

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

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## *ANALYSES GC-MS*

Le 28 Mars 2011

**Objet:** Analyse d'une huile essentielle par GC-MS  
**Nom:** **Limette**  
**Lot:** **LIM501K091018**  
**Destinataire :** Entreprise Gedane (Lausanne, Suisse)  
**Composés majoritaires:** **Limonene ;  $\alpha$ -Terpineol**

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## *CONDITIONS EXPERIMENTALES*

**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'huile essentielle de la limette (LIM501K091018) analysée 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.

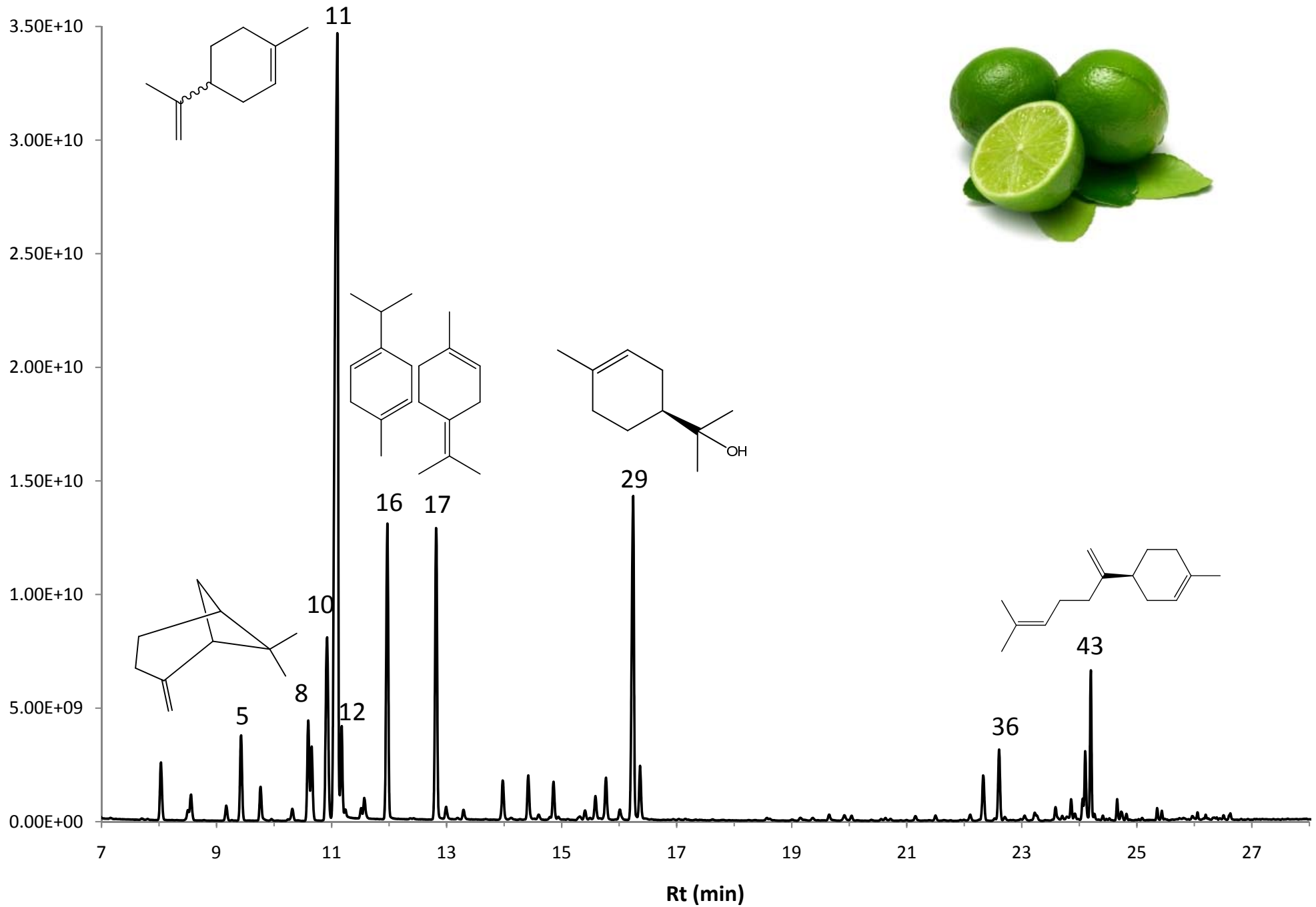


Table 1 – Composition de l'huile essentielle de Limette (LIM501K091018)

