

Small hive beetle

What is small hive beetle?

Small hive beetle (SHB) (*Aethina tumida*) is a small (0.5 cm long 0.3 cm wide) brown-black beetle with clubbed antennae. The larvae of SHB cause the majority of damage to honey bees by burrowing into combs, eating brood, honey and pollen. Whilst feeding, the larvae also carry a yeast (*Kodamaea ohmeri*) which contaminates the honey, causing it to ferment. Heavy infestations cause the hive to become 'slimed out' and may cause the colony to die or abscond. In Australia, SHB has the greatest impact in the warm and humid coastal strip between Victoria and North Queensland.

What does it look like?

Adult SHB are brown-black. The eggs are tiny (about 1 mm long) and are pearly white. In strong colonies, eggs are laid in the crevices of the hive, while in weak colonies eggs are laid directly on brood comb. Larvae are white, 10 mm long with three pairs of prolegs near the head. Once they mature, larvae leave the hive and burrow into the ground surrounding the hive to pupate.

What can it be confused with?

SHB larvae look similar to wax moth larvae. To distinguish between the two pests, SHB cause the honey to ferment and the hive to become 'slimed out', while wax moth larvae leave behind webbing mass and tough white cocoons on frames.

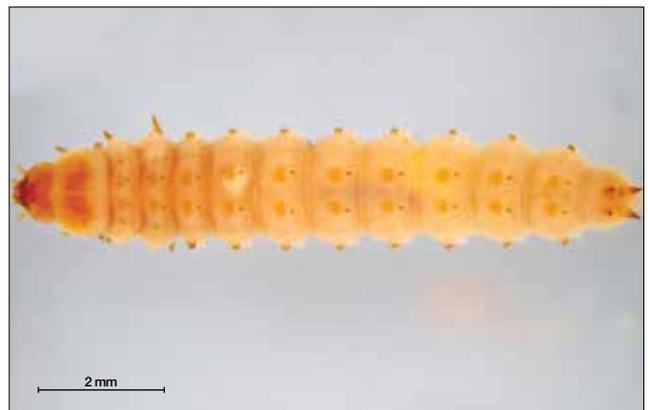
What should beekeepers look for?

Beekeepers should look for the adult SHB in the darker parts of the hive. Adult SHB avoid light and will seek refuge quickly when the hive is inspected. Inspect underneath the hive lid, as well as the brood box and bottom board. Weak and stressed colonies with a low bee-to-comb ratio are considered the most susceptible. Also look for larvae on frames in the brood box and in the above honey supers.



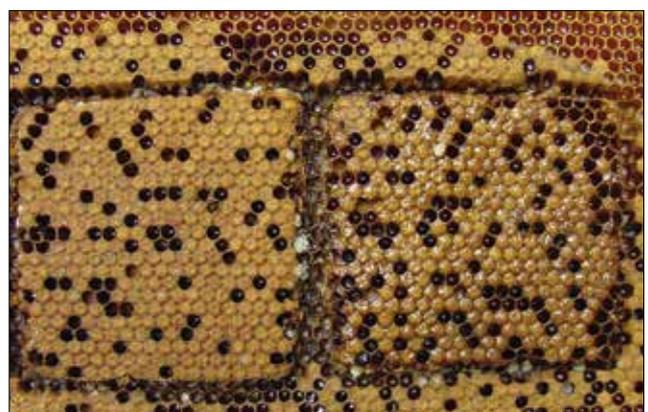
Adult SHB are brown-black with clubbed antennae

James D Ellis, University of Florida



Larvae of SHB are pearly white and about 10 mm long

Ken Walker Museum Victoria, PADIL



Cells infested with SHB (right) show a slimy appearance when compared to healthy unaffected cells (left)

Kieth Delaplaine, University of Georgia

The larvae cause the majority of the damage by burrowing into combs, eating brood, honey and pollen. Whilst feeding, the yeast species (*K. ohmeri*) that the larvae carry contaminates the honey, causing it to ferment, which makes the honey look greasy and slimy and weep out of the cells.

How does it spread?

SHB can spread by beekeepers moving infested hives to non-infested areas. SHB is also a strong flyer and can fly up to 7 km to find new hives and colonies. The SHB is believed to be attracted to new hives by honey bee colony odours and slumgum.

Where is it now?

SHB is present throughout NSW, Qld, Vic, ACT and in parts of SA and WA. It has not been recorded in NT or Tas.

How can beekeepers protect their hives from small hive beetle?

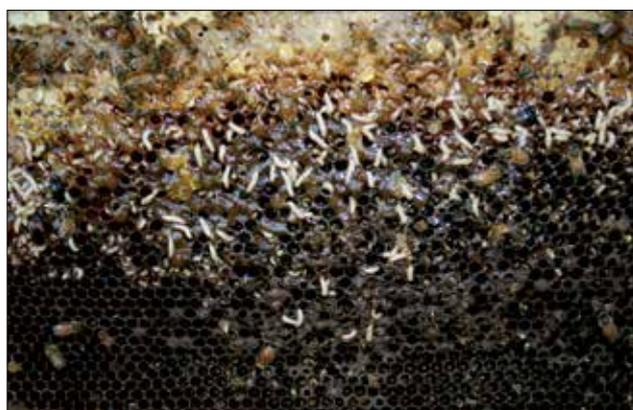
To protect hives against SHB it is critical to maintain strong, healthy colonies with a young productive queen bee and a high bee-to-comb ratio. Beekeepers should maintain good hygiene practices in the hive (e.g. remove debris on bottom boards, remove burr comb etc.) to reduce areas where SHB can hide and breed. It is also important to maintain good hygiene practices around the apiary (e.g. remove beeswax scraps, old combs and dead colonies etc.) which can attract SHB. Cool rooms maintained at 10°C or less for excess supers and combs will prevent the adult SHB laying eggs and will minimise SHB larvae activity. Freezing frames and hive parts at -7°C will kill all life stages of SHB within 4-5 hours. A range of in-hive chemical and non-chemical options are also available to beekeepers.

Please Note: The SHB larvae carry a yeast species (*Kodamaea ohmeri*) that poses a threat to immuno-compromised people. Be aware of the risk of handling and cleaning SHB slimed honey bee equipment and take precautions.



Adult SHB are about 2-3 times smaller than honey bees

Jessica Lawrence, Eurofins Agrosience Services



Heavy infestation of larvae on comb produces a slimy appearance

Nick Annand, NSW DPI

For more information about SHB, go to www.beeaware.org.au/small-hive-beetle. The BeeAware website contains extensive information on SHB, including:

- Life cycle
- Appearance
- Detection methods
- Spread and distribution
- Similar pests
- Management options
- Additional fact sheets and videos

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