

PRACTICAL 7

HANDLING OF A HONEY BEE COLONY AND MAINTENANCE OF APIARY RECORD

- Aim: 1)** To become familiar with parameters required for selection of good apiary site.
2) To learn handling of bee colonies, recording of colony data and precautions required.

The key to success of beekeeping lies mainly in three things:

- A. Good apiary site.
- B. Good bee.
- C. Proper management.

What is an apiary?

Apiary is the place where the bee colonies are kept (Fig. 7.1).

A. Selection of good apiary site:

- i) The apiary site should be rich in bee flora which may provide forage for most parts of the year and in addition there should be good density of honey flow sources near the apiary site. For collecting 20 kg of honey, one colony needs 100 blooming trees or 2-4 acres of blooming crop
- ii) The apiary site should be easily accessible by road
- iii) There should be availability of fresh running water near the apiary
- iv) The apiary site should have natural or artificial wind breaks to protect the bees from strong/chilly winds
- v) The site should receive morning and afternoon sunshine. During summer provision of shade (either using artificial structures or using shade of the trees) should be made (Fig. 7.1).



Figure 7.1 Bee colonies in an apiary kept under trees which provide shade during summer

B. Selection of good bee:

Beekeeping can be taken up with either of the two domesticated honey bee species (*Apis cerana* and *A. mellifera*). However, in cold areas e.g. high hills, *A. cerana* being cold hardy performs better than *A. mellifera*. Moreover this bee is more frugal and does well even in areas, which are not very rich in bee flora. Farmers who are incapable of making more investment in bee keeping with *A. mellifera* can use *A. cerana*, since it needs less investment.



Figure 7.2 *Apis cerana*



Figure 7.3 *Apis mellifera*

C. Proper management:

Success of bee keeping also depends upon proper understanding of bee behaviour and manipulating the colonies accordingly. For manipulation of colonies in modern hives, as per needs of the bees, examination is frequently required.

Handling of bee colonies:

- For management of honey bees in modern bee keeping, examination of colonies forms one of the important aspects. But whenever we talk about examination of bee colonies, there is general fear of stinging by bees. It is to be made clear here that if we are aware of bee behaviour, stinging can be prevented. Bees sting only for their own protection and after stinging they die. If all the precautions are taken before examination of colonies we can avoid stinging by bees.



Figure 7.4 Handling of a bee colony.

Aim of examination of bee colonies: A bee colony is examined to check its working and to determine its requirements at a particular time, since these vary during different parts of the annual cycle of a bee colony. When a bee colony is opened, make the following observations:

- Whether a bee colony has sufficient food or it needs artificial feeding. Each colony, depending upon its strength, should invariably have at least 2-5kg of stores all the time
- Whether the queen is present or not? If present whether laying satisfactory. If absent colony needs a new queen.
- Whether there are sufficient combs for egg laying by the queen and to store nectar or not. If not provide more frames.
- Whether there are any of the enemies or diseases in the colony. If yes, manage them accordingly.

Honey bees do not like much of interference since it affects their normal working. Therefore, the colonies should be disturbed as little as possible. It is suggested that during built-up period of the colony it is examined once a week whereas during off-seasons only once or twice a month.

Requirements for examination of bee colonies:

Hive tool, bee veil, apiary record register, measuring scale or grid, smoker

Precautions:

- Before handling bee colonies it is better to wear a bee veil.
- Do not wear black or dark clothing as bees are furious to black colour.
- Any kind of perfume or strong smelling hair oils or metals like ring, watch etc which would induce bees to sting, should be removed before handling the bees.
- Do not be shaky while handling bees. Take care and avoid quick and jerking movements.
- If a bee stings (Fig. 7.5), do not get nervous. Gently pull out the sting with the sharp edge of hive tool or finger nail from the base (Fig. 7.6) and not from the top without squeezing the venom out of it. Rub some grass on the stung area to mask the smell of alarm pheromone which otherwise induces other workers to sting in that area.
- Do not crush any bee while taking out or putting the frames back in a colony.
- Be careful about queen and avoid crushing it.
- Hive should not be opened on a windy, chilly day or the period when bees are not working outside the hive.



Figure 7.5 Bee stinging on the arm



Figure 7.6 Removal of sting by scrapping

Maintenance of apiary records :

Observations: Keep the record of every colony and enter your observations whenever the colony is examined. These observations can be made in the given proforma.

PERIODICAL COLONY INSPECTION RECORD

Colony Number:

Date of Inspection	Total number of frames	Number of frames covered by bees (Bee strength)	Brood area (sq.cm.) L x B	Pollen area (sq.cm) L x B	Honey/nectar stores (g)*	Presence of queen and its working	Remarks (date & amount of sugar feeding, drone rearing, honey extraction, temper etc.)

***Estimation based on assumption that each fully sealed Langstroth type frame of honey contains 2kg and BIS Type A&B about 750g of honey**

Practical things to do:

- i. Go to the apiary and check whether it is located at appropriate site as discussed above or not. Give your detailed observations.
- ii. Check whether you are ready to open a bee colony, considering the precautions given
- iii. Open the bee colony and record the data as per proforma.

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