

## SERVICE DE SPECTROMETRIE DE MASSE DE L'ISIC (SSMI)

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### *ANALYSES GC-MS*

Le 01 Novembre 2011

**Objet:** Analyse d'une huile essentielle par GC-MS  
**Nom:** **Ylang-Ylang**  
**Lot:** **YY115198HEYCB**  
**Destinataire :** Entreprise Gedane (Lausanne, Suisse)  
**Composés majoritaires:** **Germacrene D ;  $\beta$ -Caryophyllene ;  $\alpha$ -Farnesene**

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### *CONDITIONS EXPERIMENTALES*

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**Type d'instrument :** GC CP-3800 couplé au 1200L Triple quadrupole MS/MS (Varian)  
**Mode d'ionisation :** Impact électronique (IE), 70 eV (mode positif)  
**Gamme de masse :**  $m/z$  50-250 en 0.5 sec  
**Colonne :** FactorFour VF-5ms (5% phenyl-methyl 95% dimethyl polysiloxane, 0.25mm x 30 m)  
**Débit :** 1 mL/min  
**Gradient :** 50°C pendant 3 min; Montée à 150°C en 20 min; Montée à 250°C en 7 min  
**Calibrant :** FC43  
**Echantillons :** Huile essentielle diluée 1:500 dans l'éther. Injection de 1  $\mu$ L.

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Figure 1 – Chromatogramme TIC-GC/MS d'Ylang-Ylang (YY115198HEYCB) analysé sur colonne capillaire FactorFour VF-5ms (5% phenyl-methyl 95% dimethylpolysiloxane, 0.25mm x 30 m). Les numéros des pics sont reportés dans la Table 1.

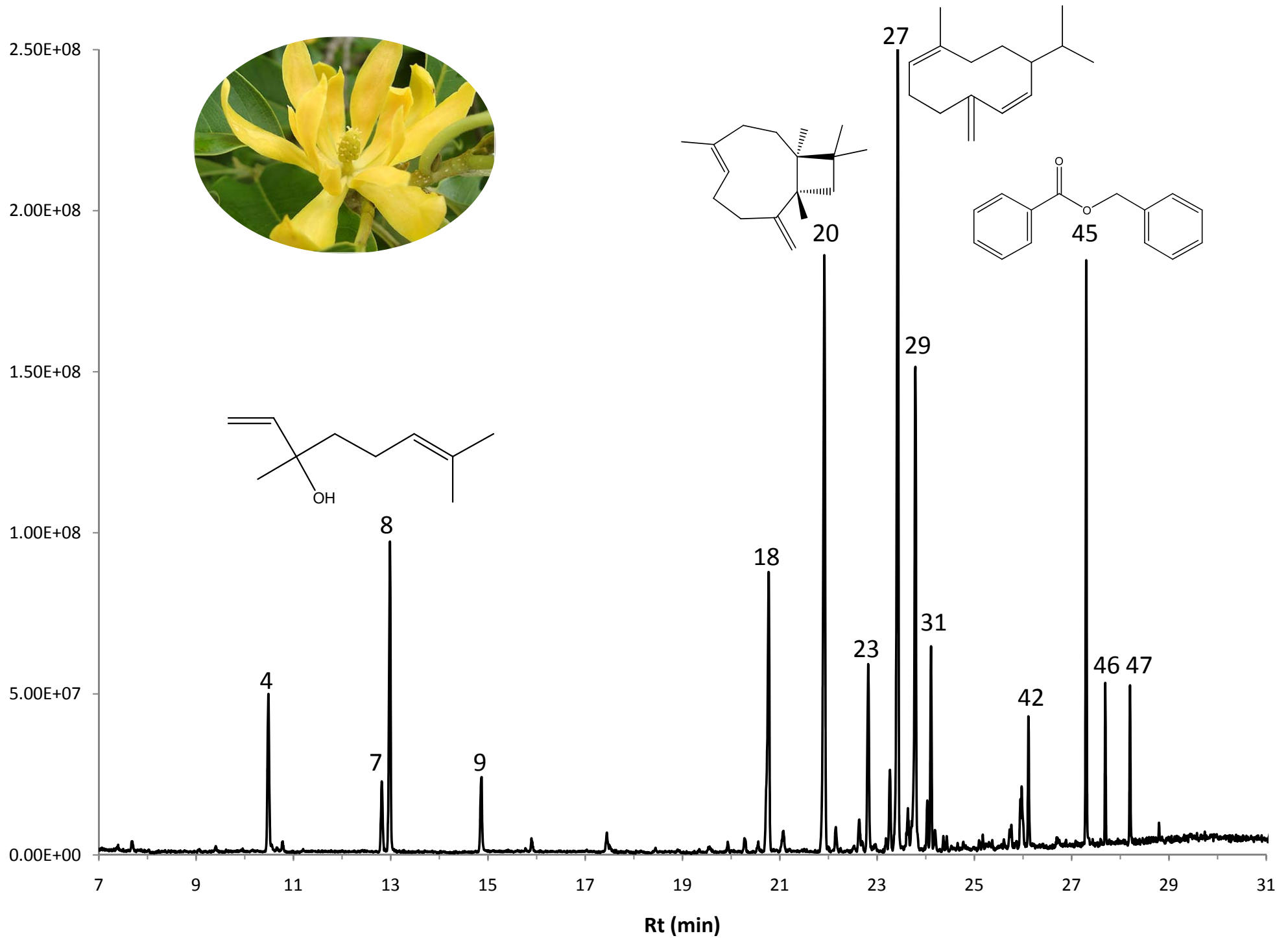


Table 1 – Composition de l'huile essentielle d'Ylang-Ylang (YY115198HEYCB)

