Rapid Scanning of the Origin and Antioxidant Potential of Chilean Native Honey Through Infrared Spectroscopy and Chemometrics

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Antioxidant compounds have the ability to trap free radicals; in honey, this capacity is related to the botanical origin of the sample, and therefore, there has been a growing interest in verifying the floral origin of beehive products and its relation with the polyphenolic compounds with potential antioxidant activity. A FTIR spectrum has been use to discriminate floral origin in Chilean monofloral samples and to predict their antioxidant capacity. Forty-nine honey samples from different geographical zones and botanical origin were classified according to melissopalynology analysis, and total phenolic and flavonoid contents were quantified by spectrophotometric methods. Discriminant analysis showed that Quillay (Quillaja saponaria), Corcolén (Azara petiolaris), and Tebo (Retanilla trinervia) honeys showed similarities related to their common geographical origin, while Ulmo (Eucryphia cordifolia) presents a differentiate behavior. The FTIR spectra were able to predict phenolic and flavonoid content, establishing the potential of spectroscopic tools for quality control in Chilean beehive industry.