chromatograph under the following conditions: stainless-steel column, 0.5 × 2 m, with a temperature of the sample inlet of 300°C, and a rate of feed of helium of 120 ml/min with, as packing, Chromaton (60-80 mesh) impregnated with 17% of poly(ethylene succinate). The fatty acids were identified from their optimum retention times in comparison with known literature figures [4] and with standard samples. The amounts of the individual acids were determined by Carral's method [5]. The following acids were found (%): 16:0-6.1; 18:1-7.2; 12:2-85.2.

Thin-layer chromatography in the heptane—methyl ethyl ketone-acetic acid (43:7:0.5) system [6] showed the presence in the oil of: hydrocarbons, triacylglycerols, free fatty acids, phytosterols, diacylglycerols, and monoacylglycerols. The analyses show that from 5 thousand tons of seeds it is posible to obtain about 2 thousand tons of a semidrying technical oil for the domestic economy — for example, for the paint and varnish industry.

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LIPIDS OF THE SEEDS OF TWO SPECIES OF Jurinea

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Plants of the genus Jurinea (family Asteraceae) include more than 300 species, 150 of which grow in Central Asia [1]. There is no information in the literature available to us on the lipids of the seeds of these plants. There is only information on a study of the triterpene compounds of J. anatolica and J. cousanquinea, the total amount of which in these species is about 40% [2].

We have investigated the neutral lipids (NLs) of the seeds of J. bipinnatifida Winkl. (I) and J. kokanika Iljin (II). The lipids were extracted from the comminuted seeds with hexane. The yields of total NLs were: (I) 6.2%; (II) 10.8%.

The separation of the total lipids into individual classes, the identification of the latter, the isolation of the fatty acids (FAs), and the determination of their composition were carried out as described previously [3]. The lipid compositions of the species investigated (I and II) are given below (% by weight): hydrocarbons, 0.1 and 0.3; esters of triterpenols and fatty acids, 0.1 and 4.9; triacylglycerols (TAGs), 80.9 and 74.0; epoxyacyldiacylglycerols (Ep-DAGs), 11.4 and 4.6; free fatty acids (FFAs), tri. and 1.3; hydroxyacyldiacyclglycerols (H-DAGs) + free triterpenols, 4.7 and 7.0; epoxyacyl, hydroxyacyl, and monoacyl-glycerols (Ep-H-MAGs), 0.5 and 1.6; diacylglycerols (DAGs) + free sterols, 1.2 and 2.7; unidentified triterpene components, 0.5 and 2.7; and monoacylglycerols (MAGs), 0.6 and 0.9.

Thus, the NLs of the two species of plants had the same set of lipid classes but differed from one another with respect to their amounts.

The lipids of (II) showed a fairly high content of triterpene compounds (more than 7.6%).

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TABLE 1. Compositions of Fatty Acids of the Individual Classes of Lipids (% GLC)

Acid	TAGs		Ep-DAGs		FFAs	H-DAGs		H-Ep-MAGs		DAGs		MAGs	
	I	II	I	II	II	I	II	I	II	I	II	I	II
12:0	—	+	+	+	—	—	—	+	+	+	+	5,5	3,4
14:0	0,4	0,5	0,2	0,2	—	—	0,9	+	—	2,2	0,7	—	—
16:0	5,9	6,6	6,4	7,2	9,5	5,5	6,8	8,8	8,8	16,2	13,1	24,8	15,1
16:1	0,4	0,5	0,6	0,5	1,5	1,1	1,3	0,2	1,5	1,4	1,7	3,5	1,8
17:0	—	—	0,7	0,2	—	—	—	—	—	—	—	—	—
18:0	3,4	3,3	2,4	2,3	3,3	2,8	1,8	0,3	2,3	3,2	3,5	1,5	4,3
18:1	46,5	48,7	41,8	47,0	59,5	42,7	45,4	43,2	45,8	42,9	54,8	27,4	49,5
18:2	34,2	30,9	35,7	33,4	26,2	39,3	37,4	42,9	41,6	28,9	26,2	27,3	34,9
18:3	1,6	1,8	1,0	1,2	—	2,2	2,2	—	—	—	—	—	—
20:0	7,6	7,7	11,2	8,0	—	6,4	4,2	4,6	—	5,2	—	—	—
Σ_{sat}	17,3	18,1	20,9	17,9	12,8	14,7	13,7	13,7	11,1	26,8	17,3	41,8	22,8
Σ_{unsat}	82,7	81,9	79,1	82,1	87,2	85,3	86,3	86,3	88,9	73,2	82,7	58,2	77,2

The fatty acid compositions of the acyl-containing lipids are given in Table 1. In all lipids except for the MAGs of (I) the main acid was the 18:1 type. The FFAs and TAGs were similar in composition, which is not characteristic for the reserve lipids of higher plants. Usually, the FFAs differ by a higher content of saturated fatty acids.

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