Table 2. Partial data of mass spectra (EI, 70 eV) of desulphoindolglucosinolates isolated from *Capparis spinosa*

	a*	b	c			
4-Hydroxy-3-indolyl methyl glucosinolate	146 (13)† 147 (56)	172 (38) 171 (45)	188 (35)			
3-Indolylmethyl glucosinolate	130 (100)	155 (92) 156 (63)	172 (6)			
4-Methoxy-3-indolyl methyl glucosinolate	160 (25)	186 (73)	204 (4) 202 (3)	171 (100)	145 (13)	
1-Methoxy-3-indolyl methyl glucosinolate	160 (21)	186 (52)	202 (1) 204 (4)	171 (21)	145 (11) 146 (26)	155 (100)

The relative intensity is in parentheses.
*a = R^+; b = R–C≡N^+; c = R–CH=NOH^+; R = indolylmethyl.

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FATTY ACIDS OF *MENTHA* SEED LIPIDS

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Key Word Index—*Mentha*; Labiatae; seed lipids; fatty acids.

Abstract—Analyses of fatty acids of seed lipids in five species of *Mentha* from different localities in Serbia are reported.

Samples of five species of *Mentha* collected in different localities in Serbia (Fig. 1) were analysed for fatty acid composition of seed lipids. Results (Table 1) suggest low intraspecific variability of fatty acid composition and show that seed oils of all investigated species belong to the high linolenic acid type of seed oils as is usual for members of Saturejoideae sensu Wunderlich (i.e. Labiatae with trinucleate and hexacolpate pollen) [1, 2].

Table 1. Composition of fatty acids of the total lipids in seeds of five species of *Mentha*

Species and place of collection		Fatty acid composition (% total)				
		16:0	18:0	18:1	18:2	18:3
M. longifolia (L.) Huds						
Debeli lug		5.3	1.8	9.3	31.7	51.9
Kopaonik-Greda		7.6	2.1	8.7	26.5	55.1
Raždaginja		5.2	1.8	8.5	28.9	55.6
Kopaonik		5.7	1.8	8.7	28.2	55.6
Panorama-Zlatar		6.5	2.1	9.2	29.4	52.8
Vlasinsko jezero		7.4	2.3	8.7	27.8	53.8
Valjevska Loznica		6.7	2.1	8.7	32.3	50.2
Beli Rzay		4.9	1.2	9.3	35.9	48.7
Perućac		7.1	2.2	9.7	36.3	44.7
Krš-Zlatar		6.9	1.8	7.9	26.0	57.4
Ovčar Kablar		6.0	2.0	8.7	32.5	50.8
Ljubičevo		8.6	5.0	7.8	27.6	51.0
Beograd		6.5	1.7	9.0	35.0	47.8
	$\bar{X}$	6.5±1.1	2.1±0.9	8.8±0.5	30.6±3.6	51.9±3.6
	C_v	16.9	42.8	5.7	11.8	6.9
M. arrensis L.						
Perućac		6.6	2.1	8.7	28.1	54.5
Rsovac		5.9	2.3	8.3	24.6	58.9
Vlasinski Rid		9.7	3.0	10.4	28.4	48.5
Blagojev Kamen		7.2	2.7	8.8	30.5	50.8
Studenica		4.5	1.7	9.0	34.4	50.4
	$\bar{X}$	6.8±1.9	2.4±0.5	9.0±0.8	29.2±3.6	52.6±4.1
	C_v	27.9	20.8	8.9	12.3	7.8
M. spicata L.						
Beočin		8.1	2.5	12.5	34.6	42.3
Manastir		9.3	2.7	10.1	31.3	46.6
Bubanj Potok		6.1	2.5	9.3	36.4	45.7
Ovčar Banja		6.7	1.6	10.1	31.4	50.2
Beograd		7.7	2.8	7.6	33.6	48.3
Miranovačka Kula		7.6	2.2	9.9	31.2	49.1
Krš Zlatar		10.5	3.2	10.1	26.3	49.9
Kopaonik		6.7	1.8	9.6	34.0	47.9
	$\bar{X}$	7.8±1.5	2.4±0.5	9.9±1.3	32.3±3.1	47.5±2.6
	C_v	19.2	20.8	13.1	9.6	5.5
M. aquatica L.						
Obedska Bara		7.8	2.7	11.6	27.8	50.1
Mramorak		9.2	2.7	11.1	33.6	43.4
Ovčar Banja		10.4	3.8	11.7	29.0	45.1
Djerdap		11.4	2.7	10.1	28.4	47.4
	$\bar{X}$	9.7±1.5	3.0±0.5	11.1±0.7	29.7±2.6	46.5±2.9
	C_v	15.5	16.7	6.3	8.7	6.2
M. pulegium L.						
Beograd		6.8	1.2	6.7	32.5	52.8
Miranovačka Kula		7.8	3.4	8.1	25.6	55.1
	$\bar{X}$	7.3±0.7	2.3±1.5	7.4±1.0	29.0±4.9	53.9±1.6
	C_v	9.6	65.2	13.5	16.9	3.0

Fig. 1. Collection sites of *Mentha* seeds (compare Table 1) in Serbia.

EXPERIMENTAL

Materials. Seeds of *Mentha* genus which comprises 10 species [3] were collected in different locations of Serbia during 1985, as listed in Fig. 1. Samples of each specimen studied have been deposited in the Faculty of Pharmacy herbarium.

Lipid analysis. Seed sample (50 mg dry wt) were homogenized in 8 ml $CHCl_3$–MeOH (2:1). The homogenate was centrifuged at 3500 *g* and the supernatant separated. The solution was evapd in a N_2 current and the lipids dissolved in a minimum vol. of $CHCl_3$. An aliquot of the total lipids was incubated with 3.4% H_2SO_4 in MeOH. The methyl esters of fatty acids were extracted with $CHCl_3$. GC analysis of methyl esters of fatty acids were performed on a Packard 427 gas chromatograph with FID. A Pyrex column 2 m × 1/4″ 25% DEGS on Chromosorb W AW DMCS (at 180°) was used. Peak areas were measured on an electron integrator Spectra Physics 4100. The content of fatty acids was determined using an internal C_{17}-methyl ester standard.

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