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ROLE OF HONEYBEES IN POLLINATION

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Imagining survival on planet earth seems impossible without flowers, vegetables and fruits. Artificial pollination is time-consuming. The natural pollination that takes place in the environment is done by pollinators. They make it easy for the flowers to cross-pollinate as they act as agents in the process of pollination. The setting of seeds by flowering species of plants is only possible if there is a pollination service provided by the pollinators. Roughly 80% of the wild plant species and 75% of plants worldwide from which humans get fruits and vegetables, also consumable, need pollinators in order to undergo the process of pollination.

The absolute number of bee species around the world depicted up until this point accounted for is to be 17,553. Honey bees are the major contributors to transferring the pollen from the anther of one flower to the stigma of another flower. They are known to be the best pollinators for commercial use. They are social insects and herbivores. They are esteemed for their honey and wax production. It has been observed that around 75% of the world's developed yields are pollinated by the honey bees.

Pollination is vital to the approximately 250,000 species of flowering plants that depend on the transfer of pollen from flower anther to stigma to reproduce

(U.S. Food and Drug Administration)

Nearly, 30% of the crops all over the world depend on the pollination done by honey bees. The communication process that takes place between the honey bees is one of the major and important processes. This process helps the honey bees that have found food sources to let other bees in the hive know about the food source. Round, sickle and waggle are the types of dances that are performed by honey bees to provide information to other honey bees.

A few fruits and vegetables that are pollinated by honey bees are tomato, watermelon, onion, okra, lettuce, cole crop, kiwi, pear, apple, avocado, cucumber, soya bean, cotton pumpkin and squash. Honey bees work as the very major bioindicators in the environment as they respond to changes that happen in the environment due to their environmental stress delicacy. The worth of honey bee's pollination to overall horticulture has been assessed to be around 215 billion dollars. The vegetables that are major sources of pollen and nectar are muskmelon, okra, alfalfa, radish, pigeon pea and turnip. Fruits that contribute to providing a good amount of pollen and nectar to pollinators are apricot, pear, Jamun, passion fruit, alu-bhukara.

The fuzzy, hairy little bodies of our worker bees collect pollen accidentally. Yes, while they are busy looking for sweet nectar, some of the pollen particles will adhere to the tiny hairs on their bodies

(Carolina Honeybees)

A few oilseed crops and seed species are also there that are good sources of pollen and nectar which are fennel, rapeseed, coriander, Sarson, taramira, sunflower and dill. Honeybee pollination in apples increases apple production, quality, yield (15-20%) and fruit drop decreases. Around 20-40% of pollination in guava is done by honey bees. Honey bee's pollination in guava increases the length of fruit, fruit set and width. The pollination by honey bees in guava also increases its yield to about 5-10%.

Honey bees play a major role in increasing the seed production of brassica vegetables. Maximum benefit has been seen in Brassica oleracea var. Italica with an increased seed yield by 29.2%. Avocado (Persea Americana) is a cross pollinated crop which address around 35% of the total agriculture production. Honeybee pollination inavocado increases its yield and production Also, in the rapeseed, pollination by honey bees helps in increasing the yield. Overall, pollination by the honey bees in various plant species help in increasing yield, fruit size, the weight of fruit and fruit set.