



- **What made you realise that the bee population was in danger?**

My Master's Degree was in social entrepreneurship and I wrote my dissertation on food security in South Africa. After graduating from the LSE, my desire was to return to South Africa to focus on creating an impact in the food value chain, as a way to reduce poverty and make nutritious food available to the poor. It is when I researched more about sustainable solutions to address food security and poverty reduction, I found beekeeping to be one of the most impactful and easy ways to implement across Africa. I found out about the dwindling bee populations in my country, and around the world, posing a big threat to food security. I got more motivated to initiate Bee Loved Honey because it would have a triple bottom line - economic, social and environmental.

- **When domesticating bees, how do you make sure that the bees don't leave their hives?**

You have to properly care for the hive by protecting it from predators, giving enough space to produce honey, and most importantly, leaving enough forage (food) for the bees to eat during the summer and enough honey for the bees to eat during the winter. With these conditions, you can expect your bees to thrive and they won't leave their hives.

- **How old were you when you started working with bees?**

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- **Are there any specific plants beekeepers should plant for bees?**

Honey bees require a balanced diet of carbohydrates, proteins, vitamins, minerals, fats, and water. (Bee-Health, 2019) Nectar, a sugary plant secretion, and honey provide the bees with carbohydrates. Pollen provides protein, which breaks down into amino acids, vitamins, minerals, and most of the fats. Though nectar contains water, additional water is needed to dilute the sugar content of the nectar.

In a rural area, there may be plenty of plant diversity within the foraging range for your bees. In suburban and urban environments, this plant diversity may be hard to find. A honey bee garden that provides pollen and nectar-rich plants throughout the year may give your colonies the boost they need.

Here are some examples of forage for bees:

- Spring vegetation, such as hazel, snowdrops, primroses, saffron, willow, hellebore, heather, wild cherry, dandelion;
- Fruit trees;
- Acacia, linden, maple, chestnut;
- Woodland undergrowth and



- Meadow flowers.

PS. Make sure to research what are the options of bee forage in your local context!

- **When drones are kicked out of the hive, are they allowed back?**

No, they are not. When the colony starts getting ready for winter, the worker bees, all-female, kick the drones out. Sometimes it's swift, they are stung and killed by the worker bees. Other times, they escape and run for their lives. But when they try to sneak back into the hive, they are quickly chased out by guard bees keeping an eye on the hive entrance.

Drones, male bees, are not physically capable of doing work around the hive. They can't sting, can't collect pollen or nectar, can't take care of the larvae or create a new hive. Therefore, when they are kicked out of the hive, it is inevitable that they will die. (Lee, 2013)

- **Does bee behavior differ around the globe?**

Honey bees, like all other living things, vary among themselves in traits such as temperament, disease resistance, and productivity. The environment has a large effect on differences among bee colonies (for example, plants in different areas yield different honey crops), but the genetic makeup of a colony can also impact the characteristics that define a particular group. (Tarpy, 2016)

- **'One of my students in my Sustainability Council asked about whether the bees that are part of this initiative are invasive species to the areas that they are being used/distributed to the beekeepers and whether this is an issue regarding unbalancing the ecosystem.'**

Great question!

South Africa has two types of bees *scutellate* (African honeybee) and *capensis* (Cape honeybee) which are indigenous to South Africa. The distribution of the *Capensis* roughly corresponds with the distribution of Fynbos vegetation of the Cape. The *scutellata* honeybee occurs in all other regions of South Africa. Although there is a hybrid zone between these races, neither race has demonstrated the ability to naturally encroach on the territory of the other. (Johannsmeier, 2001)

In the mid-1990s beekeepers transported *capensis* colonies into the northern regions of South Africa, where they do not naturally occur. There they were introduced into commercial *scutellata* bee apiaries and through migratory beekeeping have since spread throughout the summer rainfall regions of South Africa.

This has occurred because the *capensis* can easily drift into colonies of other honey bees, such as *scutellata* and can parasitise that colony. When this occurs, the queen from the host



colony is lost (a process that is still not yet understood) and the *capensis* become the reproductive individuals in the colony. This is achieved because the *capensis* are capable of changing their pheromone from a worker, to a queen-like scent, which means that parasitic workers can lay diploid eggs and get the host colony to raise and care for the eggs without knowing. Although the host colony loses their queen, the Cape honeybee assumes this role without the host colony rearing a new queen. As a result, the Cape honeybee workers increase in number in the host colony, while the numbers from the host colony slowly dwindle, which subsequently leads to the collapse of the colony and the Cape honeybees seeking a new host colony. (Bee Aware)

Cape honey bees present a major problem for beekeepers in South Africa and could pose a major problem to other beekeepers around the world if they were to spread to other regions. The ability of Cape honey bees to drift and parasitise other honey bee colonies, causing these colonies to dwindle or die is of great concern. Commercial beekeepers, in particular, have lost thousands of colonies annually, which has forced some beekeepers out of business, increased honey prices and the cost of pollination. South Africa, which formerly only exported honey has become a net importer of honey due to this problem.

To address this problem, based on the zone of operation, Bee Loved Honey only rears African honeybees. Our headquarters which are located located in Taung which is in the North West Province of South Africa only rears and distributes *scutellata* bees.

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