

Date : September 14, 2017

SAMPLE IDENTIFICATION

Internal code : 17I07-ORA9-1-DM

Customer identification : Ylang

Type : Essential oil

Source : *Cananga Odorata Flower*

Customer : Organic Aromas

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 : Benoit Roger Ph. D.

Analysis date : 2017-09-13

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	0.55	658	0.01				Aliphatic alcohol
3-Methyl-3-buten-1-yl acetate	2.82	889	0.01	0.09	1142	3.02*	Aliphatic ester
α -Pinene	3.42	926	0.11	0.11	941	1.20	Monoterpene
Prenyl acetate	3.44	928	0.03	0.04	1199	3.74*	Aliphatic ester
β -Pinene	4.20	973	0.03	0.02	1036	1.87	Monoterpene
Benzaldehyde	4.23	975	0.01	1.28	1430	7.61*	Simple phenolic
Myrcene	4.48	989	0.06	0.05	1113	2.65	Monoterpene
6-Methyl-5-hepten-2-one	4.56	994	0.01	0.01	1277	4.90	Aliphatic ketone
cis-Hex-3-en-1-yl acetate	4.88	1011	0.02	0.02	1262	4.68	Aliphatic ester
Hexyl acetate	5.01	1019	0.01	0.02	1223	4.10*	Aliphatic ester
para-Methylanisole	5.17	1027	1.11	1.06	1364	6.27	Simple phenolic
1,8-Cineole	5.24	1031	0.06	[0.09]	1142	3.02*	Monoterp. ether
cis- β -Ocimene	5.35	1037	0.01	0.01	1184	3.60*	Monoterpene
trans- β -Ocimene	5.53	1047	0.01	[0.04]	1199	3.74*	Monoterpene
Benzyl alcohol	5.69*	1056	0.04	1.13	1777	23.65*	Simple phenolic
γ -Terpinene	5.69*	1056	[0.04]	[0.01]	1184	3.60*	Monoterpene
Terpinolene	6.20	1083	0.01	[0.02]	1223	4.10*	Monoterpene
Methyl benzoate	6.61	1103	0.62	0.78	1528	10.40*	Phenolic ester
Linalool	6.73	1107	3.33	3.24	1495	9.19	Monoterp. alcohol
Benzyl acetate	8.43	1169	0.68	1.33	1636	15.05*	Phenolic ester
Ethyl benzoate	8.60	1175	0.03	4.98	1582	12.44*	Phenolic ester
Methyl salicylate	9.30	1200	0.02	0.94	1667	16.70*	Phenolic ester
α -Terpineol	9.49	1204	0.16	19.01	1623	14.36*	Monoterp. alcohol
Phenylethyl acetate	11.90*	1257	1.01	0.15	1725	20.16	Phenolic ester
Geraniol	11.90*	1257	[1.01]	[1.13]	1777	23.65*	Monoterp. alcohol
Geranial	12.70	1274	0.05	1.19	1643	15.43*	Monoterp. aldehyde
Prenyl hexanoate	13.55	1293	0.02	[0.78]	1528	10.40*	Aliphatic ester
1-Nitro-2-phenylethane	14.68	1312	0.05				Simple phenolic
δ -Elemene	15.33	1321	0.10	0.07	1416	7.30	Sesquiterpene
α -Cubebene	16.00	1331	0.19	0.23	1405	7.03	Sesquiterpene
α -Ylangene	17.25	1350	0.14	0.14	1422	7.42	Sesquiterpene
α -Copaene	17.74*	1358	1.75	[1.28]	1430	7.61*	Sesquiterpene
Neryl acetate	17.74*	1358	[1.75]	0.16	1656	16.13*	Monoterp. ester
Eugenol	17.74*	1358	[1.75]	0.54	2055	38.94	Phenylpropanoid
β -Cubebene	18.71	1372	0.18	0.18	1475	8.70	Sesquiterpene
β -Elemene	18.97	1376	0.51	[0.78]	1528	10.40*	Sesquiterpene
Geranyl acetate	19.56	1385	5.54	12.65	1695	18.17*	Monoterp. ester
β -Caryophyllene	20.88	1404	17.44	17.87	1522	10.19*	Sesquiterpene
β -Copaene	21.59	1412	0.41	0.29	1503	9.49	Sesquiterpene
trans- α -Bergamotene	22.05	1418	0.07	[17.87]	1522	10.19*	Sesquiterpene

