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HMF and diastase activity in honeys: Analysis and chemometrics for identification of honey freshness and adulteration

A fully validated approach for the determination of diastase activity and hydroxymethylfurfural content in honeys were presented in accordance with the official methods. Methods were performed in real honey sample analysis and due to the vast number of collected data sets reliable conclusions about the correlation between the composition and the quality criteria were exported. The limits of detection and quantification were calculated. Accuracy, precision and uncertainty were estimated for the first time in the kinetic and spectrometric techniques using the certified reference material and the determined values were in good accordance with the certified values. PCA and cluster analysis were performed to examine the correlation among the artificial feeding of honeybees with carbohydrate supplements and the chemical composition and properties of the honey. Diastase activity, sucrose content and hydroxymethylfurfural content were easily differentiated and these parameters were used for indication of the adulteration of the honey.

Biography

Charalampos Proestos has a BSc in Chemistry from University of Ioannina, Greece and MSc in Food Science from Reading University, UK. He obtained his PhD in Food Chemistry from Agricultural University of Athens (AUA), Greece, where he continued his Postdoc working on natural antioxidants on programs funded by EU and Greece. After further training at Wageningen University (The Netherlands), he worked as a Research Associate at AUA. He worked as a Chemist for the Hellenic Food Authority (EFET), being food industry Auditor and Supervisor of the chemical laboratory in Athens accredited with ISO 17025. Currently he is Assistant Professor at the Department of Chemistry, National and Kapodistrian University of Athens. He has published more than 40 papers in reputed journals and has been serving as an Editorial Board Member of more than 10 reputed journals.

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