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ABSTRACTS

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POLAR LIPIDS OF *ACHILLEA FILIPENDULINA* SEEDS WITH BRACTS

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Introduction. *Achillea filipendulina* (yarrow, family Asteraceae) is a perennial halophyte plant found in saline soils of Central Asia, the Caucasus, and Iran. This plant (locally known as "buymodaron") grows to a height of 80-120 cm and blooms from June to August. It has been used in traditional medicine since ancient times to treat various ailments. Infusions of the above-ground part of *A. filipendulina* are used for the treatment of sciatica, gout, arthritis, gastrointestinal disorders, congestion, cardiovascular diseases, and malaria. The lipids of the plant have not been studied.

The aim of the study was to investigate the polar lipids (PL), glycolipids (GL), and phospholipids (PhL) of the seeds with bracts of the plant *A. filipendulina*, collected in the Kashkadarya region in October 2024.

Materials and methods. PL was extracted from the crushed seeds with bracts 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 2,03%, including glycolipids (GL) at 1,54% and phospholipids (PhL) at 0,49%. The composition of GL included steryl glycosides, esters of steryl glycosides, and mono- and digalactosyl diacylglycerides. The PhL consisted of phosphatidylcholines, phosphatidylethanolamines, phosphatidylinositols, and trace amounts of phosphatidic acid. By alkaline hydrolysis of the lipids, fatty acids were extracted, and their composition as methyl esters was determined by gas chromatography on an Agilent 8860 chromatograph (see table).

Table. Composition of fatty acids of polar lipids of the seeds with bracts of *A. filipendulina*, GC, % of acids mass

Acid	GL	PhL	Acid	GL	PhL
10:0, 12:0, 14:0, 15:0	8,18	4,29	20:1	4,45	3,76
16:0	33,98	33,64	22:0	2,28	1,36
16:1	2,06	0,85	22:1	2,01	2,12
17:0	1,48	1,11	24:0	1,86	0,93
18:0	7,34	5,75	24:1	1,06	0,92
<i>sis</i> -18:1+18:3	12,25	18,57	∑ saturated fatty acid	57,18	48,21
<i>trans</i> -18:1	1,32	1,42	∑ unsaturated fatty acid	42,82	51,79
18:2	19,67	24,15	Total	100	100
20:0	2,06	1,13			

Conclusions. The seeds with bracts of *Achillea filipendulina* contain 1,54% glycolipids and 0,49% phospholipids. 17 fatty acids were found in the lipids, with a predominance of saturated fatty acids in glycolipids (57,18%) and unsaturated acids in phospholipids. In all lipids, a trans isomer of oleic acid ω9-18:1 (1,32 – 1,42%) was detected.

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