N°	Retention Time (min.)	Area	% of Total	Identification (NIST 08 /MassFinder)	Prob (%)
1	8.03	6.26E+09	1.54	$\alpha$ -Pinene	74
2	8.50	1.07E+09	0.26	$\alpha$ -Fenchene	69
3	8.55	2.99E+09	0.74	Camphene	60
4	9.17	1.59E+09	0.39	2H-Pyran, 2-ethyltetrahydro-2,6,6-trimethyl	75
<b>5</b>	<b>9.42</b>	<b>9.36E+09</b>	<b>2.30</b>	<b><math>\beta</math>-Pinene</b>	<b>87</b>
6	9.76	3.76E+09	0.93	$\beta$ -Myrcene	50
7	10.32	1.54E+09	0.38	$\alpha$ -Phellandrene	74
<b>8</b>	<b>10.59</b>	<b>1.08E+10</b>	<b>2.65</b>	<b>1,4 Cineol</b>	<b>88</b>
9	10.65	7.74E+09	1.90	2-Carene	87
<b>10</b>	<b>10.92</b>	<b>2.50E+10</b>	<b>6.16</b>	<b>m/p-Cymene</b>	<b>76/74</b>
<b>11</b>	<b>11.10</b>	<b>1.40E+11</b>	<b>34.39</b>	<b>Limonene</b>	<b>80</b>
<b>12</b>	<b>11.17</b>	<b>9.06E+09</b>	<b>2.23</b>	<b>1,8-Cinéol</b>	<b>93</b>
13	11.24	1.05E+09	0.26	(Z)- $\beta$ -Ocimene	50
14	11.51	9.70E+08	0.24	Furan, tetrahydro-2,2-dimethyl-5-(1-methyl-1-propenyl)-	87
15	11.57	2.34E+09	0.58	(E)- $\beta$ -Ocimene	64
<b>16</b>	<b>11.97</b>	<b>3.34E+10</b>	<b>8.22</b>	<b><math>\gamma</math>-Terpinene</b>	<b>56</b>
<b>17</b>	<b>12.82</b>	<b>3.31E+10</b>	<b>8.16</b>	<b>Terpinolene</b>	<b>70</b>
18	12.99	1.30E+09	0.32	p-Cymenene	58
19	13.29	1.10E+09	0.27	Linalool	58
20	13.98	4.41E+09	1.08	2-Fenchanol	70
21	14.42	4.90E+09	1.21	1-Terpinenol	47
22	14.60	8.03E+08	0.20	Myrtenol	67
23	14.86	4.16E+09	1.02	(Z)- $\beta$ -Terpineol	68
24	15.31	5.86E+08	0.14	Isoborneol	20
25	15.41	1.08E+09	0.27	Cis- $\beta$ -Terpineol	56
26	15.59	2.71E+09	0.67	Borneol	81
27	15.77	5.01E+09	1.23	4-Terpineol	78
28	16.01	1.22E+09	0.30	p-Cymenol	15
<b>29</b>	<b>16.24</b>	<b>3.94E+10</b>	<b>9.70</b>	<b><math>\alpha</math>-Terpineol</b>	<b>50</b>
30	16.36	5.48E+09	1.35	$\gamma$ -Terpineol	71
31	20.04	5.47E+08	0.13	$\delta$ -Elemene / Bicycloelemene	70/64
32	21.15	5.27E+08	0.13	Neryl Acetate	15
33	21.50	5.47E+08	0.13	$\beta$ -Elemene	40
34	22.10	6.82E+08	0.17	Cis- $\alpha$ -Bergamotene	20
35	22.33	4.85E+09	1.19	$\beta$ -Caryophyllene	32
<b>36</b>	<b>22.60</b>	<b>7.58E+09</b>	<b>1.87</b>	<b>Trans-<math>\alpha</math>-Bergamotene</b>	<b>34</b>
37	23.05	4.70E+08	0.12	$\beta$ -Farnesene	45
38	23.23	8.33E+08	0.21	$\alpha$ -Caryophyllene	36
39	23.59	1.28E+09	0.32	Selina 4,11-diene	62

Table 1 – Composition de l'huile essentielle de Limette (LIM501K091018) (Fin)

N°	Retention Time (min.)	Area	% of Total	Identification (NIST 08 /MassFinder)	Prob (%)
40	23.86	1.85E+09	0.46	$\gamma$ -Amorphene	62
41	23.92	7.18E+08	0.18	$\alpha$ -Selinene	18
42	24.10	6.24E+09	1.54	$\alpha$ -Farnesene	38
<b>43</b>	<b>24.20</b>	<b>1.25E+10</b>	<b>3.08</b>	<b><math>\beta</math>-Bisabolene</b>	<b>78</b>
44	24.66	1.65E+09	0.41	$\gamma$ -Guaiene	14
45	24.73	1.00E+09	0.25	Cis- $\alpha$ -Bisabolene	12
46	24.82	5.78E+08	0.14	Selina 3,7-diene	61
47	25.35	8.63E+08	0.21	Caryolan-1-ol	79
48	25.43	6.43E+08	0.16	Caryophyllene Oxide	78
49	35.64	9.26E+08	0.23	Trans-Squalene	63

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