



**PLANT THERAPY**  
100% PURE ESSENTIAL OILS

## GC/MS BATCH NUMBER: Y10105

**ESSENTIAL OIL:** YLANG YLANG COMPLETE  
**BOTANICAL NAME:** CANANGA ODORATA  
**ORIGIN:** MADAGASCAR

KEY CONSTITUENTS PRESENT IN THIS BATCH OF YLANG YLANG COMPLETE OIL	%
GERMACRENE D + $\alpha$ -AMORPHENE	20.9
$\beta$ -CARYOPHYLLENE	11.8
BENZYL BENZOATE	6.7
BENZYL ACETATE	4.7
LINALOOL	4.6
GERANYL ACETATE	4.2
$\alpha$ -HUMULENE	3.4
BENZYL SALICYLATE	3.1
para-METHYLANISOLE	2.7
$\delta$ -CADINENE	2.5
(2E,6E)-FARNESYL ACETATE	2.2
METHYL BENZOATE	1.8
(E)-CINNAMYL ACETATE	1.8
(2E,6E)-FARNESOL	1.5
trans- $\beta$ -FARNESENE	1.5
$\delta$ -GUAIENE	1.4
$\alpha$ -CADINOL	1.3
$\alpha$ -COPAENE	1.1

Comments from Robert Tisserand:  
Intense heady, sweet-floral odor profile. Constituents are in expected amounts.

**Date :** March 30, 2017

*SAMPLE IDENTIFICATION*

**Internal code :** 17C20-PTH5-1-DM

**Customer identification :** Ylang Complete - Madagascar - Y1010567R

**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).

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

**Analysis date :** 2017-03-29

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.	
2-Methyl-3-buten-2-ol	0.54	657	0.02	0.01	971	1.28	Aliphatic alcohol
Isoamyl acetate	2.71	883	0.01	0.01	1061	2.03	Aliphatic ester
3-Methyl-3-buten-1-yl acetate	2.79	889	0.17	0.18	1139	2.86	Aliphatic ester
Prenyl acetate	3.41*	928	0.51	0.35	1197	3.64*	Aliphatic ester
$\alpha$ -Pinene	3.41*	928	[0.51]	0.14	943	1.16	Monoterpene
Camphene	3.69	945	tr	0.01	1007	1.54	Monoterpene
$\beta$ -Pinene	4.18*	974	0.07	0.05	1038	1.81	Monoterpene
Benzaldehyde	4.18*	974	[0.07]	0.01	1450	7.88	Simple phenolic
Myrcene	4.45	990	0.07	0.06	1114	2.55	Monoterpene
6-Methyl-5-hepten-2-one	4.54	996	tr	tr	1276	4.79	Aliphatic ketone
<i>cis</i> -Hex-3-en-1-yl acetate	4.86	1013	0.05	0.04	1261	4.56	Aliphatic ester
Hexyl acetate	4.98	1020	0.07	0.08	1221	3.97*	Aliphatic ester
para-Methylanisole	5.11	1027	2.73	2.61	1364	6.14	Simple phenolic
Limonene	5.21	1033	0.09	0.09	1145	2.94	Monoterpene
<i>cis</i> - $\beta$ -Ocimene	5.32	1038	tr	0.01	1185	3.47	Monoterpene
<i>trans</i> - $\beta$ -Ocimene	5.50	1048	0.01	[0.35]	1197	3.64*	Monoterpene
Benzyl alcohol	5.54	1050	0.07	0.05	1780	22.88	Simple phenolic
<i>cis</i> -Linalool oxide (fur.)	5.96	1074	0.01	0.02	1381	6.43	Monoterp. alcohol
Terpinolene	6.15	1084	0.01	[0.08]	1221	3.97*	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	6.28	1091	0.01	0.04	1414	7.00	Monoterp. alcohol
Methyl benzoate	6.52	1103	1.80	1.78	1531	10.12*	Phenolic ester
Linalool	6.63	1107	4.55	4.45	1496	8.98	Monoterp. alcohol
Benzyl acetate	8.35	1170	4.70	5.04	1640	14.63	Phenolic ester
Ethyl benzoate	8.48	1175	0.03	3.56	1580	11.96*	Phenolic ester
$\alpha$ -Terpineol	9.27	1202	0.10	19.57	1625	13.84*	Monoterp. alcohol
Geraniol	11.62	1254	0.52	0.57	1783	23.03	Monoterp. alcohol
Phenylethyl acetate	11.76	1257	0.06	0.05	1733	19.77	Phenolic ester
Prenyl hexanoate	13.24	1290	0.13	[1.78]	1531	10.12*	Aliphatic ester
1-Nitro-2-phenylethane	14.27	1309	0.03				Simple phenolic
$\delta$ -Elemene	15.18	1323	0.08	0.09	1420	7.17	Sesquiterpene
$\alpha$ -Cubebene	15.83	1333	0.14	0.17	1405	6.80	Sesquiterpene
Eugenol	17.17	1353	0.37	0.37	2062	38.57	Phenylpropanoid
$\alpha$ -Copaene	17.54	1359	1.06	1.05	1428	7.35	Sesquiterpene
Neryl acetate	17.68	1361	0.02	0.02	1660	15.70	Monoterp. ester
$\beta$ -Cubebene	18.49	1373	0.21	0.16	1471	8.38	Sesquiterpene
$\beta$ -Elemene	18.72	1376	0.36	12.19	1522	9.79*	Sesquiterpene
Geranyl acetate	19.29	1385	4.18	16.39	1696	17.57*	Monoterp. ester
$\beta$ -Caryophyllene	20.56	1404	11.84	[12.19]	1522	9.79*	Sesquiterpene
$\beta$ -Copaene	21.30	1412	0.29	[12.19]	1522	9.79*	Sesquiterpene
<i>trans</i> - $\alpha$ -Bergamotene	21.74	1418	0.06	0.08	1527	9.98	Sesquiterpene

