

## PRACTICAL 11

### SEASONAL MANAGEMENT OF HONEY BEE COLONIES (WINTER MANAGEMENT AND MIGRATORY BEE KEEPING)

**Aim: 1)** To prepare colonies for successful wintering in case of stationary beekeeping and procedure of migrations in case of migratory bee keeping.

After preparing the colonies in fall for wintering, protection should be provided to the colonies from winter by:

- Reducing the hive entrance
- Plugging all cracks and crevices in the hive
- Protecting the colonies from direct chilly winds.

**Storage and protection of combs:** Protect the spare combs from attack of wax moth by fumigating in hive stacks frequently till spring when these drawn combs will be needed by the colonies again.

**Wintering:** In upper Himalayan region, bees experience severe winter from November to March and colonies are lost due to poor wintering. Loss of colonies in winter can be avoided if following four fundamental principles in beekeeping management are kept in mind:

- i. Every colony must have a young vigorous prolific queen of superior genetic stock and young worker bees.
- ii. Every colony must be properly protected from extreme climatic conditions through reduced entrance and proper packing.
- iii. Every colony must have adequate reserves of honey and pollen.
- iv. Every colony must be maintained in “disease free” condition.

Honey bees use honey as source of energy for generating heat and to maintain hive temperature of 32-35°C near brood area. For wintering, if insulation to hive is provided, it will help in reduction of store consumption and saving energy of bees. The type of insulation depends upon the climatic zones.

#### **Winter packing of hive:**

- Only good colonies with young bees in large number and enough food stores should be packed
- For packing colonies straw, sawdust, wood shavings, bean stalks or dry leaves, chopped rice or wheat straw can be used
- Packing material should be dry since moisture will make it poor insulator
- Packing can be given in the brood chamber beyond dummy board (Fig. 11.1 to 11.3), as well as between inner and top cover.



Fig. 11.1 Position beyond dummy board where winter packing is to be given



Figure 11.2 Winter packing being given in the form dry grass packed in newspaper



Figure 11.3 Winter packing packed in newspaper before closing the hive

Strong colonies with young bees and good food stores, with proper packing need no care during winter and are opened only in spring.

**MIGRATORY BEE KEEPING:** Flora and honey flow season vary from region to region. Several vegetation regions of the country exhibit short or long gaps in the flowering. Thus there are one or more floral dearth periods of short or long duration. Migratory beekeeping is practiced to overcome these deficiencies in bee forage availability and find out the places where flows can be availed by bees at different periods of the year. This helps not only to prevent colony losses, but even to increase colony number and getting additional honey production.

**Preparing colonies for migration:**

- Provide proper ventilation by using entrance screens and even top screen in place of inner cover during hot weather
- Close all cracks or openings in the hive
- Nail all the movable parts of the hive properly or tie with migratory belts
- Before packing the colony, remove frames of honey which are more than half sealed since honey combs cannot bear much jolts. However, the colonies should have sufficient food during the journey
- Close the entrance in the evening when all bees have returned. Colonies should be moved during night
- For deciding migrating site, the beekeeper should have a detailed knowledge of honey flow sources and density of bee colonies in the surrounding area. Avoid areas which already have lot of bee colonies
- Migration can involve shifting of one truck load of bees up to 200km or even more. If journey cannot be undertaken in one night during hot periods then the truck should be parked in the shade during day, entrances opened and provision of water should be made. Journey can be started in the evening after closing hive entrance
- On arrival at the destination, colonies are unloaded and placed at the desired site. Then the entrance screens are removed
- Check the colonies after 1 or 2 days for any damage to combs and working of queens.

**Migration cycle:** If a beekeeper of hilly area in northern India wants to exploit his colonies to the maximum extent, he may follow the following cycle:

- Migrate colonies to the plains of Punjab and Haryana during first week of November for availing toria, sarson, eucalyptus, berseem and sunflower till first week of June
- In case, a beekeeper is interested to avail litchi flow, he may migrate his colonies during end March till 3<sup>rd</sup> week of April to Dehradun in Uttarakhand after availing the Brassica, (sarson) flow and bringing back to the plains of Punjab and Haryana by end April to avail flows from berseem and sunflower
- In the first week of June, the colonies can be migrated to foot hills of Himachal to avail nectar of khair
- To avail Plectranthus flow, the colonies can be migrated by end August to the floral rich pockets of district Shimla, Chamba and Kinnaur in Himachal Pradesh. However, the honey flow from this source is erratic and depends on the good monsoon rains needed for growth of this wild bush
- After Plectranthus flow the preparations can again be made for winter migration.

In South India, beekeepers generally migrate their bee colonies to sunflower, safflowers, cotton, sesamum and other crops. However, in the hilly areas, flowering of coffee in March-April and

that of cardamom between June-August is exploited. In some regions extensive flowering of *Schifflera* spp. during May, helps in building strength of bee colonies between coffee and cardamom flowering.

**Practical things to do:**

- i. Try to do the management practices for wintering and record your observations.
- ii. Prepare the colonies for wintering by giving winter packing and draw a labelled diagram.
- iii. Prepare the given bee colony for migration and record your observation.

Dr. YSPUH & F Solan