

To: Regional and Corporate Services Committee
From: Alex Harte, Environmental Services Technician

Date: 2023-03-09
File No: 9010-01-17994

Subject: Information on a new invasive insect – the Brown Marmorated Stink Bug

INTENT

This report is intended to advise the Fraser Valley Regional District Board of information pertaining to the increased prevalence of brown marmorated stink bugs in the Fraser Valley. Staff is not looking for a recommendation and has forwarded this information should members want more clarification or to discuss the item further.

BACKGROUND

Originally found throughout Asia, brown marmorated stink bugs (BMSB), as seen in Figure 1, are an invasive insect first observed in the Fraser Valley in 2016. Last year, sightings became significantly more frequent, likely a result of the extended summer-like conditions. They are now believed to be widely distributed throughout much of the region and have been commonly seen this winter inside houses and sheds as they have moved indoors to seek shelter.

Staff are providing information on these relatively new invasive insects in preparation of additional sightings this spring as they emerge and are expected to become more active.

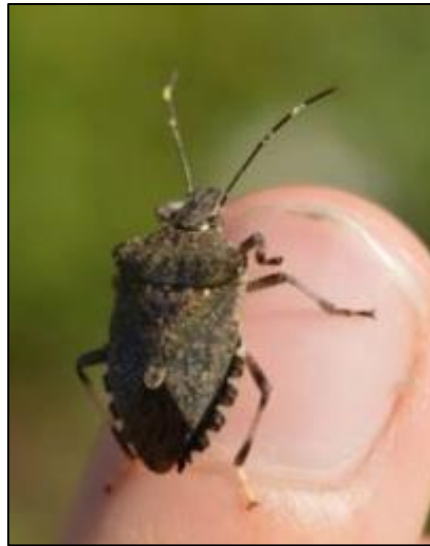


Figure 1. The adult brown marmorated stink bug (Invasive Species Council of BC website: <https://bcinvasives.ca/invasives/brown-marmorated-stink-bug/>). Distinguishing characteristics include the white bands on the top of each antennae and leg.

DISCUSSION

Brown marmorated stink bugs are 1-2 cm in length with a hard outer shell in the shape of a shield. They are mottled brown with long antennae. While there are several species of stink bugs already found in BC, BMSBs have distinguishable white bands on their antennae and legs (Figure 2).



Figure 2. The invasive brown marmorated stink bug (left), the native common brown stink bug (middle), and the native rough stink bug (right). (Images from the Province of BC's Brown Marmorated Stink Bug Pest Alert website: <https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/animals-and-crops/plant-health/insects-and-plant-diseases/tree-fruits/brown-marmorated-stink-bug>)

Should we be concerned?

While they can give off an unpleasant odour if crushed or threatened, BMSBs are not harmful to humans or animals. These insects have no biting or stinging capability and they do not chew on wood or fabrics in the home.

However, BMSB have the potential to cause damage to certain agricultural products. Some of the common crops and plants that the BMSB has been shown to harm include corn ears, peppers, tomatoes, pears, apples, apricots, hazelnuts, hops, sunflowers, thimbleberries, and elderberries. They eat a small portion of the plant or fruit and the resulting dead or brown spot can reduce the use or marketability of the product (Figure 3).

In 2010, growers in the US attributed \$37 million in losses of apples to BMSB and some farmers lost more than 90% of their peach yields¹. BMSB can also taint wine if they are not properly screened from the grapes before processing and a few missed bugs may contaminate the entire batch.

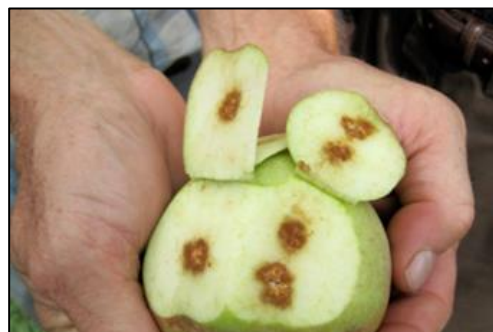


Figure 3. Brown spots on fruit from BMSB feeding (from <https://www.stopbmsb.org/>).

