

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 can be easily seen on developing pupae

Kathryn Sparks, AQIS, Victoria



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)

Food and Environment Research Agency (Fera), Crown Copyright

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, a scattered brood nest 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.



Parasitic Mite Syndrome (PMS) symptoms caused by Varroa mites

Michael Steedman, PIRSA



Worker European honey bee with wing deformities as a result of Varroa infestation

Denis Anderson, CSIRO

Other relevant fact sheets about Varroa mites:

- Varroa mites (NSW DPI) – Primefact 861
- Varroa: an exotic parasitic mite of honey bees (Vic DPI) – Note Number AG1183
- Varroa mites (DAFF Qld)

**EXOTIC PLANT PEST HOTLINE
1800 084 881**

Disclaimer: The material in this publication is for general information only and no person should act, or fail to act on the basis of this material without first obtaining professional advice. Plant Health Australia and all persons acting for Plant Health Australia expressly disclaim liability with respect to anything done in reliance on this publication.

For more information visit www.planthealthaustralia.com.au