• *Short Communication*

Phthalate Esters in Oxidized Fats

A RECENT PUBLICATION (1) announces that di-octyl phthalate has been identified as a component of certain oxidized fats and of used frying fat. In our studies of heated fat composition we too have isolated substances which we identified as phthalate esters. These compounds were observed in fat which had been heated under simulated frying conditions as well as in fatty esters which had been subjected to artificially abusive conditions of heat and oxidation.

Such esters were not observed however, despite a deliberate search for them, when subsequent portions of the heated fats or esters were worked up with scrupulous avoidance of contact between the fatty materials or the solvents used in handling them with plasticized polyvinyl tubing. We further found that substances apparently identical with those isolated from our fatty materials could readily be extracted from polyvinyl tubing by passing solvents through it. We also found that one lot of benzene which had been used for part of our isolation work was contaminated with phthalate esters; although the level of contamination was low, the ratio of solvent to fat used in extraction and chromatographic procedures was high enough so that the apparent level of phthalate in the fat, after evaporation of solvent, was substantial.

Because of our observations we concluded that the phthalate esters which we found in oxidized fats were artifacts that arose from contact of our materials with plastic tubing or contaminated solvents.

Another example of lipid sample contamination by phthalate plasticizer has recently been reported (2).

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• *Letter to the Editor*

Fatty Acids of Coho Salmon Fingerlings

STANSBY HAS RECENTLY DRAWN attention to differences in the fatty acid patterns in marine, freshwater, and anadromous fish (1). In the cited instance of coho salmon fingerlings (2) an analysis (3) of the facsimile gas chromatogram (2) suggests alternative identifications for some of the C_{18} and longer-chain fatty acids (Table I). The fatty acid composition shows such features as the high proportion of total linoleic (ω6) type of fatty acids, relative to the total linolenic (ω3) type of fatty acids, proposed as characteristics of freshwater fish fats (4).

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TABLE I
Suggested Fatty Acid Identifications and Approximate Percentages (of Total Fatty Acids) for C_{18} and Longer-Chain Fatty Acids in Coho Salmon Fingerlings

Suggested fatty acid	Approximate percentage of total acids[a]	Original peak designation (2)
18:0	6.1	18:0
18:1[b]	19.3	18:1
18:2ω6	11.7	18:2
18:3ω6	0.8	18:3
18:3ω3	4.3	18:4
18:4ω3	3.0[c]	20:1
20:1[b]	2.0[c]	20:1
20:2ω6	2.4	20:2
20:3ω6	1.2	20:3
20:4ω6	3.8	20:4
20:4ω3	0.6[d]	22:1
20:5ω3	3.5	20:5
21:4ω2 ?	0.8	22:2
21:5ω2 ?	0.3	.....[e]
22:1[b]	0.6[d]	22:1
22:2ω6 ?	0.5	.....[f]
22:4ω6	1.2	22:3
22:5ω6[g]	0.4	22:4
22:5ω3	1.8	22:5
22:6ω3	7.4	22:6

[a] By comparison of peak sizes and tabulated percentages.
[b] Probably mostly ω9.
[c] Estimated from composite peak marked 20:1.
[d] Estimated from composite peak marked 22:1.
[e] Shoulder ahead of peak marked 22:3.
[f] Baseline rise after peak marked 20:5; could also be 21:4ω5.
[g] May include small amount of 24:1.