Frequency And Timing Of American Foulbrood Inspections

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The frequency and timing of American foulbrood (AFB) inspections can have a major impact on the success, or otherwise, of a beekeepers disease control programme. Along with the number of frames inspected, timing and frequency of inspections are the most important factors.

Hives can be checked at any time for AFB as long as brood is present in a hive. Even when there is no brood present it can still be worthwhile checking frames for the remains of diseased larvae.

Some beekeepers devote a specific time, or times, to carry out inspections while others carry out a full or partial inspection every time they work on a hive. At a minimum, a full frame inspection should be conducted on all hives twice a year. One inspection in the spring and a second in the autumn.

The frequency with which beekeepers carry out inspections varies and should depend on the disease history of their hives. If little AFB has been found, the inspections can be carried out less frequently. However, where disease is a problem, inspections should be both frequent and thorough i.e. inspecting all frames in a hive.

Although badly infected colonies can be easy to identify, lightly infected colonies can be much harder. One reason for this is that adult bees in hives with AFB, especially those bees with good hygienic behavior, are continually uncapping diseased cells and removing the contents so that diseased larvae may not always be present in a diseased colony. A second inspection one week after finding AFB symptoms may result in finding no diseased larvae. Many AFB inspectors have been accused of wrongly diagnosing a hive as having a AFB when a beekeeper has checked the hive a week after the inspector had failed to find any AFB.

One hive in a group of AFB hives we were regularly checking had two cells with AFB symptoms on day one. However, none were found when the hive was inspected a week later or in any of the four inspections carried out over the following three weeks. The next inspection on day 50 revealed ten cells with AFB symptoms and on day 70 there were 30. For the disease to reappear by day 50 there was either still enough spores present in the hive to infect further larvae, or that for a month the bees were able to remove diseased cells fast enough so they were not found when the hive was inspected.

Because disease symptoms can appear and disappear, the more frequently inspections are carried out the more likely the AFB infected hives present will be detected and removed before the disease has a chance to spread.

It is best to time inspections so they are carried out immediately before hive manipulations that could spread AFB are going to be conducted e.g. before bees or equipment are removed from a hive. It is particularly important to carry out an inspection as the honey supers are removed. Failure to carry out an adequate inspection at this time is one of the major causes of the spread of AFB. During the honey removal and extraction process one or more supers are removed from each colony and then placed on completely different hives in the spring. There is usually no other beekeeping activity that redistributes more equipment between hives.

The risk of taking honey from an infected hive at this time depends on how badly the colony is infected. Failure to carry out any form of inspection while honey is harvested can result in honey being removed from badly infected colonies. These honey supers are a high risk for disease spread. During the extraction process the frames may be spread between other supers, creating an even larger potential for disease spread. Two honey supers from a badly infected colony might therefore infect three or four other colonies.

Autumn is however the hardest time to carry out inspections because the extra time spent in an apiary increases the robbing problem. An alternative to carrying out the inspection while the honey is being removed is to number each hive and put the same number on the supers that are removed. This can easily be done with a permanent marker pen. The hives can then be inspected at a later date and if an AFB hive is found the supers of honey can be located and destroyed.

In addition to the above, those beekeepers without a Disease Elimination Conformity Agreement must get a certificate of inspection signed by an approved beekeeper in the spring. This means that each colony must have a full frame inspection between 1 August and 30 November.

Conference 2004 Napier, Hawkes Bay. 28 June to 3 July 2004

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