



DEPARTMENT OF AGRICULTURE

LIVESTOCK RESEARCH SECTION

BASIC INFORMATION & GUIDELINES FOR BEE KEEPING



GUIDELINE

HONEY BEE

The applicant should be a registered farmer, having no less than a 1000 metre square of land with no less than 5 beehives.

LOCATION

The chosen site should:

- not be in a flood-prone area
- be 30m away from any dwelling house other than a designated agricultural area
- have enough space for the requested project
- Must be close to potable water or a clean water source.
- be able to accommodate:
 - the beehives
 - a tools' store
 - a fence if necessary
- have 30m from each type of animal pens (ruminant/poultry/pig/others) on the land for a better hygiene & biosecurity system.

N.B: It's advisable to consider extra acreage for any possible future expansion, SAA should be informed prior to the bee project in case there are other plans by the applicant for other types of projects in the future on the same parcel number or adjacent to it.

BEE HIVES

The amount of bee hives will depend on the amount of land available and the quantity of colonies that has been granted permission to keep. The bee hives can be built out of wood or imported.

- The roof should be 18"/18"
- The honey Super should be 20"/20"

- The Honey brooder should be 20"/20"/10.5"
- The floor stand should be 16"high. The floor of hive with bee landing platform should be 20"/23"

ORIENTATION

The bee hives should be placed on the East -West side to avoid direct sun rays and rain water inside of it. (It is very important so that the temperature inside the hives does not exceed 35 ° C). This is important to keep your hives in a shady area as much as possible to avoid excess heat in the hives.

REARING SYSTEM: The bees can be kept in an open space as any apiary sites or it can be kept in an apiary well covered to avoid damage from heavy rain and direct sunlight in the hives and also to avoid direct access from other people and animal. This place must be kept under locked and key.

RECORD KEEPING

- The apiary layout this can be a pictorial record to show the location of each colony in the apiary and its identifying mark. Hives on out-apiaries should be marked to reduce the possibility of theft and so that the owner can be identified. Talk to the local beekeeping association about the marking system used in your area. Individual record cards may also be kept with this section.
- Plans for work in the season this section will hold your plans for managing the colonies in the apiary. It is particularly useful to record the activities and timing you plan to use for queen rearing and swarm control. It can also be used as a reminder for repairing hives or buying new equipment's. There is no special format for this section but most record keepers find it useful to plan activities using a simple diary approach. If there is any concern over the general vigor or health of the colonies it can be marked here as a reminder to replace certain queens or re-site colonies. Information may also include the dates when specific operations must be carried out e.g. for queen rearing or preparation of an observation hive for a particular occasion.

- Records of the bees on this will give information on the quantity of honey collected during the season and the quality of the queens.

DISEASES/ PARASITES

- **Definition:** The normal metabolism of bees is disturbed and destructed leading to a series of pathological changes of physiological function or structure showing abnormalities (viruses) or even death.
- **Characteristics:** Three types of bees are interdependent and indispensable, in a colony so that the disease is defined in terms of the entire colony.
- **Classification:** Based on pathogen
 1. **Infectious diseases:** bacterial diseases, fungal diseases, viral diseases, protozoan disease.
 2. **Invasive diseases:** various parasitic dragonfly, parasitic insects, parasitic nematodes.
 3. **Non-communicable diseases:** genetic diseases, physiological disorders, nutritional disorders, metabolic disorders, poisoning, as well as some unusual behaviors.

- **Classification of symptoms**

Decay: The host cells are damaged by parasitic pathogens or due to non-biological factors leading to the death of organism tissue cell resulting in decomposed into decaying matter. Decay often comes with a variety of rancid odor.

Discoloration: Changing from bright to dim, from light to dark, and from shiny white to pale to yellow and finally to black.

Deformity: Referring to abnormal morphology such as the residual or missing of limb, or swelling of the body.

“starred comb” & Perforation:

“Starred comb” refers to the phenomenon that the surface is dotted with capped cells, empty cells, cells of eggs and cells of various stages of bee larvae.

Perforation refers to the little hole in the capped cell bit by worker bees after the death of larvae of pupae.

- **Transmission of bee diseases :**

1. **Internal swarm:** Horizontally, through the main activities of host such as feeding, excretion, spit liquid, physical touch, flying, etc; vertically, pathogenic microorganisms are passed on from parent to offspring through reproductive cells.

2. **between swarms:** honey, pollen and honey comb that are infected are transferred to a healthy colony;

- Beekeeping equipment that are not disinfected applied to a healthy colony;
- Worker bees that are infected mistakenly put in a healthy colony;
- Merge healthy and infected colonies;
- Contaminated feeding

BIOSECURITY

This is a series of measures necessary to prevent diseases from entering the farm. It is often neglected but vital to avoid farm production losses and danger to human health.

- **Be aware of Biosecurity threats**

The owner and the workers should be familiar with the most important exotic and established honey bee pest threats.

- **Use pest-free honey bee stock and apiary equipment**

Ensure all queen bees and package bees are from trusted sources, pest-free and preferably certified. Keep good records of the apiary inputs.

- **Keep clean**

Practicing good sanitation and hygiene will help prevent the entry, establishment and movement of pests within and between apiaries. Workers, visitors, vehicles and equipment's can spread pests, so make sure they are clean before entering and leaving the apiary.

- **Check the apiary**

Monitor hives and the health of the honey bee brood frequently. Knowing the usual performance of the hives and honey bees, will help beekeepers recognize new or unusual events and pests. Keep written and photographic records of all unusual observations. As pest numbers can increase rapidly, constant vigilance is essential for the early detection of honey bee pests and pest honey bees.

Protective clothes: Hat, veil, overall, gloves and boots. (These materials should be worn at all times since that our bees are relatively aggressive). In case of purchasing new gears make sure that it's brand new to avoid contamination of other pest and disease.

Materials: Smoker, hive tool, bee brush, honey extractor, wax making machine or wax sheet can be obtain already prepared. (Preferably local ones)

- If possible, fence the farm and restricting access to authorized personal only
- If there's a gate place a vehicle dip at the entrance of the farm or if the gate is small place a footbath (the disinfectant used should be broad spectrum antibacterial/antifungal/virucidal and should be changed daily)
- Maintaining an effective rodent eradication program
- Careful daily visualization of all the hives to detect any unthrifty (unwell) bees
- Prompt notification of the Veterinary Services should be done upon detection of any suspicious sickness or deaths
- The tool store should be kept clean & tidy with shelves to store disinfectant
- Proper cleaning and disinfection of tools and equipment's
- Do a proper cleaning of the hives before putting in new colony
- Disposal of dead bees should be done by deep burying
- For human own safety and to prevent any spread of diseases, it is always advisable to use your protective clothes with the bees on your farm only. In case going to another outside colony make sure to wear clean clothes and wash after before getting access to your own farm hives.

N.B: If any abnormal deaths occur, Veterinary Services should be contacted prior to disposal of the bees as there might need to conduct further examinations and sampling of infectious tissues from these bees.

BACK YARD

Keeping of bee hives in the back yard is not advisable as bees fly and being provoked by unwanted smell, animal or human being can cause the bees to become aggressive and attack human.

For More Information

Seychelles Agricultural Agency	– Headquarters	– 4676450
Mr.Jose Guerreiro	– Extension Section-SAA	– 2714995
Ms.Marie-Michelle Payet	– Senior Agricultural Scientist	– 2724993
Livestock Veterinary Doctor	– Grand Anse	– 2723291
Seychelles Agricultural Agency	– Praslin	– 4233313