

The Gold Maker Honeybee

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Honey bee is one the most important insect belongs to Phylum Arthropoda, Class Insecta, order hymenoptera, near about 20,000 species of honeybee are available in the world. Honeybee belongs to family Apidae having subclasses:-

Meliponinae, Bombinae which we use for commercial purpose. In India, Apidae have 4 species of honeybee that are Apis dorsata (Rock bee), Apis florea (little bee), Apis cerana (Indian honeybee), Apis mellifera (European bee). Rock bee produces about 37 kg honey that is the highest amount of honey per year but they are wild, whereas 3-4 kg, 500-700 g, 36kg per year honey produced by Apis cerana. Apis florea, Apis mellifera respectively, Apis florea are also of wild kind. Apis mellifera where most commonly used species as they are manageable & produce large amount of honey.



What's there in the bee-hive?

There are 3 types of member in a beehive-Queen, Workers, Drone. Queen is the one mentions their progeny, simply she is the egg laying machine near about 2K eggs per day. Worker bee are sterile female produce from fertile egg, they are different from Queen bee as they are not capable to produce bee progeny, Worker are male sterile bee produce by infertile egg of honeybee. In a bee-hive worker bee feeds the brood by special food for giving more nutrition to the brood.

How to identify the queen & worker bee at brood stage?

After 3-4 days after egg hatching worker feed same nutritional food to both Queen & Worker bee, later after 6-7 days worker bee starts to feed special highly nutritional food to specific egg which forms Queen egg, that food is known as "royal jelly", this makes Queen bee more fertile & healthy.

Gold Products

Honey can be of different types according to their material source, and procedure to extraction (floral, honeydew, squeezed, comb, chunk).

- **Bee wax**, it can natural or artificial bee wax for candle, cosmetics like cold creams, lipsticks, pharmaceutical, perfume industries .
- **Bee venom** (extracted by giving mechanical shock to bee) cure diseases and disorders like Rheumatism, decrease cholesterol, necrosis, endoarthritis, neuralgia, anti-allergen
- Royal jelly
- Propolis
- Pollen

Pheromones For Navigation

Pheromones are chemicals capable of acting outside body of secreting individuals to impact the behaviour of the receiving individuals. Honeybee pheromones has releaser effect through sex attraction, alarm, aggregation, trail production, clustering & mutual recognition & prime effect through inhibition of reproduction.

- **Queen pheromone**: The queen pheromone actively suppresses the egg maturation process in the non-reproductive worker caste.
- **Brood pheromones**: Brood pheromone is responsible for feeding behaviour of nurse bees
- **Alarm pheromone**: Alarm pheromone elicits stinging behavior in other individuals of the hive in order to increase the attack efficacy.

Toxicity To Honeybees

Pesticidal hazards to bees

Fibre crops – cotton crops need regular amount insecticide to control bollworms, aphids, bugs which creates toxicity of honey bees. Similarly sprays of insecticides on below crops are also harmful

1. Sunflower
2. Sesame
3. Forage crops
4. Pulses
5. Cucurbits

6. Plantation crops

7. Pome & stone fruits.

General Symptoms of Pesticide Poisoning: -

- Appearance of large number of dead bees in front of the hive.
- Bees become paralytic
- Bees are irritated and become aggressive *Regurgitation of gut contain
- Brood chilling
- Queen may stop laying eggs in irregular pattern
- Longevity of adult bees is reduced *Contaminated pollen can be collected by bees & stored as bee bread.

Interesting Facts About Honeybee

Whats that dance bee perform on the entrance of hive?

Honeybee performs behaviour pattern referred to as dance. They perform Round dance indicate source of nectar, Wag-tail dance indicate presence of pollen, sickle dance indicate direction of food source.

Vision

Honeybee can detect four different qualities of colour yellow, blue-green, blue, ultra-violet. Honeybee is **red blind**.

Egg Laying

Queen lay fertilized or unfertilizers eggs as is indicated to her by the workers bees.

Pollination

96% pollination occur due to honeybee

PESTICIDES MOST TOXIC TO BEES

Aldrin	Parathion
Carbofuran	Phenthoate
Deltamethrin	Quinalphos
Dimethoate	Carbary 1
Fenvalarate	Endosulphan

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