

GC/MS BATCH NUMBER: H90107

ESSENTIAL OIL: HELICHRYSUM ITALICUM ORGANIC
BOTANICAL NAME: HELICHRYSUM ITALICUM
ORIGIN: HERZEGOVINA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF HELICHRYSUM ITALICUM ORGANIC OIL	%
NERYL ACETATE	33.0
γ-CURCUMENE + VALENCENE	9.8
ITALIDIONE II ISOMER I + ITALIDIONE II ISOMER II	7.4
α-PINENE	5.1
cis-α-BERGAMOTENE	4.1
ITALIDIONE II ANALOG	3.2
ITALICENE	3.0
α-CURCUMENE	2.8
CADINA-4,11-DIENE	2.7
α-SELINENE	2.5
SELINA-4,11-DIENE	1.6
γ-CADINENE + 7-epi-α-SELINENE	1.5
α-COPAENE	1.5
LIMONENE	1.1

Date : September 10, 2018

CERTIFICATE OF ANALYSIS – GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 18I07-PTH4-1-CC

Customer identification : Helichrysum Italicum Organic - Herzegovina - H9010787R

Type : Essential oil

Source : *Helichrysum italicum*

Customer : Plant Therapy

ANALYSIS

Method: PC-PA-014-17J19 - Analysis of the composition of an essential oil, or other volatile liquid, by FAST GC-FID (in French); identifications validated by GC-MS.

Analyst : Benoit Roger, Ph. D.

Analysis date : September 10, 2018

Checked and approved by :



Alexis St-Gelais, M. Sc., chimiste 2013-174

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PHYSICOCHEMICAL DATA

Physical aspect: Faintly yellow liquid

Refractive index: 1.4750 ± 0.0003 (20 °C)

CONCLUSION

No adulterant, contaminant or diluent has been detected using this method.

ANALYSIS SUMMARY

Identification	DB-5 (%)	DB-WAX (%)	Classe
2-Methylbutyral	tr	tr	Aliphatic aldehyde
3-Pentanone	tr	tr	Aliphatic ketone
2-Methyl-3-pentanone	0.01	0.01	Aliphatic ketone
Unknown	tr	tr	Unknown
Unknown	tr	tr	Unknown
Hexanal	tr	tr	Aliphatic aldehyde
Octane	tr	0.01	Alkane
2-Methyl-2-heptene	0.01	0.01	Alkene
4-Methyl-3-hexanone	0.02	0.02	Aliphatic ketone
Hexanol	tr	0.01	Aliphatic alcohol
Nonane	0.01*	0.01	Alkane
Bornylene	[0.01]*	tr	Monoterpene
α -Thujene	tr	tr	Monoterpene
α -Pinene	5.09	5.18	Monoterpene
α -Fenchene	0.12*	0.07	Monoterpene
Camphene	[0.12]*	0.04	Monoterpene
5,5-Dimethyl-2(5H)-furanone	0.01*	5.33*	Aliphatic lactone
Thuja-2,4(10)-diene	[0.01]*	0.01*	Monoterpene
Sabinene	0.13*	[0.01]*	Monoterpene
β -Pinene	[0.13]*	0.13	Monoterpene
6-Methyl-5-hepten-2-one	0.01	0.01	Aliphatic ketone
Myrcene	0.02*	0.02	Monoterpene
2-Pentylfuran	[0.02]*	tr	Furan
<i>trans</i> -Dehydroxylinalool oxide	[0.02]*	tr	Monoterpenic ether
6-Methyl-5-hepten-2-ol	0.01*	0.09*	Aliphatic alcohol
2-Carene	[0.01]*	tr	Monoterpene
Unknown	0.01	0.01	Monoterpene
α -Phellandrene	0.01	tr	Monoterpene
Isobutyl 2-methylbutyrate	0.02	0.02	Aliphatic ester
Δ 3-Carene	tr*	tr	Monoterpene
(3Z)-Hexenyl acetate	[tr]*	tr	Aliphatic ester
α -Terpinene	0.06	0.06	Monoterpene
para-Methylanisole	0.01	0.01	Simple phenolic
para-Cymene	0.11	0.12	Monoterpene
Limonene	1.26*	1.10	Monoterpene
1,8-Cineole	[1.26]*	0.20	Monoterpenic ether
(Z)- β -Ocimene	tr	tr	Monoterpene
(E)- β -Ocimene	0.01	0.01	Monoterpene
Isobutyl angelate	0.13	0.21*	Aliphatic ester
γ -Terpinene	0.20	0.20	Monoterpene
Octanol	tr	0.01	Aliphatic alcohol
Terpinolene	0.09*	0.09	Monoterpene
para-Cymenene	[0.09]*	0.01	Monoterpene
2-Nonanone	0.03	0.03	Aliphatic ketone
2,4-Dimethylheptane-3,5-dione	0.04	0.02	β -Diketone
Linalool	0.49	0.51	Monoterpenic alcohol
Nonanal	0.12*	0.04*	Aliphatic aldehyde
2-Methylbutyl 2-methylbutyrate	[0.12]*	[0.21]*	Aliphatic ester

