

**Date :** August 29, 2017

*SAMPLE IDENTIFICATION*

**Internal code :** 17H24-PTH1-1-DM

**Customer identification :** Ylang Extra - Madagascar - Y2010374R

**Type :** Essential oil

**Source :** *Cananga odorata*

**Customer :** Plant Therapy

*ANALYSIS*

**Method :** PC-PA-001-15E06, "Analysis of the composition of a liquid essential oil by GC-FID" (in French).

Identifications double-checked by GC-MS

**Analyst :** Sylvain Mercier, M. Sc., chimiste

**Analysis date :** 2017-08-29

Checked and approved by :



Alexis St-Gelais, M. Sc., chimiste 2013-174

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IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
3-Methyl-3-buten-1-yl acetate	3.28	918	0.43	0.46	1120	2.73*	Aliphatic ester
Prenyl acetate	3.43*	927	1.47	1.39	1201	3.78*	Aliphatic ester
$\alpha$ -Pinene	3.43*	927	[1.47]	0.09	945	1.22	Monoterpene
$\beta$ -Pinene	4.21	973	0.03	0.02	1040	1.90	Monoterpene
Benzaldehyde	4.23	974	0.04	0.65	1432	7.67*	Simple phenolic
Myrcene	4.48	989	0.07	[0.46]	1120	2.73*	Monoterpene
$\alpha$ -Phellandrene	4.78	1006	0.02	0.02	1115	2.67	Monoterpene
<i>cis</i> -Hex-3-en-1-yl acetate	4.87	1011	0.12	0.12	1265	4.71	Aliphatic ester
$\alpha$ -Terpinene	4.95	1015	tr	[0.46]	1120	2.73*	Monoterpene
Hexyl acetate	5.00	1018	0.18	0.19	1224	4.12*	Aliphatic ester
para-Methylanisole	5.20*	1029	7.78	7.63	1368	6.33	Simple phenolic
Limonene	5.20*	1029	[7.78]	0.02	1141	3.00	Monoterpene
1,8-Cineole	5.24	1031	0.16	0.16	1144	3.05	Monoterp. ether
<i>cis</i> - $\beta$ -Ocimene	5.36	1038	0.01	0.02	1192	3.64	Monoterpene
<i>trans</i> - $\beta$ -Ocimene	5.54	1047	0.03	[1.39]	1201	3.78*	Monoterpene
Benzyl alcohol	5.72	1057	0.06	1.93	1780	23.85*	Simple phenolic
<i>cis</i> -Linalool oxide (fur.)	6.01	1073	0.04	0.04	1378	6.49	Monoterp. alcohol
Terpinolene	6.20	1083	0.01	[0.19]	1224	4.12*	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	6.33	1090	0.07	0.13	1407	7.07*	Monoterp. alcohol
Methyl benzoate	6.63	1104	3.92	4.08	1531	10.52	Phenolic ester
Linalool	6.81	1110	20.13	19.78	1500	9.38	Monoterp. alcohol
para-Cresol	6.85	1112	0.04	0.05	1996	36.96	Simple phenolic
Benzyl acetate	8.51	1172	8.33	8.75	1640	15.28*	Phenolic ester
Ethyl benzoate	8.62	1176	0.05	0.03	1577	12.24	Phenolic ester
para-Cymen-8-ol	9.30	1199	0.02	[1.93]	1780	23.85*	Monoterp. alcohol
$\alpha$ -Terpineol	9.49	1204	0.11	8.77	1623	14.34*	Monoterp. alcohol
Nerol	10.58	1228	0.06	0.04	1733	20.69	Monoterp. alcohol
Geraniol	11.93	1257	2.04	[1.93]	1780	23.85*	Monoterp. alcohol
Prenyl hexanoate	13.54	1293	0.36	8.08	1523	10.23*	Aliphatic ester
1-Nitro-2-phenylethane	14.65	1311	0.03				Simple phenolic
$\delta$ -Elemene	15.32	1321	0.04	0.03	1420	7.35	Sesquiterpene
$\alpha$ -Cubebene	15.98	1331	0.10	[0.13]	1407	7.07*	Sesquiterpene
$\alpha$ -Ylangene	17.25*	1350	0.20	0.07	1425	7.47	Sesquiterpene
Benzyl butyrate	17.25*	1350	[0.20]	0.06	1843	28.37*	Phenolic ester
$\alpha$ -Copaene	17.70*	1357	1.11	[0.65]	1432	7.67*	Sesquiterpene
Eugenol	17.70*	1357	[1.11]	0.59	2060	39.07	Phenylpropanoid
Neryl acetate	17.88	1360	0.11	0.17	1659	16.30	Monoterp. ester
$\beta$ -Cubebene	18.69	1372	0.07	0.07	1478	8.78	Sesquiterpene
$\beta$ -Elemene	18.94	1376	0.22	[8.08]	1523	10.23*	Sesquiterpene
Geranyl acetate	19.52	1385	5.85	10.45	1697	18.25*	Monoterp. ester

