



Beekeeping in Africa: Colony management I: examining the colony and controlling swarming

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Summary

This technology focuses on practices to examine and control the colony. The second part discusses the phenomenon of swarming and discusses measures to prevent swarming. This technology is part of a series on hive management derived from the FAO publication 'Beekeeping in Africa'.

Description

When the beekeeper has successfully obtained some bees in his hives, he can look forward to a bumper harvest, but he must remember that success in keeping bees depends on the exercise of his knowledge of colony organization in relation to various factors.

It is also controlled or affected by seasonal and climatic changes, not forgetting the existence of vegetation or bee forage in the area.

A farmer who plants his crop on fertile land with excellent climatic conditions is bound to fail if he leaves everything to chance, neglecting other important managerial practices such as pest control, bush clearing, pruning, thinning, etc. Beekeeping calls for practices which are vital to the survival and well-being of every bee colony.

1. How to examine a bee colony

While the experienced beekeeper can usually have a fair idea of how his colonies are progressing by observing them from outside, the only means he has of knowing for sure whether everything is going smoothly is to open the hives and inspect each comb. This will let him know if honey is being prepared and capped regularly, whether the colony is getting ready to swarm, whether the hive has been attacked by pests, etc.

The general rules for hive inspection and for harvesting honey are the same, and therefore they can be discussed together here.

1. Wear protective clothes, and cover the body thoroughly. It is better to have another person check to be sure the bees have no way to reach the skin.
2. Beekeepers should always work in pairs: one operating the smoker and the other working the top-bars and combs.
3. Get a good smoker with a large bellows. The fuel container must be large enough to carry enough fuel to last for the entire operation. Carpenter's wood shavings are excellent for fuel. Never forget to take along a good



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- knife or hive tool and brush or quill.
4. Puff some smoke gently around the hive. Then puff continuously through the main entrance for at least three minutes. Wait about one or two minutes for the bees to rush in and gorge themselves with honey.
 5. Using the hive tool or knife, pry open the lid of the hive if it has been propolized (top-bar hives have no problem with propolizing). With the top-bar hive, it is important to knock at the top-bars to determine which are without combs; the empty side makes the most noise (the frame hive does not need to be “knocked”).
Using the hive tool or knife, pry up the top-bars from the empty side. Then puff some smoke gently so that the smoke will drive the bees to the other side of the hive. Host bees will gather as far as possible from the first comb.
 6. Then remove the first comb and inspect it. If it is a brood comb, look to see that the cells are filled regularly and well-sealed, and especially whether the comb contains queen and drone cells as well as worker cells; this is a sign that the colony is preparing to swarm.
If it is a honey comb, look to see whether the cells are fully capped (containing ripe honey) or uncapped or partly capped (containing unripe honey). Then replace the comb, even if it is full of ripe honey; it can be removed and taken away later, during honey-harvesting operations, which call for special equipment (please see the entry “Beekeeping in Africa: traditional and modern beehives and beekeeping equipment” in the further readings, for more information).
 7. Replace the comb, give a puff of smoke, go on to the next comb, and repeat the

operation until all the combs have been inspected.

8. If more than ten brood combs are found, remove the excess, because if too much brood is allowed to emerge, the hive will become overcrowded and the colony may abscond. These brood combs can be placed in another hive to strengthen its colony if necessary.

2. Controlling swarming to advantage

It is a natural fact that bees in the hive will one day separate and that some of them will leave. The beekeeper will be worried about the honey and other valuables that the bees will carry away from the hive. Swarming divides the population of the colony, and this of course causes a considerable reduction of the working force.

As a result, the amount of honey and other valuable products that the colony might produce is considerably reduced. Consequently, the beekeeper would prefer to retain all the bees and make valuable use of them. This can be done by controlling swarming, but in a manner that will not interfere with the bees’ natural instinctive desire. Such interference can lead to absconding, another deplorable behaviour characteristic of the tropical bee.

Let us now look a little more closely at the circumstances that lead the bees to swarm. During the peak of the brood-rearing stage, the best queens are capable of laying up to 2 000 eggs a day. In the forest areas, this occurs between August to October and April to May (these periods may differ in some parts of the region, but they usually occur after the main rainy season, when flowers are in bloom).

The brood combs become so populous that the queen can no longer withstand the



congestion in the brood nest. The whole colony is thrown out of balance, and workers begin to build queen cells to rear queens for the purpose of swarming. The queen cells are numerous and are built in twos and threes at intervals of two days. These are always built at the sides of the comb of a top-bar hive or at the base of the comb of a frame hive.

To prevent swarming, the hive must be managed so that congestion will be avoided or, at least, minimized. The idea is to create a commodious area to cope with the ever-increasing brood during the build-up stages. Any managerial activity that will increase the desired cells required for the comfort of the queen and the workers will prevent or delay swarming. Some methods of doing this are as follows:

1. remove honeycombs near the brood nest and replace them with empty combs;
2. add empty combs from other hives at the sides of the brood combs of the overcrowded hive. This means that the beekeeper must build a stock of empty combs, which must be carefully protected from the wax-moth larva;
3. do not leave honeycombs in small hives for too long. Always remove them to create more space for the bees to work;
4. provide shade by covering the hive with a bundle of dry grass or palm branches when it is too warm for the bees. Overheating can be detected when bees gather at the entrance of the hive, fanning themselves.

The sign that warns the beekeeper that the bees are preparing to swarm is the discovery of swarming queen cells. When these are found, the beekeeper must intervene to turn this activity to his advantage by dividing the colony himself.

3. Related/Associated Technologies

- Beekeeping in Africa. Traditional and modern beehives and beekeeping equipment: TECA ID 7273
- Beekeeping in Africa. Installation of bee hives (with particular focus on the top bar hive): TECA ID 7291
- Beekeeping in Africa. Site selection for bee hives: TECA ID 7323
- Beekeeping in Africa. Colony management II. Dividing, uniting and feeding a colony: TECA ID 7326
- Beekeeping in Africa. Colony management III. Record keeping and nest control: TECA ID 7327
- Beekeeping in Africa. Honey harvesting: TECA ID 7329
- Beekeeping in Africa. Honey and bee wax extraction: TECA ID 7330
- Beekeeping in Africa. Using bees for pollination: TECA ID 7331
- Beekeeping in Africa. Responding to common bee diseases: TECA ID 7332
- Beekeeping in Africa. Choosing and rearing a queen: TECA ID 7333

4. Objectives fulfilled by the project

- Resource use efficiency; and
- Pro-poor efficiency.