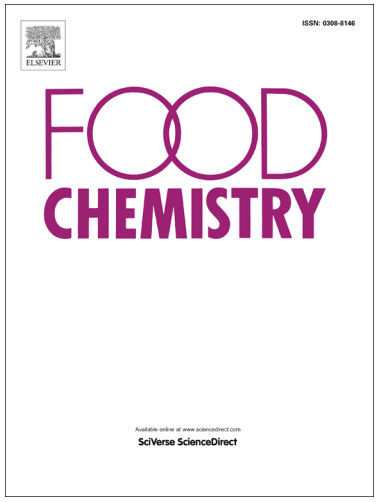


# Determination of Fatty Acid Content in Meat and Meat products: the FTIR-ATR approach

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# Determination of Fatty Acid Content in Meat and Meat products: the FTIR-ATR approach

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**Abstract**

The aim of the study was to investigate the feasibility of Fourier Transformed Infrared Spectroscopy (FTIR) on Attenuated Total Reflectance (ATR) in the determination of the fatty acid content in meat and meat products. The Multivariate calibrations were developed and proposed for Saturated Fatty Acids (SFA), Monounsatured Fatty Acids (MUFA), Polyunsatured Fatty Acids (PUFA) and Palmitic Acid.

SFA and MUFA models, developed using the first derivative and the selected region 3022.33-650.15 $cm^{-1}$, gave the best performance, with a coefficient of calibration $r^2$ 0.9834 and 0.9775, respectively, and the relative Root Mean Square Error of Calibration (RMSEC) 0.594 and 0.699. The best model for PUFA was obtained for region 4000.12-650.15 using the first derivative ($r^2$ 0.9817, RMSEC 0.724).

Palmitic acid, chosen as the case study of single fatty acids, showed a best linear regression for the first derivative approach in region 4000.12-650.15. Results were less satisfactory in prediction in the proposed models.

Key words: FTIR-ATR; Chemometrics; PLS; meat and meat products; SFA; MUFA; palmitic acid