



Pacific Northwest
Vegetable Extension Group

Identification & Management of Emerging Vegetable Problems in the Pacific Northwest

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Brown Marmorated Stink Bug

Affected plant species:

The brown marmorated stink bug (BMSB) is a new invasive pest in the Pacific Northwest that is expected to cause economic damage in the region on vegetables such as asparagus, beans, peas, corn, and tomato. Additionally, BMSB is considered an important pest of tree fruits, small fruits, nuts, grapes, and ornamental plants.

Common name of the causal organism:

Brown marmorated stink bug

Latin binomial:

Halyomorpha halys (Stål) (Heteroptera: Pentatomidae)

Symptoms & key characteristics for identification:

BMSBs have piercing-sucking mouthparts that are used to puncture the surface of vegetables, and enable feeding on internal tissues. However, BMSBs can also feed on stems and leaves. Digestive enzymes are first secreted into the plant tissue, and then the meal is ingested. Feeding initially causes a small scar on the surface of the vegetable, but symptoms worsen over time and discoloration increases. Severe deformation can result if the healthy tissues surrounding the wound continue to grow. Below the surface of the vegetable, damage appears as blemished soft spots that may become more severe secondary infections develop. In the case of corn, damage may be hidden by the shuck.



Crop damage can result from feeding by four of the five immature stages (2nd to 5th instar nymphs) as well as from winged adults. When eggs are laid directly on the crop, severe damage can result from the rapid population increase and feeding by nymphs. Eggs are laid in clusters or in masses of 28 eggs on the underside of leaves. Eggs are typically blue-green in color when fresh. After 4 to 6 days, eggs hatch and the first nymphs remain clustered around the egg mass where they feed from the eggs and not the plant. The egg masses are more easily discovered at this

stage than when they are fresh because the nymphs form a ring around the mass. These 1st instar nymphs are often brightly colored red but can also be orange or gray. As they mature, nymphs resemble the adult stage in coloration, but are spiny and lack developed wings. Adults are approximately 0.5 inches long with a shield-shaped body characteristic of all stink bugs. The body color of the back of the insect is mottled brown and grey, and the margins of the shoulders (pronotum) are smooth. The abdomen may be quite colorful, ranging from gray to crimson red, orange, yellow, or green. The antennae are dark with light bands, and the legs also show light bands.



Biology/epidemiology:

In Oregon, adults emerge from aggregations of larvae in overwintering sites near or around buildings, and from protected sites such as rocky outcrops and dead trees. In spring, the adults search for food and mates. Egg masses first appear in mid-to-late June, and are found through September. Nymphs are highly mobile, and can walk from tree to tree. Summer-generation adults first appear in August. When disturbed or handled, older nymphs and adults emit defensive chemicals. The odor strongly resembles cilantro. Beginning in September, BMSB adults again seek out overwintering sites and they may aggregate in large numbers on the sides of homes and other buildings.

Management:

Currently, sustainable management options are very limited. Producers in the eastern US are relying on broad-spectrum pyrethroid insecticides. Repeated applications are often necessary because of constant immigration of BMSB into fields. However, these practices are will to result in secondary pest resurgence, and development of resistance in BMSB populations.

Additional Readings:

- Brown Marmorated Stink Bug in Oregon, <http://BMSB.hort.oregonstate.edu>
- Northeastern IPM Center, <http://stopbmsb.org>
- *Pest Watch: Brown Marmorated Stink Bug*, Washington State University Extension Fact Sheet FS0079E
- *Pest Alert: Brown Marmorated Stink Bug*, A quick ID guide, Oregon Department of Agriculture
- Pacific Northwest Vegetable Extension Group of Washington State University, Oregon State University, and University of Idaho. http://mtvernon.wsu.edu/path_team/vegpath_team.htm
- Pacific Northwest Vegetable Extension Group of Washington State University, Oregon State University, and University of Idaho: Photo Gallery of Vegetable Problems http://mtvernon.wsu.edu/path_team/diseasegallery.htm