endo-Fenchol	0.06*	0.09*	Monoterpenic alcohol
Verbenol analog?	[0.06]*	0.90*	Monoterpenic alcohol
α -Campholenal	0.02	0.03*	Monoterpenic aldehyde
<i>trans</i> -Pinocarveol	0.05	0.06*	Monoterpenic alcohol
<i>trans</i> -Verbenol	0.02	1.66*	Monoterpenic alcohol
para-Vinylnisole	0.02	0.31*	Simple phenolic
Isoamyl angelate	0.03*	[0.04]*	Aliphatic ester
Nerol oxide	[0.03]*	0.02*	Aliphatic ether
2-Methylbutyl angelate	0.59*	0.58	Aliphatic ester
Pinocarvone	[0.59]*	0.08	Monoterpenic ketone
Borneol	0.06	0.52*	Monoterpenic alcohol
Unknown	0.02	0.02	Aliphatic ester
Terpinen-4-ol	0.20*	0.34*	Monoterpenic alcohol
Nonanol	[0.20]*	[1.66]*	Aliphatic alcohol
4,6-Dimethyloctane-3,5-dione epimer I	0.17	[0.34]*	β -Diketone
4,6-Dimethyloctane-3,5-dione epimer II	0.20	[0.34]*	β -Diketone
α -Terpineol	0.25	[0.52]*	Monoterpenic alcohol
Myrtenol	0.02	0.04	Monoterpenic alcohol
2-Methylbutyl tiglate	0.02	[0.09]*	Aliphatic ester
Unknown	0.03	0.59*	Unknown
Decanal	0.04	0.04	Aliphatic aldehyde
Unknown	0.48*		β -Diketone
Nerol	[0.48]*	0.37	Monoterpenic alcohol
Hexyl isovalerate	0.01	tr	Aliphatic ester
Isoamyl hexanoate	0.01	[0.02]*	Aliphatic ester
3-Methylpentyl angelate	0.03	0.03	Aliphatic ester
Unknown	0.07	[0.09]*	Aliphatic ester
Unknown	0.03	[0.03]*	Aliphatic ester
(3Z)-Hexenyl angelate	0.03	0.09*	Aliphatic ester
Hexyl angelate	0.29	0.32	Aliphatic ester
2-Undecanone	0.05	0.04	Aliphatic ketone
Myrtenyl acetate	0.01	0.03	Monoterpenic ester
Hexyl tiglate	0.04	0.04	Aliphatic ester
α -Terpinyl acetate	0.20	1.09	Monoterpenic ester
Cyclosativene I	0.06	[0.09]*	Sesquiterpene
Cyclosativene II	[36.35]	0.05	Sesquiterpene
Neryl acetate	[36.35]*	34.74*	Monoterpenic ester
α -Ylangene	[36.35]*	0.42*	Sesquiterpene
α -Copaene	[36.35]*	1.47	Sesquiterpene
Italicene isomer	[36.35]*	0.82	Sesquiterpene
7-Cubebene	36.35	[0.42]*	Sesquiterpene
Sativene	0.33*	0.04	Sesquiterpene
Geranyl acetate	[0.33]*	0.40	Monoterpenic ester
Hexyl hexanoate	[0.33]*	0.05	Aliphatic ester
α -Funebrene	0.17	0.15	Sesquiterpene
Isoitalicene	0.13	3.10*	Sesquiterpene
α -Cedrene	3.08*	0.02	Sesquiterpene
Isocaryophyllene	[3.08]*	[0.09]*	Sesquiterpene
Italicene	[3.08]*	[3.10]*	Sesquiterpene
Tetradecane	[3.08]*	0.02	Alkane

