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Organic Beekeeping

K. S. Sowmya

Research Associate, Organic Farming Research Centre, Navile, Shimoga, Karnataka-577225

Email: rajkgeh@yahoo.co.in

Beekeeping without the use of synthetic drugs and sweeteners for feeding bees is called organic beekeeping. Good selection and utilization of local ecotypes of bees and of ecological hive systems, best adapted to the natural environment, based on building a sufficient number of young bee colonies and the abundance and diversity of pollen and nectar resources is very important for correct management of the colonies year round to assure optimal colony development.

Introduction

Organic beekeeping is beekeeping practiced in clean areas, without intensive agriculture. The bees that create the honey are never exposed to any pesticides, insecticides or herbicides. Beekeeping without the use of synthetic drugs and sweeteners for feeding bees is called organic beekeeping. In order for a hive to be certified organic, there are three main rules to which the beekeeper must adhere. Organic beekeeping must**:**

1) Take place in an unpolluted area
2) Use natural materials, methods and feed
3) Avoid the use of conventional veterinary medicine and pesticides

a. **Hive location:** The hive itself must be surrounded by at least 3 miles of natural vegetation and/or organic or low input farmland. This is due to the fact that bees can travel up to 3 miles to feed. It is also important for the surrounding area to have sufficient sources of pollen, nectar and clean water for the bees.
b. **Strict hive standards and materials:** The hives themselves must also adhere to strict standards. Hives must be built from natural materials such as unpainted timber. Any tools or containers used in managing the colony including the harvest must be appropriate for foodstuffs and not be a source of pollutants.
c. **Compassionate and sustainable harvest:** When the beekeepers do finally harvest products from the hive, the colonies must be left more than enough honey to feed even during cold or dry seasons. Many conventional beekeepers supplement the diet with sugar water, which is not healthy for bees. Organic beekeepers leave as much as the bees would need to be happy and healthy. This goes for other bee products as well. Many conventional beekeepers would strip the hive of beeswax for the greatest yield but organic beekeepers keep the original comb intact so the bees are not stressed.

d. Record keeping and management: There are also a number of records to be kept in order to have certified organic hives. The beekeeper needs to have an organic management plan complete with a detailed map of the apiary site and its surroundings. This must also list all surrounding vegetation and possible sources of pollution. Each colony must have its own diary that details how it is handled and how it is thriving. Each of the products must be traceable to a certain hive to ensure that no more products are taken from the hive than is healthy for the bees. The organic beekeepers deal with care greatly for their bees.

Key Elements of Organic Beekeeping Management

We know that organic agricultural practices are more labour intensive than conventional ones. This applies also to organic beekeeping management. Thus, organic beekeepers should be innovative to be able to compete, also economically with conventional beekeepers.

The key elements of organic beekeeping management are:

1. Good selection and utilization of local ecotypes of bees and of ecological hive systems, best adapted to the natural environment and allowing efficient management
2. Efficient ecological strategies for the control *Varroa destructor* and other bee pests
3. Regular control of the bee colonies and their environment.
4. Safeguard of sufficient amounts of honey and pollen in the colony throughout the whole season
5. Correct management of the colonies all year round, based on building a sufficient number of young bee colonies
6. Regular renovation of comb wax.

Optimal Environment for Organic Beekeeping

Beekeeping is an important activity that contributes to the maintenance of biodiversity and agriculture-forest production through the pollination activities of bees. On the other hand, the optimal development of bee colonies depends to a great extent on biodiversity and on terrestrial ecosystems. It is necessary to avoid high beehive density because of over-exploitation of resources (pollen and nectar), because it can affect not only the survival of the honeybees under unfavourable conditions, but also the pollinators of the whole ecosystem. The environment is in constant change (e.g. pesticide accumulation, climate changes etc.) which can make honey production uncertain.

The following key points are important for the installation of organic apiaries:

1. It is necessary to have information on the annual climate of the apiary: the micro-climate of each place, the annual temperatures and rainfall.
2. The abundance and diversity of pollen and nectar resources is very important, to assure optimal colony development.
3. The installation of conventional apiaries should not be allowed near to organic apiaries. This is not an environmental factor, but conventional apiaries can negatively influence the bee pest control, e.g. by reinvasion of sick bees carrying parasites and various pests.
4. The fragmentation of apiaries should be avoided to minimize the spread of bee diseases.
5. There is a norm for a minimum of 3 km distance to agricultural contaminants. However, research is necessary to determine the safe distances from different industrial contaminants, as these can vary depending on the contamination type and the ecological cleanness standards of the plants.

Conclusion

At present, there are no precise data on the optimal organic beekeeping environment. For this purpose, it is necessary to establish nets of monitored beehives and to integrate data from different landscapes, climates and flora types. This is necessary to gain understanding about the most favorable environmental conditions for organic beekeeping.