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Fatty acid composition of different Indian foods and oils using gas chromatography

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Abstract

Background: Fatty acid profiles of various food samples ranging from different kinds of oils, snacks, biscuits, beef, chicken, fish, margarines, legumes, rices, nuts, beverages and indigenous indian foods and snacks was extracted using gas chromatography (GC). The fat was extracted from different classes of food samples using cold extraction method, Acid digestion method, Rose Gottlieb Method and soxhlet Method. Extracted triglycerides were converted to Fatty acid methyl esters (FAME) using Methanol Toluene Bromotrifluoride (MTB) solution (trans-esterification reaction).

Methods: Gas Chromatography method used for the analysis of the obtained methyl esters was enhanced on two different fused silica capillary columns.

Results: Good resolution of all fatty acids commonly found in the various food samples was achieved. The results were validated using the FAME Mix standard purchased from Sigma Alderich Chemical Co.

Discussion: The method was applied to qualitative and quantitative detection of the fatty acid content in different food samples: edible oils, diary products rich in omega 3 fatty acids, snacks, chicken, food supplements, Beef, etc.

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