<i>cis</i> -β-Farnesene	22.77*	1430	0.27	0.15	1584	12.10	Sesquiterpene
<i>cis</i> -Muurolo-3,5-diene	22.77*	1430	[0.27]	0.11	1558	11.11	Sesquiterpene
α-Humulene	23.20	1435	3.40	[3.56]	1580	11.96*	Sesquiterpene
allo-Aromadendrene	23.77	1442	0.14	0.16	1549	10.79	Sesquiterpene
( <i>E</i> )-Cinnamyl acetate	24.71*	1453	2.44	1.75	2043	37.94	Phenylpropanoid ester
( <i>E</i> )-Isoeugenol	24.71*	1453	[2.44]	0.69	2236	43.32	Phenylpropanoid
<i>trans</i> -β-Farnesene	24.71*	1453	[2.44]	1.48	1612	13.15*	Sesquiterpene
Germacrene D	25.65*	1465	20.85	[19.57]	1625	13.84*	Sesquiterpene
α-Amorphene	25.65*	1465	[20.85]	[1.48]	1612	13.15*	Sesquiterpene
β-Selinene	26.16	1471	0.25	[19.57]	1625	13.84*	Sesquiterpene
Bicyclgermacrene	26.61*	1476	0.83	0.67	1643	14.79*	Sesquiterpene
α-Selinene	26.61*	1476	[0.83]	0.31	1636	14.38	Sesquiterpene
α-Muurolole	27.35	1485	0.68	[0.67]	1643	14.79*	Sesquiterpene
δ-Guaiene	27.65	1489	1.39	1.20	1628	14.00	Sesquiterpene
( <i>E,E</i> )-α-Farnesene	27.81	1491	0.33	[16.39]	1696	17.57*	Sesquiterpene
γ-Cadinene	28.36	1497	0.67	0.77	1666	15.97	Sesquiterpene
δ-Cadinene	29.12*	1507	14.58	2.46	1673	16.35	Sesquiterpene
<i>trans</i> -Calamenene	29.12*	1507	[14.58]	0.12	1730	19.58	Sesquiterpene
<i>trans</i> -Cadin-1,4-diene	30.16	1522	0.15	[16.39]	1696	17.57*	Sesquiterpene
α-Cadinene	30.49	1527	0.22	0.17	1703	17.89	Sesquiterpene
<i>trans</i> -α-Bisabolene	31.32	1538	0.04	0.03	1720	18.93	Sesquiterpene
α-Elemol	32.11	1549	0.04	0.05	1995	36.13	Sesquiterp. alcohol
Caryophyllene oxide epimer	33.50*	1568	0.18	0.05	1840	27.01	Sesquiterp. ether
Caryophyllene oxide	33.50*	1568	[0.18]	0.06	1846	27.46	Sesquiterp. ether
( <i>E</i> )-Nerolidol	33.50*	1568	[0.18]	0.07	1987	35.77	Sesquiterp. alcohol
Viridiflorol	34.44	1582	0.07	0.07	1971	35.01	Sesquiterp. alcohol
Guaiol	35.18	1592	0.04	0.03	2012	36.87	Sesquiterp. alcohol
Junenol	35.68	1599	0.31	0.21	1924	32.95	Sesquiterp. alcohol
1,10-diepi-Cubenol	36.35	1614	0.20				Sesquiterp. alcohol
1-epi-Cubenol	36.68	1622	0.10	0.07	1979	35.38	Sesquiterp. alcohol
Cubenol	36.97	1630	0.12	0.10	1946	33.93	Sesquiterp. alcohol
τ-Cadinol	37.20	1635	0.39	0.40	2071	38.84	Sesquiterp. alcohol
τ-Muurolole	37.32	1638	0.67	0.64	2087	39.33	Sesquiterp. alcohol
α-Muurolole	37.45	1641	0.23	0.29	2101	39.78	Sesquiterp. alcohol
Himachalol	37.62	1645	0.21	0.22	2092	39.48	Sesquiterp. alcohol
α-Cadinol	37.78	1649	1.26	1.25	2126	40.52	Sesquiterp. alcohol
(2 <i>Z</i> ,6 <i>Z</i> )-Farnesol	38.27	1661	0.15	0.13	2201	42.45	Sesquiterp. alcohol
(2 <i>E</i> ,6 <i>Z</i> )-Farnesol	38.97	1678	0.07	0.06	2258	43.85	Sesquiterp. alcohol
(2 <i>E</i> ,6 <i>E</i> )-Farnesol	40.49	1720	1.51	1.71	2286	44.49	Sesquiterp. alcohol
Benzyl benzoate	42.11	1771	6.70	7.08	2484	48.68	Phenolic ester
(2 <i>E</i> ,6 <i>E</i> )-Farnesyl acetate	44.07	1838	2.18	2.31	2194	42.28	Sesquiterp. ester

Benzyl salicylate	44.96	1871	3.11	3.23	2627	51.45	Phenolic ester
<b>Total identified</b>			<b>98.21%</b>	<b>97.40%</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 :** 1.5048 ± 0.0003 (20 °C)

#### CONCLUSION

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



