LIPIDS AND LIPOPHILIC COMPONENTS OF CERTAIN PLANTS

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Much attention is presently paid to the study of lipids and lipophilic components of plant origin in order to fabricate medicinal preparations based on them [1, 2].

In continuation of research in this area, we isolated lipophilic components by the literature method [2] from milk thistle herb (*Silybum marianum*, Asteraceae) (**1**), apple leaves (*Malus sylvestris*, Rosaceae) (**2**), pear leaves (*Pyrus communis*, Rosaceae) (**3**), pressings (**4**) and leaves (**5**) of cultured Cabernet-Savignon grape (*Vitis vinifera*, Vitaceae), and flowers (**6**) and leaves (**7**) of elder (*Sambucus nigra*, Caprifoliaceae). The contents of these were (%): 4.15 (**1**), 6.9 (**2**), 2.93 (**3**), 11.25 (**4**), 13.24 (**5**), 4.87 (**6**), and 6.39 (**7**).

These data show that the contents of lipophilic components are rather high.

We also determined the fatty-acid compositions in them and the contents of carotinoids and chlorophylls (Table 1). The saturated acids in all samples were dominated by 16:0 (6.4-30.2%); unsaturated, linoleic (8.4-74.2%) and linolenic (20.8-57.8%), except for **4**, **6**, and **7**, where its amount was insignificant (0.8-2.3%).

The carotinoid contents were insignificant.

We obtained additional data on the studied samples by measuring three-dimensional fluorescence spectra, which were recorded by three-dimensional scanning spectrofluorimetry in the UV and visible spectral regions on a Hitachi F4010 spectrofluorimeter in the range 350-750 nm. Spectra were processed by constructing three-dimensional plots as before [3].

The principal peaks were characteristic of emission from simple phenolic compounds, certain lipids and phospholipids, and a mixture of chlorophylls.

A group of peaks typical of emission from flavonoid and coumarin aglycons was also observed.

The lipids and lipophilic components were studied as before [2].

The composition of fatty-acid methyl esters was determined by GC on a Chrom-5 chromatograph with a flame-ionization detector; N_2 carrier gas, flow rate 30 mL/min; rate of H_2 supply 35 mL/min; oxygen, 350 mL/min; temperature of decomposition 186°C, injector 230°C, detector 220°C; stationary phase Inerton AW (0.16-0.20 mm). The stationary phase was treated with dimethyldichlorosilane; mobile phase, diethyleneglycolsuccinate (10% of the stationary phase mass).

Fatty acids were identified by comparison of retention times with a mixture of standards [4].

The amounts of chlorophylls and carotinoids were found as before [5].

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TABLE 1. Fatty Acid and Pigment Contents (GC, %)

Acid	Sample						
	1	**2**	**3**	**4**	**5**	**6**	**7**
8:0	-	1.5	0.6	-	-	-	-
12:0	1.8	1.7	0.6	-	-	1.4	-
14:0	-	1.2	0.5	-	-	2.6	-
15:0	-	0.4	-	-	-	0.5	1.6
16:0	27.7	29.9	30.2	6.4	22.4	22.2	24.2
16:1	-	1.8	1.3	-	-	3.5	2.1
18:0	4.6	3.8	2.3	2.5	2.5	2.0	2.1
18:1	5.1	9.6	9.7	12.6	3.7	11.0	1.0
18:2	16.8	14.3	14.4	74.2	10.8	16.1	8.4
18:3	20.8	33.2	33.9	0.8	57.8	2.3	1.0
20:0	7.3	0.7	0.4	0.2	-	15.8	48.2
20:1	-	-	-	0.4	-	2.4	4.3
22:0	2.2	-	-	0.5	-	1.0	1.5
22:1	4.8	-	1.2	0.2	-	-	-
22:2	-	-	1.5	-	-	-	-
24:0	1.4	-	-	0.7	2.8	-	
24:1	4.1	-	-	-	-	-	-
			Pigments				
Carotinoids, mg%	1.16	2.5	3.2	0.19	2.29	0.37	5.22
Chlorophylls, %	1.59	0.4	5.32	0.35	4.58	0.47	8.96

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