

Zantaz honey “monoflorality”: Chemometric applied to the routinely assessed parameters



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Abstract

The comparison of Zantaz honey samples harvested in Morocco in two different years was performed through chemometric analysis of routinely assessed parameters. The objective was to study how the pollen profile of this newly reported honey shapes its physicochemical characteristics as well as to determine its monoflorality threshold, which has not yet been defined. The predominance of *B. spinosum* pollen was confirmed in the majority of samples reaching 45%, generally requested for monoflorality declaration. The principal component analysis (PCA) was used for clustering and variables correlations. Pollen qualitative and quantitative differences could discriminate the samples belonging to both seasons when combined with the sugar analysis (59.44%) better than the combination with physicochemical parameters (pH, acidity, ash content, electrical conductivity and color) (60.62%). Positive correlation between the presence of *B. spinosum* pollen and melanoidins, color, fructose, moisture, trehalose, melezitose, iron, manganese and calcium could be seen. Integrating all the parameters except the pollen data allowed distinguishing two groups with significant differences ($P < 0.05$) in *B. spinosum* representability ($58 \pm 11.24\%$ against $40 \pm 15.98\%$). This may suggest that 40% is the monoflorality threshold of the Moroccan Zantaz honey, although a confirmation with sensorial analysis is required.

Keywords

Bupleurum spinosum; Monoflorality threshold; Melissopalynology; Principal component analysis