



# Unwanted bee species (*Apis* sp)

## What are unwanted bee species?

In New Zealand, we have the European honey bee. We have two common strains of this bee, the Carniolan strain (*Apis mellifera carnica*) and the Italian strain (*Apis mellifera lingustica*). There may also be some remnant colonies of the British bee strain (*Apis mellifera mellifera*).

Unwanted or exotic bee species (or their subspecies) are any bees that are not currently present in New Zealand. There are a number of exotic bees (*Apis* sp.) from overseas that could disrupt the apiculture industry, the ecosystem and could harbour pests and diseases.

## What should beekeepers look for?

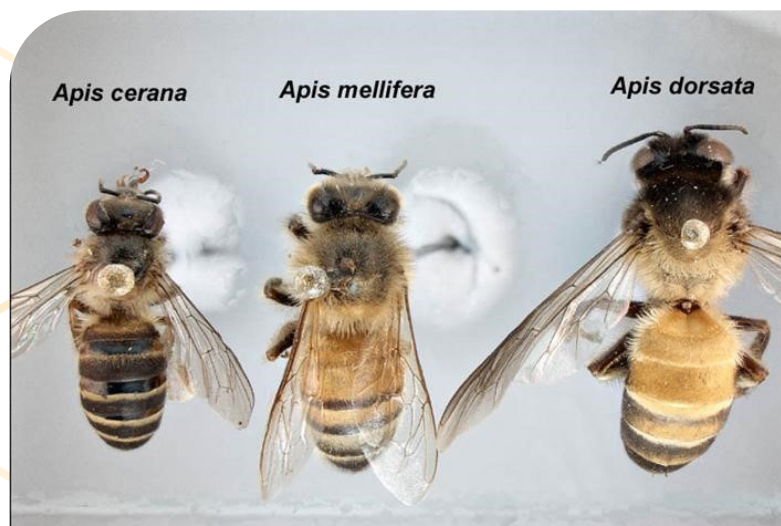
The most notable exotic bees that pose a risk to New Zealand include the:

- Asian honey bee (AHB, *Apis cerana*),
- Cape honey bee (*Apis mellifera capensis*) and
- African honey bee (*Apis mellifera scutellata*) and any hybrids ('Africanised' bees).

## Asian honey bee (*Apis cerana*)

The Asian honey bee (AHB; *Apis cerana*) is found throughout much of Southeast Asia, and in Australia. The AHB is approximately 10 mm long and could be easily mistaken for European honey bees. Some distinguishing features of AHB includes:

- Quick and erratic foraging behaviours.
- AHB are smaller and less hairy than our European honey bees.
- More prominent, evenly-spaced and consistent abdominal striping, when compared with European honey bees.
- Smaller swarms: from the size of a fist to the size of a basketball.
- AHB nest in cavities around dwellings, making encounters more likely. Our European honey bees prefer to nest in more open and less disturbed environments.
- AHB drone cappings form a raised wax cap with a pin hole sized pore in the centre.



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## Cape honey bee (*Apis mellifera capensis*)

The Cape honey bee (*Apis mellifera capensis*) is a subspecies of the European honey bee. It is from the eastern and western Cape region of South Africa. In its home range, the Cape honey bee is readily managed as a production bee. However, the Cape honey bee has a unique reproductive system that means it can quickly take over other hives.

Cape honey bee workers invade host colonies of any other bee subspecies, like European honey bees, and begin laying Cape honey bee workers. These laying workers or 'pseudoqueens' eventually

replace the original host queen. As a result, Cape honey bee workers increase in number in the host colony, while the numbers from the host colony slowly dwindle, which leads to the collapse of the colony. The Cape honey bees then seek out a new host colony to parasitise. This reproductive adaptation causes serious problems for beekeepers in South Africa where they act as 'social parasites'.

