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Life Cycle of *Apis dorsata Fabricius*

(* Ashutosh Chourasia and Dr. Jagrati Upadhyay)

Department of Agriculture, Mangalayatan University Jabalpur (M.P.) 483001

*Corresponding Author's email: ashutoshchourasia028@gmail.com

Abstract

Apis dorsata Fabricius are also known as the rock bee, the giant bee or the great honey buzzard. This bee is reported from all over India from high altitudes belts (1200 meters) to the plains. It is slightly larger than other bees, with an entire length of 20 mm. It is a very good honey gatherer. It constructs only one large nest at the front of a rock, on branches of large trees and occasionally on walls and constructions. This bee is negative in behavior and very aggressive. These bees are nomadic in their movement kind. During winter, they are usually found on plains while in summer they descend to the slopes of hills. A comb is always constructed in the open area making it almost impossible to domesticate the bees up to this particular time. every single colony is capable of producing and storing between 20 and 40 kilograms of honey.



1. Egg Stage

1. Duration: Approximately 3 days.

1. Mating takes place in a single season, and the queen bee used to lay eggs successively in hexagonal cells of the beehive.
2. The making of each one of them is a small cylindrical structure in the initial hours and days after the laying and is initially standing but falls over in a few days.
3. These eggs can be fertilized or non-fertilized which means that at some point they were or were not penetrated by sperm. Female worker bees or Queen bees are the eggs that are fertilized while male bees or drone bees come from the unfertilized eggs.

2. Larval Stage

Duration: Approximately 6 days.

Feeding:

1. The hatched larvae are fed with sap that is secreted by the worker bees and in the initial 3 days they are given royal jelly.
2. In case of the workers, they will be fed on a mixture of pollen and honey whereas the queen larvae are fed on royal jelly exclusively.

Growth:

1. Larvae grow faster, feeding and molting five times in their development process as they grow bigger.
2. The worker bees close the cell with wax as soon as the larva has grown to its full size.

3. Pupal Stage

Duration: It takes roughly 12 days for workers, 8 days for the queen and 14 days for drones.

Development:



1. Within the confines of the capped cell, the larva weaves a cocoon round itself and molts into the pupal stage.
2. At this stage, the structures of the larvae are dissolved and replaced by structures of adult bee.
3. Eyes form, wings, legs and other features typical for adults start to appear.

4. Adult Stage

1. After development, the young one tears out of the wax cap of the cell by chewing it.
2. The adult bees pass through some stages of activities depending on their responsibilities in the colony.
3. The general development stages of bees include:
4. Adult Bee Roles and Life Span It is very important to understand that there are three adult bees in the colony: The different species of bees like the worker bee, the queen bee and the drone bee also mentions that the life cycle of the adult bees is not the same in all the three bees.

Worker Bees:

1. Early Life (Nurse Bees): First, they perform cell sanitation and delivering food to the larvae.
2. Mid Life (House Bees): Responsibilities increase in constructing the comb, processing of Nectar, as well as protecting the hive.
3. Late Life (Foragers): The last stage is when they are released out of the hive to forage for nectar, pollen, water, and propolis.
4. Life Span: It take roughly 45 days to be active during the seasons, much longer during the dormant season.

Drones:

1. Role: It is mainly used for the process of to mate with a virgin queen.
2. Life Span: That is usually 90 days; they are moved out of the hive, especially during late autumn or a period of scarce food.



Queen:

1. Role: The egg layer, the individual that possesses and lays eggs within the species, also known as the gamete.
2. Life Span: Generally, the payback 2-5 years of the investment.
3. Mating: The queen lays eggs during her lifetime and mated with several drones during the nuptial flight in the early days of her life, with sperm being stored for the later use in the matings.
4. Other activities and stages of the lifecycle, if present in the current language, are not specified by this grammar.

Swarming:

1. Purpose: One of the most obvious biological methods of colony reproduction. It's the old queen who flies away with such workers and starts a new colony, ensuring the continuation of the bee family.
2. Trigger: Shift in population density, or the life cycle of the colony is natural.

Colony Maintenance:

1. Seasonal Behavior: Due to environmental pressures, Apis dorsata move between nest sites and alter their foraging activity.
2. Defense: They are known to be highly defensive especially when the colony is under attack; they attack in large group.

3. **Apis dorsata** also known as the giant honey bee goes through various complex steps in its life cycle. This cycle can be broadly categorized into three main phases: These are the egg stage, the larval (or brood) stage, the pupal stage and the stage when the adult bee is produced.

4. Knowledge on the life cycle of **Apis dorsata** explains the dynamics of the social system and behaviors that help support the species and make it effective. Their lifecycle evidently connects individual roles with the colony's health and operation

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