

Who's Who in the Honey Bee Hive

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In a honey bee hive you will find thousands of Workers, hundreds of Drones, and only one Queen.



Image from: <http://content.yardmap.org/learn/basic-honeybee-biology/>

Worker

Worker honey bees start their life as a tiny, fertilized egg, which is laid by the Queen in the bottom of a wax cell. When the egg becomes a larva, it is fed "bee bread" which is a mix of honey and pollen with a bit of royal jelly. Worker bees emerge in about 21 days, and immediately start their life of labor by cleaning out their 'birthing cell' and begin duties as a nursery bee, caring for the larva and sealed brood cells in the colony.

Worker bees do all the work around the hive, except to lay eggs and mate. They build the comb for their home using wax made from glands in their abdomen. They clean and repair the colony, gather nectar, pollen, water, and propolis. They feed the larvae, the Queen, and the drones. Workers ventilate, cool and heat the colony as necessary so that it functions efficiently. They also guard and defend the colony. Worker honey bees live an average of 28-35 days.

Drone

Male honey bees, or drones, are the result of the Queen bee laying an unfertilized egg in the bottom of a wax cell. Like Worker bees, Drones are fed bee bread. Drones emerge in about 24 days, have large eyes and no stinger. They are responsible to mate with new, virgin Queens. Drones are only produced during peak pollination times, or before a swarm. After mating, the drone dies.

Drones who do not mate (or have not yet mated) with a Queen lead a life of leisure, doing no work to support the colony while being fed by their sisters, the worker bees. That all comes to an end as winter approaches, though. As the weather turns cold, Drones are expelled from the colony because they no longer have a role to perform during the winter season. On average, Drones live about 90 days.

Queen

By laying an average of 1,200 eggs per day each season, the Queen ensures the future of her colony. A Queen starts out as a fertilized egg, just like a worker bee. But, larvae destined to be a Queen are fed exclusively on royal jelly. Queens emerge in about 16 days. There can only be one Queen in a colony, so if there are other Queen pupae, the newly emerged Queen will seek out and destroy her rivals.

The Queen is cared for by an 'entourage' of worker bees who feed and groom her. As the Workers care for the Queen, they spread the Queen's chemical scent (pheromones) throughout the colony. These pheromones affect the social behavior, hive maintenance, and inhibits the development of ovaries in the Worker bees, among other things.

Within two weeks or less, the new Queen will leave the colony to take her maiden flight and where she mates with 7-10 drones. The Queen stores this sperm (which will last her lifetime of 2-7 years) and uses it to fertilize the eggs after measuring the cell to determine whether the size of the cell requires her to fertilize the egg for a Worker bee or to not fertilize the egg for a Drone.