

SWARMING AND CONTROL

Swarming

This is a natural instinct for increase in the number of colonies. Division of colony takes place in which worker bees (30 to 70 per cent), fill their honey stomachs with the food and leave the colony along with old queen and this divide, called as swarm, settles down temporarily generally in the nearby area of the colony on the bushes, hedges, tree branches etc.

Period of swarming

It occurs when queen has reached her peak of brood rearing activity under the stimulus of incoming pollen and nectar, mainly in late spring or early summer, but can also occur during summer or fall, depending upon floral conditions of the area. This generally occurs during the period before honey flow.

Swarming occurs due to:

- Overcrowding and lack of ventilation.
- Presence of old queen
- Sudden honey flow
- Lack of space for egg laying and honey storage.

Problems due to swarming

- Loss of working force due to division of the colony
- The morale of colony is not favourable for honey collection. The bees direct their efforts towards building queen cells and searching for new home sites
- Colonies show great variations in respect of swarming. Some colonies do not swarm even after becoming quite populous yet many swarm without any apparent reason indicating genetic variations to the

instinct of swarming. *A. cerana* is more prone to swarming than *A. mellifera*.

Indication of swarming

- The colonies start raising large number of queen cells usually along the lower edges of combs. However, few emergency queen cells are also raised in the event of queen failure i.e. supersedure.
- Many bees do not go to field creating additional crowding, resulting in clustering of bees outside the hive.

Time of swarming

Time to issue swarms by the colonies is from 10AM to 2PM on sunny days. If weather is not favourable, swarms may be issued even earlier in the morning or late in the evening.

Catching and hiving a swarm:

- A settled swarm can easily be caught using swarm catching basket . This basket is placed above the bee cluster and the cluster is gently pushed upwards so that the bees start ascending into the basket. Once the queen has entered, the whole swarm will follow the queen
- The swarm in this basket can be taken to the apiary for hiving
- To make the swarm settle properly, a hive is prepared by giving one frame each of capped brood, pollen and honey and provided with extra frames as per strength of the swarm.
- The swarm from the swarm catching basket is then shaken on the top bars of such a prepared hive and immediately covered with burlap cloth, inner cover and top cover
- Sugar syrup is also fed to such a newly settled swarm (1 part sugar dissolved in 1 part of water).

How to prevent and control swarming

Depending on the internal and external factors, one colony may issue one to several swarms resulting in loss of population of the parent colony. To prevent swarming do as given below:

- Avoid overcrowding by adding empty combs for egg laying. Sealed brood can be shifted to second hive body
- Remove the queen cells at regular interval as soon as these are made. Delay in queen cell removal is not much effective
- Provide shade and ventilation to the colonies
- Swarming can be prevented by removing old queen (which otherwise provides the supersedure impulse) followed by introduction of a young laying queen. Requeening the colonies annually is also a good practice
- Another well known method of swarm control is “Demaree plan of swarm control” which is described below:
 - o Examine the brood of the colony and remove all the queen cells
 - o Remove the brood chamber from the bottom board. Place another hive body containing one comb of unsealed brood, eggs and the queen on this bottom board. Fill the remaining hive with empty combs.
 - o Place queen excluder on this hive body and keep the removed brood chamber along with remaining brood and bees over it. Again, inspect the top hive body after 10 days and remove all queen cells that may have been built in this interval. In 21 days, all of the brood will have emerged in the upper body and it will be used for honey storage. In this way swarming can be checked.
- Swarming instinct of the colonies can also be overcome by temporarily dividing the colony and then re-uniting them just before honey flow.