CONCRETE HIVES IN THE GAMBIA

Kristin Lassen and Ebrima Jammeh

In B/DJ 75 Joyothi Ravishankar from India explained his method for the construction of cement hives. Now Kristin Lassen and Ebrima Jammeh describe the concrete hives they developed during the collaboration of the Danish Beekeepers' Association (DBF) and several Gambian beekeepers' associations from 1992 to 2003.

The purpose of the work was to develop Gambian beekeeping using wooden top-bar hives. However, a constant problem faced by new beekeepers was the high price of wood, which limited possibilities to make more hives. We tried to solve this problem in various ways. The concrete hive was one such attempt.

Pros and Cons

In The Gambia the price of a concrete hive is about 15% that of a wooden hive. Apart from the lower price, the concrete hive lasts longer and requires less maintenance than its wooden counterpart, which is susceptible to cracking and rotting. Fewer cracks and holes in a hive help the bees keep out pests and, according to the President of the Sifoe Kalo Farm, Manjiki Jabang, they have less problems with wax moth in the concrete hives compared to the wooden hives.

The size of the holes must match the dimensions of a top-bar hive

The holes are dug
The bottom of the hive is smeared with concrete. Notice the white stick, which is placed temporarily to make the hive entrance.

Using concrete instead of wood for hives reduces problems with termites, bush fires, and hive theft (for the wood), all commonly experienced by Gambian beekeepers. Also the heavier concrete hives are less likely to be knocked over by animals.

One disadvantage of the concrete hive is the weight, which makes it difficult to move and transfer. In addition it can be hard to dig the hole in the ground for the mould (especially during the dry season) and one needs access to cement that cannot be reused.

It works!
The first concrete hives were made in 1997. According to Manjiki Jabang, the honeybees seemed to enjoy equally the concrete and wooden hives. No research on the measurement of temperature and humidity inside the two types of hives has been made, but in a hot climate it is important to place all hives in the shade. By July 2005, Sifo Kafu Farm had seven colonised concrete hives, with some of the colonies dating back to 1997.

How to make a concrete hive
For three hives you will need:
50 kg cement plus 1 wheelbarrow of sand plus 1 wheelbarrow of gravel and water to mix
- A hole is dug in the ground the same size and shape as a top-bar hive
- The bottom and sides are plastered with a 3-4 cm layer of concrete, except for the hive entrance
- The concrete is left drying for about 7 days. The drying process should not be too fast otherwise this can make the concrete brittle. Eventually a piece of cardboard may be placed on top of the hive to reduce the rate of water evaporation
- When the concrete is dry, the soil is dug away and the hive is lifted to its standing position, for example on some concrete blocks
- The hive is fitted with top-bars with a guiding line of beeswax. A lid is put on the hive to keep out rain and dust. Painting is optional.