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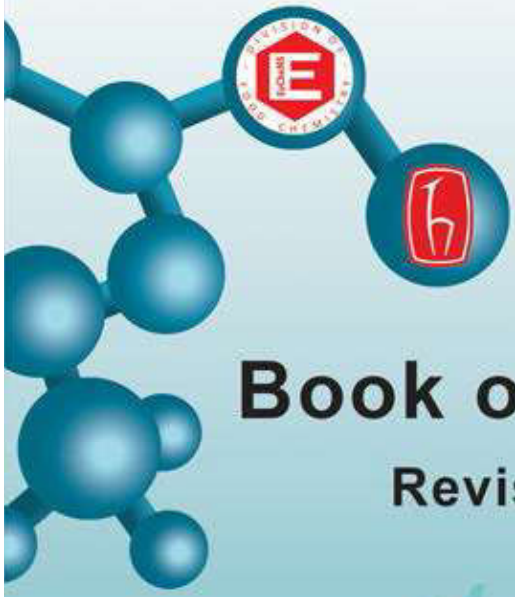
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DETECTION OF SUCROSE ADULTERATION IN HONEY USING FOURIER TRANSFORM INFRARED SPECTROSCOPY

Muhammed Zeki Durak[1], Mehmet Fatih Cengiz[2]

[1]Yıldız Technical University, Davutpaşa Campus, Chemical and Metallurgical Engineering Faculty, Food Engineering Department, 34210, Istanbul/Turkey
[2]Department of Food Engineering, Faculty of Engineering, Akdeniz University, 07058, Antalya/Turkey.

Honey is the natural sweet substance produced by honeybees and has been a part of human diet over centuries. However, the dietary frauds in particular the sugar adulteration of honey is a constant progress and very common in recent years. We have adopted a rapid Fourier transform infrared spectroscopy (FTIR) based chemometric method for the evaluation of sucrose syrup adulteration of honey in Turkey. Honey samples were obtained from a local beekeeping operation verified as having colonies never treated with sucrose and used as control (blanks). In order to prepare matrix-based standards and monitoring studies, seven major brand honey samples were purchased from local chain markets. The calibration was prepared by spiking sucrose to honey in the concentration range of 2, 6, 8, 10, 20, 30 and 40. The samples containing of 100% honey and 100% sucrose were used to observe spectral differentiations. The ranges were chosen to evaluate the adequacy of the method for detecting the sucrose adulteration in honey. The predicted sucrose syrup content of honey ranged between non-detectable and 6.6 (w/w) and results were validated by HPLC-RID with 97% or a higher correlation at the time of adulteration and after 10 days of storage.

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