<i>cis</i> -Muurolo-3,5-diene	23.04*	1429	0.30	0.17	1550	11.24	Sesquiterpene
<i>cis</i> - β -Farnesene	23.04*	1429	[0.30]	[4.98]	1582	12.44*	Sesquiterpene
α -Humulene	23.55	1435	4.49	[4.98]	1582	12.44*	Sesquiterpene
allo-Aromadendrene	23.76	1438	0.05	0.17	1559	11.58	Sesquiterpene
<i>trans</i> - β -Farnesene	24.61	1448	0.06	2.06	1611	13.71*	Sesquiterpene
(<i>E</i>)-Cinnamyl acetate	25.16*	1455	0.70	0.47	2035	38.30	Phenylpropanoid ester
(<i>E</i>)-Isoeugenol	25.16*	1455	[0.70]	0.29	2227	43.61	Phenylpropanoid
Germacrene D	25.98*	1464	21.08	[19.01]	1623	14.36*	Sesquiterpene
γ -Muurolole	25.98*	1464	[21.08]	[19.01]	1623	14.36*	Sesquiterpene
β -Selinene	25.98*	1464	[21.08]	3.06	1628	14.62*	Sesquiterpene
Viridiflorene	26.52	1471	0.35	[2.06]	1611	13.71*	Sesquiterpene
Bicyclgermacrene	26.96	1476	0.95	[1.33]	1636	15.05*	Sesquiterpene
α -Selinene	27.05	1477	0.16	[3.06]	1628	14.62*	Sesquiterpene
Valencene	27.50	1482	0.07	[0.16]	1656	16.13*	Sesquiterpene
α -Muurolole	27.76	1486	1.13	[1.19]	1643	15.43*	Sesquiterpene
δ -Guaiene	28.00	1488	2.53	[3.06]	1628	14.62*	Sesquiterpene
(<i>Z,E</i>)- α -Farnesene	28.33	1492	0.15	[0.94]	1667	16.70*	Sesquiterpene
γ -Cadinene	28.78	1498	1.07	[0.94]	1667	16.70*	Sesquiterpene
(<i>E,E</i>)- α -Farnesene	29.39	1506	7.51	[12.65]	1695	18.17*	Sesquiterpene
δ -Cadinene	29.58	1509	3.44	3.96	1674	17.10	Sesquiterpene
<i>trans</i> -Calamenene	29.69	1511	0.12	0.24	1731	20.56	Sesquiterpene
<i>trans</i> -Cadina-1,4-diene	29.85	1513	0.23	[12.65]	1695	18.17*	Sesquiterpene
α -Cadinene	30.57	1523	0.17	0.28	1702	18.61	Sesquiterpene
Eugenyl acetate	30.92	1528	0.34	0.05	2163	42.00	Phenylpropanoid ester
α -Elemol	32.65	1552	0.07	0.10	1993	36.85*	Sesquiterp. alcohol
Palustrol	33.04	1558	0.08	0.07	1808	25.72	Sesquiterp. alcohol
Caryophyllene oxide	33.87	1569	0.39	0.30	1841	28.20	Sesquiterp. ether
(<i>E</i>)-Nerolidol	34.13	1573	0.05	0.10	1986	36.50	Sesquiterp. alcohol
Globulol	34.35	1576	0.15	0.18	1972	35.86*	Sesquiterp. alcohol
Viridiflorol	34.73	1581	0.06	[0.18]	1972	35.86*	Sesquiterp. alcohol
Guaiol	35.37	1590	0.05	[0.10]	1993	36.85*	Sesquiterp. alcohol
Junenol	36.00	1600	0.46	0.32	1922	33.58	Sesquiterp. alcohol
1,10-diepi-Cubenol	36.65	1616	0.24	0.63	1950	34.90	Sesquiterp. alcohol
1-epi-Cubenol	37.01	1625	0.18	0.10	1962	35.45	Sesquiterp. alcohol
Cubenol	37.27	1631	0.17	0.16	1942	34.54	Sesquiterp. alcohol
τ -Cadinol	37.56	1638	0.57	0.64	2065	39.23	Sesquiterp. alcohol
τ -Muurolol	37.69	1642	0.94	1.23	2080	39.70*	Sesquiterp. alcohol
α -Muurolol	37.80	1644	0.34	0.46	2093	40.12	Sesquiterp. alcohol
Himachalol	37.96	1648	0.25	[1.23]	2080	39.70*	Sesquiterp. alcohol
α -Cadinol	38.15	1653	1.81	1.86	2119	40.85	Sesquiterp. alcohol
(2 <i>Z</i> ,6 <i>Z</i>)-Farnesol	38.62	1664	0.19	2.03	2188	42.64*	Sesquiterp. alcohol
(2 <i>E</i> ,6 <i>Z</i>)-Farnesol	39.30	1681	0.09	0.16	2252	44.17	Sesquiterp. alcohol
(2 <i>E</i> ,6 <i>E</i>)-Farnesol	40.75	1722	2.06	2.35	2278	44.80	Sesquiterp. alcohol
(<i>E,E</i>)-Farnesal	41.36	1741	0.05				Sesquiterp. aldehyde

