



## Brown Marmorated Stink Bug

The Brown Marmorated Stink Bug (BMSB), an insect pest that is native to Asia, was first identified in North America about a decade ago in Pennsylvania. It has spread from there and is currently present throughout the USA (including Washington, Oregon and California) and Eastern Canada, with a high concentration in the eastern mid-Atlantic states. In 2015 it was found in the eastern Fraser Valley, the Okanagan and Kitsilano. In 2016, monitoring traps were set out by the BC Ministry of Agriculture to detect and monitor BMSB, and to track its spread.

BMSB has the potential to become a significant agricultural pest in BC because it has a very wide host range. It feeds on over 200 different plant species including vegetables, tree fruits, berries and ornamentals. It uses a long mouthpiece to pierce and feed on leaves and fruits causing distortions and necrotic (dead) spots on the plant and fruit. It is also a harvest contaminant in high value crops like wine grapes, where it will affect the final flavor. In the US in 2010, estimated losses in the apple industry in the mid-Atlantic states alone were in the neighborhood of almost \$40 million.

### Identification Facts:

- Latin name: *Halyomorpha halys*
- The adult BMSB is a typical stink bug shape, described as “shield-shaped”. A large stink bug, BMSB adults can grow up to 17 mm in length.
- It has a marbled brown color, which is what the word “marmorated” means. The antennae have bands of white on the last two segments,



Figure 1: Brown Marmorated Stink Bug

which helps to distinguish this specific stink bug from others.

- Eggs are laid in groups of 20 – 30, are white or pale green, round and about 1.5 mm.
- The BMSB is not a type of insect that develops from an egg, to a larva, pupa and finally an adult. Rather, the eggs hatch to produce “nymphs”, smaller versions of the same-shaped insect. In the case of the BMSB, it develops through 5 nymphal stages. The first nymphs after egg hatch are orange-red, the second are black, and the others are brown.

### Similar-looking Insects to Brown Marmorated Stink Bug

The distinguishing features of BMSB, especially the two white antenna bands, will help prevent confusing other, similar appearing stink bugs with BMSB. Two similar stink bugs are the Common Brown Stink Bug and the Rough Stink Bug.

### Life Cycle and Biology

BMSB has one generation per year. Overwintering adults emerge in March and April and lay up to 400 eggs. Offspring emerge in June and nymphs are present throughout the summer. Nymphs go

through multiple stages of development and become adults in early fall. Adults will continue to feed until mid-autumn when they will seek overwintering sites. This life cycle data is from the Eastern US, but should not change much in our area. BMSB is also a pest to homeowners, as adults will aggregate on the side of houses in the fall and early winter and can find their way into homes.

### Crop Damage

The BMSB causes damage by puncturing fruits and vegetables with its mouthparts during feeding. This causes an unsightly small, dead spot. And of course, we all know that stink bugs have an unpopular aroma. When feeling threatened, stink bugs release a defensive aroma by exuding a chemical from the underside of their thorax. This can be problematic for workers during harvest, and obviously harvested produce can be ruined by contamination.

### Controls

Management of Brown Marmorated Stink Bug should include cultural activities and chemical options.

There are four insecticides already registered in Canada for use in controlling and/or suppressing BMSB: **Clutch 50WDG**, **Lannate**, **Actara 25WG** and **Malathion 85E**. All of the registered products are broad spectrum, so application timing is going to be critical in order to prevent losses of beneficial insects. BMSB is also very mobile, so control with chemicals is going to be difficult, as the pest can repopulate a field from other areas after an insecticide application. Being an introduced pest, BMSB has very few natural predators in North America. Recently, USDA researchers have been researching a parasitic wasp from Asia that has potential for a release program. Any such release is still years away, but does put hope on the horizon. USDA scientists are also developing a pheromone attractant used to detect and hopefully reduce population numbers. Our best weapon against this pest is exclusion, and failing that, early detection of its presence here. The BC Ministry of Agriculture has put together a brochure asking locals to be on the lookout for this pest, and if found to report it immediately to them (scan the QR code on your smart phone). The BMSB enters new areas mostly by hitchhiking on shipments (plants or otherwise) from infested areas. When buying nursery stock from affected areas, please be careful to buy only from nurseries that are free of this pest.



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Figure 1: Brown Marmorated Stink Bug feeding on an apple.

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