

**POLAR LIPIDS OF *ACHILLEA MILLEFOLIUM* L. LEAVES****Samandarova Z.Y.****Yuldasheva N.K.****Gusakova S.D.**S.Y. Yunusov Institute of the Chemistry of Plant Substances, Tashkent city, Republic of
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Introduction. *Achillea millefolium* L. is a perennial halotolerant species widely distributed across Central Asia, the European part of the Russian Federation and Siberia, the Caucasus, Western Europe and other regions. In Uzbekistan, it occurs in mountain meadows, fields, and household plots of the Tashkent, Samarkand, Fergana, Andijan, and Surkhandarya regions. Literature data indicate that chlorophylls and carotenoids, similar to lipids, are valuable organic compounds exhibiting wound-healing, bacteriostatic, anticancer, antioxidant, and radioprotective activities.

The aim of the study was to investigate the polar lipids (PL), glycolipids (GL), and phospholipids (PhL) of the leaves of the plant *A. millefolium*, collected in the Tashkent region in august 2023.

Materials and methods. PL was extracted from the crushed leaves using a mixture of chloroform and methanol (2:1, v/v) after the neutral lipids were removed.

Using column chromatography on silica gel, PL was separated into GL (eluted with acetone) and PhL (eluted with methanol).

Results. The content of polar lipids (PL) was 4,31%, including glycolipids (GL) at 3,08% and phospholipids (PhL) at 1,23 %. The composition of GL, steryl glycosides, steryl glycoside esters, and mono- and digalactosyldiacylglycerols were identified. PhL included phosphatidylcholines, phosphatidylethanolamines, and phosphatidylinositols. By alkaline hydrolysis of the lipids, fatty acids were isolated, and their composition, in the form of methyl esters, was determined by GC using an Agilent GG 8860 chromatograph (table).

**Table. Composition of fatty acids of polar lipids of the leaves of *A. millefolium*,
GC, % of acids mass**

Acid	GL	PhL	Acid	GL	PhL
10:0, 12:0, 14:0	10,28	3,21	20:0	1,48	1,77
15:0	1,21	0,77	20:1	1,77	1,01
16:0	59,62	57,85	22:0	1,74	1,07
16:1	2,85	1,54	22:1	0,96	0,40
18:0	5,35	3,25	24:0	2,31	1,99
<i>cis</i> -18:1n9	4,47	8,31	Σsaturated fatty acid	81,99	69,91
<i>trans</i> -18:1n9	1,14	0,77	Σunsaturated fatty acid	18,01	30,09
18:2n6	4,71	12,15	Σmonounsaturated fatty acid	11,19	12,03
18:3n3	2,11	5,91	Σpolyunsaturated fatty acid	6,82	18,06



Conclusions. The leaves of *Achillea millefolium* contain 3,08% glycolipids and 1,23% phospholipids. 16 fatty acids were identified in the lipids, with monounsaturated fatty acids predominating in the glycolipid fraction (11,19%) and polyunsaturated fatty acids predominating in the phospholipid fraction. In all lipid classes, the trans-isomer of oleic acid 18:1n9 (0,77–1,14%) was detected.

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