

TACKLING

Brown Marmorated Stink Bug

(*Halyomorpha halys*)

Invasive species have significant impacts on the environment, human health, infrastructure and the economy in the Metro Vancouver region.

The brown marmorated stink bug (BMSB) is an invasive insect native to East Asia that was accidentally introduced to North America and Europe. It poses a significant threat to agricultural and horticultural industries. First detected in British Columbia in 2015, BMSB is now found in Metro Vancouver, the Fraser Valley, Vancouver Island, and the Okanagan.

IMPACTS

BMSB feeds on more than 100 tree fruits, berries, grapes, vegetables and ornamental plants. The damage can make produce unmarketable. While this pest has caused millions of dollars in crop losses in the United States, significant agricultural impacts have not yet been documented in BC, though backyard gardeners could experience losses.

Although harmless to humans and structures, BMSB can be a significant nuisance. They release a foul odour when disturbed or crushed and often congregate in and around buildings or vehicles during the fall and winter months.

IDENTIFICATION

- **Lifecycle:** Adults overwinter in protected indoor or outdoor spaces, and emerge in the spring. Females lay clusters of 20-30 eggs every 5-7 days throughout the summer.
- **Eggs:** Globe-shaped, 1.6 by 1.3 millimetres, white or pale green eggs are laid in single-layers on the underside of leaves or other structures.
- **Nymphs:** There are five nymph stages (instars). Nymphs lack fully developed wings and are more brightly coloured than adults, often red, black, or brown.



Egg mass and newly hatched 1st instar nymphs
CREDIT: C. PORTERFIELD



5th instar nymph
CREDIT: S. ELLIS, BUGWOOD.ORG



Adult beetle with white bands on the last two antennae segments
CREDIT: S. ELLIS, BUGWOOD.ORG



Adults feeding on fruit with noticeable damage
CREDIT: G. BERNON, USDA APHIS, BUGWOOD.ORG

- **Adults:** Shield-shaped, measuring 13-17 millimetres long and 8 millimetres wide, with a brown marbled ("marmorated") pattern. Alternating brown-and-white markings along the abdomen edges. Distinctive white bands on the legs and the last two antennae segments.
- **Feeding damage:** Feeding can cause deformed or discoloured fruits and seeds, fruit loss, delayed plant maturity, and bud death.

CONTROL METHODS

Effective invasive species management typically involves a variety of control methods. The techniques below are recommended following table summarizes the recommended techniques for controlling brown marmorated stink bugs on private property or where permission has been granted by the land owner or manager. Other methods may be used by professionals..

CONTROL STRATEGY	TECHNIQUES	SUITABLE SITES	NOTES
Prevention – building entry	Sealing access points	Gaps and cracks in windows, screens, doors, attics, siding, etc.	<ul style="list-style-type: none"> • Use caulking, weatherstripping, screens, netting, or chimney caps • May be difficult to seal all entry points
	Managing vegetation around buildings	Buildings with surrounding vegetation	<ul style="list-style-type: none"> • Trim plants and rake leaf litter away from siding and foundations at least once a year
	Inspecting and winterizing	Outdoor furniture	<ul style="list-style-type: none"> • Close umbrellas, sweep and cover furniture, and store seasonal items indoors during the winter
	Turning off or dimming lights at night	Buildings with outdoor lights	<ul style="list-style-type: none"> • BMSB are attracted to light at night
Manual	Destroying egg masses	Egg clusters found under leaves or structures	<ul style="list-style-type: none"> • Crush or freeze eggs, but ensure proper identification to avoid harming beneficial look-alike insects
	Hand picking	Low numbers of insects	<ul style="list-style-type: none"> • Hand pick insects off indoor and outdoor plants
	Sweeping	Multiple insects	<ul style="list-style-type: none"> • Sweep insects up using a broom • Insects may fly away
	Using a dry or wet vacuum	Low numbers of insects	<ul style="list-style-type: none"> • Use a household or shop vacuum to remove insects from buildings • May cause insects to emit foul odour – dispose vacuum contents promptly to minimize smell
	Using do-it-yourself traps	Indoors	<ul style="list-style-type: none"> • See 'How to' guidance below
Cultural	Installing plant protectors	Indoor or outdoor plants susceptible to predation	<ul style="list-style-type: none"> • Use tents, cages, permeable netting, or cloches • Difficult to implement over large plants/trees • May impact pollinator and plant health
	Using fruit protection bags	Fruit trees	<ul style="list-style-type: none"> • Install mesh drawstring bags around individual fruits or clusters of fruit • Time-consuming to implement

HOW TO MAKE DO-IT-YOURSELF TRAPS

BMSB Pan Trap

- Fill a pan with soapy water and place a desk lamp above (see photo)
- Use a white light bulb and place the trap in a dark spot for best results
- Empty the pan when necessary and repeat



Pan trap
CREDIT: ISCMV

BMSB Funnel Trap

- Find a 2-litre clear pop bottle (label removed), small push button LED light, black tape, and masking tape
- Cut off the top ¼ of the bottle, cover the bottom with black tape, place the LED light in the bottom, and invert the top part of the bottle to create a funnel (see photo)
- Use masking tape to secure the funnel pieces, then place additional strips vertically around the trap to help insects crawl upward
- Place the trap in a dark spot for best results
- Empty the trap when necessary and repeat



Funnel trap
CREDIT: ISCMV

Disposal

Do not place live BMSBs in garbage or yard waste bins as they can escape and establish in other areas. If crushed or squished, BMSB will emit a foul odour, so drowning or freezing is recommended. Dead insects can be placed in municipal green bins. Do not flush BMSBs or other materials used to capture insects down the toilet.

How Can You Help?

- Outside of the Metro Vancouver, Fraser Valley, and Okanagan regions, report BMSB [online](#) to help monitor the distribution within BC.
- To reduce the spread of invasive species, dispose of yard waste and soil appropriately. Visit your municipality's website for more information.
- If you also have invasive plants, check out factsheets for those species. Visit [growgreenguide.ca](#) for non-invasive plant suggestions.
- Download the '[Report Invasives BC](#)' app to identify and report invasive species.

For the complete set of best management practices for BMSB and other key invasive species, visit [metrovancouver.org](#) and search 'Invasive Species'.



Side view of an adult on a leaf
CREDIT: CITY OF PITT MEADOWS