POSTERS Trans-18:1 isomer profiling in French processed foods containing partially hydrogenated vegetable oils

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The use of partially hydrogenated vegetable oils (PHVO) in food processing has been, and is still a matter of debate among nutritionists. Most often, *trans* fatty acid isomer determinations in food surveys were, and still are based on analytical procedures of questionable accuracy that preclude any sound conclusions to be drawn from such studies. A few years ago, following alarmist conclusions of some epidemiological and nutritional studies, a trend by manufacturers towards lower contents of *trans* isomers in margarines was observed in several countries, e.g., France, Germany, Austria, Denmark, Canada. However, it was not known whether "hidden fats" had followed this trend or not, and the present study was aimed at determining the level as well as the detailed profile of individual *trans*-18:1 isomers in French processed foods labelled as containing PHVO. The analytical methods used here involve bidimensional chromatography, *i.e.*, a combination of argentation thinlayer chromatography and gas-liquid chromatography on 100-m CP-Sil 88 capillary columns operated under optimal temperature and carrier gas pressure conditions. This procedure allows resolution of practically all individual *trans*-18:1 isomers with no interferences with other overlapping fatty acids, and their accurate integration. A survey of 21 French food items purchased in local supermarkets has shown that PHVO present in foods had *trans*-18:1 isomers contents and profiles that considerably vary among foods, and even in a given category of foods. However, a mean profile for these PHVO was established, and shown to be similar to that reported either for similar French foods analyzed a few years ago, or for German margarines and shortenings. Such data thus appear of general use to calculate the consumption of individual *trans*-18:1 isomers in countries where food consumption or disappearance data are known. Data for the mean daily per capita intake of *trans*-18:1 isomers are assessed for French people, indicating that PHVO essentially affect the A6-A10 part of total *trans*18:1 isomers as compared to ruminant fats.

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