α-Gurjunene	[3.08]*	0.03	Sesquiterpene
β-Caryophyllene	[5.00]	[5.33]*	Sesquiterpene
cis-α-Bergamotene	5.00	[0.90]*	Sesquiterpene
β-Copaene	0.05	[0.09]*	Sesquiterpene
6,9-Guaiadiene	0.85*	0.15	Sesquiterpene
trans-α-Bergamotene	[0.85]*	[5.33]*	Sesquiterpene
Cadina-4,11-diene	2.76*	[0.06]*	Sesquiterpene
Italidione I	[2.76]*		β-Diketone
Unknown	[2.76]*	0.02	Sesquiterpene
α-Humulene	0.09	0.09	Sesquiterpene
Neryl propionate	0.27	[0.59]*	Monoterpenic ester
(E)-β-Farnesene	0.83*	[1.66]*	Sesquiterpene
allo-Aromadendrene	[0.83]*	0.12	Sesquiterpene
α-Acoradiene	[0.83]*	0.39	Sesquiterpene
β-Acoradiene	0.41	[0.31]*	Sesquiterpene
4,5-diepi-Aristolochene	0.33	[0.31]*	Sesquiterpene
α-Amorphene	1.63*	0.05	Sesquiterpene
Selina-4,11-diene	[1.63]*	[1.66]*	Sesquiterpene
ar-Curcumene	14.34*	2.85*	Sesquiterpene
Italidione II isomer I	[14.34]*	7.38*	β-Diketone
γ-Curcumene	[14.34]*	9.82*	Sesquiterpene
β-Selinene	[14.34]*	5.84*	Sesquiterpene
Italidione II isomer II	[24.08]	[7.38]*	β-Diketone
Valencene	24.08	[9.82]*	Sesquiterpene
α-Selinene	2.51	3.46	Sesquiterpene
Italidione II analog	3.22*	1.18*	β-Diketone
Eudesma-2,4(15),11-triene	[3.22]*	0.04	Sesquiterpene
δ-Amorphene	0.27	[5.84]*	Sesquiterpene
β-Bisabolene	0.24*	[34.74]*	Sesquiterpene
10-epi-Italicene ether	[0.24]*	0.06	Sesquiterpenic ether
γ-Cadinene	0.15	0.37*	Sesquiterpene
7-epi-α-Selinene	1.54*	[0.37]*	Sesquiterpene
β-Curcumene	[1.54]*	[34.74]*	Sesquiterpene
Sesquicineole	0.03	[0.37]*	Sesquiterpenic ether
Zonarene	0.94*	[0.37]*	Sesquiterpene
δ-Cadinene	[0.94]*	1.14	Sesquiterpene
cis-Calamenene?	[0.94]*	0.03	Sesquiterpene
trans-Cadina-1,4-diene	0.01	[2.85]*	Sesquiterpene
(E)-γ-Bisabolene	0.27*	[0.37]*	Sesquiterpene
Italicene ether	[0.27]*	0.10	Sesquiterpenic ether
α-Cadinene	0.05*	0.07	Sesquiterpene
Selina-3,7(11)-diene	[0.05]*	0.04	Sesquiterpene
(E)-α-Bisabolene	0.09	0.11	Sesquiterpene
(E)-Nerolidol	0.18*	0.13	Sesquiterpenic alcohol
Caryophyllenyl alcohol	[0.18]*	0.02	Sesquiterpenic alcohol
Italidione III isomer I	0.65*	[1.18]*	β-Diketone
Caryophyllene oxide	[0.65]*	[1.18]*	Sesquiterpenic ether
Caryophyllene oxide isomer	[0.65]*	0.06	Sesquiterpenic ether
Italidione III isomer II	0.51	[1.18]*	β-Diketone
Italidione III isomer III	0.20		β-Diketone
Guaiol	0.17	0.16	Sesquiterpenic alcohol
Copaborneol	0.12*	0.25*	Sesquiterpenic alcohol

