SUMMER MANAGEMENT

Under summer management, information on indication of honey flow, method of supering, honey extraction and management for dearth period has been provided.

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)

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

Supering:

- 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
- Place queen excluder between brood chamber and super so as to prevent laying in the super by the queen
- 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

- 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
- Supers can be of half or full depth. But full depth supers are more practical since frames can be exchanged among different chambers
- 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
- 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

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.

Other management 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^{o}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:

- Provide the bee colonies with shade by shifting to shady areas or placing them under open straw huts

- 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
- Close all cracks and crevices in the hive so as to prevent entry of the enemies and robbers.
- Ensure that colonies do not remain brood less for longer duration. Provide sufficient food stores if the colonies have been stripped heavily of their honey stores during honey extraction
- Do not examine the colonies very frequently
- Restrict the number of frames as per colony strength. Remove extra frames and store these safely for later use
- In areas where summer temperature rises above 40^{o}C, gunny bags or straw packs moistened twice a day with water should be spread over the top covers of the colonies
- 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.