

# PROFILE AND DIVERSITY OF PHYSICOCHEMICAL PARAMETERS OF THE BLACK LOCUST HONEY FROM EASTERN CROATIA REGION GIVEN THE TESTING SEASONS

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## Abstract

According to its chemical composition, honey is a complex mixture of over 70 ingredients, which enter honey in a variety of ways. Not only that the different types of honey differ, but the honey within each species differs in its composition depending on its herbal and geographical origin, climatic conditions, the type of bees, and the work of the beekeeper. A number of European countries have the national legislation and the reference methods used for local quality control, but they are often specific for a particular country and cannot always be applied in the commercialization of honey for the international sales. Therefore, the profession in accordance with expert associations - International Honey Commission IHC - seeks to harmonize the reference methods and standards for proving the authenticity of botanical origin of monofloral type of honey.

The purpose of this paper is to present the profile of physicochemical parameters of 40 samples of the black locust honey from Eastern Croatia region monitored by the season. Moreover, it will point out their differences within each testing season. Melissopalynological and physicochemical analysis are used to prove the botanical origin of honey, and whether the samples meet the general quality requirements set by the Regulations on the quality of monofloral honey.

Every tested sample meets the requirements set by the Regulations on the quality of monofloral honey regarding physicochemical parameters: water (14.96 - 20.28 %); free acid (8.0 - 16.9 mEq/1000 g); electrical conductivity (0.09 - 0.23 mS/cm); reducing sugars (63.27 - 73.48 g/100 g); sucrose (0.09 - 1.38 g/100 g); diastase (7.26 - 19.92 DN) and hydroxymethylfurfuraldehyde - HMF (1.26 - 14.70 mg/kg). Gained data were processed by ANOVA) method. The analysis of variance gained an insight into the significance of differences (p - values) within the physicochemical parameters for water and electrical conductivity given the season black locust honey is from  $p < 0.05$ .

Botanical origin of all the samples, as declared by the manufacturer, was confirmed using the melissopalynological analysis-black locust.

**Key words:** *Black locust honey, Physicochemical parameters, Melissopalynological analysis, Analysis of variance.*