Eudesm-5-en-11-ol	[0.12]*	0.26	Sesquiterpenic alcohol
Unknown	0.31	0.11	Oxygenated sesquiterpene
Unknown	0.12	0.07	Oxygenated sesquiterpene
Unknown	0.14	0.12	Unknown
Neryl angelate?	0.02		Monoterpenic ester
Caryophylladienol I	0.08*	0.03	Sesquiterpenic alcohol
1-epi-Cubenol	[0.08]*	0.03*	Sesquiterpenic alcohol
Caryophylladienol II	0.14*	0.01	Sesquiterpenic alcohol
γ-Eudesmol	[0.14]*	[0.25]*	Sesquiterpenic alcohol
τ-Muurolol	0.09*	0.01	Sesquiterpenic alcohol
τ-Cadinol	[0.09]*	[0.25]*	Sesquiterpenic alcohol
β-Eudesmol	0.10	0.04	Sesquiterpenic alcohol
α-Eudesmol	0.24*	0.07	Sesquiterpenic alcohol
Selin-11-en-4α-ol	[0.24]*	0.15	Sesquiterpenic alcohol
Bulnesol	0.05	0.06	Sesquiterpenic alcohol
β-Bisabolol	0.11	0.13	Sesquiterpenic alcohol
epi-α-Bisabolol	0.02	0.02	Sesquiterpenic alcohol
α-Bisabolol	0.05	0.01	Sesquiterpenic alcohol
Neryl 4-methylvalerate?	0.05	0.03	Monoterpenic ester
Unknown	0.06	0.04	Unknown
Geranyl 4-methylvalerate?	0.03	[0.03]*	Monoterpenic ester
Unknown	0.11		Oxygenated sesquiterpene
Unknown	0.02	0.02	Oxygenated sesquiterpene
Unknown	0.05		Oxygenated sesquiterpene
Unknown	0.05		Oxygenated sesquiterpene
Unknown	0.07	0.06	Oxygenated sesquiterpene
Unknown	0.26	0.13	Oxygenated sesquiterpene
Unknown	0.19		Unknown
Total identified	95.78%	96.93%	

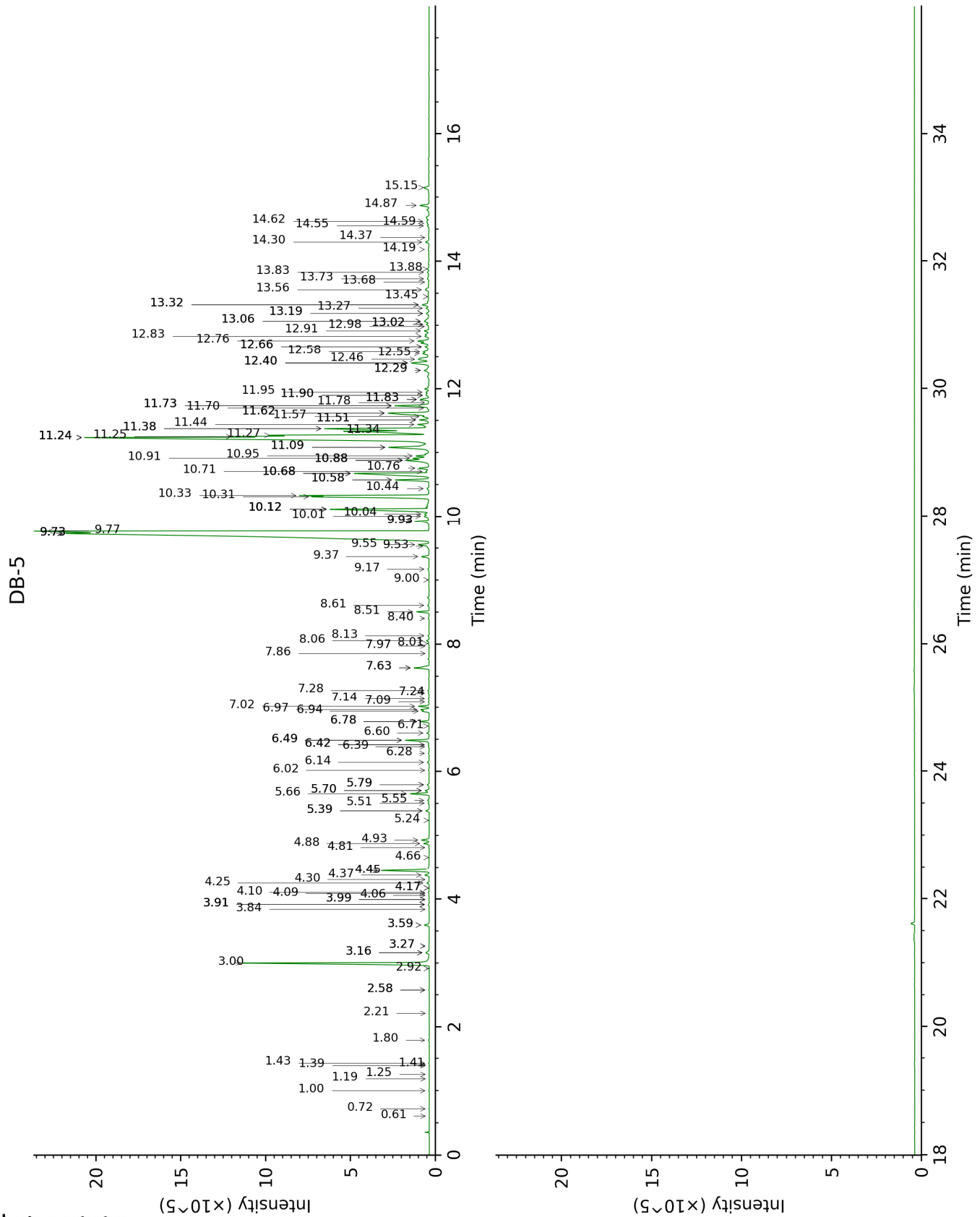
*: Two or more compounds are coeluting on this column

