

Thus, the group of investigations of the carbohydrates of common comfrey root that has been performed has permitted the isolation of the main fractions of polysaccharides and the determination of their composition, which is represented by glucose, galactose, arabinose, and xylose.

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FATTY ACID COMPOSITION OF THE NEUTRAL LIPIDS OF THE EPIGEAL PART OF *Psoralea drupaceae*

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Continuing a study of the chemical composition of various parts of plants of the family Leguminosae [1, 2], we have investigated the neutral lipids of the epigeal part of drupe scurf pea (fruit, leaves, and flowers) collected in 1987-1988 in Chimkent province.

The lipids were extracted from the air-dry raw material with petroleum ether (40-70°C). The main physicochemical constants of the lipids are given in Table 1.

The fatty-acid compositions of the neutral lipids (Table 2) in the form of methyl esters were analyzed by GLC on a Vyukhrom instrument with a flame-ionization detector. GLC conditions: steel column 0.4 x 250 cm, filled with 15% of poly(ethylene succinate) on Chro-

TABLE 1. Physicochemical Constants of the Neutral Lipids

Constant	Plant organ		
	fruit (whole)	leaves	flowers
Yield, %	3,8	7,9	6,4
$n_D^{20}$	1,5330	1,5380	1,5370
$d_4^{20}$	0,916	0,923	0,920
Acid No., mg KOH/g	1,01	0,84	0,47
Saponification No., mg KOH/g	196	198	196
Iodine No., %	90,2	108,2	91,8
Unsaponifiable substances, %	2,30	4,90	4,15
Carotenoids, mg/kg	9,2	71,0	14,4
Tocopherols, mg/kg	50,0	46,0	24,0
Chlorophyll a, mg/kg	—	67,4	12,5
Chlorophyll b, mg/kg	—	51,2	8,3

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TABLE 2. Fatty-Acid Compositions of the Lipids from the Epigeal Part of the Plant

Acid	Amount of acid, %			Acid	Amount of acid, %		
	fruit (whole)	leaves	flowers		fruit (whole)	leaves	flowers
C <sub>8:0</sub>	0,3	1,6	1,3	C <sub>18:0</sub>	6,2	8,3	4,3
C <sub>10:0</sub>	0,2	0,6	1,5	C <sub>18:1</sub>	22,9	8,9	6,4
C <sub>11:0</sub>	0,3	0,9	0,9	X <sub>1</sub>	—	1,9	5,8
C <sub>12:0</sub>	0,3	0,6	0,8	C <sub>18:2</sub>	12,0	3,6	8,3
X <sub>1</sub>	0,2	0,3	0,4	C <sub>18:3</sub>	6,5	25,4	17,4
C <sub>14:0</sub>	0,9	10,4	10,0	C <sub>19:1</sub>	2,0	1,1	2,1
C <sub>14:1</sub>	1,0	1,4	0,9	C <sub>20:0</sub>	25,5	1,8	2,1
C <sub>15:0</sub>	0,8	1,0	1,3	C <sub>20:1</sub>	4,8	9,7	14,0
C <sub>15:1</sub>	0,7	1,9	1,2	C <sub>22:0</sub>	1,5	2,0	1,9
C <sub>16:0</sub>	8,6	8,0	7,6	C <sub>24:0</sub>	0,3	0,6	1,7
C <sub>16:1</sub>	1,6	4,6	4,1	Σ <sub>sat</sub>	48,5	39,6	42,5
C <sub>17:0</sub>	3,4	1,6	2,9	Σ <sub>monoenic</sub>	33,0	31,4	31,8
C <sub>17:1</sub>	—	3,6	3,1	Σ <sub>polyenic</sub>	18,5	29,0	25,7

maton N-AW (0.40-0.60 mm), column temperature 204°C, evaporator temperature 250°C, pressure of the carrier gas 0.9 kg/cm<sup>2</sup>.

The lipids of all the organs of the plant contained the same acids, but their quantitative amounts were different. The lipids of the leaves were the most highly unsaturated; they contained 25.4% of linolenic acid.

In contrast to other representatives of the family Leguminosae that we have studied previously [2], drupe scurf pea has a large set of fatty acids. We must also mention the considerable amount of acids with odd numbers of carbon atoms in the lipids of all the plant organs. We also determined the amounts of pigments and vitamins in the various organs of the epigeal part [3, 4].

We are first to have studied the fatty-acid compositions of the neutral lipids of the epigeal organs of drupe scurf pea.

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