



Apiculture

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What is bee keeping/Apiculture?

- **Bee keeping/Apiculture** (derived from latin word 'Apis'- Bees) is the maintenance of honey bee colonies, commonly in hives by humans.
- A **Bee keeper/Apiarist** keeps bees in order to collect their honey and other products that the hive produces (including beeswax, propolis, pollen, and royal jelly) to pollinate crops, or to produce bees for sale to other beekeepers.
- A location where bees are kept or maintained is called an **Apiary** or "**bee yard.**"

Introduction

- Honey bees are social insect belonging to order Hymenoptera, family Apidae and genus *Apis*.
- About 20,000 species of bees are present in the world. Only 8 spp are recognized as 'Honey bees' by entomologist.
- Out of the 8 spp of *Apis*, 7 spp such as *Apis cerana*, *Apis florea*, *Apis dorsata*, *Apis mellifera*, *Apis labriosa*, *Apis andreniformis*, *Apis koshevnikovi* are found in india.

Different Spp. of Honey Bees

Five important species of honey bees are as follows.

1. The Rock bee, *Apis dorsata* (Apidae).
2. The Indian hive bee, *Apis cerana indica* (Apidae).
3. The little bee, *Apis florea* (Apidae).
4. The European / Italian bee, *Apis mellifera* (Apidae).
5. Dammer bee / Stingless bee, *Melipona irridipennis* (Melliponidae).

Modern Method for Mass Production of Honey

They are divided into 5 types:

1. Typical Movable Hive
2. Queen Excluder
3. Honey Extractor
4. Uncapping Knife
5. Other Equipments

1. Typical Moveable Hive: Size and number of frames are variable according to the need. The perforation size of zinc sheet is only 0.375 cm but the thorax of queen is 0.43 to 0.45cm so queen cannot pass through the pore.

Six parts of typical moveable hive

(a) Stand (b)Bottom board (c)Brood chamber (d)Super (e)Inner cover (f)Top Cover

2. Queen Excluder: Consists of wire gauze, extraneous guards and drone traps. Workers can pass through it but queen cannot.

3. **Honey Extractor:** It functions on principle of centrifugal force. By centrifugation, pure honey is thrown out without any damage to the comb.
4. **Uncapping Knife:** Honey filled combs are sealed by wax which is removed by heated uncapping knife.
5. **Other Equipment:** Some materials like protective garments, gloves, net veil, bee net, brush *etc* are required for easy and well planned handling of bees.

Benefits of Bee Keeping

To provide self employment to rural and forest based populations. Production of honey, pollen, wax, venom, and royal jelly. To provide employment to rural educated youth in collection, processing and marketing of bee products. To increase the yield by cross pollination of several agriculture and horticulture crops.

Insects and Crop Pollination

Entomophily is by the most common mean of pollen transfer and it played a vital role in the evolution of angiosperms. Out of 95 per cent of the flower which are cross pollinated, more than 85 per cent depend on insects for pollination. Many wild plant in nature are being propagated through insect pollination which maintains the sustainability of ecosystems, environmental quality and help in conservation of biodiversity

Insect pollinators

- 73% Bees, 19% flies, 6.5 % birds & 1-2% others.