

Seasonal Management of Honeybee Colonies



Summer Management

Summer Management

- Under summer management, following practices should be applied:
 - Information on indication of honey flow
 - Method of supering
 - Honey extraction
 - Management for dearth period

What is honey flow?

- It is the period when honey bees gather and store surplus honey in the hive after attaining peak population in the colony.
- **Honey flow is indicated by:**
 - **Whitening of honey cells** of the comb due to deposition of fresh wax
 - Appearance of **large quantities of burr and brace combs** (freshly prepared pieces of combs)
 - **Increase in weight of the colonies** due to incoming nectar (a colony kept on a stage balance in an apiary indicates the sudden increase in weight; such a colony is also known as balance colony)

What is honey flow?

- During this period:
 - Colonies should be **quite populous** but without swarming instinct
 - Colonies should **gather maximum honey** instead of only concentrating on brood rearing
 - Colony **morale should be high** for honey collection.

Supering

1. With the first indication of honey flow, **provide supers** to the colonies
 - But before putting supers:
 - **Examine** the colonies for **disease**
 - Check whether **queen is present or not** and whether laying satisfactorily
 - Because after the honey flow starts, the bee keeper becomes too busy in putting and taking off the supers
2. **Place queen excluder** between brood chamber and super so as to prevent laying in the super by the queen
3. **Keep swarming under check** by avoiding congestion in the brood chamber
 - Provide empty combs at all the times until end of honey flow
 - The space can be provided by removing sealed brood to super chamber

Supering

4. Supers should contain **drawn combs**
 - If these are not available, provide frames with comb foundation sheets
 - In that case, also place at least one or two drawn combs with the comb foundation sheets to attract bees for raising the combs on foundations
5. Supers can be of **half or full depth**
 - But full depth supers are more practical since frames can be exchanged among different chambers
6. When first super is full and there is a need to put the second one, it should be added between **brood chamber and first super**

Supering

7. If there is shortage of drawn combs and raising of new combs is likely to lower honey production (since bees consume about **7kg of honey to secrete one kg of beeswax**)
 - The fully sealed and two third sealed honey frames can be taken out for honey extraction and empty combs can be returned for re-use
8. A strong colony can collect **4.5 to 10 kg of unripe honey in a single day** during good honey flow, therefore, keep the supers ready for meeting colony demand
 - It is better to supply at least one super ahead of needs of the colony.

Honey Extraction

- For honey extraction only sealed honey frames are removed
- Do not extract uncapped honey since it is unripe and due to higher moisture contents it is liable to ferment

➤ Time to remove supers:

- **Early in the morning** before bees start storing unripe honey in the combs
- If combs are well sealed, these can be removed at any time of the day
- All the management practices of honey bee colonies are ultimately directed to get better quality hive products
- It is, therefore, important that apiary honey is extracted properly so as to **retain its quality**
- The process of extraction should be **hygienic and prevent any extraneous material** in honey

Requirements for Honey Extraction

- Smoker
 - Bee veil
 - Hive tool
 - Bee brush
 - Empty super bodies
- Boiling water
 - Drip trays
 - Honey extractor
 - Honey storage container
 - Muslin cloth
- Uncapping knife

Procedure of Honey Extraction

1. To remove sealed honey combs, give **few puffs of smoke** to the colony and **brush off bees** from the honey combs using soft bee brush or bunch of soft green grass
2. Place the honey combs in bee tight hive bodies and **shift to honey extraction room**
3. **Never rob** the colonies of their **entire honey stores**
 - Depending on strength, keep with each colony at least **5-10 kg of honey in case of *Apis mellifera*** and **2-3kg with *A. cerana*** for summer and monsoon dearth periods
4. Honey extraction **room should be bee tight**
 - After bringing the honey frames for extraction, these can be **uncapped either with a steam heated double walled uncapping knife** or with ordinary uncapping knife by heating in boiling water

Procedure of Honey Extraction

5. Keep these **uncapped frames** in hive bodies with **drip trays** below, till extraction
6. Put the uncapped frames in honey extractor and work at about **150 revolutions per minute for 1 to 2 minutes**.
 - Then reverse the sides of the frames and repeat the extraction process
7. Stock the emptied frames in hive bodies and return these to the colonies for cleaning.
 - Shorten the hive entrance to avoid robbing
8. Since freshly extracted honey is warm and easy to strain, arrangements for **straining using muslin cloth** and **packing** should be promptly made so as to prevent subsequent heating

Procedure of Honey Extraction

9. **Clean the appliances** and the place where honey is extracted
10. Beeswax collected during uncapping of honey frames should be allowed to drain off its honey.
 - Then **purify this beeswax** by putting in a muslin bag and boiling in a water bath
 - On, cooling pure beeswax will float over the surface of water and all impurities will remain in the muslin bag

Procedure of Honey Extraction



Brushing bees from honey frame



Uncapping sealed honey



**Unsealed frame being put
in the extractor**



Honey extractor in motion

Precautions During Honey Extraction

- Remove only completely sealed or two third sealed combs of honey for extraction
- Never extract unripe honey
- Keep sufficient food stores with the colonies as per strength and prevailing dearth period
- Do not rob the colonies of their whole stores

Other Management Practices (During Summer)

- Honey flow in most of the areas is generally followed by summer dearth period
- Summer is generally marked by hot winds and ambient temperature often exceeds 40°C
- During this period **bees throw out drones** and colony population also dwindles due to the **death of old bees** who have worked hard during honey flow season
- **Attack of bee enemies increases** and robbing activity of bees is also more
- If **colonies** are not managed properly, they **may even abscond**. This tendency is more in *A. cerana* and little in *A. mellifera*

Manage the colonies as described below:

1. **Provide** the bee colonies with **shade** by shifting to shady areas or placing them under open straw huts
2. **Provide proper ventilation** by slightly raising the brood chamber or the super such that bees do not pass through this ventilation, otherwise robbing may be induced
3. **Close all cracks and crevices** in the hive so as to **prevent entry of the enemies** and robbers
4. Ensure that colonies do not remain broodless for longer duration
 - **Provide sufficient food stores** if the colonies have been stripped heavily of their honey stores during honey extraction

Manage the colonies as described below:

5. Do not examine the colonies very frequently
6. Restrict the number of frames as per colony strength
 - Remove extra frames and store these safely for later use
7. In areas where summer temperature rises above 40°C, gunny bags or straw packs moistened twice a day with water should be spread over the top covers of the colonies
8. Provide a source of fresh water as honeybees maintain their hive temperature during summer by collecting water from outside source, spilling it inside hive and evaporating it by fanning
 - This can easily be arranged in an apiary by hanging an earthen pitcher filled with water having a hole at its bottom, provided with a wick and allowing drops of water to fall on sloping stones or log of wood