



Care and Management of Beekeeping

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The pre-requisites which are considered must to start beekeeping are as follows

- Knowledge and training on bee keeping
- Knowledge on local bee flora
- Sufficient local bee flora
- Knowledge of migratory bee keeping

Apiary site requirements

- The site should be dry without dampness. High RH will affect bee flight and ripening of nectar.
- **Water:** Natural or artificial source of water should be provided.
- **Wind breaks:** Trees serve as wind belts in cool areas.
- **Shade:** Hives can be kept under shade of trees. Artificial structures can also be constructed to provide shade.
- **Bee pasturage and forage:** Plants that yield pollen and nectar to bees are called bee pasturage and forage. Such plants should be plenty around the apiary site.

General apiary management practices

1. Hive inspection: Open the hive at least twice a week and inspect for following details. Hive record also is to be maintained for each hive.

- Presence of queen
- Presence of eggs and brood.
- Honey and pollen storage
- Presence of bee enemies like wax moth, mite, disease

2. Expanding brood net: It is done by providing comb foundation sheet in empty frame during honey flow period.

3. Supering (Addition of frames in super chamber): This is done when brood chamber is filled with bees and all frames are covered. Comb foundation sheet or constructed comb is provided in super chamber

4. During breeding season

1. increase in the foraging activity of the workers and in the rate of egg laying by the queen.
2. Necessary additional space has to be provided for all these and this is done through supply of new, clean, yellow combs or comb foundation sheets.

5. Swarm control

- Primary swarm is allowed to take place but trapped in a swarm trap and hived as a separate colony. The after-swarms are prevented by destroying the remaining queen brood cells

- One or two brood combs in the strong colonies which are inclined to issue swarms are removed and given to weak colonies.
- A brood comb with the reigning queen and a few workers taken out and put in a separate hive and thus the colony is divided,
- Inter-change of positions between a strong and weak colony.

6. Artificial feeding

when pollen and nectar is not available due to different seasons mostly in summer artificial feeding (sugar syrup and jeggery) is very essential.

Preparation of artificial feed.

- Sugar syrup is prepared by dissolving 100 g of sugar in 150-200 ml of hot water, boiled and cooled.
- It is offered in 400 ml glass-bottle or cigarette tins with their mouth covered with a mark in cloth held tightly with rubber band or thread.
- The syrup bottle is placed upside down in the super with or without inner cover. The colonies should be fed on alternate days in the evening.

Effect of artificial feeding:

- The bee colonies should be fed well during dearth period, especially in winter season.
- In such cases swarming is induced earlier and this helps a beekeeper in making the bee colonies strong before honey-flow season starts.

7. Provision of Drinking Water

- A source of fresh water within a short distance of an apiary is essential.
- Water is required to blend with the food and to lower the temperature of the hives during hot weather.
- Water can be supplied in a tank or an earthen pot set up so as to permit the water to drip.
- The water can be given in a glass bottle inside the hive also.

8. Uniting bee colonies

- The question of uniting stock of bees arises only when the colony becomes weak or queen less and all attempts of requeening fail. I
- t is then necessary that weak colonies should be united.
- As each colony has its own peculiar odour, it is necessary either to blend the odours of the two colonies slowly or suppress both by a stronger one.
- If this is not done the bees of the two colonies fight.
- The colonies to be united should be brought near each other by moving them closer, 0.5 to 1.0 m each day, so that incoming bees may not drift back to old site when the colonies are sufficiently close. Two other methods described below can also be used for uniting the colonies.

Newspaper method: Bring colonies side by side by moving 30 cm/day

- Remove queen from weak colony
- Keep a newspaper on top of brood chamber of queen known as right colony
- Make holes on the paper
- Keep queen less colony on top of right colony.
- Close hive entrance so that the smell of bees get mixed in both the colony
- Unite bees to the brood chamber and make it one colony.

Smoke method: Both colonies should be smoked heavily and then dumped into one hive. More smoke should be blown into the common hive.

9. Handling the Queen

The queen is the most important and indispensable individual in the bee colony, and should be handled properly and carefully.

10. Finding the queen

- The presence of an active queen in the colony can be judged by the presence of worker eggs.
- If, however, it is essential to spot her or to catch her, then she must be searched properly. In a strong colony sometimes it may be difficult to spot the queen at the first look.
- Test for the absence of queen.
- It is often necessary to be sure that a colony is really queen less before introducing a new queen.
- The bees of a queen less colony always develop nervousness.
- They do not sit properly in the comb. There will be no egg-laying or worker egg laying without uniformity in combs (more than one egg in cells).