Benzyl benzoate	42.43	1775	7.29	7.67	2475	48.97	Phenolic ester
(2E,6E)-Farnesyl acetate	44.22	1837	1.78	[2.03]	2188	42.64*	Sesquiterp. ester
Benzyl salicylate	45.25	1874	1.88	1.90	2617	51.72	Phenolic ester
Geranyl benzoate	47.56	1964	0.17				Phenolic ester
Total identified	98.06%			98.60%			

*: 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

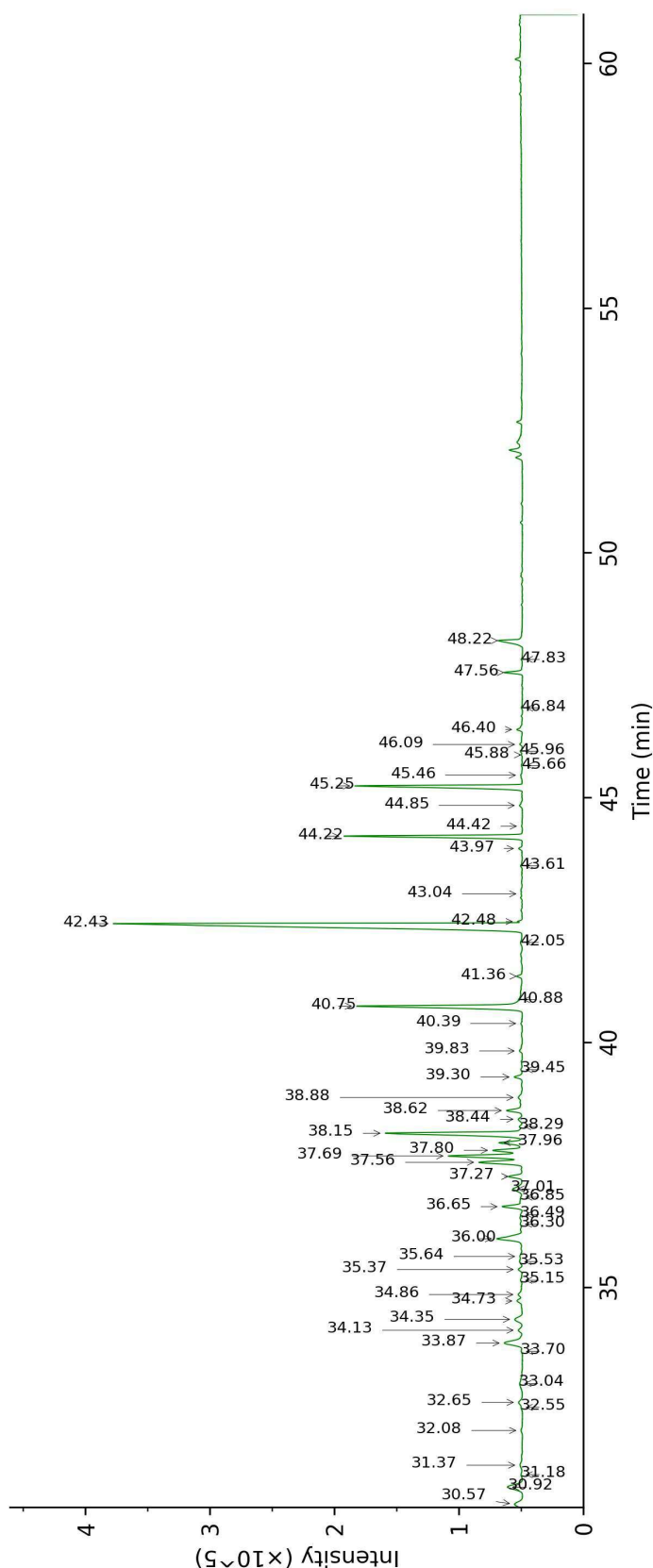
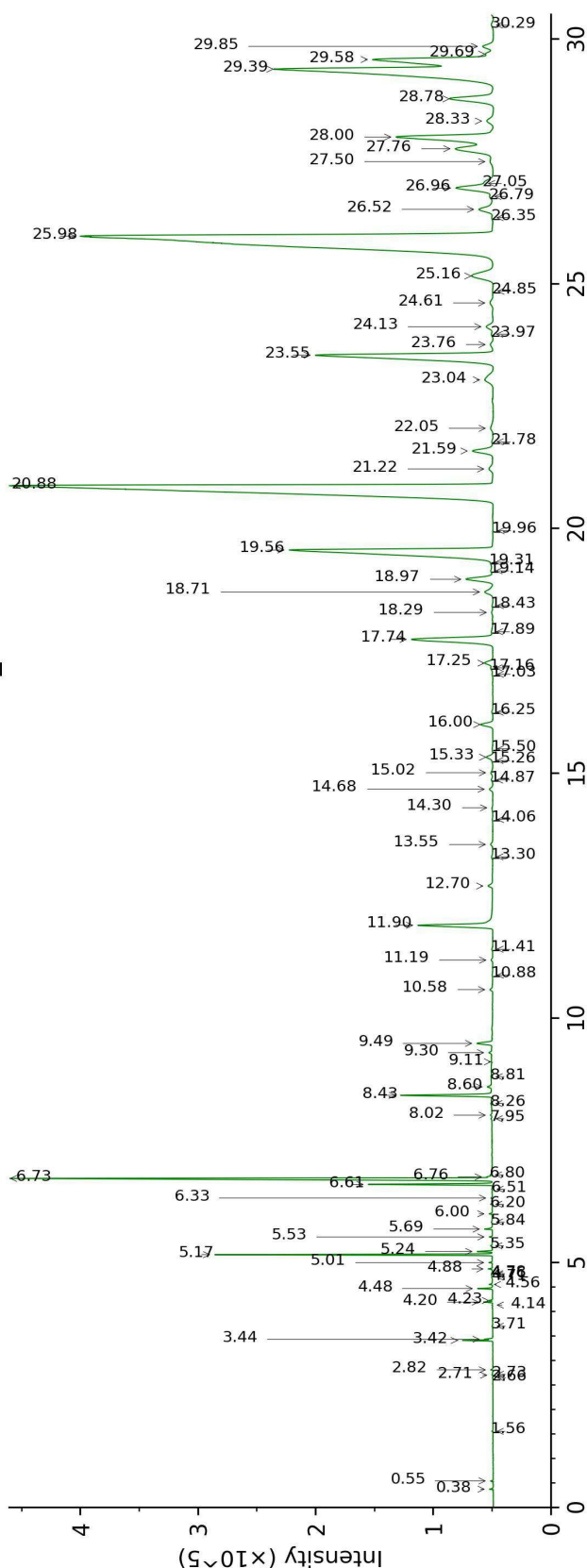
Physical aspect : Yellow liquid

Refractive index : 1.5043 ± 0.0003 (20 °C)

CONCLUSION

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

17107-ORA9-1-DM_BP5



17107-ORA9-1-DM_WAX

