

Strengthening hive biosecurity

Good hive and farm biosecurity practices are needed to minimise the risk of new pest introductions into Australia and help manage pests that are already established.

There are a number of things that will improve your property's biosecurity and assist Australia's plant production and honey bee industries.

Beekeepers should

- Check the health of any bees purchased
- Consider hive placement and what pests might be at a new location
- Specifically check hives for established and exotic pests
- Consider the stress placed on honey bees that are regularly moved
- Isolate captured swarms for six months to ensure freedom from pests and diseases
- Position hives to limit the transfer of pests from hive to hive



What are the risks?

Honey bees pollinate around 65% of agricultural and horticultural crops produced in Australia and play a crucial role in Australia's food security. There are a number of pest threats to the Australian honey bee industry that could have a negative impact on pollination and honey production.

This brochure outlines both established and exotic honey bee pests and what you can do to help safeguard Australia's food security and honey bee industries.



Recognising new pests early will help protect the productivity of the industry and those industries dependent on pollination.

What is biosecurity?

Biosecurity is a set of measures that can be put in place at the national, regional or farm level to protect against the introduction and spread of new pests, to help deal with them should they arrive, and to minimise the impact of those already established.

Early detection and immediate reporting increases the chance of an effective eradication or improved management of a new pest.

Have you spotted anything unusual?

Report anything unusual to the Exotic Plant Pest Hotline

EXOTIC PLANT PEST HOTLINE
1800 084 881

Further information

Australian Honey Bee Industry Council
www.honeybee.org.au

Plant Health Australia
www.phau.com.au

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Honey bee biosecurity threats

Established and exotic pests of honey bees in Australia



Exotic pests (not present in Australia)

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

Varroa mites cause the most destructive disease of honey bees worldwide and are the greatest biosecurity threat to the Australian honey bee industry.



Scott Bauer, USDA Agricultural Research Service, Bugwood.org

Varroa mite on the thorax of a worker bee

Varroa mites (1-2 mm long) are carried on both Asian and European honey bees. Australia is the last remaining major beekeeping country free from this pest.

Varroa mites feed on both adult and brood stages of honey bees, causing early death and deformity, as well as transmitting viruses. This results in the early death of individual honey bees and the ultimate collapse of the colony if left untreated.



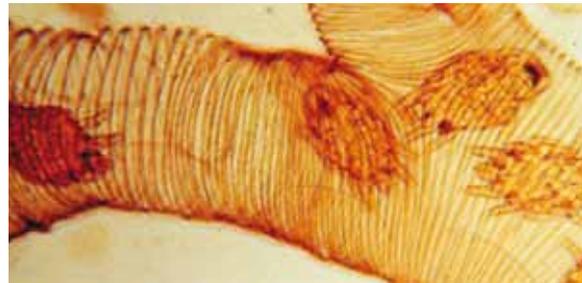
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Varroa mites on a bee pupa

Tracheal mites (*Acarapis woodi*)

Tracheal mites are microscopic internal parasites of the honey bee's respiratory system. Infection affects the honey bee's capacity to breathe and results in weakened and sick honey bees which have a reduced lifespan.

Although there are no reliable visual signs for the detection of this pest, infected honey bees may crawl around the hive entrance unable to fly.



USDA

Tracheal mites inside the breathing tubes of a honey bee

Tropilaelaps mites (*Tropilaelaps clareae* and *T. mercedesae*)

Tropilaelaps mites (1-2 mm long) are parasites of honey bee brood. These mites cause brood malformation, death of bees and subsequent colony decline or absconding.



Denis Anderson, CSIRO

Tropilaelaps mites on European honey bee pupae, and a deformed bee

Established pests

Asian honey bee (*Apis cerana java strain*)

The Asian honey bee (AHB) was first detected in Cairns in 2007.

The AHB is similar to the European honey bee in Australia, although it is slightly smaller, has more pronounced stripes on its abdomen and has a more erratic flying pattern.



CSIRO

Asian honey bee worker bees

The AHB robs managed hives of their honey stores and competes for floral resources; is a natural carrier of the Varroa mite; poses a greater public nuisance and is likely to swarm and establish nests in disturbed environments.



Department of Employment, Economic Development and Innovation, Queensland

Asian honey bee swarm

Small hive beetle (*Aethina tumida*)

Small hive beetle (SHB) was identified in NSW in 2002, and has since spread throughout eastern Australia and to parts of WA and SA.

SHB (5-7 mm long) consumes honey bee eggs, brood, pollen and honey within the hive, as well as laying eggs throughout the hive.



Nick Armand - NSW DPI

Small hive beetle adult

The hatched larvae (11 mm long) chew through the combs, causing the honey to ferment and the hive to become 'slimed out'.



Nick Armand - NSW DPI

Small hive beetle larvae 'sliming' out a frame

The beetle avoids light and thrives in humid and warm environments, relying on bee colonies for survival. Large numbers of SHB can result in a bee colony absconding.