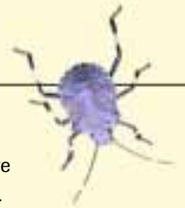
Brown Marmorated Stink Bug, *(Halyomorpha halys)*



The Brown Marmorated Stink Bug (BMSB) is a newly introduced agricultural pest in the United States. Commercial stone fruit production is at risk, particularly peaches. BMSB is also considered a nuisance pest because of its tendency to aggregate in dwellings certain times of the year.

The Biology

The Brown Marmorated Stink Bug is believed to have one complete generation per year in Pennsylvania. In its native range in southern China the Brown Marmorated Stink Bug has as many as five generations per year.

BMSB spends the winter as adults in a protected area and becomes active and starts a new generation May through June in Pennsylvania. Emergence is followed by mating. Eggs are laid on the undersides of host plants through early September. Eggs hatch in about one week.

Each female lays about 28 eggs per egg mass and about 400 eggs in her lifetime. Nymphs undergo five development stages, each about a week in duration. Damage is done by feeding nymphs and adults. Little damage can occur after September in Pennsylvania as crops are harvested and adults seek shelter and begin their resting phase. This is the period when aggregation occurs in preparation for winter. It is believed that it will have more than one generation in the warmer latitudes of the United States.

The Problem

BMSB has tremendous potential to spread. It survives in Pennsylvania and New Jersey indoors and other protected places such as plant litter. It can establish itself in urban and suburban areas. In addition to being a strong flyer, it is a hitchhiking pest, able to spread rapidly with human assistance to other locations in the United States.

Peach, apple and soybeans are vulnerable to BMSB. Reports also indicate this insect attacks grapes, raspberries, other brambles, many ornamentals, snap beans, cherries, cucurbits, and tomatoes. Black cherry, maples, Juneberry, hollies and crabapples are some of the host plants growing in natural areas. It is believed that BMSB would be able to survive, if not thrive, on native plants.

The Food Quality Protection Act limits usage of chemicals on commodities for human consumption. It will probably be several years before products are available for use on vulnerable crops. There are chemicals available for control of BMSB on and within structures. The success rate of these controls is variable.

Two egg parasitoids have been found in Pennsylvania; both are considered generalists. The effectiveness of biological control by native parasitoids is doubtful. Two viruses of BMSB are known. Ants and spiders are sometimes predators of Stink Bugs.

So What?

The Brown Marmorated Stink Bug might negatively impact the quality standards of several commodities. Fresh market fruits, vegetables and nursery stock, can be reduced in quality by the feeding habits of BMSB. Affected states are planning university research in many areas.

Hatched egg mass showing disbursing nymphs. In this picture is one 1st stage nymph or 1st instar nymph, (black and red nymph in the center of the picture). The red nymph at the top of the picture is a 2nd instar nymph that has very recently molted, and has not yet developed the normal darker coloration. The 2nd instar nymphs appear black in color. The molting is very fast. The red color will only last a short time.

Picture taken in mid-July on Paulownia tomentosa. This is the peak time of ovipositing, although eggs are laid from end of June until September.

Last instar nymphs (5th instar) taken on black cherry showing some leaf damage.

(Above) Last stage nymph (5th instar) before it moults into an adult.

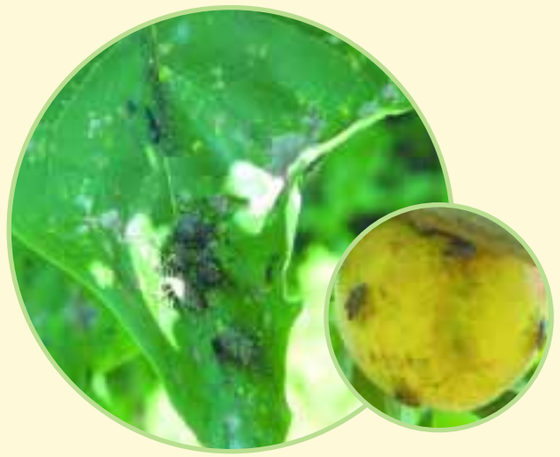
Brown Marmorated Stink Bugs feeding on beans.

What you can do...

Management

Before Bugs Enter a Building: Mechanical exclusion is the best method to keep stink bugs from entering homes and buildings. Cracks around windows, doors, siding, utility pipes, behind chimneys, and underneath the wood fascia and other openings should be sealed with good quality silicone or silicone-latex caulk. Damaged screens on doors and windows should be repaired or replaced. Exterior applications of insecticides may offer some protection from new infestations where the task of completely sealing the exterior is difficult or impossible. Applications should consist of a synthetic pyrethroid (i.e., deltamethrin, cyfluthrin, lambda-cyhalothrin, cypermethrin, sumithrin or tralomethrin) and should be applied by a licensed pest control operator in the fall just prior to bug aggregation. Unfortunately, because insecticides are broken down by sunlight, the residual effect of some material will be limited.

After Stink Bugs Have Entered the Structure: If numerous bugs are entering the living areas of the home, attempt to locate the openings where the insects gain access. Typically, Stink Bugs will emerge from cracks under or behind baseboards, around window and door trim, and around exhaust fans or lights in ceilings. Seal these openings with caulk or other suitable materials to prevent the insects from crawling out. Both live and dead stink bugs can be removed from interior areas with the aid of a vacuum cleaner.



It is not advisable to use an insecticide inside after the insects have gained access to the wall voids or attic areas. Although insecticidal dust treatments to these voids may kill hundreds of bugs, there is the possibility that carpet beetles will feed on the dead Stink Bugs and subsequently attack woolens, stored dry goods or other natural products in the home. Although aerosol-type foggers will kill Stink Bugs that have amassed on ceilings and walls in living areas, it will not prevent more of the insects from emerging shortly after the room is ventilated. For this reason, use of these materials is not considered a good solution to long-term management of the problem. Spray insecticides, directed into cracks and crevices, will not prevent the bugs from emerging and is not a viable or recommended treatment.

Warning

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

PENNSTATE

College of Agricultural Sciences
Cooperative Extension

Credits

This document was developed using information published by:

Karen Bernhard, Program Assistant
Lehigh County Cooperative Extension

Gary Bernon, Pest Survey, Detection and Exclusion Lab, USDA

Maureen Carter, Department of Entomology, Cornell University

Richard Hoebeke, Department of Entomology, Cornell University

Steven Jacobs, Senior Extension Associate, Department of Entomology
Penn State University

Peter Shearer, Associate Extension Specialist,
Research and Development Center, Rutgers University

Thanks to Steven Jacobs for review.

This publication was produced by John Berry, Lehigh County Cooperative Extension, and is partially funded through the PA-IPM Program.

They're Baaack!