¹ Invasive Species Centre, "Brown Marmorated Stink Bug" (<https://www.invasivespeciescentre.ca/invasive-species/meet-the-species/invasive-insects/brown-marmorated-stink-bug/>).

What should people do if they have these insects in their homes?

BMSBs may move indoors to a house, shed, or barn during winter and will remain until the weather warms up in spring. Most BMSBs go into a dormant-like state during the winter but they may also be observed flying or walking around your house as they start to become more active.

Household pesticides are not effective against brown marmorated stink bugs.

The preferred method for avoiding having them in your house is to prevent initial entry. This can be from replacing or repairing damaged window screens, sealing off entry points, and turning off indoor lights at night. BMSBs **do not cause damage to wood or fabric inside one's house, but they may cause** some damage to indoor plant foliage. Covering these plants until the bugs are removed could be considered if damage to these plants is starting to be observed.

If found in a home, BMSBs are best to be physically removed using a vacuum or sweeping. Insects that are caught or swept up should be killed and not released outside or be placed live into the garbage or compost as they may spread or escape. Placing the insect in soapy water will drown the bug and avoid releasing its odorous smell. Another effective method is to set up a “**light trap**” by placing a light source, such as a lamp, over the top of a tray filled with soapy water (Figure 4). The light will attract the bugs and they will fall into the water and perish.



Figure 4: A stink bug light trap made of water, dish soap, a lamp, and a pan.

Additional information is also available on the Province of BC's recently released brochure "*Controlling Brown Marmorated Stink Bugs in Your Home*" (attached).

How can populations of these insects be managed or controlled?

Pesticides do not appear to be an effective mechanism to protect crops from an infestation of brown marmorated stink bugs. Physical prevention is the most recommended method of control. For smaller gardens, a light trap can be placed outside at night. Where it is feasible, crops and plants may be covered to provide protection. Bug collection traps can be effective in trapping a small population of BMSBs for removal. However, BMSBs are highly mobile and can move from area to area as they feed. More crop-specific tips can be found at www.stopbmsb.org.

There are some native predators to BMSBs in BC, including spiders, mites, ladybugs, and some bird species. Growing plants that attract these predators could help reduce BMSB numbers. The Province is also currently exploring further biological control, but more research is needed (see attachment “*Have you seen these insect eggs?*”).

Should I report sightings?

Because brown marmorated stink bugs are considered widely distributed throughout the Fraser Valley, reporting residential sightings of BMSBs, either indoors or outdoors, is not recommended. However, the BC Ministry of Agriculture still wants to know about BMSB occurrences on farmland to allow them to monitor spread. Reports of BMSBs on farmland can be made using the following provincial website: <https://forms.gov.bc.ca/industry/report-brown-marmorated-stink-bug/>.

Where do I go for more information?

Several resources are available if residents want more information about the brown marmorated stink bug, including the **Province’s** BMSB Pest Alert². Residents can also contact the Ministry of Agriculture if they have additional questions or would like more information. They are asked to contact Tracy Hueppelsheuser, the Ministry Entomologist for the Coastal Region, by calling 778-666-0519 or by sending an email to Tracy.Hueppelsheuser@gov.bc.ca.

COST

n/a

CONCLUSION

Brown marmorated stink bugs are a nuisance pest for residents, businesses, and property owners, and a threat to local growers and agricultural crops in the FVRD. These pests are overwintering in homes currently, and residents are encouraged to remove and destroy any insects found to help reduce numbers before they emerge in the spring. The BC Ministry of Agriculture is also encouraging residents to report observations of BMSBs to them if observed on crops.

COMMENTS BY:

Stacey Barker, Director of Regional Services: Reviewed and supported.

Kelly Lownsbrough, Director of Corporate Services / CFO: Reviewed and supported.

Jennifer Kinneman, Chief Administrative Officer: Reviewed and supported.

² <https://alpha.gov.bc.ca/gov/content/industry/agriculture-seafood/animals-and-crops/plant-health/insects-and-plant-diseases/tree-fruits/brown-marmorated-stink-bug>