LETTER TO THE EDITOR

Misidentification of Fatty Acid Methyl Ester Peaks in Liquid Canola Shortening

Sir,

A recent paper on liquid canola shortening (1) listed the fatty acids expected for such products in Table 1, plus three others, two of which are normally associated with marine or animal fats (2). None of the three unusual fatty acids reported (octadecatetraenoic acid, 0.6%; arachidonic acid, 0.2%; and docosapentaenoic acid, 0.1%) were observed in a detailed examination of the minor fatty acids of rapeseed oil (3), or of oil from canola screenings (4). More recent published gas-liquid chromatograms for canola oil fatty acid methyl esters do not show such components (2).

The modest drop in iodine value (to 92) recorded for this liquid canola shortening (1) suggests that the reaction conditions favored the formation of C_{18} conjugated fatty acids. Thus the peak in the position for octadecatetraenoic acid could have been confused with that for *cis*-9, *trans*-11-18:2, and the peak in the position for arachidonic acid confused with *cis*-9, *cis*-12, *trans*-14-18:3. The proportions reported for these two acids (3:1) correspond to the original proportions of 18:2n-6 and 18:3n-3 normally found in rapeseed or canola oils (3,4). A variety of conjugated isomers might be formed, but in fact *cis*-9, *trans*-11-18:2 is found naturally in several commercial edible oils (5), including canola oil (4). Similarly, geometrical isomers are likely in the "oleic" peak and possibly in the "linoleic" and "linolenic" peaks arising from the hydrogenation process and/or deodorization (6).

The peak reported as docosapentaenoic acid could similarly correspond to that for 24:1n-9. This fatty acid is found in most brassica oils (2–4) in the proportion of total fatty acids (0.1%) reported in the shortening analysis (1), and would be in close proximity to 22:5 on low-polarity gas-liquid chromatographic columns (2).

Thus there is little reason to be concerned about contamination of the liquid canola shortening with animal fat or other materials. The concern lies in possible acceptance elsewhere of the fatty acids listed in Table 1 published in *JAOCS* (1) as representative of canola oil in any form. I hope that this letter will offset that possibility.

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