

# 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