

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

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ANALYSES GC-MS

Le 18 Mars 2013

Objet: Analyse d'une huile essentielle d'Épinette noire
Nom latin: *Picea mariana* Miller, *Picea nigra* (Myrtacées)
Lot: **EPINB366N002**
Provenance: Canada
Partie distillée: Aiguilles
Destinataire : Entreprise Gedane (Lausanne, Suisse)

Composés majoritaires:

Nom	N° CAS	N° CE (EINECS)	Caractéristiques
Bornyl Acetate	5655-61-8	227-101-4	Xi
Camphene	79-92-5	201-234-8	N, Xi, R10, R50/53, R36
α -Pinene	80-86-8	201-291-9	N, Xn, R43, R50/53, R65

CONDITIONS EXPERIMENTALES

Type d'instrument : 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 50-300 en 0.5 sec
Colonne : FactorFour VF-5ms (5% phenyl-methyl 95% dimethyl polysiloxane, 0.25mm x 30 m)
Débit : 1 mL/min
Gradient : 3 min à 50°C ; Montée à 150°C en 20 min puis à 250°C en 7 min
Calibrant : FC43
Echantillons : Huile essentielle diluée 1:1000 dans l'éther. Injection de 1 μ L.

Figure 1 – Chromatogramme TIC-GC/MS d'huile essentielle d'Epinette noire (EPINB366N002) 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.

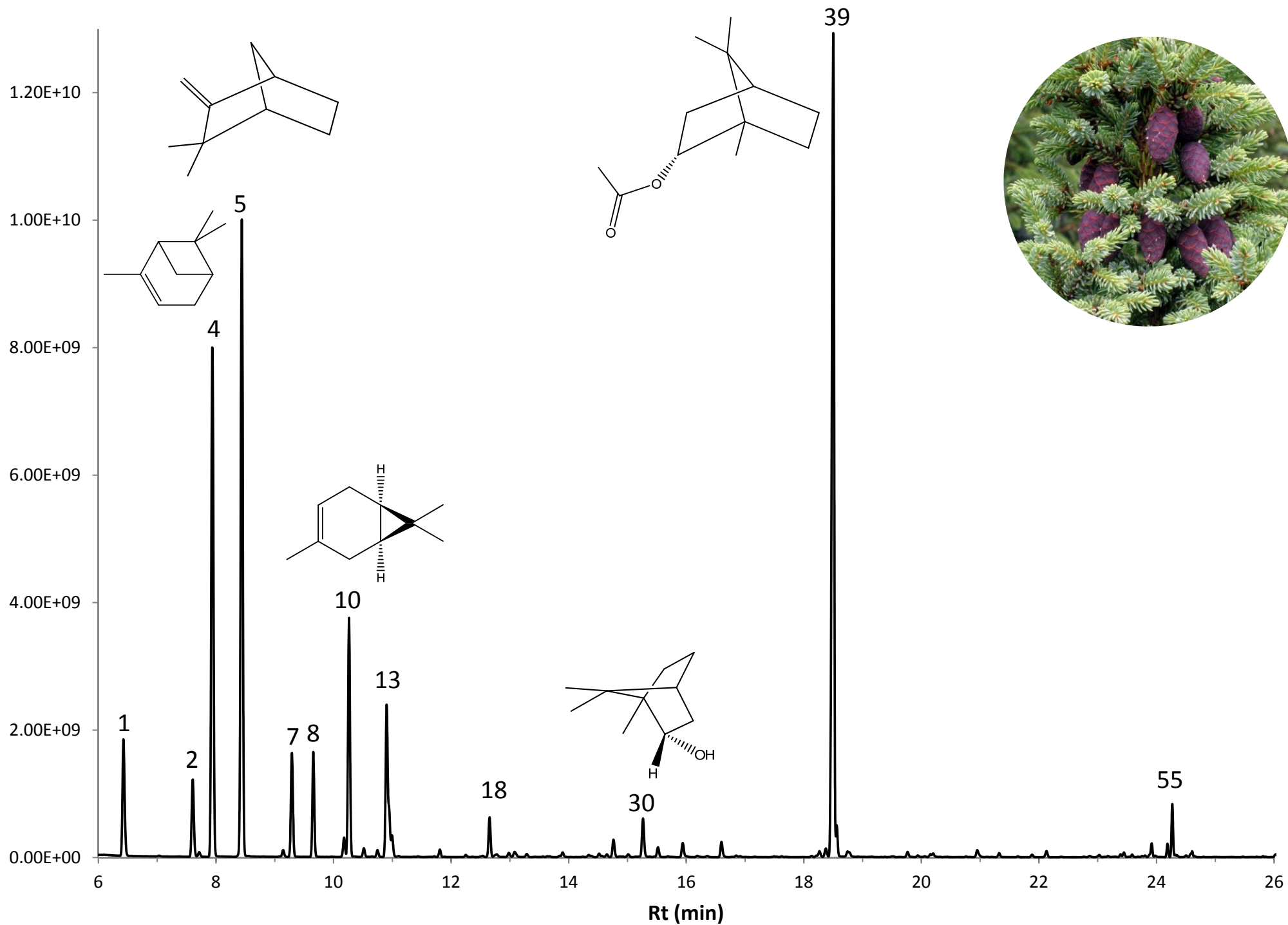


Table 1 – Composition de l'huile essentielle d'Epinette Noire (EPINB366N002)

