DETECTION OF PORK IN USED COOKING OIL USING FOURIER TRANSFORM INFRARED SPECTROSCOPY

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ABSTRACT

Fraudulent incorporation of cheaper materials such as used cooking oil into fresh cooking oil can become a problem for reasons related to religious, ethical, and legal requirement. Thus, the present study aimed to detect pork adulteration in the used cooking oil by using Fourier Transform Infrared (FTIR) Spectroscopy. Samples of frying oils from fried pork, fried fish, fried chicken and fried banana were analysed. Spiked samples were prepared by adding frying oil from fried pork ranging from 3% to 70% (v/v) to frying oils from fried fish, fried chicken and fried banana. The data obtained were further analysed with Principal Component Analysis (PCA) for better results feasible. In the evaluation of the spiked samples, this method was able to detect at least 3% of pork adulteration in used cooking oils. However, it unable to classify the samples based on their sources. This method would beneficial to ensure food integrity in the frying oils.

Keywords: Cooking oil, adulteration, pork, Fourier Transform Infrared Spectroscopy (FTIR), Principal Component Analysis (PCA)