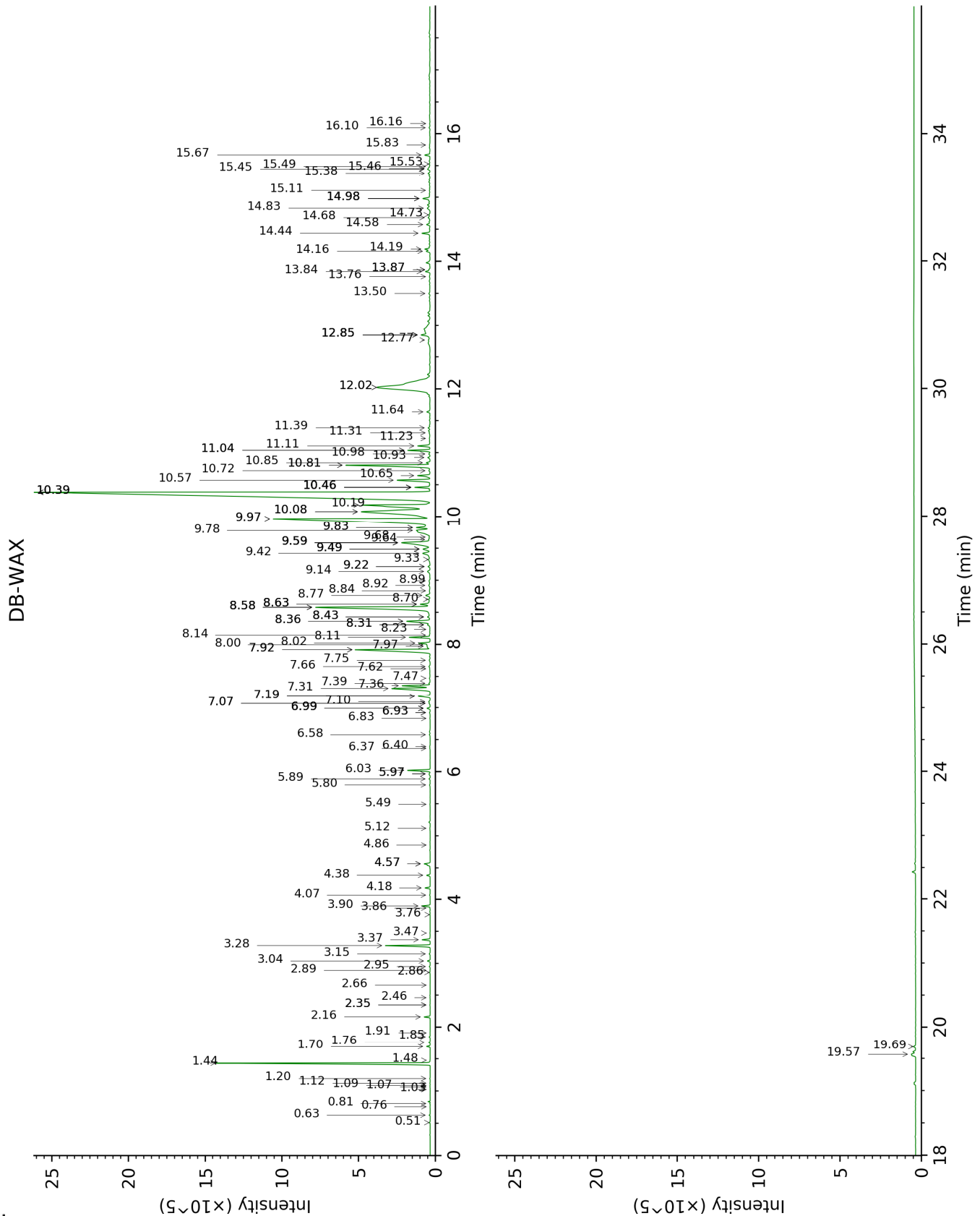
[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

