

## Varroa mites

### What are varroa mites?

Varroa mites (*Varroa destructor* and *V. jacobsoni*) are external parasites of adult honey bees, and drone and worker bee brood. Varroa mites feed and reproduce on larvae and pupae, causing malformation and weakening of honey bees as well as transmitting numerous viruses. Heavy varroa mite infestations can build up in 3-4 years and cause scattered brood, crippled and crawling honey bees, a reduction in honey bee population, supersedure of queen bees and ultimate colony breakdown and death of the hive.

### What do they look like?

Adult female varroa mites are oval, flat, red-brown and around 1.1 mm long and 1.5 mm wide. They can be seen with the naked eye. Varroa mites complete their life cycle in honey bee brood and can be observed in both drone and worker bee brood. Examining the brood involves uncapping brood (preferably drone) to check for the dark mites in the cell and against the pearly white bodies of the developing brood. They can also be observed between the sclerites and between the head and thorax on adult worker bees and drones.

### What can they be confused with?

Varroa mites could be confused with the braula fly (*Braula coeca*) which is red-brown, 1.5 mm long, covered in spine like hairs and has six long legs. This pest is currently only present in Tasmania and is generally considered quite harmless. Varroa mites could also be confused with pollen mites (*Mellitiphis alvearius*) which are light brown and are around 0.75 mm long and 0.75 mm wide. Pollen mites are not harmful to honey bees but are sometimes found in hives.

Varroa mites could also be confused with other exotic parasitic mites, most notably tropilaelaps mites (*Tropilaelaps clareae* and *T. mercedesae*). If any mites are observed on adult honey bees or in the brood, call the Exotic Plant Pest Hotline immediately on 1800 084 881.



Varroa mites on honey bee pupa

CSIRO



Varroa mite on a forager worker bee

Kathy Keatley Garvey, UC Davis Department of Entomology



Braula fly (top), varroa mite (right), tropilaelaps mite (bottom) and pollen mite (left)

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## What should beekeepers look for?

Symptoms are dependent on the level of varroa mite infestation, the level of brood within the colony and the potential of viral infections transmitted by the varroa mites. Colonies with low infestation generally show very few symptoms. As varroa mite infestation grows, it results in the significantly reduced weight of worker bees and drones, impaired flight performance and a lower rate of return to the colony after foraging, a reduced lifespan as well as deformed wings and abdomens. Colony symptoms, commonly called parasitic mite syndrome (PMS), include a reduction in the adult honey bee population, loss of coordinated social behaviour, distorted and deformed honey bees, scattered brood with dead or uncapped brood and rapid honey bee de-population in the colony.

## How do they spread?

Varroa mites can spread through drifting drones and worker bees as well as through swarms and absconding colonies. The transport and movement of hives, used beekeeping equipment, packaged bees and queen bees are also effective means of spread.

## Where are they now?

*Varroa destructor* is present in Europe, North America, South America, Africa, parts of Asia and New Zealand. The genotype of *Varroa jacobsoni* that parasitises European honey bee brood is currently only present in some regions of Papua New Guinea.

## How can beekeepers protect their hives from varroa mites?

This pest is currently not present in Australia and there are strict quarantine requirements in place to protect the Australian honey bee industry.

**If you see any of these symptoms, or observe mites on your honey bees or in the brood, call the Exotic Plant Pest Hotline.**

**EXOTIC PLANT PEST HOTLINE  
1800 084 881**

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Parasitic mite syndrome (PMS) caused by varroa mites

Rob Snyder, www.beeinformed.org



Worker honey bee with severe wing deformities as a result of varroa infestation

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For more information about varroa mites, go to [www.beeaware.org.au/varroa-mites](http://www.beeaware.org.au/varroa-mites). The BeeAware website contains extensive information on varroa mites, including:

- Life cycle
- Effect on bees
- Detection methods
- Spread and distribution
- Overseas experiences
- Additional fact sheets and videos