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Factors affecting honey composition

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Honey is a very nutritional food product. It is widely consumed over the world due to its nutritional properties, health effects and desired sensorial characters. The quality characteristics of honey is directly related with composition affected by environment factors such as floral origin and age, pollen type, climatic factors, and production parameters. The nutritional quality, antimicrobial activity, antioxidant activity, anti-infective properties, and therapeutic benefits are correlated to chemical composition of honey. In most honey types, antimicrobial activity is due to the generation of hydrogen peroxide (H₂O₂), but this can vary greatly among samples. The major antibacterial properties are related to the level of hydrogen peroxide determined by relative levels of glucose oxidase and catalase. The non-peroxide factors contributing to antimicrobial and antioxidant activities are the lysozyme, phenolic acids and flavonoids. Honey is usually subjected to filtration and heating for bottling before commercialization. Honey quality is also influenced by processing procedures and storage conditions like temperature and humidity. Raw honey after harvesting is usually strained and filtered to remove suspended materials including pollen and bee wax prior to heating. Honey is thermally treated before packaging for several reasons. Heating temperatures range from 30 oC to 140 oC for a few seconds up to several hours. The HMF content and enzymatic activity are known as the indicators for honey freshness. The heating methods might decrease the biochemical components such as nutrients, enzymatic activities and vitamins. Therefore, production process should be adjusted carefully to prevent nutritional and functional properties.

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