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FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
2-Methylbutyral	0.61	649	tr	0.76	880	tr
3-Pentanone	0.72	690	tr	1.07	939	tr
2-Methyl-3-pentanone	1.00	739	0.01	1.20	960	0.01
Unknown [m/z 73, 41 (54), 87 (50), 56 (47), 54 (29), 55 (25), 100 (23)... 115? (6)]	1.18	767	tr	1.03	932	tr
Unknown [m/z 73, 87 (52), 41 (45), 56 (42), 100 (29)...]	1.25	777	tr	1.09	942	tr
Hexanal	1.39	797	tr	1.91	1045	tr
Octane	1.41	800	tr	0.51	784	0.01
2-Methyl-2-heptene	1.43	802	0.01	0.63	833	0.01
4-Methyl-3-hexanone	1.80	834	0.02	1.85	1039	0.02
Hexanol	2.22	870	tr	5.49	1324	0.01
Nonane	2.58*	901	0.01	0.81	897	0.01
Bornylene	2.58*	901	[0.01]	1.12	948	tr
α -Thujene	2.92	924	tr	1.48	1002	tr
α -Pinene	3.00	929	5.09	1.44	998	5.18
α -Fenchene	3.16*	940	0.12	1.70	1024	0.07
Camphene	3.16*	940	[0.12]	1.76	1030	0.04
5,5-Dimethyl-2(5H)-furanone	3.27*	947	0.01	8.58*	1551	5.33
Thuja-2,4(10)-diene	3.27*	947	[0.01]	2.35*	1089	0.01
Sabinene	3.59*	969	0.13	2.35*	1089	[0.01]
β -Pinene	3.59*	969	[0.13]	2.16	1070	0.13
6-Methyl-5-hepten-2-one	3.84	986	0.01	5.12	1297	0.01
Myrcene	3.91*	991	0.02	2.95	1138	0.02
2-Pentylfuran	3.91*	991	[0.02]	3.76	1200	tr
<i>trans</i> -Dehydroxylinalool oxide	3.91*	991	[0.02]	3.47	1178	tr
6-Methyl-5-hepten-2-ol	3.99*	996	0.01	6.99*	1432	0.09
2-Carene	3.99*	996	[0.01]	2.46	1101	tr
Unknown [m/z = 123, 43 (16), 152 (14), 124 (9), 137 (6)]	4.06	1000	0.01	2.86	1132	0.01
α -Phellandrene	4.09	1002	0.01	2.89	1134	tr
Isobutyl 2-methylbutyrate	4.10	1003	0.02	3.15	1154	0.02

