

# American foulbrood disease— inspection management

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## Introduction

Once American foulbrood disease (AFB) has been identified in one or more hives owned/managed by a beekeeper then an effective eradication program requires all hives to be inspected on a regular basis until they are able to be declared free from AFB.

Depending on the level of infection present in the apiaries, AFB can be expected to be eradicated from all apiaries in three to five rounds of inspections carried out at 6–8 week intervals. When it takes more than five rounds of inspections then it may mean:

- (i) the procedure has been modified so that it is less effective, e.g. inspections are more than 8 weeks apart;
- (ii) there is an unidentified source of infection re-infecting the apiaries, e.g. use of stored or purchased *used* beehive materials.

**Every** brood frame in **every** hive in **every** apiary owned/managed by the beekeeper is to be inspected at **each** round of inspections.

## Step 1

### (i) When each hive is being inspected

- Examine every cell in every frame under the queen excluder.
- Use a toothpick or match to uncap any cells that look different from other capped cells—particularly examine dark-coloured cappings.
- Check any capped cells in small groups isolated from other capped cells.
- Check the outside frames for dead brood or scales.

### (ii) Keep robbing to a minimum

Between hives in an apiary:

- Stop working before robbing starts, leave the apiary and come back another time.
- Always cover exposed frames, e.g. in a spare brood box covered with a lid.
- Attend to weak/vulnerable hives before they are robbed out.
- If robbing conditions continue over a period of time, move the apiary to a site where nectar is available.

From dead-out hives:

- Seal and remove dead-out hives from the apiary as soon as possible.

From extracting and storage sheds:

- Bee-proof all areas where bees are able to rob honey, pollen, wax and propolis, e.g. honey drums, supers containing frames of honey and extracted frames, wax rendering areas, slumgum storage, old hive materials etc. Use bee-proof sheds, shipping containers, nets etc. to protect stored materials.

From other beekeepers' premises / storage areas / suspect apiary sites:

- Do not use apiary sites within 3 km of suspected risk areas. From your records identify the apiary site where you consider your bees became infected.



**(iii) Practise strict hygiene**

- Have a bucket of water, soap and a towel to keep your hands, clothing and boots clean from honey during inspections.
- Clean up honey that drips onto the ground, hive lids etc. to prevent initiating robbing behaviour.
- Place each used toothpick/match (remove head) into the hive in which it was used, to prevent spreading disease to other hives.
- Heat-sterilise your hive tool after finding a positive or suspect AFB hive, and before going to a new apiary.
- Wash smoker bellows, gloves and hive tool regularly, and before going to a new apiary.

**(iv) Visit each apiary solely for the purpose of carrying out an AFB inspection**

Other hive inspection related work should not be attempted at the same time as an AFB inspection is carried out. This will reduce your ability to concentrate on your prime purpose and diseased brood may be missed. Missed diseased brood add significantly to eradication costs by increasing the number of rounds of inspections required.

**(v) Clearly mark suspect hives**

Mark suspect hives so they can be found again. If you have doubts whether the brood is positive for AFB, take a sample, preferably a smear, for a laboratory examination and treat the hive as positive until cleared (see [Agnote DAI-209 Samples for bee disease diagnosis](#)).

**(vi) Move AFB apiaries at night**

- In apiaries where AFB has been confirmed, move apiaries with entrances closed at night to reduce drifting of bees between hives in the load.
- Where practical, inspect each apiary just before moving and identify positive AFB hives. Move the clean hives first and come back within 48 hours to process the AFB hives.

**(vii) Management of hives with AFB**

- Any dead or near-dead hives should have all entrances blocked immediately.
- Adult bees should be killed and the hive materials made bee-proof as soon

as possible, preferably within 48 hours of the disease being identified.

- Where brood is allowed to emerge before killing the adult bees, then management of the hives is required to prevent robbing from the infected hives.
- Material from infected hives is to be destroyed by burning or burying, or by irradiating (see [Agnote DAI-35 Sending beehives for irradiation](#)).
- Details of procedures are available from Apiary Officers.

**(viii) Records**

The beekeeper is required to keep written records of all inspections and the results of those inspections as prescribed by a Regulatory Officer. AFB is a notifiable disease under the *Apiaries Act 1985*. The Regulatory Officer is to be notified with details of all new confirmed and suspect positive hives.

**(ix) Barrier system**

The beekeeper should consider implementing a barrier system to reduce cross-contamination of diseased and clean hive materials within and between apiaries.

**Step 2**

A further inspection of **all** hives in **all** apiaries, 6–8 weeks after the date of the first inspection, is required. Destruction and/or irradiation of identified infected hives/materials are to be carried out under instructions from a Regulatory Officer.

The most suitable time period between inspections is 6–8 weeks. Inspections less than 6 weeks apart will miss infected larvae which have not decomposed sufficiently to be recognised as AFB by visual inspection. Inspections later than 8 weeks apart will allow hives containing infectious larval remains to be present in apiaries where they are vulnerable to robbing by bees from their own or nearby apiaries, and from worker bees drifting from infected hives into nearby hives.

**Step 3**

Step 2 is repeated with continued inspections of **all** apiaries 6–8 weeks apart until two **consecutive** inspections result in zero hives being found with visual signs of AFB.

## Step 4

Once two consecutive inspections free from AFB have been achieved the situation should be discussed with your Regulatory Officer to complete inspection requirements of your apiaries.

As a final check, after the next round of extractions of honey, a sample of honey from each apiary should be forwarded to a NSW Department of Primary Industries (NSW DPI) laboratory for analysis for the presence of AFB spores. Responsibility for payment of costs associated with honey samples should be determined before sending the samples to the laboratory (see [Agnote DAI-209](#) for addresses).

**Note:** AFB spores remain viable for more than 35 years in stored hive materials etc. and are able to spread infection.

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