

Beekeeping and their Value Added Products

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INTRODUCTION

Beekeeping (also known as apiculture) is the human-led upkeep of bee colonies, typically in hives made of man-made materials. However, other honey-producing bees like *Melipona* stingless bees are also kept. Honey bees in the genus *Apis* make up the majority of these bees. Beekeeping has historically been done for the production of honey and dates back 9,000 years. That is less true now than it was in the 20th century. Nowadays, it is increasingly frequently utilized for agricultural pollination and the production of other goods like wax and propolis. Although the majority of beekeepers are non-commercial and have fewer than 25 hives, the largest beekeeping enterprises are agricultural businesses that are run for profit. Many people maintain bees as a pastime and manage tiny operations. Beekeeping has improved in accessibility thanks to advancements in technology, and urban beekeeping is now a rising trend. According to some studies, "city bees" are healthier than "country bees" because cities have less pesticide use and more biodiversity.

Bees are kept by a beekeeper (or apiarist) to generate honey, beeswax, propolis, flower pollen, royal jelly, and other goods that the hive produces. Bees may also be kept to pollinate crops or to produce bees for sale to other beekeepers. An apiary, sometimes known as a "bee yard," is a place where bees are kept.

Different species of Honey bee- Average honey yield per year per hive

Common name	Scientific name	Yield/hive
Indian bee	<i>Apis cerana indica</i>	6 to 8 kilograms/hive
European bee	<i>Apis florea</i>	500 grams/hive
Rock bee	<i>Apis dorsata</i>	36 kilograms/hive
Italian bee	<i>Apis mellifera</i>	25 to 40 kilograms/hive
Stingless bee	<i>Tetragonula iridipennis</i>	100 grams/hive



Apis dorsata



Apis florea



Apis cerana indica



Apis mellifera



Tetragonula iridipennis

Commercial beekeeping:-

Commercial beekeeping is when a business sells honey, beeswax, and other bee products for a profit and has more than 300 hives. Less than 25 hives would normally be maintained at a time by a non-commercial beekeeper. In the US, commercial beekeeping businesses are typically family-owned and passed down to the following generation.

Natural beekeeping

The natural beekeeping movement contends that contemporary beekeeping and agricultural techniques, such as routine medicine, crop spraying, hive movement, frequent hive inspections, artificial insemination of queens, and sugar water feeding, weaken bee hives.

Location of hives

The ideal site for hives has been the subject of intense discussion. Virgil believed they needed to be situated close to crystal-clear springs, ponds, or little streams. They ought to face either south or west, according to Wildman. Hives should be protected from severe winds, which was one point on which all authors could agree. They were frequently left under the cover of trees throughout the summer in warmer locations.

Value added products of honey bee:-

Honey- Honey is a sweet, sticky food product produced by honey bees and other bee species. Bees create honey through regurgitating, enzymatic activity, and water evaporation

from the sugary secretions of plants (floral nectar) or from the secretions of other insects (such as honeydew). Stingless bees store their honey in pots formed of wax and resin, whereas honeybees store it in wax structures

called honeycombs. The monosaccharides fructose and glucose are what give honey its sweetness, and it is roughly as sweet as sucrose in terms of relative sweetness.



Honey

Beeswax- Young bees that are precisely 2 to 3 weeks old produce the best beeswax. They prepare the beeswax shortly before they leave the hive to go foraging, after feeding the young brood royal jelly.



Beeswax

Royal Jelly- A white, paste-like fluid called royal jelly is produced by the worker bee's head glands. The colony's larvae are fed on the jelly. 67% of royal jelly is made up of water, 12.5% is crude protein, 11% is simple sugar, and 5% is made up of fatty acids, vitamin C, enzymes, and minerals. This vital chemical is produced by nursing bees between the ages of five and fifteen, and it is supplied to larvae during the first three days of their life.



Royal Jelly

Propolis- Propolis is another significant honeybee product. Propolis is made from resins that the bees collect from flowers, trees, and other man-made sources. Its composition typically varies based on the time of year, the location, and the available resin sources.



Propolis

Bee Pollen- The anthers of blooming plants are used to make bee pollen. It is composed of amino acids, lipids, proteins, and carbohydrates. Normally, bees gather the pollen as they travel from one flower to another. They assist in pollination during the process.



Bee Pollen

Bee Bread- Pollen, nectar, beeswax, pieces of honey, and digestive byproducts are all ingredients of bee bread, a product created by bees. It is gathered and stored by honey bees in brood cells. The product is primarily designed to be used in the future during times of food scarcity.



Bee Bread

Bee Venom- Bees are known for their sting and their tendency to be aggressive. But very few individuals have ever really grasped the mechanism behind bee stings. Never will a bee sting you without a good reason. They sting when they feel threatened or when they are irritated.



Bee Venom