is needed to identify the best ways to battle this new threat. Although BMSB has yet to arrive in eastern WA, an active research program on native stink bugs funded by the Tree Fruit Research Commission will be modified to address issues of the BMSB distribution and its threat to tree fruit crops in this state.



Visit PMTP online at:
<http://pmtip.wsu.edu>

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