



## Small Hive Beetle

**Latin name:** *Aethina tumida* (Murray)

**Common name:** The Small hive beetle  
Often abbreviated to “SHB”

The SHB is a statutory notifiable pest in the European Union. There is a legal requirement for any findings to be notified to the regulatory bodies under EU legislation.

SHB has been identified in Italy in Autumn 2014 and eradication measures are in place. Apart from this outbreak SHB is not present in Europe.

**Damage in colonies:** The beetle can multiply to huge numbers within infested colonies where it eats brood, honey and pollen. In certain conditions, the SHB destroys combs and causes fermentation and spoiling of the honey, excreting in it. If beetle infestations are very high and uncontrolled, they ultimately destroy colonies or cause them to abscond.

**Beekeeper national registration:** It is extremely important that **all beekeepers register on their national database**. If locations of colonies at risk of SHB infestation are not known, then the chances of detecting its arrival, achieving eradication, or even managing longer term control in the event of an introduction are all seriously jeopardised.

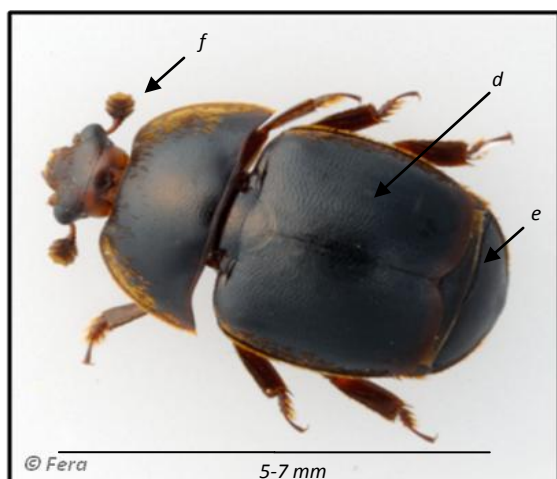
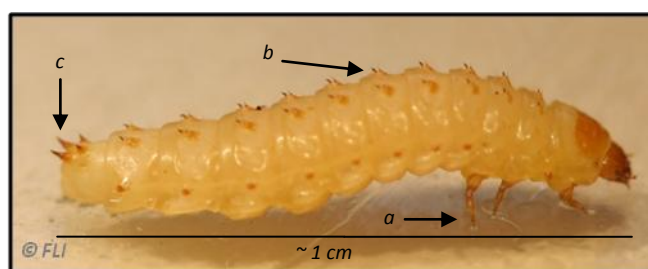
**EU legislation** now prohibits (with the exception of New Zealand) imports of package bees or colonies from Third Countries. It is permitted to import honey bee queens from a very limited number of countries outside the EU. **The import regulations** are the main defence against the introduction of the SHB. It is therefore crucial that every beekeeper respects the EU legislation and ensures regular surveillance.

**The Small hive beetle cannot be eradicated once well established.**

### How to recognize *Aethina tumida*

- **The larva**

The larva is the harmful stage to the colony when it occurs in the hive. It grows to about 1 cm long, is creamy-white and may at first glance look like the wax moth larva (*Galleria mellonella*). However, on closer examination it can easily be distinguished due to the presence of 3 pairs of long forelegs (a), spines on the dorsal side of each body segment (b) and two large spines protruding from the rear (c).



- **The adult**

The adults are 5-7 mm long and 2.5-3.5 mm wide (one-third of the size of a worker bee). Light-coloured upon emergence from the pupa, the beetle darkens to become brown to black. The head, thorax and abdomen are well separated. A key feature of this beetle is that its wing cases (elytra - d) are smaller than the abdomen, so the end of the abdomen is exposed (e). It also has distinctive “club-shaped” antennae (f).

## Biological cycle

*A. tumida* can have several generations per year (1-6) depending on the environmental conditions.

**The fertilized female lays eggs** (1.5 x 0.25 mm) in clusters e. g. in wood crevices or directly into the bees' brood cells (g – capping has been removed). Females can lay one- to two-thousand of eggs in the hive during their lifetime.

**The larval stage lasts 10-16 days.** Larvae are omnivorous and eat brood, pollen and honey.

**Mature larvae pupate after 15-60 days.** Pupation occurs in soil outside the hive, usually at a depth of 1 cm to 30 cm and within 20 m of the hive. In rare instances larvae will crawl 200 m to find suitable soil. Soft and moist soils and a temperature above 10°C are necessary for completion of the life cycle, although SHB may be able to survive at lower soil temperatures if of short duration (< 3 weeks).

**Adult beetles usually emerge after 3-4 weeks** but can emerge anytime between 8 and 84 days depending on temperature. Adults can fly at least 10 km to infest new colonies. Adult beetles can survive for up to 9 days without food or water, 50 days on used comb and several months on fruit.

**Methods of spread.** The spread occurs naturally as SHB is a good flyer. Spread is enhanced by movement of package bees, honey bee colonies, honey bee swarms, honeycomb, beeswax or beekeeping equipment. Movement of soil, fruits, and alternative hosts (e.g. bumble bees) may also be routes for introduction.



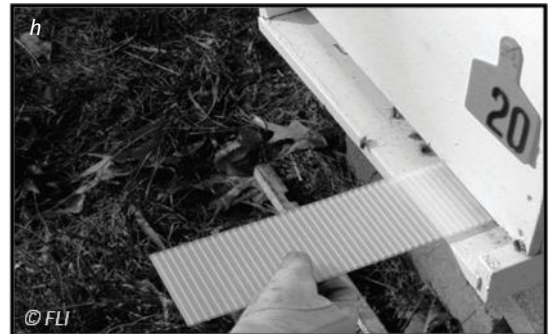
## Suspicion criteria/ Infestation consequences for the colony

### Clinical signs of infestation by the Small hive beetle:

- Galleries inside the frames (larvae dig galleries)
- Brood destruction (eaten by SHB larvae)
- Modification of the honey colour and honey fermentation

### How to check your hives

Note that it is very difficult to detect low numbers of Small hive beetles, larvae or eggs in hives, so regular inspection of colonies in apiaries is essential for early detection.



- If available, you can place traps made of 4 mm corrugated plastic (h) at the bottom of the hive. Adults of *A. tumida* will hide from the bees inside the tunnels of the trap.
- If you do not have corrugated plastic, you can physically check your hive and look for two signs:
  1. Sometimes it is possible to see adult beetles running around.
  2. In the worst cases (i.e. when infestation is very heavy) you will see fermented, smelly honey running out of the hive entrance or dark, crusty traces on the outside of the hives from the crawling wandering larvae.

**It is crucial to detect atypical beetles as early as possible.**

## What to do in case of suspicion?

As soon as possible, alert the competent authority, who will implement the adequate measures.

In Ireland all suspect *Aethina tumida* adults, larvae or eggs should immediately be submitted for identification to: **Dr. Rachel Wisdom, Entomologist, Plant Health Laboratory, Department of Agriculture, Food and the Marine, Backweston Campus, Celbridge, Co. Kildare.** Use a sealed container. Please provide as many details as possible - your name, address and phone number, the apiary name and location. **Do not send live beetles, larvae or eggs in the post.** Kill them first by keeping them in a freezer for a minimum of 12 hours or by putting them in 70% ethanol.

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