

# CONFIRMING THE BOTANICAL ORIGIN OF THE CROATIAN BLACK LOCUST HONEY (ISTRIA REGION) USING PHYSICOCHEMICAL PARAMETERS DURING TWO SEASONS

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## Abstract

Honey is a sweet, thick, viscous, liquid or crystallized product produced by honeybees (*Apis mellifera*) from the nectar of honey plants or secretions of living parts of plants or excretions of insects. Its chemical composition makes it a complex mixture of over 70 ingredients. The most common among them are carbohydrates (fructose and glucose) and water (they make 99% of honey). Other substances (which make only < 1%) are proteins (including enzymes), minerals, vitamins, organic acids, phenolic compounds, aroma compounds (volatile compounds) and various chlorophyll derivatives, which are also responsible for sensory and nutritional properties of honey.

In Croatia, the largest production pertains to the production of black locust honey. The aim of this paper is to present the share of physicochemical parameters (water, free acids, electrical conductivity, reducing sugars, sucrose, diastasis, and hidroksimetilfurfurala HMF) as an indicator of whether the samples meet the general requirements of the Honey Regulations to confirm the botanical origin of black locust honey (as defined by the manufacturer).

The research was conducted through two seasons. Forty samples of honey collected by beekeepers in the region of Istria were included.

The methods that were used to determine the physicochemical parameters are various. The determination of water was based on refractometry. Titration using sodium hydroxide was used to determine the free acid, while the electrical conductivity is defined as the conductivity of 20% aqueous solution of honey at 20 °C. Reducing sugars and sucrose were identified by titration using Fehling's solution, and diastasis was proven using the hydrolysis method. HMF was defined using the Winkler method.

All the samples tested met the requirement on the quality of black locust honey (water content, free acids, electrical conductivity, reducing sugars, sucrose, diastase, and HMF) thus confirming the botanical origin of honey, i.e. all the samples are black locust honey.

**Key words:** *Black locust honey, Physicochemical analysis, Botanical origin.*