N°	Retention Time (min.)	Area	% of Total	Identification (NIST 08 / Massfinder)	Prob (%)
1	7.68	8.45E+06	0.25	$\alpha$ -Pinene	93
2	9.08	5.19E+06	0.15	$\beta$ -Pinene	15
3	9.41	6.16E+06	0.18	Myrcene	25
<b>4</b>	<b>10.49</b>	<b>1.17E+08</b>	<b>3.46</b>	<b>p-Methylanisol</b>	<b>83</b>
5	10.67	5.13E+06	0.15	D-Limonene	71
6	10.78	6.62E+06	0.20	Eucalyptol	72
<b>7</b>	<b>12.82</b>	<b>5.50E+07</b>	<b>1.62</b>	<b>Methyl Benzoate</b>	<b>77</b>
<b>8</b>	<b>12.99</b>	<b>2.29E+08</b>	<b>6.77</b>	<b>Linalool</b>	<b>77</b>
<b>9</b>	<b>14.87</b>	<b>5.99E+07</b>	<b>1.77</b>	<b>Benzyl Acetate</b>	<b>87</b>
10	15.79	4.41E+06	0.13	Methyl Salicylate	76
11	15.91	1.76E+07	0.52	Estragole	30
12	17.44	1.99E+07	0.59	Geraniol	64
13	17.88	2.41E+06	0.07	Geranial	35
14	18.45	3.68E+06	0.11	Isoestragole	44
15	19.93	5.76E+06	0.17	$\alpha$ -cubebene	73
16	20.28	1.21E+07	0.36	Eugenol	63
17	20.56	7.67E+06	0.23	$\alpha$ -ylangene	73
<b>18</b>	<b>20.77</b>	<b>2.50E+08</b>	<b>7.37</b>	<b>Neryl Acetate</b>	<b>80</b>
19	21.07	2.05E+07	0.60	Cis- $\beta$ -Elemene	16
<b>20</b>	<b>21.92</b>	<b>5.01E+08</b>	<b>14.78</b>	<b><math>\beta</math>-Caryophyllene</b>	<b>50</b>
21	22.15	1.81E+07	0.54	$\beta$ -Copaene	83
22	22.63	2.66E+07	0.78	Cinnamyl Acetate	42
<b>23</b>	<b>22.82</b>	<b>1.48E+08</b>	<b>4.38</b>	<b><math>\alpha</math>-Humulene</b>	<b>81</b>
24	22.95	6.50E+06	0.19	Cis-Muurolo-4(15), 5-diene	61
25	23.18	9.28E+06	0.27	Cadina-1(6),4-diene trans	62
<b>26</b>	<b>23.26</b>	<b>5.83E+07</b>	<b>1.72</b>	<b><math>\alpha</math>-Amorphene / <math>\gamma</math>-Muurolole</b>	<b>72</b>
<b>27</b>	<b>23.43</b>	<b>6.05E+08</b>	<b>17.83</b>	<b>Germacrene D</b>	<b>69</b>
28	23.63	2.83E+07	0.84	$\alpha$ -Muurolole	67
<b>29</b>	<b>23.79</b>	<b>3.72E+08</b>	<b>10.98</b>	<b><math>\alpha</math>-Farnesene</b>	<b>70</b>
30	24.03	2.86E+07	0.84	$\gamma$ -Cadinene	83
<b>31</b>	<b>24.11</b>	<b>1.20E+08</b>	<b>3.55</b>	<b><math>\delta</math>-Cadinene</b>	<b>63</b>
32	24.19	1.28E+07	0.38	Calamenene	15
33	24.36	7.56E+06	0.22	Cubenene	67
34	24.43	8.85E+06	0.26	$\alpha$ -Cadinene	68
35	24.77	4.11E+06	0.12	(Z)-Nerolidol	15
36	25.17	7.91E+06	0.23	Caryophyllene Oxide	26
37	25.27	6.07E+06	0.18	Globulol	15
38	25.61	5.85E+06	0.17	} coelution 1-epi-Cubenol/cubenol	
39	25.72	1.04E+07	0.31		
40	25.76	1.23E+07	0.36		
41	25.95	2.23E+07	0.66	$\tau$ -Cadinol	70
<b>42</b>	<b>25.97</b>	<b>4.22E+07</b>	<b>1.25</b>	<b><math>\tau</math>-Muurolol</b>	<b>77</b>
<b>43</b>	<b>26.11</b>	<b>6.23E+07</b>	<b>1.84</b>	<b><math>\alpha</math>-Cadinol</b>	<b>82</b>
44	26.69	5.15E+06	0.15	Farnesol	37
<b>45</b>	<b>27.30</b>	<b>2.73E+08</b>	<b>8.05</b>	<b>Benzyl Benzoate</b>	<b>97</b>
<b>46</b>	<b>27.69</b>	<b>6.41E+07</b>	<b>1.89</b>	<b>Farnesol Acetate</b>	<b>63</b>
<b>47</b>	<b>28.20</b>	<b>6.96E+07</b>	<b>2.05</b>	<b>Benzyl Salicylate</b>	<b>82</b>
48	28.80	1.01E+07	0.30	Geranyl Benzoate	39
49	29.93	6.64E+06	0.20	Oleic Acid	21

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