

# American foulbrood - tracing the source

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American foulbrood (AFB) disease is the most serious brood disease of honey bees in New South Wales (NSW). It is caused by the bacterium *Paenibacillus larvae*. In Australia it has been found in all States.

It is a notifiable disease under the NSW *Apiaries Act 1985*. There is a persistent low level of infection in NSW. Early and accurate diagnosis of this disease is essential if control is to be effective.

## Determining the source of infection

Beekeepers with infected hives should ask themselves appropriate questions to establish a possible source of the infection. These questions may include but are not limited to the following.

*Have you recently purchased or introduced hive material?*

Active beehives or other hive materials which are purchased or otherwise obtained may carry disease. Before purchasing beehives it is important to inspect all brood frames in all hives for signs of disease. Obtain from the vendor a 'Vendor declaration: bees, colonies and used beekeeping equipment' (see 'Further information').

Introduced hives or hives with introduced material should be identified and kept separate. If AFB is detected then you can trace back the source of the infection.

*Have you treated your colonies with antibiotics or have you provided supplements with honey or pollen as additives?*

It is important to confirm what the disease is that is present in your hives.

Antibiotics are only legally to be used to treat European foulbrood (EFB) infected colonies. It is illegal to treat AFB infected colonies. Antibiotics will mask the symptoms of AFB for up to 18 months.

Treated colonies should be identified. Records of the hives treated and the dates of treatment should be kept.

AFB spores remain viable in honey for decades, and adult bees can carry spores without themselves becoming diseased.

Honey which is fed to bees must be from known AFB-free hives or honey that has been irradiated. Honey can carry viable AFB spores and if fed to the larvae by the bees it can cause an AFB infection in the brood.

*Have you recently used in the apiary old stored material, e.g. combs?*

Due to the AFB spores being viable for decades, hive material may carry spores, and if placed on active hives the bees can transmit the spores to the larvae, which can cause AFB. If the disease history of used hive material is unknown it is best to have the material irradiated. This will ensure disease-free material. The cost of the irradiation may be well worth the investment as an AFB eradication process can take up a lot of your time and can be expensive.

*Are you aware of any neglected and or abandoned hives nearby?*

A nearby apiary, especially if it is neglected or abandoned, may be the source of the infection. Suspected neglected or abandoned hives should be reported to NSW DPI for investigation. An Advice form is available to report such apiaries.

*Do you share equipment, e.g. extracting plant?*

If you share equipment with another beekeeper it is important to know the disease history of that beekeeper's hives. Clean down any equipment before using it.

*Can your bees fly to a waste management facility (rubbish tip)?*

Bees will normally forage up to 3 km but they will fly up to 8 km if nectar and pollen sources are scarce. Rubbish tips may contain discarded honey containers or a beekeeper may have disposed of hive material at the tip without it being covered



over. Try to place your hives away from a waste management facility (rubbish tip).

*Can your bees fly to other beekeepers' extracting sheds?*

Bees will rob honey from extracting sheds if a beekeeper does not take precautions to exclude robber bees when extracting, for example in a bee-proof shed or extracting at night. Locate your hives away from known extracting sheds.

*Do you know of any other apiaries within 3 km and their disease status?*

Bees will normally forage up to 3 km and therefore if there are known apiaries within 3 km of your own apiary bees may rob hives from those nearby apiaries, especially if they are abandoned or neglected.

*Have you recently caught swarms?*

Adult bees can carry AFB spores without themselves being affected by the spores. If enough spores are carried by the adults then it is possible for AFB to become established in a colony from that swarm. If swarms are caught it is best to keep them separate from your main apiary until at least one round of brood has hatched.

*Does your apiary get visited by other beekeepers?*

AFB spores can be carried on contaminated equipment or clothing so it is important that good hygiene practices are used to ensure that AFB is not introduced into your apiary. Wash down any exposed honey or wax from clothing, boots or hive tools.

After considering these questions thoroughly, see if your answers establish that your own actions may have been the cause for the spread of the disease or whether it was likely that the source may have been outside of your control.

If you have established that it may have been your own actions that have spread the disease and you have identified high risk areas, then you can do something about it. You can take action to eliminate or reduce the impact of each potential source of AFB.

If you think that the source is out of your control, then it becomes a matter for NSW DPI to potentially follow up when and if possible.

Forward tracing from known infected apiaries may determine if the infection has spread from that apiary. The known owners of hives in the vicinity, or who may have acquired infected material, should be contacted and advised to examine their own hives and report any suspected signs of AFB infection to an inspector.

## Record keeping

Good record keeping will assist with disease tracing. Beekeepers need to keep the following records.

- the date any hives were moved
- the number of hives moved
- the site from which the hives were moved
- the site to which the hives were moved
- the name of the person who moved the hives.

A traceback form is available to help the beekeeper to record potential sources and to report it to NSW DPI. The traceback form is available on the internet at <http://www.dpi.nsw.gov.au/agriculture/livestock/honey-bees/pests-diseases> or ring the author, Mick Rankmore, on 6741 8374.

## Further information

Primefact 94: [Abandoned or neglected hives](#)

Report form: [Advice of abandoned, neglected and/or diseased apiary](#)

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