

FOURIER TRANSFORM INFRARED (FTIR) SPECTROSCOPIC METHOD IN DETECTION OF GELATIN IN COFFEE JELLIES

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ABSTRACT

Gelatin is one of the common ingredients that has been used in many coffees based confectionery products. It is widely used because of its ability to form foams, gels or solidifies into pieces and dissolve slowly or melt in the mouth. The largest scale of porcine and bovine gelatins production in a global market has raised scepticism among consumers toward products-containing gelatin, particularly on religious concerns. Thus, this study was aimed to detect gelatin in coffee jellies by using Fourier Transform Infrared (FTIR) Spectroscopy. A total of three types of gelatin (i.e. porcine, bovine and fish gelatins) with five different concentrations ranging from 1 - 30% were mixed with three different types of coffee and analysed with FTIR. The FTIR spectra were then analysed using chemometric, Principal Component Analysis (PCA). The results found that gelatin can be detected by the presence of a dominant band at Amide I. In the assessment of spiked samples, this method could detect at the minimum of 1% of gelatin in coffee jellies. This method would be beneficial to ensure food integrity in the coffee jellies.

Keywords: Gelatin, Coffee, Fourier Transform Infrared (FTIR) Spectroscopy, Principal Component Analysis (PCA)

Acknowledgement: This work was supported by the IIUM Research Initiative Grant Scheme [RIGS16-068-0232] from the International Islamic University Malaysia (IIUM), Selangor, Malaysia.