



Care of Wooden Beehives

This leaflet gives advice on how to extend the useful life of wooden beehive components for as long as possible in order to recover the initial cost and to provide a return on the investment.

Hives that are dry inside and well ventilated, especially during the winter, provide the honey bee colony with the best conditions in which to develop and prosper.

Wood becomes porous through the effects of age and weathering and retains water. This reduces its thermal insulation properties. Evaporation of this water by wind will cool the hive markedly. Cold hive walls cause condensation and dampness inside the hive. Damp is considered to be a significant danger to the health of bee colonies.

Wood that is constantly damp is susceptible to fungal attack. Early onset of decay will be aided if the hive is made of non-durable sapwood or low durability heartwood. Stored equipment can also suffer damage, e.g. woodworm, wax moth, rats, etc.

The useful life of wooden beehive components (hive stand, floor, brood box, super and roof) can be extended by adopting the following good practices:

Choice of wood

Use wood from timber species which have a degree of natural durability. Western Red Cedar is a preferred material. It has good dimensional stability, is light in weight and has some natural resistance to decay and insect attack. There are other timber species commonly used including redwood (Scots Pine) and whitewood (spruce), especially in some budget or economy ranges sold by beekeeping suppliers and these may not be so durable, especially for parts that are exposed to weather all year round e.g. floors and brood boxes, although they are adequate for supers. Wherever possible check the components for the presence of loose knots as these may fall out; however reputable suppliers should not have included such material in their premium products. If 'seconds' are purchased these may have loose knots. Some wood can be very resinous and the application of a knotting compound will help the adhesion of a paint finish.

Whichever timber species is selected, if the timber component contains a high proportion of sapwood it will require attention to reduce its decay potential.

Plywood suitable for exterior applications can also be used and care should be taken in machining it to avoid splintered edges. Plywood hives are heavy to handle and may not be able to 'breathe' owing to the layers of glue. Blockboard, MDF or

orientated strand board (Sterling Board) are non-durable in exterior uses where a useful service life is required.

Pre-treated timber, also referred to as pressure treated, can be bought from timber merchants or DIY centres but always obtain information on the product used to treat the timber and check whether there are any restrictions in its use for beehives. Ask the outlet for product information.

Design

Hives should be made to recognised designs such as National, Commercial, Langstroth or Smith. Well-made joints will help stop moisture from penetrating the timber.

When assembling or repairing hives using nails, use only galvanised or sheradised nails. Screws are often better than nails in preventing the wood from warping at vulnerable joints. Bee equipment suppliers sell hives as flat-pack kits. Always follow the instructions and use waterproof glue to ensure strong and durable joints. However, glued joints do not 'give' and any movement of the wood puts pressure on the glued joint, which may split. If water does get behind the glue, the wood takes much longer to dry out. It is almost impossible to replace damaged parts if they are glued. Using screws, rather than nails, can make repair work easier.

Hive stand

Single walled hives, such as the National, should be stood on hive stands well clear of the ground. This keeps solid floors dry and ensures there is good air circulation under the hive.

Hive stands can be permanent structures or moveable with the hives. They can be made from pressure treated wood, metal frames or concrete building blocks. Porous blocks that have absorbed water may crumble during frosty weather. Ensure that the hive stand is large enough to support the whole hive. A narrow stand can put unnecessary strain on the floor and may cause the hive to collapse.

Placing the hive stand onto a level paving slab ensures a flat and stable base for the hive. The removal of vegetation will increase air circulation and will help to keep the hive dry.

Choice of wood preservative

Any product which claims to be a wood preservative requires authorisation before it can be placed on the market. Before purchasing any wood preservative product you should:

- Check the product label on the container for the HSE Number, which indicates that the product has been cleared for use by the general public (also referred to as Amateur users). If it states for Professional or Industrial use then it should not be used by the general public.
- Carefully read the label and other information on the container and note any conditions of use and whether there are restrictions on the use of the product on bee hives. Latest information may be found on the manufacturer's website.

Do not be tempted to use old products which you may happen

to have in your shed. They may no longer be appropriate or legal to use. Take them to your Local Authority Civic Amenity site which will have a special facility to deal with them.

Whilst not a wood preservative as such, dipping hive parts into hot liquid paraffin wax is not a recommended practice for most beekeepers because of the high fire risk.

Choice of exterior coating or finish

There are many wood protection products on the market which protect the timber against the effects of weather and give a colour to the timber.

Water-based acrylic paints and stains can be used. They provide good weather resistance but are soft and prone to physical damage. Water-based shed and fence treatments are usually not suitable for application to planed timbers such as those used in hive components.

Solvent based paints and stains can also be used.

Whichever of these products you use always remember that there is a risk of blistering caused by moisture being trapped under the paint film if the coating can't breathe.

'Microporous' finishes work well on hives. They are more permeable to allow water vapour to escape through the film without peeling or blistering the finish. They repel water well and are relatively flexible, accommodating to some extent the movement of the wood substrate.

Woodstains can also be used and can be low or medium build according to their solids content. Low build finishes are preferable for migratory beekeeping because they are less liable to mechanical damage and abrasion.

Woodstains and microporous finishes can be maintained very readily, only requiring cleaning down and recoating.

Varnishes are unsuitable for use on hive parts as exposure to sunlight and mechanical abrasion breaks down the coating and it is difficult to restore.

Note: hive parts that have been treated or finished should be dry and free from odour by airing in the open before the bees are introduced to the hive.

Hive Roofs

Galvanised metal is the most suitable material for long term use as a roofing cover. When the galvanised coating is damaged a metal primer followed by a metal paint can be applied.

Alternatively thin aluminium sheeting can be used as it is corrosion resistant and needs no maintenance, although it is easily punctured if not handled carefully.

Consider using silicone mastic to fix the metal cover to the underlying structure as this means you don't have to make holes in it for nails.

Roofing felt can also be used but it is not very durable. The application of heat reflective paint helps prolong the life of the felt.

Holes or small tears can be repaired using a suitable mastic sealant but it is preferable to remove and replace the whole roof covering.

Care during use and Repairs

The useful life of hive parts can be extended if damage is avoided and repairs are carried out at an early stage. Damage is commonly caused to top and bottom edges of boxes by the use of poorly made hive tools. This can make gaps for bees and wasps to enter. Hive tools with thin blades are much easier to separate boxes than those with thicker ended blades.

Damage caused by woodpeckers can often be satisfactorily repaired using wood filler rather than discarding.

General Notes:

This leaflet is one of a series intended to help beekeepers and non-beekeepers. If you believe the contents of this leaflet are relevant to you, please seek further advice from an experienced beekeeper or your tutor.

Information is updated regularly – please check with the BBKA web site at: www.bbka.org.uk – for the latest information.

This leaflet supersedes 'The Preservation of Beehives' (B7 2007 4th edition)

Note: The same information is published in our printed leaflet L007 available from the BBKA.

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