



Atlantic Tech Transfer Team  
for Apiculture

# SMALL HIVE BEETLE

## Learn how to spot it and what to do if you find it.

Small hive beetle (SHB), *Aethina tumida* Murray, is an invasive pest of western honey bees (*Apis mellifera* Linnaeus) that originated from Sub-Saharan Africa and has since established a breeding population in the Niagara Region of Ontario. Hives from Ontario may be imported to Maritime Provinces in the spring for pollination of crops such as lowbush blueberry. Due to the potential for SHB entry, either by flight or movement of hives, it is important that beekeepers at all levels of experience be able to identify SHB and report suspicious findings to their Provincial Apiculturist.

### WHAT DOES SHB LOOK LIKE?

Eggs are small (1.5 mm long), white and visible. However, SHB is more likely to be detected in its adult or larval form.



SHB larva – SHB larvae are small, pale, worm-like grubs that grow to almost 1 cm in length and 1.3 mm in width by their final larval growth stage. Note the rows of dorsal spines characteristic of beetle larvae (Paul Kozak).



Adult SHB – Adults measuring an average 5.5 mm long and 3.2 mm wide emerge from the soil as light brown and eventually fade to black (Lyle Buss, University of Florida).

### WHAT DOES SHB DAMAGE LOOK LIKE?

The most considerable damage performed by SHB occurs during their larval stage. Larvae consume virtually every edible substance in the hive except for the wooden hive-ware itself. A large infestation of SHB will cause significant damage to brood, comb, pollen, and honey. Excrement defecated by feeding larvae causes honey to ferment and no longer be suitable for human or bee consumption. Frames that have been removed from active colonies are also at risk of SHB damage. Entire seasons' worth of honey in extraction lines can be spoiled and valuable frames of empty wax comb can be lost if indoor storage facilities are infested.



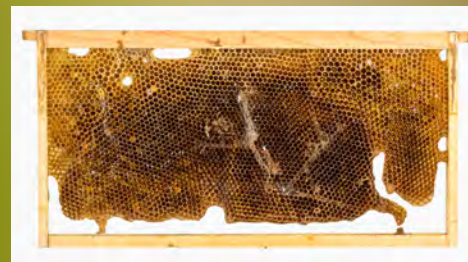
Infestation of SHB larvae spoiling honey frame (Paul Kozak).

### DON'T GET CONFUSED!

Small hive beetle larvae can be confused with other hive pests, the lesser wax moth (LWM), *Achroia grisella*, and greater wax moth (GWM), *Galleria mellonella*, larvae. SHB larvae are distinguishable from wax moth larvae by two rows of spines that run the along the dorsal surface and a lack of fleshy prolegs.



Along the ventral side, SHB larvae lack four pairs of fleshy prolegs characteristic of moth larvae. While prolegs are not "true" legs, they give caterpillars the appearance of having more than six legs. Use of a hand lens will aid in discerning prolegs and dorsal spines.



Feeding damage to a wax frame caused by wax moth larvae is characterised by the distinctive trails of white silk absent with SHB damage.

### WHO SHOULD YOU CALL?

If any suspected specimens (adults or larvae) are found in hives or stores hive products, Atlantic Canadian beekeepers are required by law to report their findings. Contact information for the Provincial Apiculturists can be found on The Atlantic Tech Transfer Team's factsheet on SHB available at [www.perennia.ca](http://www.perennia.ca). The Atlantic Tech Transfer Team for Apiculture is also interested in hearing of any potential SHB samples found, although it is not required to mail any samples to ATTTA. ATTTA's contact information can also be found at [www.perennia.ca](http://www.perennia.ca).

### HOW TO PREPARE A SAMPLE:

Your Provincial Apiculturist can help you confirm the identity of your possible SHB finding. Here are the steps you should take if you find a possible SHB in your hives:

1. Collect suspected SHB and store it/ them in isopropyl alcohol in a small jar or Ziploc bag. To do so:
  - a. Have an open collection container on hand.
  - b. Gently press (without crushing) on the back (dorsal side) of the beetle with one index finger, immobilizing it, so you can get your collection container ready.
  - c. Using your fingers (gloves can be worn), gently place the beetle into your collection container, again making sure not to crush the sample.
    - i. If the sample is in the larval stage, gently scoop it/ them into the collection container
  - d. Add 70 – 75% isopropyl alcohol
    - i. Avoid using 99% isopropyl alcohol as this potency of alcohol could deteriorate the sample.
2. After a sample has been collected, a few photos of any additional sightings and the preserved sample should be taken.
3. Mark the hive the sample was taken from and reduce its entrance.
4. Reduce the entrance(s) to all other hives in the yard
5. Contact the Provincial Apiculturist and send photos of sample.

### FINAL STEPS

Upon leaving the yard, employ standard biosecurity practices such as:

- a. Torch hive tools
- b. Checking clothing and vehicle exterior for beetles
- c. Double bag garbage
- d. Go through a car wash before visiting another apiary
6. Contact your Provincial Apiculturist for instructions on the best way to deliver the sample.



### Funders and Contributors:

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