Δ3-Carene	4.17*	1008	tr	2.66	1116	tr
(3Z)-Hexenyl acetate	4.17*	1008	[tr]	4.86	1279	tr
α-Terpinene	4.25	1012	0.06	3.04	1145	0.06
para-Methylanisole	4.30	1016	0.01	6.37	1386	0.01
para-Cymene	4.37	1020	0.11	4.18	1230	0.12
Limonene	4.45*	1025	1.26	3.28	1164	1.10
1,8-Cineole	4.45*	1025	[1.26]	3.37	1171	0.20
(Z)-β-Ocimene	4.66	1038	tr	3.86	1208	tr
(E)-β-Ocimene	4.81	1048	0.01	4.07	1222	0.01
Isobutyl angelate	4.88	1052	0.13	4.57*	1258	0.21
γ-Terpinene	4.93	1056	0.20	3.90	1210	0.20
Octanol	5.24	1075	tr	8.24	1525	0.01
Terpinolene	5.39*	1084	0.09	4.38	1244	0.09
para-Cymenene	5.39*	1084	[0.09]	6.40	1388	0.01
2-Nonanone	5.51	1092	0.03	5.89	1352	0.03
2,4-Dimethylheptane-3,5-dione	5.55	1095	0.04	7.62	1478	0.02
Linalool	5.66	1101	0.49	8.11	1515	0.51
Nonanal	5.70*	1104	0.12	5.97*	1358	0.04
2-Methylbutyl 2-methylbutyrate	5.70*	1104	[0.12]	4.57*	1258	[0.21]
endo-Fenchol	5.80*	1110	0.06	8.43*	1540	0.09
Verbenol analog?	5.80*	1110	[0.06]	8.36*	1535	0.90
α-Campholenal	6.02	1124	0.02	7.07*	1438	0.03
trans-Pinocarveol	6.14	1132	0.05	9.22*	1601	0.06
trans-Verbenol	6.28	1142	0.02	9.59*	1631	1.66
para-Vinylanisole	6.39	1148	0.02	9.49*	1623	0.31
Isoamyl angelate	6.42*	1150	0.03	5.97*	1358	[0.04]
Nerol oxide	6.42*	1150	[0.03]	6.93*	1427	0.02
2-Methylbutyl angelate	6.49*	1155	0.59	6.02	1362	0.58
Pinocarpone	6.49*	1155	[0.59]	8.00	1506	0.08
Borneol	6.60	1162	0.06	9.83*	1650	0.52
Unknown [m/z 83, 100 (34), 55 (33), 43 (21), 84 (21)...]	6.71	1169	0.02	5.80	1345	0.02
Terpinen-4-ol	6.78*	1173	0.20	8.63*	1555	0.34
Nonanol	6.78*	1173	[0.20]	9.59*	1631	[1.66]
4,6-Dimethyloctane-3,5-dione epimer I	6.94	1184	0.17	8.63*	1555	[0.34]
4,6-Dimethyloctane-3,5-dione epimer II	6.97	1185	0.20	8.63*	1555	[0.34]
α-Terpineol	7.02	1189	0.25	9.83*	1650	[0.52]
Myrtenol	7.09	1193	0.02	10.98	1746	0.04
2-Methylbutyl tiglate	7.14	1196	0.02	6.99*	1432	[0.09]

