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APPLICATION OF FTIR-ATR SPECTROSCOPY TO THE QUANTIFICATION OF SUGAR IN HONEY

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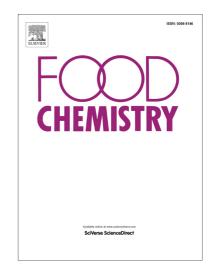4   Ofélia Anjos[1,2*], Maria Graça Campos[3], Pablo Contreras Ruiz [1], Paulo Antunes[4]

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15   ***Abstract***

16   A Fourier transform infrared spectroscopic method with attenuated total reflectance (FTIR-ATR) and partial

17   least squares (PLS) regression model for the prediction of sugar content in honey samples was calculated.

18   Standards of trehalose, glucose, fructose, sucrose, melezitose, turanose and maltose were used to identify and

19   quantify the individual sugar components in 63 honey samples by HPAEC-IPAD.

20   Fructose and glucose are the highest sugars in honey with an average value of 36% and 26% respectively.

21   The 1stDer spectra with MSC or SLS in the wave number range from 1500 to 750 cm^{-1} provide the best

22   calibration model with a r^2 of 86.60 and 86.01 with RPD of 2.6 and 2.55, respectively for fructose and glucose.

23   For turanose and melezitose good models were also found.

24   The FTIR-ATR showed to be a good methodology to quantify the main sugar content in honey and easily

25   adapted to routine analysis.

26

27   **Key words**: Honey sugars, Fructose, Glucose, HPAEC-IPAD, FTIR-ATR, Validation

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