Pests and Diseases of

Honey Bees

A Quick Reference Guide

Department of
Natural Resources and
Environment Tasmania

Tasmanian Government

Tasmanian beekeepers have an important role to play in protecting the state's apiary industry as well as the many agricultural sectors that rely on honey bees for pollination.

The key to safeguarding Tasmania's honey bee population from both established and exotic pests and diseases is knowing where to look, what to look for, and performing surveillance regularly so that any pests or diseases are detected as early as possible.

This guide has been developed to help beekeepers quickly identify honey bee pests and diseases of biosecurity concern. For more information on those included in this guide, please visit the Biosecurity Tasmania webpage:
https://nre.tas.gov.au/biosecurity-tasmania

Note: Under the *Biosecurity Act 2019*, the presence of certain pests and diseases constitutes a biosecurity event, which must be reported to an authorised officer as soon as practical following detection (or suspected detection).

Acknowledgments

The author would like to thank J. Bikaun, R. Bourke, W. Chatterton, E. Frost, C. McGinty, R. Oliver, and B. Quinn for their photo contributions.

Healthy, developing brood

Healthy larvae are pearly white in colour with a glistening appearance and can be found in a curled “C” shape on the bottom of the cell.

A healthy brood pattern includes brood cappings that are medium brown in colour, convex, and without punctures.

Varroa mite
(*Varroa destructor* and *V. jacobsoni*)

External parasite of honey bees that reproduces and feeds on developing brood, feeds on adult bees, and can serve as a vector of viruses.

Where to look:

The brood box

What to look for:

Red-brown mites, 1.1mm long, 1.5mm wide

Detection methods:

- Alcohol wash
- Sugar shake
- Soapy water wash

Found in Tasmania?	**No**
Need to report?	**Yes**

Small Hive Beetle
(*Aethina tumida*)

A bee pest originating from Africa, whose larval stages cause damage by feeding on brood, honey and pollen as well as carrying a yeast that causes the honey to ferment.

Where to look:

Throughout the hive, but especially in dark corners, crevices, and in debris on the base board

What to look for:

- Small, brown-black beetle with clubbed antennae
- Long white larvae (10mm in length) with a brown/tan head and three pairs of prolegs near the head
- Wet or greasy honeycomb
- Fermenting honey

Found in Tasmania?	**No**
Need to report?	**Yes**

American Foulbrood
(*Paenibacillus larvae*)

Brood disease caused by spore-forming bacterium. Spores can remain viable for 50+ years. Infected larvae and pupae generally die after their cells have been capped.

Where to look:
The brood box

What to look for:

- Scattered, uneven brood pattern
- Sunken, greasy, or perforated cell cappings
- Discoloured brood (darker brown)
- Dead, glue-like brood that make a smooth rope of 3-5cm
- The threadlike tongue of dead pupa attached to topside of cell
- A dark scale adhered to the wall of the cell (difficult to remove)

Found in Tasmania?	**Yes**
Need to report?	**Yes**

Note: *If foulbrood is suspected, it is recommended to submit a pupal smear to the Animal Health Laboratory for diagnosis.*

European Foulbrood
(*Melissococcus plutonius*)

Brood disease considered to be stress-related and most prevalent in spring or early summer. Generally, kills larvae early in development, prior to the cell being capped.

Where to look:

The brood box

What to look for:

- Discoloured brood (watery, yellowish, brown, grey)
- Twisted larvae, or molten mass inside of cell
- A thin scale that, unlike an AFB scale, can be easily removed from the cell

Found in Tasmania?	**Yes**
Need to report?	**Yes**

Note: *If foulbrood is suspected, it is recommended to submit a pupal smear to the Animal Health Laboratory for diagnosis.*

Wax moth
(*Galleria mellonella* and *Achroia grisella*)

Moths that eat beeswax, pollen, remains of larval honey bees, honey bee cocoon silk, and honey bee faeces found on walls of brood cells.

Where to look:

Stored equipment kept in areas of low light, warm temperatures and poor ventilation

What to look for:

- Tunnels of silk throughout combs
- Patterns of bald brood caused by bees uncapping cells where wax moth larvae have tunnelled
- Cocoons stuck to frames and parts of the hive

Found in Tasmania?	**Yes**
Need to report?	**No**

Nosema disease
(*Nosema apis* and *N. ceranae*)

Disease caused by two species of microsporidian parasites (a type of spore forming fungus), whose infection cause the bee to have difficulty digesting food.

Where to look:

The hive entrance

What to look for:

- Brown diarrhoea on combs, interior walls and the outside of the hive
- Swollen and greasy honey bee abdomens
- Honey bees crawling around the hive entrance, sometimes with wings held at odd angles

Found in Tasmania?	**Yes**
Need to report?	**No**

Braula fly
(*Braula coeca*)

A small, wingless fly that resides in honey bee colonies. Considered a minor pest, only damaging the appearance of wax cappings and stealing small amounts of food from adult honey bees.

Where to look:

Throughout the hive, although they have an affinity for the Queen

What to look for:

- Red-brown fly, covered in hair with six legs that appear large in proportion to the rest of their body
- Narrow tunnels under wax cappings

Found in Tasmania?	**Yes**
Need to report?	**No**

Chalkbrood
(*Ascosphaera apis*)

Fungal disease where symptoms may only be visible for a short time although spores can remain viable for 15 years in the hive.

Where to look:

Hive entrance or bottom board

What to look for:

- Hard, shrunken, chalk-like mummies
- Colour of mummies can range between white and grey-black
- A scattered brood pattern

Found in Tasmania?	**Yes**
Need to report?	**No**

Sacbrood Virus

Virus of the Iflavirus genus, which mostly affects worker larvae, although can also infect adult bees.

Where to look:

The brood box

What to look for:

- Discoloured, sunken or perforated cappings
- Dead larva with its head raised toward the top of the cell

BL12408

Found in Tasmania?	**Yes**
Need to report?	**No**

Contacts

Animal Health Laboratory

03 6777 2111

(for enquiries related to the submission of samples for foulbrood testing)

Biosecurity Tasmania

03 6165 3777

(for all other enquiries, including reporting)