

Analysis of organic molecules, physicochemical parameters, and pollen as indicators for authenticity, botanical origin, type and quality of honey samples examined

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Abstract

To contribute to Chilean honey's characterization, 12 honey samples were analyzed using comprehensive physicochemical and pollen analyses. Beekeepers donated samples from La Pintana, Linderos, Cajón del Maipo, and Chiloé. Physicochemical parameters required for honey authentication such as free acidity (in range of 9.5–46 meq/kg), hydroxymethylfurfural (0–8 mg/kg), humidity (14.4–16.9%), sugar profile, amino acid profile, organic acid profile, pH (3.8–4.7), electrical conductivity (0.25–1.47 mS/cm) and diastase activity (28.6–43.8 °G), were determined by conventional techniques and nuclear magnetic resonance (NMR) at an international quality control laboratory for honey analyses. The Chilean honey samples analyzed showed physicochemical properties in normal ranges and typical sugar profiles for natural honey, which confirmed their authenticity and high quality.

Author keywords

Apis mellifera
Chilean honey
Honey authentication
physicochemical properties