

Brown Marmorated Stink Bug

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The brown marmorated stink bug, *Halyomorpha halys*, is an invasive pest, that is becoming wide-spread in the U.S. and is of concern to farmers. It feeds on a large number of high-value crops and ornamental plants in its immature and adult life stages. The species is native to Asia and was introduced into the United States in the mid-1990s, possibly stowing away in a shipping container. Their numbers and range have been growing since that time, and they have proved difficult to manage.

In 2010, these stink bugs were seen in extremely high numbers in the mid-Atlantic region. They were responsible for causing major economic damage to fruits and vegetables on a number of farms. In addition to plant damage, brown marmorated stink bugs are a nuisance to people. Adult stink bugs may seek shelter inside houses and other buildings, although they do not bite people or pets, nor do they damage buildings.

Identifying Brown Marmorated Stink Bugs

The adult brown marmorated stink bug (figure 1) is shield shaped and dark, mottled brown. It ranges in length from 14 to 17 mm, roughly the size of a U.S. dime. The last two antennal segments have alternating broad light and dark bands. The exposed abdominal edges also have alternating dark and light banding.



Figure 1- Adult Brown Marmorated Stink Bug



Figure 2- Newly Hatched Brown Marmorated Stink Bug Eggs



Figure 3- Brown Marmorated Stink Bug Nymph

From June to August, females lay clusters of 20-30 light green, elliptical-shaped eggs on the undersides of leaves (figure 2). They usually produce one or two generations per year in cooler climates and up to five generations in warmer climates. Newly hatched nymphs are yellowish, mottled with black and red. Older nymphs (figure 3) are darker with banded legs and antennae, like the adults. When disturbed or squashed, the bugs produce an unpleasant odor.

Destructive to Agriculture

As of early February 2011, the brown marmorated stink bug had been identified in 36 states and the District of Columbia. It is increasingly becoming a serious pest in fruit and vegetable crops.

While tree fruits are the primary crops of concern, this species has also been observed to feed successfully on numerous fruit and vegetable crops including apples, apricots, Asian pears, cherries, corn (field and sweet), grapes, lima beans, nectarines and peaches, peppers, tomatoes and soybeans.

Physical damage includes pitting and scarring, sometimes leading to a mealy texture in the fruit. This makes the fruit unmarketable as a fresh product. Some damage to fruit can even render the crop unusable for processed products. Leaves that have been fed upon usually develop stippled areas approximately 1/8 inch in diameter. Entry wounds from feeding can allow disease to attack the host fruit or plant.

Managing this newly introduced pest is challenging because there are currently few effective pesticides labeled for use against them. Researchers are looking into short- and long-term ways to effectively control this stink bug species.

If you suspect you have seen brown marmorated stink bugs, contact your State Department of Agriculture, University Diagnostic Laboratory or Cooperative Extension Service for further advice on effective treatment and control recommendations.

Nuisance in Homes and Businesses

When the weather turns cool each fall, adult brown marmorated stink bugs look for wintering sites and can be found on the outsides of buildings or inside near doors, windowsills, and other entry points. They can also be found in leaf litter and vegetation outdoors. In areas where they have become established, they can enter structures by the hundreds.

They can congregate almost anywhere, including bookcases; under beds and sofas; in cracks under or behind baseboards, window and door trim; and in attics. These pests will not cause structural damage or reproduce in homes.

They do not bite people or pets. Although they are not known to transmit disease or cause physical harm, some people may be sensitive to pest allergens.

Adult brown marmorated stink bugs, like other pests, can enter homes through cracks and crevices. A few simple tips to help keep them from entering homes are:

- Caulk windows inside and out.

- Weather strip entry doors and/or install door sweeps if daylight is visible around the perimeter of the door.

- Rake away all debris and edible vegetation from your home's foundation to keep from attracting pests.

- Inspect for and seal foundation cracks to block a potential point of entry.

- Secure crawlspace entries.

- When insulating exposed plumbing pipes around the foundation or the crawlspace of your home, caulk small gaps and fill larger ones with steel wool.

- If your home has a fireplace, cap or screen the top of the chimney to keep out pests.

- Contact a pest control professional to treat surrounding vegetation near your home's foundation, which can harbor large populations of stink bugs, with products registered for residential outdoor uses.

Both live and dead brown marmorated stink bugs can be removed from interior areas with the aid of a vacuum cleaner, but the vacuum may smell of stink bugs for a period of time.

Although aerosol-type sprays and foggers labeled for domestic stink bugs will kill these pests in living areas, it will not prevent more of the insects from emerging from cracks after the room is aired out. Use of these materials is not a solution for long-term management of stink bugs.

What EPA Is Doing

- Collaborating with the U.S. Department of Agriculture, state pesticide agencies, various federal research agencies, universities, industry and growers to develop a sustainable pest management solution.

- Participating in the brown marmorated stink bug work group.

- EPA has approved requests under the FIFRA section 18 emergency exemption program for use of the insecticides bifenthrin and dinotefuran on tree fruit to help manage populations of the brown marmorated stink bug.

- Last year, EPA approved an additional use for an insecticide that may help manage stink bugs in organic production systems. This product contains azadirachtin and pyrethrins, which are derived from botanical ingredients. This product is now approved for use on many crops where stink bug management is needed and it can be used by organic farmers.

- Developing Integrated Pest Management Plan, which relies on natural pest control techniques, only uses pesticides when absolutely necessary, and uses the least toxic pesticide to control pests, for long-term management.