



A BEE Smart Club™

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BEE Smart™ DIGEST: HONEY BEES & POLLINATION

Content Excerpts: The National Honey Board

<http://www.honey.com/honey-at-home/learn-about-honey/honey-bees-and-pollination/>

Why do Bees Make Honey?

Honeybees collect nectar and store it as honey in their hives. Nectar and honey provide the energy for the bees' flight muscles and for heating the hive during the winter period. Honeybees also collect pollen, which supplies protein for bee brood to grow.

Colonies:

- **Honey bees live in colonies that are often maintained, fed, and transported by beekeepers.** Centuries of selective breeding by humans have created honey bees that produce far more honey than the colony needs. Beekeepers harvest the honey. Beekeepers provide a place for the colony to live and to store honey in.
- **Honey is made by bees in one of the world's most efficient facilities, the beehive.**
- **The modern beehive is made up of a series of square or rectangular boxes** without tops or bottoms placed one on top of another. Inside the boxes, frames are hung in parallel, in which bees build up the wax honeycomb in which they both raise brood and store honey. Modern hives enable beekeepers to transport bees, moving from field to field as the crop needs pollinating and allowing the beekeeper to charge for the pollination services they provide.
- **A colony generally contains one breeding female, or "queen"; a few thousand males, or "drones"; and a large population of sterile female "worker" bees.** The population of a healthy hive in mid-summer can average between 40,000 and 80,000 bees. The workers cooperate to find food and use a pattern of "dancing" to communicate with each other.

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The Queen Bee:

- **The queen is the largest bee in the colony.** Queens are developed from larvae selected by worker bees to become sexually mature. The queen develops more fully than sexually immature workers because she is given royal jelly, a secretion from glands on the heads of young workers, for an extended time. She develops in a specially-constructed queen cell, which is larger than the cells of normal brood comb, and is oriented vertically instead of horizontally.
- **She will emerge from her cell to mate in flight with approximately 13-18 drone (male) bees.** During this mating, she receives several million sperm cells, which last her entire life span (from two to five years). In each hive or colony, there is only one adult, mated queen, who is the mother of the worker bees of the hive, although there are exceptions on occasion.
- **Although the name might imply it, a queen has no control over the hive.** Her sole function is to serve as the reproducer; she is an “egg-laying machine.”
- **A good queen of quality stock, well reared with good nutrition and well mated, can lay up to 3,000 eggs per day** during the spring build-up and live for two or more years. She lays her own weight in eggs every couple of hours and is continuously surrounded by young worker attendants, who meet her every need, such as feeding and cleaning.

Drones:

- **The male bees, called “drones”** are characterized by eyes that are **twice the size of those of worker bees and queens, and a body size greater than that of worker bees**, though usually smaller than the queen bee. Their abdomen is stouter than the abdomen of workers or queen. Although heavy bodied, drones have to be able to fly fast enough to catch up with the queen in flight.
- **Drones are stingless.**
- Their **main function in the hive is to be ready to fertilize a receptive queen.**
- **Mating occurs in flight**, which accounts for the need of the drones for better vision, which is provided by their big eyes.
- In areas with **severe winters, all drones are then driven out of the hive.**
- **The life expectancy of a drone is about 90 days.**

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