Field identification of the Cape honey bee is difficult and relies on laboratory diagnosis. Cape honey bees are:

- Generally darker in colour and slightly smaller in size than European honey bees. The only way to accurately tell the difference between Cape honey bees and European honey bees is to have a laboratory check.
- More 'flighty' than European honey bees and commonly leave the hive when it is being inspected. They also regularly swarm or abscond from a hive.
- Cape honey bee colonies grow faster and tend to be smaller than European honey bees.
- Cape honey bees also store less honey than European honey bees.

Symptoms of invaded hives may include:

- Dwindling hive strength.
- Very little foraging activity for the number of bees present.
- Laying-worker bees.
- Spotty and abandoned brood.



## African honey bee (*Apis mellifera scutellata*) and hybrids (Africanised bees)

The African honey bee (*Apis mellifera scutellata*) and its hybrids ('Africanised' bees) occur naturally throughout sub-Saharan Africa. In the 1950s, the African honey bee was purposefully introduced to South America and very quickly hybridised with local populations of the European honey bee (*Apis mellifera*). This was able to occur because it is a subspecies of *Apis mellifera* and is capable of interbreeding or hybridising.

Africanised honey bees are much more aggressive and defensive than European honey bees. Because of their rapid hybridisation, they were quickly able to displace the European honey bee in countries where they were introduced. By 2012, Africanised honey bees had saturated Central and South America and had established in many southern states of the USA.

The term 'African honey bee' refers to those that are naturally found in Africa, while the term 'Africanised honey bee' refers to the bee and hybrids that occur outside their native range.

Apart from being slightly smaller in size and a bit darker in colour, the Africanised honey bee looks nearly identical to the European honey bee when seen with the naked eye. Expert laboratory analysis using a microscope is the only way to distinguish these bee species.

The main differences between Africanised honey bees and European honey bees are in their behavioural traits.

- Africanised honey bees swarm and abscond much more frequently than other races of honey bees.
- Africanised honey bees have a heightened defensive behaviour compared to other honey bees. This can result in the Africanised honey bees defending a greater radius around their nest and attacking with many more individual bees than honey bees would. Although they have been termed 'killer bees' in the USA, they do not have more potent or larger venom dose than any other honey bee, they just attack more aggressively with more individual bees.
- Africanised honey bees are less selective with nesting sites, and can nest in much smaller spaces than other honey bees.
- Africanised honey bees are more 'flighty' than honey bees and commonly leave the hive when it is being inspected.
- Africanised honey bee colonies produce more drones per colony than honey bees, and their colonies grow faster and tend to be smaller than honey bees.
- Africanised honey bees store less honey than European honey bees.



## What can these unwanted bee species be confused with?

All of the exotic and unwanted bee species closely resemble our European honey bees (*Apis mellifera*). It is important that beekeepers remain vigilant and report any suspect bee species to our **exotic pests and diseases hotline on 0800 80 99 66**.

## How does it spread?

Unwanted bee species could arrive in New Zealand as a stowaway, or in illegally-imported bees and genetic materials. Once introduced, unwanted bee species can populate a new area very quickly.

## Where are they now?

These exotic bees are in many nearby countries. The closest population of bees featured in this factsheet is the Asian honey bee in Australia.

## How can beekeepers protect their hives from unwanted bee species?

These species are **NOT PRESENT** in New Zealand and are **NOTIFIABLE ORGANISMS**. Beekeeper sightings should be reported to MPI as soon as possible on our **exotic pests and diseases hotline on 0800 80 99 66**. An MPI investigator will give you directions once you have made contact on the hotline.

## Further Reading

**BeeAware.** Africanised honey bee. Retrieved from <https://beeaware.org.au/archive-pest/africanised-honey-bee/#ad-image-0>

**University of Florida.** African honey bee, Africanized honey bee, killer bee. Retrieved from: <http://entnemdept.ufl.edu/creatures/misc/bees/ahb.htm>

**BeeAware.** Asian Honey Bee. Retrieved from <https://beeaware.org.au/archive-pest/asian-honey-bee/#ad-image-0>

**BeeAware.** Cape Honey Bee. Retrieved from <https://beeaware.org.au/archive-pest/cape-honey-bee/#ad-image-0>