

Chemical Compositon of *Vepris elliotii* Essential Oil

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ABSTRACT: Twenty-six compounds have been characterized by GC and GC/MS in *Vepris elliotii* oil obtained by steam distillation of fresh leaves collected from Madagascar. Among the constituents, α -pinene (4.3%), limonene (6.2%), terpinolene (49.7%) and (E)-anethol (23.5%) were the main components.

KEY WORD INDEX: *Vepris elliotii*, Rutaceae, essential oil composition, (E)-anethole, terpinolene.

PLANT NAME: *Vepris elliotii* (Radlkofer) Verdoon. Local name - Manitranjetry.

SOURCE: Plant material of *Vepris elliotii* were collected in the Biosphere Reserve of Mananara Nord (northeast part of Madagascar).

PLANT PART: Fresh leaves harvested during southern summer, were steam distilled (0.4-0.6%) in a small field still (50 L) which was used in the field.

PREVIOUS WORK: To the best of our knowledge the oil of *V. elliotii* has not been the subject of previous study. *V. elliotii* is an endemic small tree growing on the sea coast of Madagascar (1). The leaves of this plant are known in folk medicine as an aphrodisiac and for its disinfectant activities (2). The chemical composition of other *Vepris* species growing in Madagascar (3) and Mali (4) have been described.

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Table I. Chemical composition of *Vepris elliotii* oil from Madagascar

Component	DB-20		Percentage	DB-1	
	Peak no.	KI		Peak no.	KI
α -pinene	4	927	4.31	6	924
camphene	5	969	0.05	7	938
β -pinene		-	t		963
sabinene	6	1023	0.25	9	962
myrcene	7	1064	2.08	10	979
α -phellandrene	8	1067	1.29	11	997
α -terpinene	9	1081	0.27	12	1009
limonene	10	1102	6.20	14	1022
β -phellandrene	11	1110	0.97	16	1036
(Z)- β -ocimene	12	1134	0.04	15	1025
γ -terpinene	13	1145	0.24	17	1048
(E)- β -ocimene	14	1151	0.81	16	1036
p-cymene	15	1171	0.16	13	1012
terpinolene	16	1191	49.70	18	1083
(Z)-3-hexenol	17	1290	0.14		
linalool	25	1443	2.79	18	1083
β -caryophyllene	27	1491	0.13	41	1420
terpinen-4-ol	28	1496	0.28	27	1175
methyl chavicol	30	1568	0.94	26	1161
α -terpinyl acetate	32	1593	0.37		
neryl acetate	34	1623	0.04		
geranyl acetate	37	1656	0.39	39	1369
(E)-anethol	39	1734	23.50	33	1267
geraniol	40	1750	0.55		
anisaldehyde	47	1944	0.60		
pinol C	53	2079	0.03		

Capillary columns: DB-20 and DB-1: L: 50 m; Di: 0.2 mm; gas vector: helium; pressure: 19 psig; flow: 1 mL/min; injector and detector temperature: 250°C; oven: 60°C (5 min), 60°-220°C (at 2°C/min); FID detector, or Perkin-Elmer Q-mass
t = trace

PRESENT WORK: Leaf oil analyses were conducted using previously published GC and GC/MS procedures (5). The chemical identification of *V. elliotii* oil investigated was obtained after oil fractionation into hydrocarbons and oxygenated components, using column chromatography and hexane/diethyl ether as eluents. Twenty-six compounds representing 96.2% of the components have been characterized by GC/MS and relative retention times using two capillary columns: a WCOT DB 20 (50 m x 0.2 mm) and a DB 1 (50 m x 0.2 mm). The oxygenated fraction represented 31% of the whole oil. Results given in Table I show the occurrence of α -pinene (4.3%), limonene (6.2%), terpinolene (49.7%) and (E)-anethol (23.5%) as the main components. The composition of this oil is significantly different from *V. heterophylla* (4), which is composed mainly of sabinene (15.3%) and pregeijerene (14.0%). In the case of *V. madagascariensis*, only five compounds were identified: α -pinene, p-cymene, eugenol, methyl eugenol and methyl chavicol (3).

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