CHEMICAL COMPOSITION OF THE VOLATILE COMPOUNDS OF *Cinnamomum septentrionale*

Zhengqiu Fan, Xiaofeng Ruan, Ruimin Mu, Xiangrong Wang, Sixiu Liu, and Shoubing Wang*

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Cinnamomum septentrionale Hand.-Mazz. is a medium or large tree of the Lauraceae family, native of China, grown in the valley or on the hillside. Camphor, which is used as analgetic in medicine or perfume for preventing insect and antisepsis, can be produced by distilling its root.

We isolated volatile and active compounds from plant material by microwave distillation (MD), which was developed by Chemat and co-workers [1], followed with headspace solid-phase microextraction (HS-SDME) introduced by Jeannot and Cantwell [2]. The sample was heated by a microwave at the power of 400 W for 4 min [3].

Gas chromatography-mass spectrometry (GC-MS) was used to study the volatile compounds of *Cinnamomum septentrionale* Hand.-Mazz., and the total amount of components was 99.144%. The compositions of the volatile compounds of *Cinnamomum septentrionale* Hand.-Mazz. are shown in Table 1. The main constituents were 3-*tert*-pentylcyclopentanone (71.899%), 3,7-dimethyl-2,6-octadienal (4.412%), hexadecane (2.844%), camphor (2.734%), borneol (2.494), α-farnesene (1.801%), 3-carene (1.563%), β-neoclovene (1.189%), and α-pinene (1.101%).

TABLE 1. Composition of the Volatile Compounds of *Cinnamomum septentrionale*

Compound	RI, min	%	Compound	RI, min	%
α-Pinene	8.654	1.101	1-Ethyl-1-phenyl-hydrazine	16.644	0.978
Camphene	9.058	0.250	Eugenol	16.996	0.602
β-Pheuandrene	9.566	0.423	Caryophyllene	18.184	0.250
β-Pinene	9.693	0.936	β-Humulene	18.478	0.374
β-Myrcene	9.900	0.879	α-Caryophyllene	18.750	0.301
D-Limonene	10.823	0.338	β-Neoclovene	19.240	1.189
Eucalyptol	10.910	0.499	γ-Elemene	19.321	0.282
Camphor	13.413	2.734	α-Farnesene	20.036	1.801
Borneol	13.817	2.494	Spathulenol	20.405	0.321
3-*t*-Pentylcyclopentanone	13.950	71.899	Hexadecane	20.469	2.844
3-Carene	14.221	1.563	Ledene oxide-[11]	20.509	0.177
3,7-Dimethyl-6-octen-1-ol	14.694	0.244	12-Oxabicyclo[9.1.0]dodeca-3,7-diene,1	20.832	0.095
3,7-Dimethyl-2,6-Octadienal	14.959	4.412	Spathulenol	21.051	0.636
3,7-Dimethyl-2,6-octadien-1-ol	15.138	0.562	3-[2,5-Dimethylbenzoyl]-butyric acid	21.253	0.094
Bornyl acetate	15.819	0.280	Eudesma-4[14],11-diene	21.374	0.586

RI: retention time.

Department of Environmental Science & Engineering, Fudan University, Shanghai 200433, China, fax: +86 21 65642297, e-mail: daljam@sohu.com. Published in Khimiya Prirodnykh Soedinenii, No. 2, p. 229. March–April, 2009. Original article submitted August 13, 2007.

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