All about honey

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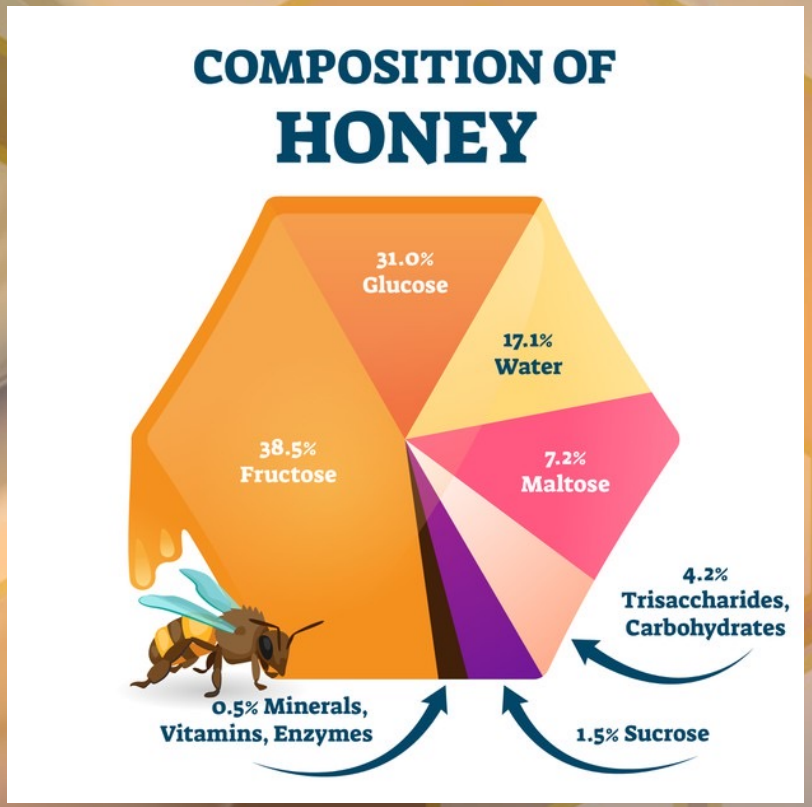
Composition of honey

Honey is a a food without expirity date
Honey is acidic pH range from 3.4 to 6.1

Composed of :

- Water
- Glucose
- Fructose other carbohydrates
- Minerals
- Small amount of enzymes (proteins)

Composition varies from one nectar source to another



3 predominants enzymes:

Diastase (amylase): convert starch to dextrose, maltose and glucose

Invertase (saccharase or alfa-glucosidase): breaks down sucrose into glucose and fructose

Glucose oxydase: Breaks down glucose and gives honey its acidity and anti-microbian properties

A good quality honey has high level of this enzymes. But because enzymes are destroyed by heat, honey heated too much will loose its properties

The ratio of glucose/fructose is an indication of the ability to crystalise. The higher the glucose content, the most chance it will crystallise

Effect of temperature and time on honey

If honey is heated, it will destroy its enzyme and it will loose its properties

Heat also increase the HMF (hydroxymethylfurfural content produced when fructose breaks down. HMF is naturally present in honey but in a small amount but it increases with time (slighly) and temperature (highly), especially well over 40ºC

Honey will also darken over time and if it is heated. Reactions will occurs between proteins and carbohydrates that will darken honey.

The honey color is measured using the pFund scale from very light (low pFund) to very dark (high pFund). Dark honeys tend to have a higher anti-oxydant level.

Contamination of honey

Yeast and mould contamination
If honey water content is higher than 19%, it will likely ferment with *Saccharomyces sp* yeast strains)

Be aware that honey is hygroscopic, therefore, it will absorb water from surrounding.

Bacteria
Spores forming bacteria are found in honey, but don't have any ill effects on humans. Consumption of honey with *Paenibacillus larvae* (AFB) spores is perfectly fine for humans, but not for bees!
Clostridium botulinum can also be found in honey but in a too low level to cause any harm. But if honey is to be used as a wound dressing, it has to be irradiated.
If *coliform* bacteria are found in honey, it's often an indicator of poor hygiene procedure during extraction or contamination.

Manuka honey

Manuka honey is well known for its medical and gut benefits.

Properties are given by a high MGO content (methylglyoxal)

- Healing wound
- Antiviral properties
- Antibacterial properties

UMF (Unique Manuka Factor) is a scale that describe the level of MGO and a precursor, dihydroxyacetone. The higher the better and also the dearer!

Manuka honey is not unique to NZ, it is also very potent, if more, in Australia, and probably in your honey too, if you have a lot of *Leptospermum* species around your hives!