

ANALYSIS OF LIPOPHILIC FRACTIONS FROM LEAVES AND BRANCHES OF *Armeniaca vulgaris*

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UDC 615.07:582.734.6

Lipophilic substances of plant origin are becoming more and more significant as platforms for creating drugs. We investigated this aspect by analyzing lipophilic fractions from leaves and branches of common apricot *Armeniaca vulgaris* L. (Rosaceae). Raw material collected in summer 2006 in Kharkov Oblast was exhaustively extracted with CHCl_3 in a Soxhlet apparatus. The yield of lipophilic fraction from leaves and branches was 2.85 and 1.42%, respectively. Thus, the content of lipophilic substances in leaves was twice as much as in branches. The resulting extracts were thick and viscous dark green and greenish-brown masses with distinct aromas.

The qualitative compositions of the fractions were studied by TLC using hexane:acetone (6:2, first direction) and hexane:acetone (6:4, second direction). The chromatograms were developed by diaminobenzaldehyde (2%) in an ethanol:HCl mixture. Free and bound fatty acids (FA), chlorophylls, and carotinoids were detected. The composition of the FA as methyl esters was found using GC on a Chrom-5 chromatograph (Table 1). The chromatography conditions were steel column (250 × 0.3 cm), Chromaton stationary phase, N_2 carrier gas, N_2 and H_2 flow rate 25 mL/min, separation temperature 186°C, injector temperature 190°C, detector temperature 190°C, PEG polar stationary phase. Saturated acids dominated in both samples, palmitic in leaves (46.45%) and hexacosanoic in branches (36.51%). The main unsaturated acids were α -linolenic in leaves (17.06%) and linoleic in branches (6.79%).

Table 1 gives the amounts of chlorophylls and carotinoids found using known procedures [1, 2].

Fluorescing components of lipophilic fractions were studied in more detail by recording three-dimensional fluorescence spectra using a Hitachi F 4010 3D scanning spectrofluorimeter in the UV and visible ranges with the exciting wavelength varying in 5-nm steps from 350-750 nm. 3D curves were constructed by further processing of the recordings using the Spectra DataLab program set developed at the Scientific-Research Institute of Chemistry at V. N. Karazin Kharkiv National University [3]. The main peaks were characteristic of simple phenolic compounds, certain lipids, phospholipids, and chlorophyll mixtures.

Thus, the quantitative contents of carotinoids, chlorophylls, and fatty acids in lipophilic fractions of leaves and branches of *A. vulgaris* L. were determined.

TABLE 1. Fatty-Acid (% of Acid Mass, GC) and Pigment Contents, mg/g

Acid	Content		Acid	Content	
	leaves	branches		leaves	branches
12:1	3.46	-	22:0	-	36.07
14:2	3.56	-	24:0	2.07	3.73
16:0	46.65	10.84	26:0	7.04	36.51
16:1	2.17	-	$\Sigma_{\text{Sat.}}$	65.08	90.72
18:0	7.12	2.35	$\Sigma_{\text{Unsat.}}$	34.92	9.27
18:1	2.15	-	Pigments:		
18:2	6.52	6.79	carotinoids	171.05	22.07
18:3	17.06	2.48	chlorophyll	91.51	13.33
20:0	2.20	1.22			

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