



Beekeeping: How to keep bees and process honey

Source	Technical Centre for Agricultural and Rural Cooperation (CTA)
Keywords	Beekeeping, honey, bees, honey harvesting and processing, hives
Country of first practice	Uganda
ID and publishing year	7360 and 2011
Sustainable Development Goals	Zero hunger, decent work and economic growth, responsible consumption and production and life on the land

Summary

This practice describes beekeeping and sheds the light on choosing of suitable hive and location, and hive populating. Additionally, it covers honey harvesting and processing.

Description

1. How to Keep Bees and Process Honey

1.1 Benefit from beekeeping

- Bees pollinate crops and thus help increase yields.
- High demand for honey exists in local, regional and international markets.
- Propolis, collected from plants by bees to cover the inside of the hive, treats a broad range of ailments.
- Pollen, collected from plants by bees to feed their larvae, is used in the perfume industry, and is a food additive and a medicine.
- Royal jelly, made by young bees from gland secretions and fed to the queen to make her strong, has medicinal properties.
- Beeswax is used in cosmetics, candles and polishes.
- Beekeeping has low start-up costs and occupies negligible land space.
- About 80 percent of honey consists of sugars that are readily absorbed by the body and honey is thus quite suitable

for children, sick people and those who perform heavy manual tasks.

1.2 Choosing the right hive

The table below lists the advantages and disadvantages of three different types of hive (see Table 1).

1.3 Site selection

Some considerations need to be taken into account when choosing the site for the hives:

- Beehives should be placed near a source of water (river, stream, lake, dam or natural or man-made ponds) and in an area with adequate vegetation, such as coffee, sunflower, moringa, mangoes, oranges, bananas and other flowering plants.
- The site should be fenced to protect bees from people and animals (and people and animals from bees).
- Hives should be located at least 30 m away from roads and public or noisy places.

1.4 Populating the hive

There are two ways of populating a swarm:

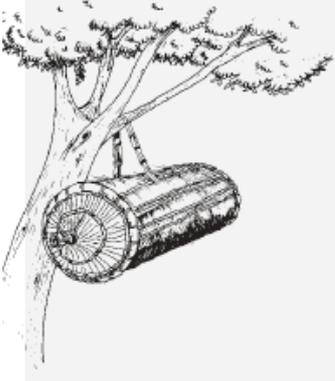
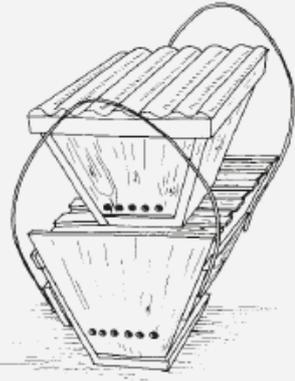
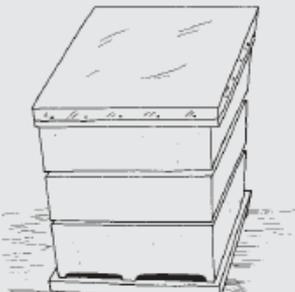
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Beekeeping

Table 1: Choosing the right Hive

Type of hive	Advantages	Disadvantages
<p>Local woven beehive</p> 	<p>Cheap and easy to establish</p> <p>Made from locally available materials</p> <p>More propolis is produced than in other types of hive</p>	<p>The colony cannot be inspected</p> <p>It is difficult to prevent swarming or replace a queen</p> <p>Quality cannot be controlled because the combs with brood cannot be separated from the honeycombs</p> <p>Honey yields are low (approximately 6 to 10 kg per year)</p> <p>Life span of the hive is up to 2 years</p>
<p>Top-bar hive</p> 	<p>Can be made with locally available and inexpensive materials</p> <p>Easy inspection and control of swarming</p> <p>Quality of honey can be monitored</p> <p>Yields are 20 to 40 kg per year</p> <p>Life span is about 10 years</p> <p>More wax is produced since the combs have to be cut from the frame during harvesting</p>	<p>More expensive than local hives</p> <p>Difficult for small-scale farmers to acquire minimum economic number (about 10 hives)</p> <p>Predators and other insects can easily access them because they are hung low</p>
<p>Langstroth hive</p> 	<p>Combs with brood (young bees) can be easily separated from combs with honey</p> <p>Yields range between 50 and 60 kg per year</p> <p>Quality of honey can be monitored</p>	<p>Costly to build or buy</p> <p>Requires a special extractor to remove the honey from the combs</p> <p>Needs more advanced beekeeping skills</p>



1.4.1 Baiting a swarm

- Use a small hive that has already been inhabited by bees and fill it with frames or top bars; two of the frames should contain combs and the others should have foundation sheets or strips of old comb.
- Place the hive in a tree or on a roof in such a way that there is some protection from the wind.
- Place the hive in its desired place the very day that the swarm has taken occupation of it.
- Baiting is useful only in the swarming season, usually at the beginning of the dry season and end of a cold season.

