

Cape Honey Bee

The Cape honey bee (*Apis mellifera capensis*) is one of two races of honey bee that inhabit South Africa. The "Cape bee problem" occurs when workers of the Cape bee enter colonies of another race of honey bee, where their ovaries develop and they start to lay eggs. These workers become pseudoqueens. The original queen may be killed or die from neglect and the social order of the host colony breaks down. Eventually the colony is unable to support itself and may die.

Field identification of the Cape bee is difficult and laboratory analysis is needed for confirmation:

- › Body colouring is dark to black which is within the normal colour range found in New Zealand honey bees
- › The bee is slightly smaller than European honey bees
- › It can be very active on the comb and may be very aggressive

Symptoms of hives invaded by Cape bees include:

- › Dwindling hive strength
- › Very little foraging activity for the number of bees in the hives
- › Bees that look like workers but lay eggs
- › Spotty and abandoned brood
- › Bees which have pointed abdomens and often spread their wings



Cape honey bee workers and pseudoqueens (pointed abdomens)

African or Africanized Honey Bees

The Africanized honey bee is a hybrid of the African honey bee (*Apis mellifera scutellata*) and the European honey bee (*Apis mellifera mellifera*).

The African and the Africanized honey bees:

- › Are smaller than the races of European honey bee found in New Zealand
- › Are similar in colour and shape to our yellow Italian bees
- › Are very active on the comb
- › Can be extremely aggressive
- › Are prone to absconding and swarming



African bee attack



African queen bee and workers

Asian Honey Bee

The Asian honey bee, or Eastern honey bee (*Apis cerana*), is found throughout Southern and South Eastern Asia and recently has become established in Queensland, Australia.

- › *A. cerana* is smaller than *A. mellifera* on average
- › They have more distinctive banding on their abdomens than *A. mellifera*
- › It can be very defensive
- › It is prone to swarming and absconding
- › It inhabits smaller nesting sites and may become the dominant honey bee species in an area
- › Worker bees ventilate their hives by facing outwards rather than inwards like *A. mellifera*
- › Wax from drone cell cappings may be seen outside the hive entrance
- › Capped drone brood can have a hole in the cappings



Apis cerana workers: Note holes in drone cells

Honey Bee

Exotic Diseases & Pests



Keeping our beekeeping industry safe

BORDER PROTECTION

Honey bee diseases and pests are spread either through bee products, used beekeeping equipment, or on bees. If you bring anything into the country, which is related to the beekeeping industry, declare it to the Ministry for Primary Industries (formally MAF) which will decide whether to permit entry.

WHAT TO DO IF YOU SUSPECT AN EXOTIC PEST OR DISEASE

If you suspect one of your hives has an exotic disease or pest, or if you know of a swarm on a ship or in a shipping container or bees being imported illegally, then:

- › Contact your nearest Apicultural Officer at AsureQuality 0508 00 11 22

or

- › Call the MPI freephone for reporting a suspect exotic disease 0800 80 99 66



European Foulbrood

European foulbrood (EFB) is a bacterial disease which kills honey bee larvae. It can easily be mistaken for sacbrood, American foulbrood (AFB), parasitic mite syndrome or half-moon syndrome, all of which occur in New Zealand. Definitive identification of EFB can only be made in the laboratory. Symptoms include the following:

- › Most larvae die before being capped
- › Infected larvae lose their distinct form and change from their normal pearly-white to yellow then dark brown
- › Tracheae (air tubes) may appear prominent as light lines in the larvae
- › Infected larvae may twist up the cell wall instead of remaining curled in the base of the cell
- › Some larvae may end up near the lip of the cell as seen with parasitic mite syndrome
- › In medium to heavy infections some larvae die after capping and the brood pattern may appear patchy. Some cappings may be sunken or perforated
- › The larvae dry down to thin scales which can easily be removed from the cells. Unlike sacbrood, the dried scales appear rubbery rather than brittle
- › Unlike AFB, EFB infected larvae rarely "rope out" when an inserted matchstick is slowly withdrawn from the larval remains



EFB: Note larvae in non-capped cells and visible air tubes (tracheae)



EFB larva removed from cell

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Asian Mites

The Asian mites (*Tropilaelaps spp.*) are external parasitic mites of the honey bee. Infestations at the colony level look similar to varroa infestations including one or more of the following:

- › Rapid reduction in colony population
- › Abnormal brood exhibiting symptoms similar to other endemic and exotic brood diseases (referred to as parasitic mite syndrome)
- › Deformed adults
- › Absconding of the colony
- › Colony death

Tropilaelaps is visible to the naked eye but lighter in colour and smaller than varroa. It moves very rapidly on the combs, going from one brood cell to another. Adult mites appear less oval shaped than varroa and are about 0.9mm long by 0.6mm wide.



Varroa (left) and Tropilaelaps (right)

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Damage to adult bees caused by parasitic mites

Tracheal Mite

The tracheal mite (*Acarapis woodi*) is a parasite that lives inside the respiratory system (tracheae) of adult honey bees. The mite is so small that it cannot be seen with the naked eye.

At the colony level, there are no symptoms unique to tracheal mites. Symptoms include dwindling hive populations and large numbers of dead and dying bees at the hive entrance similar to symptoms of poisoning.

Female mites are larger and are 0.14mm - 0.17mm long and 0.07mm - 0.08mm wide. Identification can only be made in the laboratory with a microscope after dissecting the bee.



Tracheal mites in air tubes

Colony Collapse Disorder (CCD)

CCD is a recently described phenomenon that results in the sudden collapse of honey bee colonies. It has been reported in a number of significant beekeeping countries including the United States and parts of Europe. It is unclear what causes CCD but environmental effects, pesticides, poor colony nutrition, viruses, *Nosema ceranae*, Israeli Acute Paralysis Virus and chemical resistant parasitic mites such as varroa, are among the list of potential causative agents. It is possible that it may even be a combination of these.

Typical symptoms include:

- › The rapid loss of worker bees
- › Excess brood relative to the adult bee population
- › Lack of dead worker bees within and around the hive
- › Delayed invasion of robbing bees and hive pests (e.g. wax moths)

Small Hive Beetle

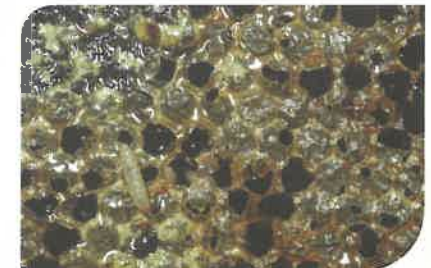
The Small Hive Beetle (SHB) (*Aethina tumida*) is a pest of the honey bee that eats honey, pollen and bee larvae.

The adult SHB:

- › Is dark brown to black in colour
- › Is about 5.5mm long and 3mm wide
- › Is fast moving and runs away from light
- › Can be found at the extremities of a hive (e.g. under the hive mat and on the inside of boxes)

The SHB larvae:

- › Are pearly white
- › Are up to 9.5 mm long
- › Move towards the light and will come out of combs like maggots when a hive is being inspected
- › Consume honey and pollen leaving a slime on the combs
- › Sometimes they will congregate in a large mass on the floorboard
- › Will burrow into the ground around the hive to pupate



Slime on honey comb



Adult bees and beetles



Adult beetle

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Small Hive Beetle larvae
Photo courtesy of MPI