11. Introduction of the queen

- Of several methods of introducing the queen, some are direct and others indirect.
- For safe introduction, first it should be make sure that the colony into which it is to be introduced is really queen less.
- and further that no queen cell is present in the brood combs.
- The queen should be put into a queen-introducing cage, with the exit plugged with queen candy, and then placed in the centre of the brood nest.
- The queen can be kept in a small specimen tube.

12. Increasing the Number of Colonies

It is very important for beekeeper to increase his bee colony every year and this can be done by dividing the existing colonies into 2 or 3 sub-colonies with fresh queens.

- purchase from government or private organisations. Should have 5-6 brood and healthy queen.
- Increased by the existing colonies during swarming season, the queen cells are constructed.
- Another method is to let the colony swarm, and the swarms are captured and transferred to empty hives by giving brood comb from another colony. The swarms can be kept in the same vicinity.
- Bee colonies can be captured from natural sources. Before bagging the colony, smoke should be applied. The combs are cut and placed in frames with wire to which they are firmly secured. The frames are transferred to a hive along with the bees.

Management: Pollen and nectar are available only during certain period. When surplus food source are available it is known as honey flow season. In contrast during dearth period there will be scarcity of food. During extremes in climate like summer, winter and monsoon certain specific management tactics are required.

13. Honey flow season management

This season coincides with spring. During this season,

- Provide more space for honey storage by giving comb foundation sheet or built combs
- Confine queen to brood chamber using queen excluder
- Prevent swarming as explained in swarm management
- Prior to honey flow, provide sugar syrup and build sufficient population
- Divide strong colonies into 2-3 new colonies, if colony multiplication is needed
- Queen rearing technique may be followed to produce new queens for new colonies

14. Summer management

Bees have to survive intense heat and dearth period by following means.

- Provide sufficient shade, under trees or artificial structure

- Increase RH and reduce heat by Sprinkling water twice a day on gunny bag or rice straw put on hive
- Increase ventilation by introducing a splinter between brood and super chamber
- Provide sugar syrup, pollen supplement, substitute and water

15. Winter management

It includes the following

- Maintain strong and disease free colonies
- Provide new queen to the hives
- Provide winter packing in cooler areas hilly regions

16. Management during dearth period

- Remove empty combs and store in air tight container.
- Use dummy division board to confine bees to small area
- Unite weak colonies
- Provide sugar syrup, pollen supplement and substitute

17. Rainy season and monsoon management

- Avoid dampness in apiary site. Provide proper drainage
- In rain when bees are confined to the hive, provide sugar syrup feeding

18. bee forage

- Plants that yield pollen and nectar are collectively called bee pasturage or bee forage.

● Plants which are good source of nectar are:

1. tamarind,
2. moringa,
3. neem,
4. Prosopis juliflora,
5. Soapnut tree,
6. Glyricidia maculata,
7. eucalyptus, Tribulus terrestris and pungam.

Plants which are good source of pollen are

- sorghum, sweet potato, maize, tobacco, millets like cumbu, tenai, varagu, ragi, coconut, roses, castor, pomegranate and date palm.

Plants which are good source of both pollen and nectar are

- banana, peach, citrus, guava, apple, Sunflower, berries, safflower, pear, mango and plum.

Foraging: This refers to collection of nectar and pollen by bees.

Nectar foragers: These collect nectar from flowers using lapping tongue and pass the nectar to hive bees. Hive bees repeatedly pass the nectar between pre oral cavity and tongue to ripen the honey. Later they drop the ripened honey into cells.

Pollen foragers:

- They collect pollen by passing through different flowers.

Pollen sticking to the body is removed by using pollen comb. Then it is packed using pollen press into corbicula or pollen basket. A single bee carries 10 to 30 mg of pollen which is 25 per cent of bee's weight. Then the pollen is dislodged by middle leg into cells. Pollen is mixed with honey and stored.

Enemies of honey bee

- Ants
- Birds
- Moths

- Beetles etc.
- And Diseases.

Management

- Bee hives stand take place to the water container at proper hight in which ants are not climbed
- Regular water supply to the surrounding of bee keeping areas.
- And hive or combs cover with covering material time to time.
- Proper cleaning and caring of bee keeping areas.

References

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