1.4.2 Capturing a swarm

You may capture a newly settled swarm around a branch of a tree, but make sure you wear protective clothing.

- First sprinkle cold water over the bees with a brush or spray bottle to stop them from moving away.
- Hold a small hive without frames, a basket or a box under the swarm.
- Drive the bees into the hive with a bee brush or smoke.

2. Honey harvesting

For traditional and top-bar hives, harvest once or twice a year. For the Langstroth hive, harvest three or four times a year.

Steps for honey harvesting:

- wear protective clothing: overall, veils, gloves, boots;
- light the smoker;
- gently open the hive;
- select combs that are two-thirds sealed full of honey;
- avoid combs with brood;
- lift comb, blow smoke on both sides and gently brush bees back into hive with a

feather;

- cut away combs and honey, leaving about 1 cm of comb on the bar;
- place capped honey in a clean, dry container and cover;
- leave at least eight combs for the bees; and
- before closing hive, push the unripe combs next to the combs with brood and place harvested bars behind these.

See Table 1 for possible complications.

2.1 Honey processing

To process Honey follow the following steps:

- Use a hot rod or knife to de-cap the honeycombs (by passing it over the combs).
- Place the de-capped comb on a piece of fine white linen tied over the top of a plastic container. The de-capped side should face downwards.
- Let the honey drip through the cloth until the cells are empty.
- Turn over the comb and repeat the above process.
- Pack honey in clean, dry jars with well-sealed lids. Label with date harvested and store in a cool place.

2.2 Keeping records

It is important to keep records during each hive inspection in order to follow the progress of each colony and monitor its condition. Hives should be inspected two to three-times a month. Entries may be made under the following headings: hive number, date hive occupied, date of inspection, observation, yield in kilogrammes.

3. Case study

Asaf Ayatuhare, from Bushenyi District in South Western Uganda, has more than 100 beehives of different types. With an



Table 2: What can go wrong

What can go wrong	Cause	Solution
Bees fly away	Lack of food and water Disturbance of hive e.g. by fire, people or animals Frequent attacks by pests	Ensure sufficient food: plant flowering plants near hive Provide water during droughts Reduce size of colony Place hive at least 30 metres from roads and public places and fence site Treat bees gently Keep hive area clean
Bee sting	Disturbance of hive	Keep calm, remove the sting and smoke the stung area. In case of severe reaction, report to nearest hospital or clinic
Pests (safari ants, wax moth, honey badger)	Poor siting and maintenance of hives	Hang hives between trees If poles are used, treat poles with used engine oil or grease to keep out termites and ants
Use of insecticides or pesticides which poison bees	Use of chemical sprays nearby	Keep in touch with other farmers and know when they are spraying Request farmers to spray at night when bees are safely in hive
Fires	Bush burning	Clear grass and bushes surrounding the apiary

Source: CTA 2015

annual production of honey of around 2 000 kg, he earns more than USD 2 200 a year and has recently registered a company, West Honeys Uganda.

But ten years ago, Asaf had just three traditional hives and produced only 6 kg of honey a year. Then he attended a national training of trainers programme, organized and sponsored by the Entomology Department of the Ministry of Agriculture. After completing his training, he became involved in training other beekeepers and his local communities.

Asaf was also able to interact with Non-governmental Organizations (NGOs) and international and local funding agencies, such as USAID, FAO and the District Farmers Association. These agencies helped him to expand his apiary and acquire improved top-bar hives.

Today, thanks to beekeeping, Asaf has a permanent house, pays fees for his children in secondary and higher education and is able to save from his income.

4. Validation of the practice

- Farmers in Uganda applied this practice.

5. Minimum requirements for the successful implementation of the practice

Choosing a suitable hive and location are very important and determinant to the successful application of this practice. Equipment required for honey harvesting and processing are mentioned in section 2.

6. Agro-ecological zones

- Tropics, warm