

Lard detection based on fatty acids profile using comprehensive gas chromatography hyphenated with time-of-flight mass spectrometry.

ABSTRACT

Comprehensive gas chromatography hyphenated with time-of-flight mass spectrometry was applied to detect the differences between lard (LA) and three other commonly animal-derived fats, namely cattle fat (CA), chicken fat (CF) and goat fat (GF). Combination of two different microbore columns (SLB-5ms and DB-wax) allowed the discrimination of lard from other animal fats by three fatty acid methyl esters (FAMES) constituents involving methyl trans-9,12,15-octadecatrienoate (C18:3 n3t), methyl 11,14,17-eicosatrienoate (C20:3 n3t) and methyl 11,14-eicosadienoate (C20:2 n6). The FAME profiles could be used as a basis for discriminating lard from other animal fats in food authentication process.

Keyword: Lard; Animal fats; Fatty acid; FAME; GCXGC; TOF-MS.