



Containing Disease

Diseases such as *Nosema*, foulbrood and others have major impacts on colony health, strength and its ability to collect nectar and pollinate plants. Disease at low levels can often not be seen and so goes unnoticed by the beekeeper. As a result, it is spread amongst colonies through contaminated equipment such as hive tools.

How can I contain disease?

Developing management and apiary practices which reduce the chance of spreading diseases is essential in keeping healthy colonies. Below is a list of common practices which will greatly reduce chances of spreading disease. The more of these suggestions which are included in a management strategy the better chance one has of containing an outbreak of disease.

1. Do not exchange frames of brood or honey between colonies unless you are sure they are disease free. If possible:
 - a) Keep supers and frames specific to colonies. Frames can be easily marked using a felt tip pen or chalk pen (often used for queen marking).
 - b) If you need to exchange combs of brood between colonies, pair the hives to restrict exchange.
 - c) Super and brood combs can be fumigated using acetic acid. See fact sheet '*Fumigating Comb*'.
2. Control robbing. NEVER leave supers open, frames out for bees or other animals to clean out. If you wish to dry combs return them to their own colony.
3. NEVER feed bees honey from another colony or an unknown source.

4. Keep your apiary clean and tidy. Never throw propolis or comb onto the ground. Put it into a container and render or burn the product.
5. Know the signs of foulbrood and other diseases. Specifically examine your colonies for signs at least twice a season. Once in the spring and again in the summer or autumn. You are most likely to identify EFB during a honey flow. If you are unsure, seek expert advice.

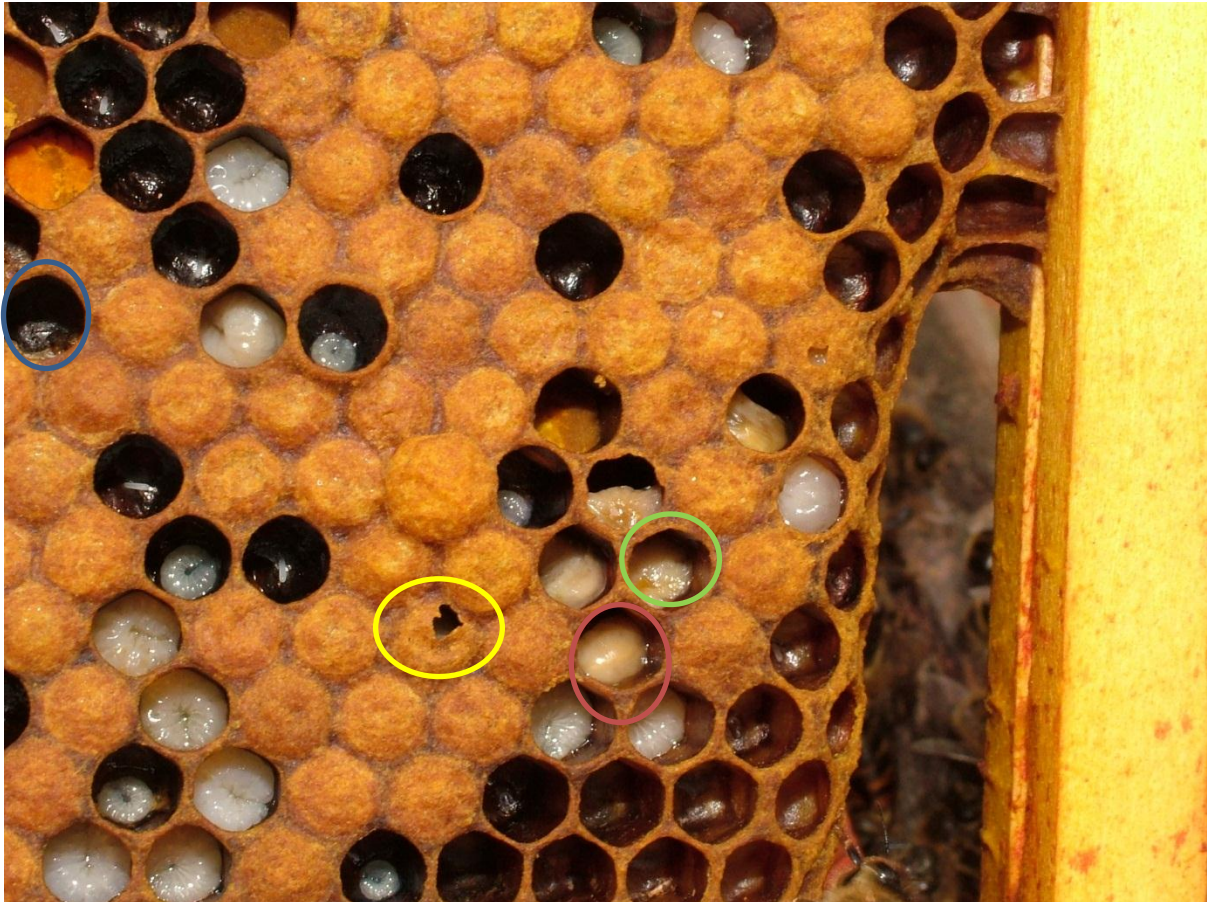


Figure 1, a comb showing symptoms of European foulbrood (EFB).

Symptoms of European foulbrood:

Twisted and discoloured larvae;

Chewed/perforated cappings;

Melted larvae;

Scales.

6. If a colony does not appear to be thriving and the reason is not already known, examine the brood and adult bees for signs of disease.
7. When a colony dies out seal it up, to prevent the remaining stores being robbed out, pending examination of the brood combs to find out why it has died.

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8. Make sure bees are disease free before purchasing them. If you are not sure, seek expert help.
9. Sterilise used equipment. Normally done by scorching or when this is not possible by immersing the equipment in a 0.5% solution sodium hypochlorite for 20 minutes. See *FAQ sheet 3 'Second-hand Equipment' or 'Hive Cleaning and Sterilisation'* .
10. Never buy or use second hand combs.
11. Be suspicious of stray swarms. They should be hived in an isolation apiary, preferably on foundation rather than drawn comb and then subsequently checked for signs of disease. When satisfied that they are disease free they can be moved into a healthy apiary.



Figure 2, arrange colony entrances to reduce the chance of drifting bees.

12. Arrange hives to reduce drifting and robbing.
13. Regularly and systematically replace old brood combs by melting them down and replacing with frames of foundation. See *FAQ sheet 5 'Replacing comb'* .
14. Clean your hive tool and smoker with a washing soda solution between hives (1Kg to 5 litres of water). Keep your bee suit and gloves clean. See *FAQ sheet 6 'Apiary Hygiene and Quarantine'* .