

# American Foulbrood Disease Eradication Programmes

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**To misquote President Kennedy, "Ask not what the AFB Management Agency can do for you, but ask what you can do for the Management Agency". This article describes a 10 point plan to eradicate AFB from an area. This plan will be best used in semi-rural areas and cities, but it can also be used for areas with commercial hives.**

There are several good reasons why you might want to carry out such a local AFB control programme. There is the noble cause of assisting New Zealand to eliminate AFB, or the self-interest of reducing the chance you will need to burn your own hives because they have contracted AFB. These elimination programmes get local beekeepers working together, and for hobbyist groups, everyone gets invaluable experience in AFB recognition and control.

## 10 point plan to eradicate AFB from an area

*This approach to AFB elimination does not require any legal powers. The collecting of samples and inspecting hives are all done with the cooperation of the owners of the hives.*



### 1. Decide **who** is going to manage the programme

This would best involve a group of interested people. Most programmes have been carried out by beekeeping clubs and groups of commercial beekeepers, but it doesn't have to be done that way. It just requires management skills to keep the activity on track.



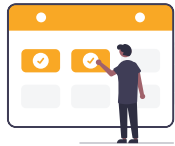
### 2. Deciding on the **area to be eradicated**

No area is too large or too small, but an area with few hive movements would be an advantage. Trying to eliminate AFB from the Te Puke area would be difficult because of the large number of hives moved into the area each year for pollination. The Waikato Domestic Beekeeping club ran a programme to eliminate AFB from Hamilton city. For a large city like Auckland, a programme could be designed to eliminate AFB from part of the city. Even larger areas can be chosen. Commercial beekeepers have attempted to eliminate AFB from Southland. It will be useful to draw the eradication area on a map.



### 3. Finding hives in the area

If you are part of a beekeeping hobbyist club, your group's membership will hopefully account for most of the hives in the area, but there will likely be other bee hives that need to be found. You can ask the AFB Pest Management Agency to do a mailout which will ask beekeepers to contact your team. The team can also ask beekeeping equipment suppliers to do a mailout, or the team could advertise locally to come up with hives you don't know about. It may not be possible to find all hives, but the ones you can't find are probably not a major disease risk if the owners don't have much contact with other beekeepers. The location of all hives found should be marked on the map with green stickers. The beekeepers should be asked if they have had any AFB hives in the last 2 years and any positive apiaries should be marked with orange stickers to indicate that it is important to recheck them, and to determine if there is a cluster of AFB hives.



### 4. Deciding on AFB inspection methods

There are two potential methods. Programmes have been carried out by doing visual inspections of hives. This approach works very well, and has the added advantage that if it is done with inspection teams, it can be a very good learning experience for the team members. The challenge might be to find enough people who know how to properly inspect a hive for AFB. The second method, and potentially the easiest, is dnature's qPCR test that involves testing a swab from the front entrance of hives for AFB spores. This method has the advantage that it is faster, and little experience is required to take samples. A combination of both methods can be used. For instance, the Waikato Domestic Beekeeping Association arranged for all hives to be visually checked, and for a sample to be taken for testing. Alternatively, hives that can be easily visited could be inspected, and samples taken where hives cannot be inspected.



## 5. Organising inspections and/or testing

If the programme includes qPCR testing, sample kits will have to be sourced from dnature and provided to all beekeepers in the group so that their hives can be tested. Samples kits and instructions can also be sent to beekeepers who are not in the group. With the beekeeper's permission, their hives can be visited and samples taken.



## 6. Testing samples

Getting samples tested can be costly, and some eradication programmes have arranged sponsorship. When the sample kits are returned, they can be combined into groups of up to 10 hives. Testing composite samples decreases the cost per hive. However, if there is a very high incidence of AFB, all the composite samples might test positive. In such cases it might be better to use smaller composite samples. A record will need to be kept of which hives are in each composite sample.



## 7. Non-cooperating beekeepers

There may be beekeepers who don't want to take part in a voluntary elimination programme. Before starting a programme, some thought needs to be given to what support can be given to beekeepers who lose their hives. While bees and equipment might be replaceable, it will obviously depend on how many AFB hives are found. An offer to replace bees and equipment may reduce the number of non-cooperating beekeepers. Providing assistance in the destruction of AFB infected hives may be considered as an incentive, as residential areas in particular have restrictions. The details of any non-cooperating beekeeper could be provided to the AFB Management Agency in case they want to inspect these hives.



## 8. Results

There will likely be some positive composite samples. The lab can do further testing to identify which hive was positive although this will create additional costs. Alternatively, the hives from the composite sample could be given a visual inspection. Any positive results from a visual inspection should be reported to the AFB Management Agency by the beekeeper. The hives with visual AFB disease symptoms have to be burnt. Some thought will need to be given to what can be done with stored equipment belonging to any beekeeper found with AFB infected hives.



## 9. Tracing

The map should be updated to identify the apiaries that have been shown to have AFB or a positive qPCR test. The owner of any AFB hives should be interviewed to see if it can be determined whether they could have brought AFB into the area. If there is a discrete cluster of positive results, there may be an AFB-infected hive in the area that hasn't been found. A letter drop in the immediate area might locate it.



## 10. Area freedoms

The programme should be repeated fully, or in part, on a yearly basis until no more AFB hives can be found. The area freedom should be advertised as widely as possible along with a request to have any hives that are brought into the area tested beforehand.

At this stage, the results from a qPCR testing programme cannot be used to replace the mandatory hive inspections that must be carried out by an approved beekeeper.