N°	Retention Time (min.)	Area	% of Total	Identification (NIST 11/MassFinder)	Prob (%)
1	6.43	4.66E+09	3.58	Santene	40
2	7.60	3.13E+09	2.41	Tricyclene	76
3	7.71	1.65E+08	0.13	α -Thujene	71
4	7.94	2.09E+10	16.05	α -Pinene	69
5	8.44	2.52E+10	19.35	Camphene	78
6	9.14	2.60E+08	0.20	Sabinene	84
7	9.29	3.95E+09	3.04	β -Pinene	81
8	9.66	3.67E+09	2.82	Myrcene	82
9	10.18	6.94E+08	0.53	α -Phellandrene	82
10	10.26	8.79E+09	6.75	D-3-Carene	83
11	10.52	3.29E+08	0.25	α -Terpinene	52
12	10.75	2.54E+08	0.20	m/p-Cymene	82
13	10.90	7.18E+09	5.51	coelution D-Limonene β -Phellandrene	30
14	10.99	8.55E+08	0.66	Eucalyptol	78
15	11.11	2.68E+07	0.02	Z-(β)-Ocimene	20
16	11.44	1.82E+07	0.01	E-(β)-Ocimene	20
17	11.81	2.71E+08	0.21	γ -Terpinene	77
18	12.65	1.49E+09	1.14	Terpinolene	70
19	12.78	1.47E+08	0.11	o/p-Cymenene	25
20	12.98	1.74E+08	0.13	Camphenol	20
21	13.08	2.70E+08	0.21	Linalool	25
22	13.29	1.17E+08	0.09	α -Thujone	73
23	13.64	2.78E+07	0.02	β -Thujone	25
24	13.90	1.87E+08	0.14	α -Campholenal	35
25	14.34	9.74E+07	0.07	Trans-Pinocarveol	20
26	14.52	1.36E+08	0.10	Camphor	74
27	14.65	1.13E+08	0.09	Citronellal	96
28	14.76	7.11E+08	0.55	Camphene Hdrate	30
29	15.01	1.24E+08	0.10	Isoborneol	60
30	15.27	1.61E+09	1.23	Borneol	70
31	15.52	4.02E+08	0.31	4-Terpineol	74
32	15.94	5.96E+08	0.46	α -Terpineol	53
33	16.19	6.50E+07	0.05	α -Campholenol	44
34	16.60	6.06E+08	0.47	Fenchyl Acetate	67
35	16.85	6.88E+07	0.05	β -Citronellol	57
36	16.92	4.89E+07	0.04	Thymol Methyl Ester	70
37	17.62	3.06E+07	0.02	Piperitone	73
38	18.38	3.53E+08	0.27	Bicyclo[3.3.1]nonan-3-ol,7-methylene	20
39	18.50	3.74E+10	28.73	Bornyl Acetate	50
40	18.56	2.81E+08	0.22	Isobornyl Acetate	30
41	18.75	2.06E+08	0.16	Eucarvone	25
42	18.77	1.37E+08	0.10	Trans-Pinocarvyl Acetate	60
43	20.15	1.02E+08	0.08	α -Terpinyl Acetate	41
44	20.20	1.62E+08	0.12	Citronellyl Acetate	15
45	20.95	3.37E+08	0.26	Geranyl Acetate	51

Table 1 – Composition de l'huile essentielle d'Épinette Noire (EPINB366N002) (suite)

N°	Retention Time (min.)	Area	% of Total	Identification (NIST 11/MassFinder)	Prob (%)
46	21.32	1.50E+08	0.11	cis- β -Elemene	20
47	21.88	1.02E+08	0.08	Longifolene	52
48	22.13	2.43E+08	0.19	β -Caryophyllene	70
49	22.76	1.87E+07	0.01	Carota-5,8-diene	57
50	23.45	1.70E+08	0.13	5-epi-Aristolochene	54
51	23.59	8.26E+07	0.06	Isogermacrene D	56
52	23.92	4.86E+08	0.37	α -Amorphene	79
53	23.98	4.81E+07	0.04	α -Fanesene	42
54	24.19	3.86E+08	0.30	γ -Amorphene	73
55	24.27	1.63E+09	1.25	ω-Cadinene	77
56	24.51	6.00E+07	0.05	Cubenene	25
57	24.61	2.35E+08	0.18	(E)- α -Bisabolene	74
58	26.04	1.38E+08	0.11	τ -Cadinol	30
59	26.18	1.12E+08	0.09	α -Cadinol	61

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