

The use of honey to increase general well-being and flourishing

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Honey is a sweet, viscous food substance made by honey bees and some related insects.[1] Bees produce honey from the sugary secretions of plants (floral nectar) or from secretions of other insects (such as honeydew), by regurgitation, enzymatic activity, and water evaporation. Bees store honey in wax structures called honeycombs.[1][2] The variety of honey produced by honey bees (the genus *Apis*) is the best-known, due to its worldwide commercial production and human consumption.[3] Honey is collected from wild bee colonies, or from hives of domesticated bees, a practice known as beekeeping or apiculture.

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Honey is produced by bees collecting nectar and honeydew for use as sugars consumed to support metabolism of muscle activity during foraging or to be stored as a long-term food supply.[11][12] During foraging, bees access part of the nectar collected to support metabolic activity of flight muscles, with the majority of collected nectar destined for regurgitation, digestion, and storage as honey.[11][13] In cold weather or when other food sources are scarce, adult and larval bees use stored honey as food.[12]

By contriving for bee swarms to nest in human-made hives, people have been able to semidomesticate the insects and harvest excess honey. In the hive or in a wild nest, the three types of bees are:

- a single female queen bee
- a seasonally variable number of male drone bees to fertilize new queens
- 20,000 to 40,000 female worker bees[14]

Leaving the hive, a foraging bee collects sugar-rich flower nectar, sucking it through its proboscis and placing it in its proventriculus (honey stomach or crop), which lies just dorsal to its food stomach. The honey stomach holds about 40 mg of nectar, or roughly 50% of the bee's unloaded weight, which can require over a thousand flowers and more than an hour to fill. The nectar generally begins with a water content of 70 to 80%.[15] Salivary enzymes and proteins from the bee's hypopharyngeal gland are added to the nectar to begin breaking down the sugars, raising the water content slightly. The forager bees then return to the hive, where they regurgitate and transfer nectar to the hive bees. The hive bees then use their honey stomachs to ingest and regurgitate the nectar, forming bubbles between their mandibles repeatedly until it is partially digested. The bubbles create a large surface area per volume and a portion of the water is removed through evaporation.[16][11][13][17] Bee digestive enzymes hydrolyze sucrose to a mixture of glucose and fructose, and break down other starches and proteins, increasing the acidity.[11][13][18]