β-Caryophyllene	20.76	1402	7.82	[8.08]	1523	10.23*	Sesquiterpene
β-Copaene	21.55	1412	0.25	[8.08]	1523	10.23*	Sesquiterpene
<i>cis</i> -Muurolo-3,5-diene	23.01*	1429	0.20	0.12	1553	11.33	Sesquiterpene
<i>cis</i> -β-Farnesene	23.01*	1429	[0.20]	2.36	1584	12.50*	Sesquiterpene
α-Humulene	23.46	1434	2.00	[2.36]	1584	12.50*	Sesquiterpene
( <i>E</i> )-Cinnamyl acetate	25.17	1455	2.59	2.45	2040	38.45	Phenylpropanoid ester
Germacrene D	25.83*	1463	9.76	[8.77]	1623	14.34*	Sesquiterpene
α-Amorphene	25.83*	1463	[9.76]	1.27	1612	13.75	Sesquiterpene
β-Selinene	26.47	1470	0.16	[8.77]	1623	14.34*	Sesquiterpene
Bicyclogermacrene	26.92	1476	0.47	[8.75]	1640	15.28*	Sesquiterpene
α-Muurolole	27.70	1485	0.57	0.61	1645	15.52	Sesquiterpene
δ-Guaiene	27.93	1488	1.25	1.52	1629	14.69	Sesquiterpene
( <i>Z,E</i> )-α-Farnesene	28.30	1492	0.10	2.11	1676	17.17*	Sesquiterpene
γ-Cadinene	28.74	1497	0.58	0.65	1668	16.78	Sesquiterpene
( <i>E,E</i> )-α-Farnesene	29.28	1505	4.63	[10.45]	1697	18.25*	Sesquiterpene
δ-Cadinene	29.49	1508	1.99	[2.11]	1676	17.17*	Sesquiterpene
<i>trans</i> -Cadin-1,4-diene	30.54	1522	0.12	[10.45]	1697	18.25*	Sesquiterpene
α-Cadinene	30.89	1527	0.17	0.14	1704	18.71	Sesquiterpene
Eugenyl acetate	31.15	1531	0.03	0.03	2157	41.83	Phenylpropanoid ester
α-Elemol	32.64	1552	0.05	0.07	1989	36.64	Sesquiterp. alcohol
Caryophyllene oxide	33.88*	1569	0.40	[0.06]	1843	28.37*	Sesquiterp. ether
( <i>E</i> )-Nerolidol	33.88*	1569	[0.40]	0.34	1982	36.35*	Sesquiterp. alcohol
Viridiflorol	34.85	1583	0.03	[0.34]	1982	36.35*	Sesquiterp. alcohol
Junenol	35.99	1600	0.19	0.14	1925	33.71	Sesquiterp. alcohol
1,10-diepi-Cubenol	36.65	1616	0.12	0.36	1953	35.04*	Sesquiterp. alcohol
1-epi-Cubenol	37.01	1625	0.09	[0.36]	1953	35.04*	Sesquiterp. alcohol
Cubenol	37.26	1631	0.08	[0.36]	1953	35.04*	Sesquiterp. alcohol
τ-Cadinol	37.55	1638	0.29	0.32	2068	39.31	Sesquiterp. alcohol
τ-Muurolole	37.67	1641	0.47	0.50	2082	39.78	Sesquiterp. alcohol
α-Muurolole	37.79	1644	0.20	0.22	2096	40.22	Sesquiterp. alcohol
Himachalol	37.94	1648	0.14	0.17	2086	39.88	Sesquiterp. alcohol
α-Cadinol	38.12	1652	0.91	0.89	2122	40.92	Sesquiterp. alcohol
( <i>2Z,6Z</i> )-Farnesol	38.60	1664	0.08	0.10	2196	42.87	Sesquiterp. alcohol
( <i>2E,6Z</i> )-Farnesol	39.29	1681	0.03	0.04	2258	44.32	Sesquiterp. alcohol
( <i>2E,6E</i> )-Farnesol	40.71	1721	0.87	0.99	2281	44.87	Sesquiterp. alcohol
Benzyl benzoate	42.40	1774	5.84	6.09	2480	49.06*	Phenolic ester
( <i>2E,6E</i> )-Farnesyl acetate	44.19	1835	0.86	0.88	2190	42.70	Sesquiterp. ester
Benzyl salicylate	45.23	1873	1.98	2.00	2623	51.81	Phenolic ester
Geranyl benzoate	47.54	1963	0.08	[6.09]	2480	49.06*	Phenolic ester
<b>Total identified</b>			<b>98.71%</b>	<b>98.26%</b>			

\*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

Note: no correction factor was applied

*OTHER DATA*

**Physical aspect :** Light yellow liquid

**Refractive index :**  $1.4930 \pm 0.0003$  (20 °C)

*CONCLUSION*

No adulterant, contaminant or diluent were detected using this method.

17H24-PTH1-1-DM\_BP5



