Animal & Plant Health Agency

National Bee Unit

Apiary Hygiene and Quarantine

Attention to good apiary hygiene practices and the use of quarantine for both bees and equipment can have a significant impact on reducing infection levels and recurrence of disease. They should be practised routinely by all beekeepers.

Bees are a food producing animal so all beekeepers should maintain simple hygiene practices to prevent contamination of honey and the spread of disease between colonies. The following paragraphs contain some key points to consider that will improve your beekeeping practices.

The apiary

To reduce the spread of disease between colonies, hives should be positioned with entrances pointing in different directions to reduce drifting. Avoid placing hives in straight lines.

Measures should be taken to control robbing. Entrances should be reduced at critical times, for example after the main honey flow or whilst feeding. Particular attention should be given to small colonies that may not be able to defend a larger entrance. Any dead colonies should be sealed and removed from the apiary, these can then be cleaned up. Please refer to the National Bee (NBU) Fact Sheet 'Hive Cleaning and Sterilisation' which can be found on Beebase.

Apiary hygiene

Hive tools

Wash your hive tool off between colony examinations in a strong washing soda solution. Use a dilution of 1kg of washing soda to 4.5 litres of water. Adding a drop of washing up liquid to the solution assists with cleaning, as does the use of a stainless steel pan scourer. Washing soda is cheap, dissolves propolis and has anti-bacterial properties.

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Gloves

If you wear gloves to examine bees avoid those made of leather as they can become tough and make it difficult to pick up frames with ease, often leading to the jolting of frames and squashing of bees. They are also difficult to keep clean.

A better alternative is to use washing up gloves or disposable surgical gloves (or a similar alternative). They can be cleaned in washing soda solution between colony examinations. They can also be changed between apiaries, so act as a good tool for barrier management. They give better 'feel' and make jarring of the bees less of a problem.

Smoker

These are difficult to clean, however the barrel is not a problem as it gets hot enough to kill disease pathogens. The bellows can be scrubbed off using washing soda solution and then rinsed with clean water to avoid damage. The bellows can also be covered using disposable shower/boot covers to assist in biosecurity.

Bee suit

Although the risk of disease spread by a dirty bee suit is low, they should be washed regularly. If nothing else, it removes the pheromone left after a bee has stung the material, thus reducing the risk of encouraging stings on your next visit.
Always follow the washing instructions attached to the garment. To protect the veil it should be folded into the body of the suit and then zipped in. To assist with cleaning, washing soda can be added to the wash.

Replacing old combs

Old brood combs carry pathogen loads, invariably increasing with age and use. Exchanging old comb for new foundation has a significant impact on reducing disease incidence.
Super comb also carries a pathogen load, though not to the same degree. As a result they should be exchanged regularly but not necessarily at the same frequency as brood comb, unless they have contained brood or there is a significant disease problem. New super comb improves the quality, quantity and clarity of extracted honey.
Details of exchanging combs can be found in textbooks and in the (NBU) Fact Sheet 'Replacing Comb' which can be found on Beebase.

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Hive boxes and hive parts

Brood boxes and supers should be cleaned regularly. Propolis and wax should be scraped off of the surfaces.

Wooden boxes can be sterilised by lightly scorching the interior with a blow-lamp. Polystyrene boxes and plastic hive parts can be sterilised by submerging them in a 0.5% sodium hypochlorite (found in household bleach) solution for twenty minutes. Some beekeepers use washing soda solution to clean boxes and hive parts.

Please refer to the NBU Fact Sheet 'Hive Cleaning and Sterilisation' which can be found on Beebase.

Contamination of honey

Honey supers should never be placed directly on to the ground, but instead should rested on an upturned roof or on a suitable stand.

When using medicines or treatments in bee colonies, only use approved products. To avoid contamination, the instructions on the label should always be followed.

As a general rule, treatments should not be applied if supers are on the colony.

Please refer to the NBU Fact Sheet 'Bee Medicines' which can be found on Beebase.

Quarantine practices

Equipment

When disease is a problem or the apiary is at high risk, then keeping equipment such as queen excluders, supers, brood boxes and frames/combs etc for the sole use of a colony has significant benefits. It is a good tool for barrier management, it helps prevent the introduction and spread of disease.

Brood comb

Restrict movement. Moving brood combs between colonies carries a high risk of spreading disease. It is a major cause of disease increase when the beekeeper fails to recognize the signs of disease, which can be particularly difficult when at its early stages. Many beekeepers move frames of eggs to confirm if a colony is queen right. If this is done, it is best to maintain a written record, or only exchange brood with the adjacent hive. Exchanging comb between apiary sites holds a high risk of spreading disease from one area to another.

Super comb

Restrict movement. Super comb carries a risk of spreading disease. Ideally comb should be specifically used on one colony only. It is easy to mark a super and the top-bars of the frames with the colony number using a marker pen (similar to those used in queen marking). This ensures that the beekeeper can maintain colony quarantine for supers. A less effective system is to ensure that supers and combs are restricted to use in one apiary, known as 'apiary quarantine'. It has been shown both in the UK and abroad that these measures significantly reduce the occurrence and spread of disease.

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Quarantine apiaries

Swarms from an unknown source should be taken to a separate ‘quarantine’ apiary, and hived on foundation. After 24 hours they can be fed, if necessary. They should then be allowed to progress through two brood cycles, i.e. six weeks. Check the brood to ensure no signs of disease are present, before introducing the colony to an established apiary.

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