

BEST PRACTICES FOR USE OF PROFUME® GAS FUMIGANT FOR FUMIGATION OF STATIONARY VEHICLES AND EQUIPMENT FOR CONTROL OF THE BROWN MARMORATED STINK BUG



These best practices recognize the unique circumstances associated with quarantine fumigation of vehicles and equipment using ProFume® gas fumigant for control of the brown marmorated stink bug. All directions on the labeling for ProFume, including the use of personal protective equipment and posting of warning signs, must be followed. This document does not supersede national, state and local regulations for the use of these fumigants.



1. Preparation prior to fumigant introduction:

- a. The exterior of vehicles and equipment should be sufficiently dry and free of excessive moisture on visible, exposed glass, finished metal, such as chrome and painted surfaces.
- b. At least one window, if present and operational, per vehicle should be opened at least 3 inches.
- c. Inspection: Large compartments, such as automobile trunks and passenger/driver compartments, must be inspected prior to fumigation to ensure they are vacated of people, domestic animals and pets.

2. Securing the fumigated site:

- a. If fumigating vehicles and equipment inside a structure, such as a warehouse, shipping container, or chamber, secure the structure against unauthorized entry during the fumigation exposure period using a locking device or barricade on all exterior doors and doorways. A locking device, such as a secondary lock or barricade, must be demonstratively effective in preventing an exterior door or doorway from being opened from the outside using normal opening or entering processes by anyone other than the certified applicator in charge of the fumigation or persons in his/her on-site direct supervision.
- b. When fumigating vehicles as a tarped stack outdoors, secure the driver/passenger compartment against unauthorized entry by using a locking device or barricade on the vehicle doors. The locking device or barricade must be demonstratively effective in preventing

an exterior door or doorway from being opened from the outside using normal opening or entering processes by anyone other than the certified applicator in charge of the fumigation or persons in his/her on-site direct supervision.

- c. When fumigating vehicles and equipment as a tarped stack outdoors, if it is impractical to secure the driver/passenger compartment against unauthorized entry by using a locking device or barricade on the vehicle doors, then alternative security measures should be used. Alternative security measures, such as use of guards or conducting the fumigation in a locked, fenced compound, should prevent unauthorized personnel from accessing the tarped stack by normal means.

3. Fumigant introduction:

- a. Release the fumigant into the largest open space(s) in the fumigation site. Do not release the fumigant inside the driver/passenger compartments of vehicles.
- b. Do not apply fumigant directly to any surface. This includes the visible exterior surfaces of vehicles, such as glass windows, chrome metal, and painted surfaces.
- c. Follow label directions for fumigant release into the blast of air from a fan(s) having a capacity of at least 1000 cubic feet per minute (cfm) for each pound of sulfuryl fluoride released per minutes (28.3 m³ per minute for each 0.5 kilogram of sulfuryl fluoride released per minute).

Sulfuryl Fluoride Best Practices for Control of the Brown Marmorated Stink Bug

4. Fumigant monitoring:

- a. It is recommended to measure sulfuryl fluoride concentrations at one or more locations in the fumigated space.
- b. Fumigant concentration readings should be taken at a minimum of two time intervals: about 30-60 minutes after fumigant introduction is completed and prior to initiating aeration. Quarantine treatment schedules may require fumigant concentration readings at different and/or more time intervals.
- c. Sulfuryl fluoride concentrations should be measured using equipment, such as a Fumiscope, RDA Fumiscope, ProCheck, or Spectros 400, calibrated to manufacturer recommendations to measure high concentrations (exceeding 1 g/m³)(1 oz/1000 ft³) of sulfuryl fluoride.

5. Fumigant aeration:

- a. Using an approved detection device of sufficient sensitivity, such as the Interscan, Miran [SapphIRe], SF-ExplorIR or CLIRcheck, test the breathing zone inside vehicles, such as driver/passenger compartments, to confirm the concentration of sulfuryl fluoride is 3 ppm or less.
- b. After aerating the fumigated space per label directions, turn on the vehicle's interior air handling system, if operational, to ventilate the ducts. Use an approved detection device of sufficient sensitivity to test the breathing zone inside vehicles to confirm the concentration of sulfuryl fluoride is 3 ppm or less.



A. Adult BMSB; B. BMSB eggs and newly hatched nymphs. Photographs courtesy of David R. Lance, USDA APHIS PPQ, Bugwood.org.

The Brown Marmorated Stink Bug (*Halyomorpha halys* Stål) (BMSB) is native to Asia (China, Japan, North and South Korea). It was first reported in the United States in the 1990s when it was found in states along the east coast. It was first reported in Europe (Switzerland) in 2008. Today, the BMSB is found in many US states, some Canadian provinces, and several European countries (<https://www.cabi.org/isc/datasheet/27377>). It is a serious pest of fruit trees, vegetables, legumes, field crops, and ornamental plants. Additionally, it is considered a nuisance pest in temperate climates as it often seeks shelter in homes during colder months.

BMSB has been found in containers of various goods, including vehicles and machinery, shipped from infested areas. Treatment schedules are available for the use of sulfuryl fluoride for BMSB control. Check with the importing country or appropriate government regulatory agency to confirm acceptance of treatment with sulfuryl fluoride prior to fumigating. When fumigating with sulfuryl fluoride for phytosanitary purposes, it is critical to monitor the fumigation to ensure the requirements of the treatment schedule are met. Failure to meet treatment requirements may result in survival of the target species leading to rejection of shipped goods by the receiving country.