

P25: MIR, NIR AND RAMAN SPECTROSCOPIES AND CHEMOMETRICS TO AUTHENTICATE HONEYS FROM ARGENTINA

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Argentina is a major producer of quality honey; 90% of the honey produced in Argentina is acquired by the United States and the European Union. The globalization of the world market makes the authentication and characterization of geographical and botanical origins of honey an important issue.

Quality schemes, such as Protected Designation of Origin and Protected Geographical Indication, protect the identity and quality of a product from certain region, in order to prevent fraud and illicit practices, and give it an added-value. These schemes are linked to the characteristics of the production systems, geographical origin, and cultural and historical practices. In particular, for honeys, sensorial, pollen and physicochemical characteristics depend largely on the botanical and geographical origin, and reflect regional aspects of beekeeping management.

Honey is traditionally characterized by performing the analysis of physicochemical parameters, melissopalynological and sensory analyses; which are tedious, time-consuming, use considerable amounts of reagents, and requires skilled personnel with extensive experience in pollen analysis and honey tastings. To overcome these drawbacks, vibrational spectroscopies are considered powerful alternatives due to their simplicity, speed, cost-effective and non-destructive character. MIR, NIR and/or Raman along with chemometrics are one of the strategies proposed for discrimination of the botanical and/or geographical origin of honeys.

The objective of the present work was to develop analytical tools for the characterization of Argentinean honeys: Samples from three production regions from four harvests (2013-2016) were analysed by vibrational spectroscopies and pattern recognition techniques to develop classification models to distinguish honeys according to their geographical origin.