



## South Tipperary Beekeepers' Association

*Fact Sheet 15*

### **Sterilization of Combs Bailey frame change**

Bees in modern hives live in confined spaces occupying the same comb for many years. It is now widely accepted that all diseases are endemic in all hives. These are kept under control by various means namely the bees' ability to resist the spread of same. This is evident in some hives more so than others and is related to their hygienic behavior and immune system. It is therefore important that the beekeeper considers "resistance to disease" when breeding bees.

The beekeeper can play a big part in helping the bees to reduce the spore count throughout the hive. Old black combs harbour all types of spores. In nature bees move to new comb every year if space allows. This is nature's way of reducing the incidents of disease. Every year at least four if not six combs should be replaced in the brood box. No comb should be in use for more than three years. Throughout the active season the beekeeper should be working the older combs to the outside of the box removing when the opportunity arises.

A more thorough replacement can be performed by replacing all the combs using the Bailey frame method. This involves giving a full box of foundation to the colony and eventually removing the entire old comb. The method is as follows:

1. Find queen and remove her on the cleanest frame of brood

- placing them in a new brood box full of foundation
2. Close entrance to old brood box
3. On top of the old brood box place Queen excluder followed by an eke with an entrance facing out in the same direction as the old one
4. Place the new brood box now containing the queen, one frame of brood and frames of foundation on top of this.
5. Place an Ashford feeder on top of the new brood box ( a 5litre bucket feeder will also do)
6. The bees will orientate back to the new top entrance.
7. The brood in the bottom box will all hatch within 24 days the top box will be laid up.
8. Remove the old box and replace the floor board and crown board with a clean one.
9. A week after setting up the original brood box it should be checked for queen cells
10. It may be necessary to make provision to allow drones to escape from the bottom box, allow a gap between the front wall by moving the excluder back. It is highly unlikely that the queen will find it and go back down.
11. After removing the old box the combs can be graded those that are less than two year old can be sterilized and kept for nucs, the older blacker combs treated as below.



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### **Sterilization of Out of use combs**

When a beekeeper finds a hive has died out it should be closed up to prevent robbing bees entering the hive and spreading disease if present

The beekeeper should try to establish the reason why the colony died out.

If EFB or AFB is suspected the comb should be sent for laboratory analysis and if result is positive the entire content and the hive should be burnt.

Most hives die from bad management, Nosema, Acarine or queen malfunction.

Each frame should be examined and if deemed to be too old, badly drawn, excess out of use space it should be immediately culled.

Combs that are fit for reuse should be scraped clean and placed in the brood box to be sterilized as follows

1. Remove excess propolis and burr comb from each frame
2. Leave acceptable combs back in brood box
3. Place upturned roof on ground
4. Line with sheet of plastic
5. Place brood box into roof
6. Pour 100mls of 80% glacial acetic acid onto an absorbent pad and place over the frames
7. If second or subsequent brood boxes need to be sterilized place one on top of the other with an absorbent pad between each.
8. Cover the top box with a sheet of plastic and wrap the entire stack with cling film thereby making an air tight seal
9. Leave for one week at 15°C ambient temperature
10. Open stack and air frames for a few days preventing bees from gaining access
11. If the combs are not worth sterilizing cut out old comb and boil the frames in a solution of water and caustic soda rinse with fresh water, allow to dry
12. Rewax with fresh foundation, writing year number on the top bar
13. The brood box can be scraped clean and sterilized by blow torch.
14. Writing the year of rewaxing on the top bar will indicate the age of the comb and due date for next change.