

# Inspecting Alternative Hive Types

*In recent months we have reviewed various hive designs and materials. We know there are avid beekeeper protagonists for different hives, but we wondered what challenges the range of hives pose to vital inspections for pests and diseases. So we asked our regional bee inspector, Nigel Semmence, for his opinion.*

I am a Regional Bee Inspector for the FERA National Bee Unit which is responsible for the control of bee pests and disease in England and Wales. I have been asked to write this article as a follow on from the articles on alternative hive types published in recent *BBKA News*. We also provide beekeeper education and training, and carry out research and commercial services. Further information on all our activities is available on our website [www.nationalbeeunit.com](http://www.nationalbeeunit.com).

Our major function is to run a targeted statutory disease inspection programme for Defra and the Welsh Assembly Government and this function is also enshrined as a key objective of the ten-year healthy bees plan. There are two notifiable diseases and two notifiable pests under legislation in England and Wales (the Bee Diseases and Pests Control Order 2006). The two diseases are American foul brood (AFB) and European foul brood (EFB), and the two notifiable pests are the Small Hive Beetle (SHB) and the *Tropilaelaps* mites. Both AFB and EFB are present in the UK but currently SHB and *Tropilaelaps* are not. For this article I have used the term inspection to refer to one done by an Appointed Bee Inspector for the purpose of determining the presence of notifiable diseases and exotic pests and not the routine inspection done by the beekeeper for bee husbandry reasons. This type of inspection requires the examination of all brood combs for symptoms of infection by EFB or AFB.

The National Bee Unit uses a risk-based system to prioritise inspections in England and Wales. This is necessary for us to comply with the statutory regulations required for inspection agencies. There are many criteria; below is a simplified version of the categories of apiary visit showing the highest priorities with those at the top having higher priority than those at the bottom.

## Apiary visit categories

- 1 Apiaries where notifiable disease or exotic pests have been found and a treatment or follow-up visit is required.
- 2 Other apiaries owned by beekeepers that have notifiable disease or exotic pests where inspection is now needed.
- 3 Apiaries within three km of notifiable disease or exotic pests.
- 4 Apiaries where disease has been found in previous two years.
- 5 Apiaries within three km of risk points for the entry of exotic pests, (ports, harbours, airports etc).
- 6 Apiaries within three km of notifiable disease or exotic pests found in previous two years.

These inspections are carried out with the dual aims of preventing the spread of EFB and AFB, providing comprehensive advice on reducing recurrence of disease and for the purpose of detecting the arrival of SHB and *Tropilaelaps*. Having worked for

the NBU for over two years I have seen the devastating effect that EFB and AFB can have and would point out that these inspections aid us in catching and treating these diseases early before they spread through a beekeeper's apiaries and subsequently to neighbouring beekeeper's apiaries.

The old adage 'prevention is better than cure' applies as once established in the beekeeper's equipment EFB and AFB can only be eliminated by hard work, determination and expense. Therefore when apiaries fall within the above high risk categories the colonies present must be inspected regardless of the hive type.

## Moveable frame versus top bar hives

As beekeepers we are all familiar with the standard box-like moveable frame hives such as National, Commercial, Langstroth, Dadant, WBC, Smith, and Rose. There are other types with variations on this theme, such as the Dartington and ZEST hives. Traditionally most are made in wood, but plastic and polystyrene hives are now available in the most popular styles. All of these can be inspected by inspectors with ease and the presence of visual symptoms of notifiable disease or the presence of notifiable pests determined with confidence.

Over recent years there has been an increase in the number of beekeepers who have moved away from moveable frame hives and have started using top bar hives. There is a wide variety of what are called 'top bar' hives so please excuse my generalisation. The majority use only a top bar for the bees to build their combs from; there are no side bars or bottom bars as in moveable frame hives. In

this article I am going to split them into two classifications: horizontal and vertical. Horizontal top bar hives are long and coffin-like, usually with sloping side walls, and the combs are built side-by-side gradually moving along the box. Vertical top bar hives use boxes of top bars stacked one on top of each other in a similar fashion to moveable frame hives.

Horizontal top bar hives can be inspected relatively easily depending on the design and the involvement taken by the beekeeper. I have managed a horizontal top bar hive this season and the bees have developed nicely in it. The key is to ensure that the combs are built along the top bars, and this can be encouraged by the use of starter strips of foundation or the use of a wax guide (wax poured into a groove along the centre of the top bar), and by regular inspections to correct any bending of the comb. Because of the sloping side walls of a horizontal top bar hive the combs are not usually attached to the walls; if they are attached it should not prove too difficult because you can lift the top bars at the end away from the bees, and will be able to free each comb as you proceed along the box.



*L shaped cutting tool and nails being freed from the top bars of a Warré hive. Photo by Nigel Semmence, FERA National Bee Unit.*



Inspecting a comb from a Warré hive using a U shaped top bar holder. Photo by Nigel Semmence, FERA National Bee Unit.

Vertical top bar hives such as Warré or Stewerton are harder to inspect. Consideration has to be taken of the Warré principles and cover cloths can be used to reduce the loss of nest smell and warmth. As the boxes have vertical sides the bees will attach the combs to the side and over a long enough period may attach the bottom of the combs to the top bars of the box below. Cheese wire can be gently slid between the boxes and a sawing action applied and the boxes separated, then an L shaped cutting tool (which has been issued to all Regional Bee Inspectors) inserted between the top bars, gently lowered until the cutting edge is beneath the comb, twisted through ninety degrees and then lifted cutting the comb from the side walls. This is repeated for the other end of the comb then the nails holding the top bar in place can be

freed and the top bar with comb attached lifted from the box.

In all top bar hives, because there are not any side or bottom bars on the frames, the combs have to be kept vertical and handled with care to avoid them breaking off the bar. To free your hands a U shaped top bar holder can be used. When inspecting hives with moveable frames for the presence of disease, the frames are usually shaken to remove the bees and enable the inspector to clearly view the cells and larvae. This cannot be done with combs on top bars so the bees are gently stroked with the back of the hand to encourage them to move out of the way.

The difficulty comes for inspection of all types of top bar hive when combs are built across the bars subsequently, meaning that an inspection for disease will not be possible without un-attaching the combs from the top bars and leaving the beekeeper with a very difficult management task. This is not new to the NBU inspectorate as there have always been colonies that prove a challenge to bee inspectors, like skeps or wild comb in hives where frames were not used, that have had to be inspected as they were near to other confirmed diseased colonies and at potential risk of infection.



Abandoned hive with wild comb. Photo by Diane Steele, FERA National Bee Unit.

All beekeepers regardless of whatever the type of hive we use have a responsibility to reduce the chance of the spread of notifiable pests and diseases and we can all go a long way towards that by maintaining our colonies in a manner that enables inspection to a level that allows the determination of their presence. It is important to understand and appreciate that the requirement for inspection outlined earlier must take precedence over the 'leave alone' or 'natural' beekeepers reluctance to open the hive. Our recent inspection data does show that bees kept in these hives are susceptible to disease including foul brood.

Also please can I encourage all beekeepers to sign up to BeeBase so that if the worst should happen and notifiable pests or disease does turn up close to you then we can inspect if necessary. Without knowing who is keeping bees, finding out where the bees are can prove very difficult. Many beginners believe that because they have joined a local beekeeping association their details have been passed to the National Bee Unit; that is not the case unless this has been specifically mentioned on your membership form.

**Nigel Semmence,**  
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