

Better beekeeping in top-bar hives: Hives and hive making

Pam Gregory, UK

As I have said in *BfDJ 66* and *BfDJ 67* bees do not really mind where they live as long as it is safe and dry. The hive is for the beekeeper's convenience and profit. There are three basic choices - the local style (fixed comb) hive, the top-bar (or movable-comb) hive and the movable-frame hive.

Beekeepers should be able to make their own hives from materials that are cheap and easily available locally, especially where beekeepers do not have access to factory-made consumer goods including hives. The simpler a hive is to make, the more people will be able to take part in beekeeping, even if they have very little money. This is one reason why top-bar hives are so useful. They are easy to

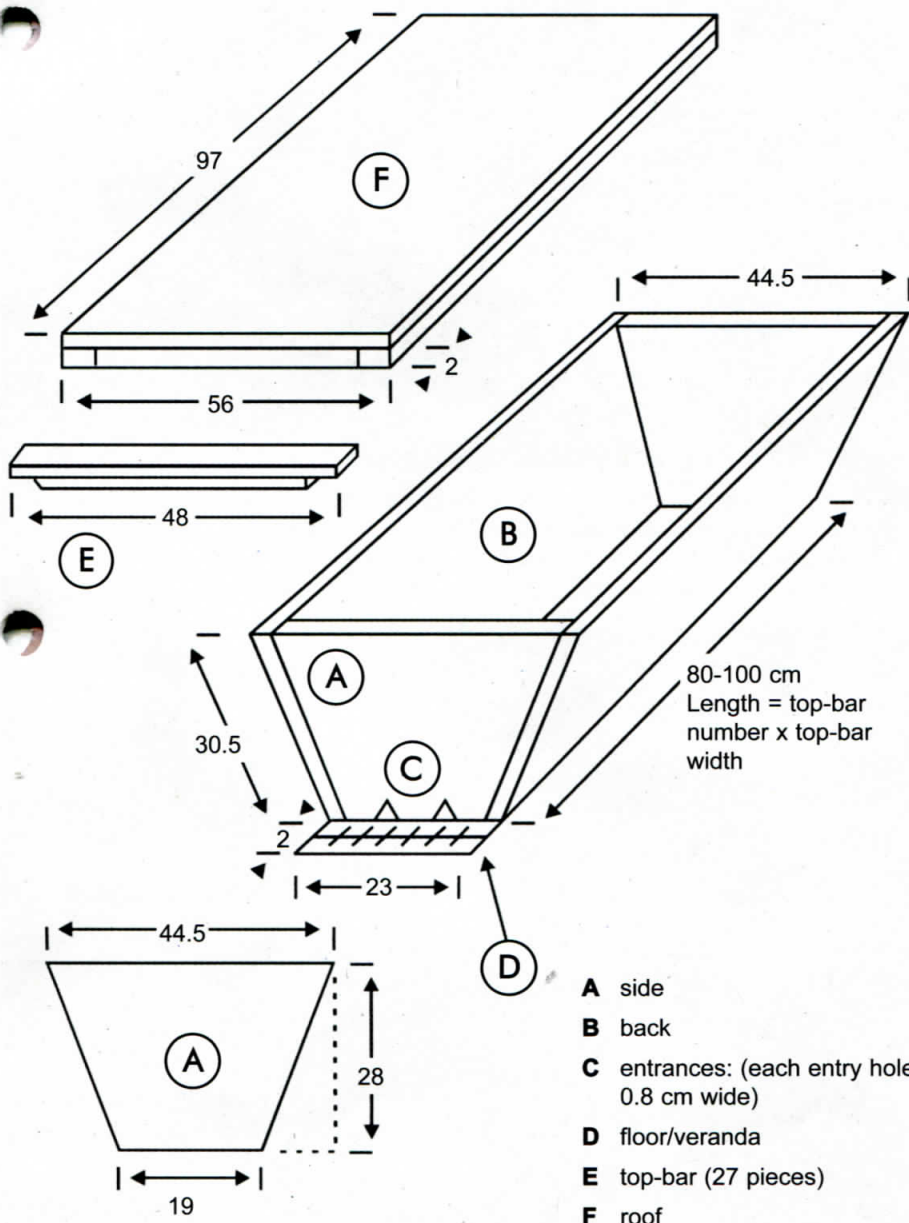
make and yet still give all the advantages. Increasingly I meet beekeepers in the UK who are trying out top-bar hives (after they have seen them used in other countries) because they are interesting to make and experiment with. Also top-bar hives are more comfortable to work with than frame hives, and with less lifting involved, fewer back problems arise.

