BEETUNED by Véto-pharma

Best Management Practices for Nutrition

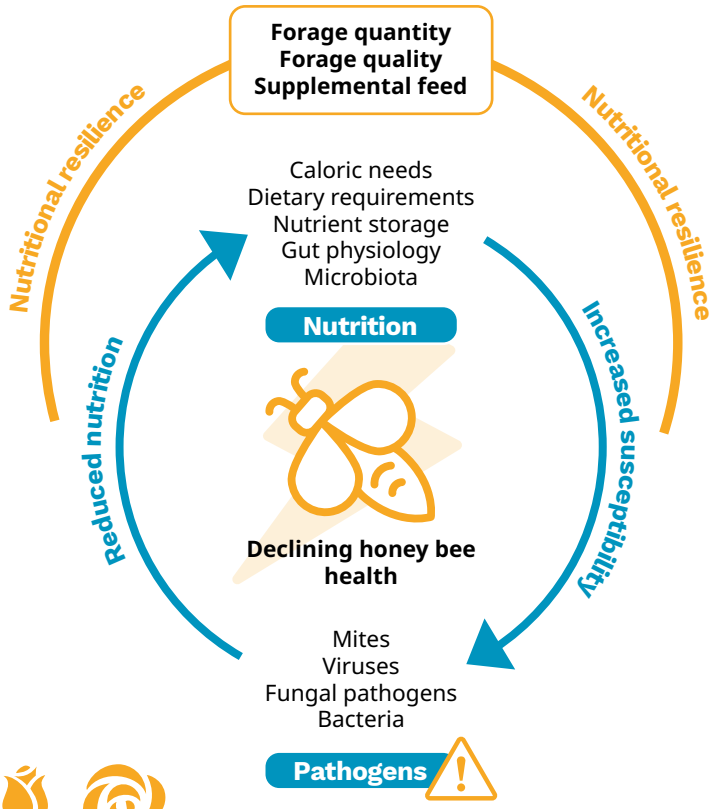
Honey Bee Nutrition

Complete and varied nutrition is essential to maintain healthy hives, not only to ensure colony growth, but a well-nourished hive also demonstrates better immunity against diseases.

Nutrition supports bee health

Complete nutrition satisfies individual energetic needs while collective reserves are filled and preserves microbiota and digestive efficiency.

Malnutrition in adults can affect brood quality and, therefore, the next generation of adults.



Adapted from Adams, 2018.

Foraging: the Importance of Variety

Bees collect their food from plants: nectar is their source of energy and pollen provides, as well as sugars, proteins, fats, vitamins and minerals.

To obtain **complete nutrition,** bees need access to the broadest possible variety of flowers since no floral species can provide all the nutrients, especially all the essential amino acids that bees need.

To have a **continuous food source,** apiaries must be located in places with varied and staggered blooms, that is, species that do not bloom simultaneously but rather succeed one another.

Each location varies in its carrying capacity, also the same location varies between years. Experience helps to evaluate **optimal flowering densities** and to judge food reserves to know the productivity of an area.

Some good references about the quality of an apiary are to count the number of bees entering the hive with pollen, which should be not less than 10 or 12 per minute. Counting at least 4 or 5 **different colours in pollen** helps to ensure a variety of sources.

To avoid competition between hives, it is necessary to calculate the **number of hives** that are placed in a settlement.

Too high density will provoke a lack in hive development, less production per colony and will increase drifting and robbing with higher disease transmission.

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Supplemental Feeding throughout the Year

Throughout the year, specially in times of shortage, we need to monitor reserves and nutritional status and correct when necessary:

- **When flowering is scarce,** the beekeeper must ensure the survival of the colony by providing corrective feeding.
- **Summer is especially critical** due to frequent droughts and the incidence of *Varroa*.
- Ensuring highly **nutritious patties in autumn** is essential to prepare over-wintering bees.
- **A few weeks before spring,** feed to stimulate the colony for the first blooms.
- Hives providing pollination services have access to a large amount of food, but their nutritional environment is not very varied: deficiencies must be prevented by **providing protein food.**
- **Protein food should be provided when there is breeding,** and energetic (carbohydrate) food when the swarm does not breed but does need to maintain its temperature.
- Food must meet the following characteristics: **consumable, accessible, highly palatable, digestible and absorbable, and nutritious.**
- **Pollen patties** should preferably be placed as close to the brood as possible.

Water

- When choosing a new location, the beekeeper should provide a source of clean water.
- Water is as important as food, place drinkers in the apiary especially in summer.
- **Bees will consume a lot of water to maintain stable temperatures and humidity levels in the brood.** If they need to fly longer distances to get water, it will cost more energy, meaning less honey production / harvest per colony.

Factors to consider for Preventing Malnutrition Problems

- Climatic factors
- Available vegetation within a 3 km radio
- Quantity and quality of pollen available
- Clean water is close and freely available
- Presence of predators may prevent foraging
- Productive status of the colony since its nutritional needs will vary