

Application of the FTIR Method Combined with Chemometrics to Differentiate Raw Materials in Leather Gloves

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ABSTRACT

Leather is the best material for making gloves, such as sport and fashion gloves. Gloves are usually made from goat, sheep or pig skin. In Indonesia and some Muslim countries, the products derived from pork are prohibited (haram). Most of costumers cannot differentiate the raw materials in leather products if there are no labels on these products. Various methods such as PCR, HPLC, GC-MS, and FTIR have been carried out to differentiate the raw materials of leather products. The FTIR method is known as an inexpensive and easy to be used. The objective of this study was to evaluate the FTIR method combined with chemometrics to differentiate raw materials in leather gloves. Lipid extracts derived from the various skin and leather were scanned using an FTIR spectrophotometer at 4000–450 cm⁻¹. There is the differentiation of spectral in several wavenumbers (3000-2800 cm⁻¹ and 1200-1000 cm⁻¹). The FTIR spectroscopy combined with chemometrics can differentiate pigskin, sheepskin, and goatskin through specific peaks in infrared spectra. This can be used as an initial analysis on determining the existence of skin adulteration in leather glove.

Keywords: FTIR, Chemometrics, Leather Gloves, Raw Material Differentiation

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