CHEMICAL COMPOSITION OF THE ESSENTIAL OIL OF *Nothopanax delavayi* LEAVES

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The genus *Nothopanax* (Araliaceae) contains about 15 species, distributed mainly in Oceania. Among them, *N. delavayi* is used in Chinese folk medicine to relieve fever, diminish inflammation, stop diarrhea, and treat laryngitis and rheumatism [1]. Previously triterpenoid saponins were isolated from the plant [2], but there are no references on the essential oil content and chemical composition of its leaves, which are also used in folk as a delicious and healthy natural vegetable.

TABLE 1. Composition of the Essential Oil from the Fresh Leaves of *Nothopanax delavayi*

Compound	RI	%	Compound	RI	%
cis-3-Hexenol	853	Tr.	α-Cubebene	1347	Tr.
α-Thujene	934	Tr.	α-Copaene	1373	Tr.
α-Pinene	936	7.4	β-Bourbonene	1382	0.1
β-Pinene	976	15.3	β-Cubebene	1388	Tr.
Myrcene	994	2.6	β-Elemene	1393	1.0
α-Phellandrene	1007	1.6	β-Caryophyllene	1417	2.0
Δ^3-Carene	1014	Tr.	γ-Elemene	1433	0.7
α-Terpinene	1018	0.2	α-Humulene	1453	0.5
Limonene	1029	7.6	Alloaromadendrene	1458	0.1
cis-β-Ocimene	1042	1.7	Germacrene D	1478	3.3
trans-β-Ocimene	1050	0.7	Bicyclogermacrene	1493	1.3
γ-Terpinene	1059	1.4	α-Muurolene	1501	0.2
cis-Linalool oxide	1076	Tr.	γ-Cadinene	1513	1.9
Terpinolene	1088	0.2	δ-Cadinene	1525	1.3
Linalool	1100	1.4	Cadina-1,4-diene	1532	0.4
cis-Limonene oxide	1133	0.1	α-Calacorene	1543	0.2
cis-Verbenol	1141	0.8	Germacrene B	1553	3.3
Pinocarvone	1163	0.3	β-Calacorene	1562	Tr.
4-Terpineol	1175	2.3	Spathulenol	1576	4.4
Cryptone	1190	0.3	Viridiflorol	1587	0.7
α-Terpineol	1192	3.1	Guaiol	1594	2.2
Myrtenol	1201	0.4	β-Oplopenone	1611	0.6
cis-Carveol	1225	0.1	1,10-di-*epi*-Cubenol	1614	2.2
cis-3-Hexenyl			1-*epi*-Cubenol	1629	0.5
2-Methylbutanoate	1235	0.3	α-Cadinol	1654	16.5
Cuminal	1240	Tr.	Unknown[a]	1667	1.6
Carvone	1244	Tr.	Unknown[b]	1679	3.3
Pregeijerene isomer	1282	0.3	Unknown[c]	1692	0.8
p-Cymen-7-ol	1290	0.2	Germacrone	1697	2.1
Perilla alcohol	1296	0.2			

MS *m/z* (rel. int.) [a] $C_{15}H_{26}O$,: 222 $[M]^+$ (4), 204 (70), 189 (24), 161 (100), 147 (16), 133 (24), 121 (62), 105 (62), 95 (66), 81 (38), 71 (22), 55 (22); [b] $C_{15}H_{26}O$, : 222 $[M]^+$ (8), 204 (45), 189 (55), 161 (78), 147 (30), 135 (85), 119 (43), 107 (100), 93 (78), 79 (45), 67 (21), 55 (23); [c] $C_{15}H_{24}O$,: 220 $[M]^+$ (17), 202 (50), 187 (27), 159 (100), 145 (50), 131 (65), 119 (45), 105 (67), 91 (75), 79 (47), 67 (22), 55 (32).

RI: retention indices on HP-5 capillary column; %: calculated from TIC data; Tr.: trace amount (<0.1%).

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We report here the results of our studies on the composition of oil from the fresh leaves of *N. delavayi*.

The young and fresh leaves were collected in Kunming, Yunnan of China and identified by Dr. Hong Yu, Biological Department of Yunnan University, Kunming, Yunnan of China. A voucher specimen is kept in the Herbarium of the Department of Chemistry, Yunnan Normal University, Kunming, China.

The young and fresh leaves of *N. delavayi* yielded 0.4% of the oil. A total of 58 components was detected in the essential oil. The identified components and their percentages are given in Table 1, where the components are listed in the order of their elution on the HP-5 column. As can be seen, the major components of the oil are α-cadinol (16.5%), β-pinene (15.3%), limonene (7.6%), and α-pinene (7.4%). The terpenes were the dominant group in the oil (99.4%), whereas alkene ester (*cis*-3-hexenyl 2-methylbutanoate) accounted for only 0.3%.

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