

FATTY-ACID COMPOSITION OF ROOTS OF CERTAIN PLANT SPECIES OF THE GENUS *Limonium*. VIII.

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Herein we report results from a comparison of the fatty acids in lipids obtained from roots of six *Limonium* species growing in one area of Ilii Region of Almaty District. Earlier lipids were isolated in 0.5% yield from *L. gmelinii* and *L. popovii* by treatment with petroleum ether of the methanol extracts. They exhibited antifungal, antibacterial, and insecticidal activities. The fatty-acid composition of the isolated lipids was established by GC—MS [1].

We studied for the first time the fatty-acid composition of lipids isolated from roots of six *Limonium* species in order to expand the raw material base of these plants.

Total lipids from finely ground (to 1-3 mm) plant roots were extracted three times by $\text{CHCl}_3\text{:CH}_3\text{OH}$ (2:1, v/v) at room temperature. The extracts were combined, washed with CaCl_2 solution (0.04%) [2, 3], dried, and concentrated in vacuo.

The fatty acids were analyzed as their methyl esters by GC in a Carlo Erba chromatograph (USA-Italy) with a flame-ionization detector, steel column (2.5 m \times 3 mm) packed with cellite 545 (0.20-0.25 mm) with 20% polyethyleneglycoladipate, column temperature 190°C, vaporizer 230°C, He carrier-gas flow rate 40 mL/min, air 450 mL/min. Components were identified using internal standards.

The results showed that the qualitative composition of the saturated and unsaturated fatty acids in roots of all studied species was the same. However, the quantitative content differed. The total content of saturated acids was 16.2-19.7%; unsaturated, >80%. Lipids of *L. gmelinii* had the highest (83.8%) content of unsaturated acids and correspondingly the lowest (16.2%) content of saturated acids (Table 1).

TABLE 1. Fatty-Acid Composition of Lipids from Roots of Six *Limonium* Species

Acid	Content, mass %					
	<i>L. gmelinii</i>	<i>L. otolepis</i>	<i>L. popovii</i>	<i>L. myrianthum</i>	<i>L. leptophyllum</i>	<i>L. suffruticosum</i>
12:0	1.3	1.6	1.5	2.2	1.4	1.6
14:0	2.3	2.1	2.4	3.1	2.3	2.4
16:0	6.2	5.4	6.1	4.1	5.2	6.0
16:1	2.5	2.6	2.0	1.3	2.3	1.9
18:0	2.0	3.6	4.1	4.5	3.8	4.0
18:1	17.0	26.0	26.4	30.6	28.5	27.5
18:2	61.3	49.9	47.8	47.8	48.9	48.8
18:3	0.3	0.2	0.4	0.4	0.3	0.3
20:0	0.7	1.2	0.9	0.6	0.9	0.8
20:1	0.8	0.9	1.0	0.7	0.7	0.9
21:0	0.9	1.1	1.2	0.8	1.0	0.9
20:2	2.0	3.1	2.6	1.6	2.2	1.9
22:0	2.8	2.2	3.7	2.3	2.5	3.0
Total acids, %						
saturated	16.2	17.2	19.8	17.6	17.1	18.7
unsaturated	83.8	82.8	80.3	82.4	82.9	81.3
monoene	20.3	29.6	29.5	32.6	31.5	30.3
polyene	63.6	53.3	50.8	49.8	51.3	51.0

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