

FATTY ACID COMPOSITIONS OF THE LIPIDS OF SOME NATURAL PRODUCTS

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We have determined the fatty acid (FA) compositions of the lipids of eight substances of natural origin from the Central Asian region. The lipids were isolated by Folch's method [1] at room temperature from previously comminuted plant materials and by the Bligh-Dyer method [2] from previously comminuted meat and fish.

The methyl esters of the fatty acids, obtained as described by Kates [1], were analyzed by GLC on a Tsvet-530 instrument with a FID, using a 0.3×300 cm glass column filled with polyethyleneglycol succinate on Chromaton N-AW at a column temperature of 198°C and a rate of flow of carrier gas (nitrogen) of 35 ml/min, the volume of sample introduced being 0.1 μ l.

The individual components were identified by comparison with model FAs and from their relative retention times [3]. The results obtained are given in Table 1. As can be seen from the table, almost all the substances were enriched with the essential FAs constituting vitamin F.

The 8:0 and 10:0 acids were not detected in any of the materials studied. The 18:4, 20:0, 20:1, 20:4, 20:5, 22:0, 22:1, 22:5, and 22:6 acids were also absent, except for the peanut, which contained trace amounts of the 20:1 and 22:1 acids, with 0.9% of the 20:0 and 0.7% of the 22:0 acids, and fish, which contained 0.8% of the 18:4 acid, 1.7% of the 20:1, 9.9% of the 20:4, 2.0% of the 22:0, 2.0% of the 22:1, 0.8% of the 22:5, and 2.9% of the 22:0 acid.

This is the first time that this information has been obtained for a number of products of the Central Asian region, such as apricot and peanut, while we have found no information on the FAs of the mung bean in the available literature [4, 5]. The meat studied contained the 17:0 acid, not reported in [4], and more of the 18:2 acid than in [4], while the fish contained more of the 18:2, 18:3, and 20:4 acids.

TABLE 1. Fatty Acid Compositions of the Lipids of Some Natural Products (GLC, % by weight)

Acid	Mung bean	Walnut	Peanut	Almond	Pistachio nut	Apricot	Meat (beef)	Fish (carp)
12:0	—	—	—	—	—	—	0.4	—
14:0	0.1	0.2	0.2	0.4	0.4	0.6	1.5	0.4
15:0	—	—	—	—	—	—	0.4	—
14:1	—	—	—	—	—	—	—	—
16:0	16.8	5.5	6.7	6.4	6.5	7.4	24.4	13.5
16:1	0.7	0.4	0.2	1.1	1.8	0.6	4.1	2.9
17:0	—	—	—	—	—	—	2.6	—
18:0	2.5	3.0	4.2	2.6	Сл.	Сл.	14.0	3.3
18:1	4.2	25.9	46.6	68.2	74.4	65.8	46.0	14.2
18:2	41.6	54.0	39.6	21.3	16.8	25.5	6.6	42.7
18:3	34.0	10.9	0.7	—	—	—	0.1	2.9

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