The most important reason for making your own hives is to maintain independence. You do not have to wait for other people to provide hives, grants or loans that have to be paid back even if the honey crop fails. Making hives gives a person the freedom to get started in beekeeping or to expand the beekeeping business at her/his own pace as both skill and money allow. If you can build your own hives as cheaply as possible from local materials you can build more hives for your money: this is a major benefit of local beekeeping methods.

Top-bar hive designs and standards

There is a confusing variety of top-bar hive standards and designs. This is hardly surprising given how much beekeepers like to experiment and innovate. There are also many variations on Langstroth's original frame hive, which is reputedly based on the dimensions of the champagne crate from which he built the first hive. People will have a new idea and encourage others to follow it, which means people can have strong views about hives. They may tell you that only their way is right and all other ways are wrong - avoid these beekeepers for their experience is limited. A new approach might indeed have some improved features or it may be worse than the old way; it may not offer enough advantages or not be successful in your circumstances. Unless you are very experienced it can be difficult to decide what will be best. People can find all this very confusing, especially when they are just starting out in beekeeping.

If you come to hive design with an understanding of the underlying ideas, then you are better informed how to choose what will suit you. There are a number of things to remember:



Exact plan of a top-bar hive (Cameroon standard) with measurements in centimetres

- Hives are for the convenience of the beekeeper - think what you need to do and choose accordingly.
- Your choices should be based on the best methods for **you**.
- Honey harvesting is easier using top-bar hives and this is more likely to preserve the colony for the future.
- New management methods can be undertaken with top-bar hives that may give advantage.
- Standardisation of hive width is important if you wish to transfer combs or top-bars between hives.
- Top-bar width is important to encourage bees to build one comb on one top-bar: otherwise you may as well use a fixed comb hive.
- You will have problems transferring comb from a straight sided top-bar hive into a sloping sided top-bar hive.
- Frame hive beekeeping is often more complicated than necessary for many places.
- Beekeeping may be profitable but it should also be pleasurable, so choose a method you feel you will enjoy - you might even want to compare several methods.

Materials

The materials used to build a hive affect the cost and the length of time it will last, and the beekeeper needs to think what he/she wants from the hive. A perfect hive that lasts a lifetime is wonderful, but if you cannot afford this then a cheaper hive that will make money now and allow investment in the future may be a better option. Normally top-bar hives are built from wood. While this is an excellent material, I have some reservations about its use. The most important is that modern top-bar beekeeping techniques are about encouraging sustainable development. It may not be sustainable to cut a large tree in order to get hive materials. At worst, this can exacerbate deforestation and encourage erosion; at best it uses prime wood that might be better used in other ways. In many places beekeepers are already finding that trees suitable for bark or log hives are becoming scarcer. It is probably best that good wood is used for the most valuable activities - maybe furniture for the house or to sell to raise cash while hives are made of cheaper stuff. In some cases it seems that neatly made, all wooden hives encourage hive theft - they make excellent tables or storage trunks.

There are always other materials that can be used to make hives. I have seen it suggested to use materials such as polystyrene and corrugated plastic. I have no personal experience of these and assume they would be very durable,

but I am not sure the bees would like them because of the problems they would have with heat build up and condensation. A good way of finding out what materials might be suitable for top-bar hives is to look at the materials that are being used in local hives and see if it is possible to adapt these. I have seen many ideas including basket hives and hives made out of strips of material. These are used after plastering with mud and/or cow dung, in the same way that houses are made. An excellent compromise is to use strips of material

such as bamboo or straight sticks to make the hive sides (or panels), attached to the front and back gables made from scrap timber. The 'wood' that comes from the leaf bases of the raffia palm *Raphia farinifera* is used to make strips of material for hive sides in many parts of tropical Africa but where this plant is not common there will be other choices. I have tried split sisal poles *Agave sisalana*, woven floor matting, wooden off-cuts and various types of bamboo both split and round while, in the UK, hazel sticks have proved very effective.



© Pam Gregory

Raffia palm top-bar hive in Cameroon. Hives made this way must be plastered before use to fill up the gaps between the strips of wood or basketwork. It is essential to fill up all the gaps or the bees will have too many entrances or, worse, pests such as ants and hive beetles will be able to enter.



© Bees for Development

A top-bar hive with walls made from split bamboo