Unknown [m/z 95, 93 (32), 121 (24), 79 (22), 91 (21), 105 (16)... 154 (2)]	7.24	1202	0.03	11.04*	1751	0.59
Decanal	7.28	1205	0.04	7.39	1461	0.04
Unknown [m/z 113, 57 (55), 85 (16), 170 (16)]	7.63*	1229	0.48			
Nerol	7.63*	1229	[0.48]	11.11	1757	0.37
Hexyl isovalerate	7.86	1244	0.01	6.84	1420	tr
Isoamyl hexanoate	7.97	1252	0.01	6.93*	1427	[0.02]
3-Methylpentyl angelate	8.01	1254	0.03	7.47	1467	0.03
Unknown [m/z 83, 55 (29), 57 (24), 100 (21), 104 (13)...]	8.06	1258	0.07	6.99*	1432	[0.09]
Unknown [m/z 83, 55 (30), 57 (23), 100 (20), 98 (14)...]	8.13	1263	0.03	7.07*	1438	[0.03]
(3Z)-Hexenyl angelate	8.40	1281	0.03	8.31*	1530	0.09
Hexyl angelate	8.51	1288	0.29	8.02	1508	0.32
2-Undecanone	8.61	1294	0.05	8.70	1561	0.04
Myrtenyl acetate	9.00	1322	0.01	9.68	1638	0.03
Hexyl tiglate	9.17	1334	0.04	8.99	1583	0.04
α -Terpinyl acetate	9.37	1348	0.20	9.78	1646	1.09
Cyclosativene I	9.53	1359	0.06	6.99*	1432	[0.09]
Cyclosativene II	9.55†	1361	[36.35]	7.10	1440	0.05
Neryl acetate	9.73*†	1373	[36.35]	10.39*	1695	34.74
α -Ylangene	9.73*†	1373	[36.35]	7.19*	1446	0.42
α -Copaene	9.73*†	1373	[36.35]	7.31	1455	1.47
Italicene isomer	9.73*†	1373	[36.35]	7.36	1459	0.82
7-Cubebene	9.77†	1376	36.35	7.19*	1446	[0.42]
Sativene	9.93*	1387	0.33	7.66	1481	0.04
Geranyl acetate	9.93*	1387	[0.33]	10.65	1717	0.40
Hexyl hexanoate	9.93*	1387	[0.33]	8.92	1578	0.05
α -Funebrene	10.01	1393	0.17	7.97	1504	0.15
Isoitalicene	10.04	1395	0.13	7.92*	1500	3.10
α -Cedrene	10.12*	1401	3.08	8.14	1518	0.02
Isocaryophyllene	10.12*	1401	[3.08]	8.31*	1530	[0.09]
Italicene	10.12*	1401	[3.08]	7.92*	1500	[3.10]
Tetradecane	10.12*	1401	[3.08]	6.58	1402	0.02
α -Gurjunene	10.12*	1401	[3.08]	7.75	1488	0.03
β -Caryophyllene	10.31†	1415	[5.00]	8.58*	1551	[5.33]
<i>cis</i> - α -Bergamotene	10.33†	1417	5.00	8.36*	1535	[0.90]
β -Copaene	10.44	1425	0.05	8.43*	1540	[0.09]
6,9-Guaiadiene	10.58*	1435	0.85	8.77	1566	0.15
<i>trans</i> - α -Bergamotene	10.58*	1435	[0.85]	8.58*	1551	[5.33]

Cadina-4,11-diene	10.68*	1442	2.76	9.22*	1601	[0.06]
Italidione I	10.68*	1442	[2.76]			
Unknown [m/z 91, 161 (92), 105 (85), 119 (63), 133 (53), 79 (49), 204 (46)]	10.68*	1442	[2.76]	8.84	1571	0.02
α-Humulene	10.71	1445	0.09	9.33	1610	0.09
Neryl propionate	10.76	1448	0.27	11.04*	1751	[0.59]
(E)-β-Farnesene	10.88*	1458	0.83	9.59*	1631	[1.66]
allo-Aromadendrene	10.88*	1458	[0.83]	9.14	1595	0.12
α-Acoradiene	10.88*	1458	[0.83]	9.42	1617	0.39
β-Acoradiene	10.91	1460	0.41	9.49*	1623	[0.31]
4,5-diepi-Aristolochene	10.95	1463	0.33	9.49*	1623	[0.31]
α-Amorphene	11.08*	1473	1.63	9.64	1635	0.05
Selina-4,11-diene	11.08*	1473	[1.63]	9.59*	1631	[1.66]
ar-Curcumene	11.24*	1484	14.34	10.81*	1731	2.85
Italidione II isomer I	11.24*	1484	[14.34]	12.02*	1836	7.38
γ-Curcumene	11.24*	1484	[14.34]	9.97*	1662	9.82
β-Selinene	11.24*	1484	[14.34]	10.08*	1671	5.84
Italidione II isomer II	11.25†	1485	[24.08]	12.02*	1836	[7.38]
Valencene	11.27†	1487	24.08	9.97*	1662	[9.82]
α-Selinene	11.34	1491	2.51	10.19	1679	3.46
Italidione II analog	11.38*	1494	3.22	12.85*	1910	1.18
Eudesma-2,4(15),11-triene	11.38*	1494	[3.22]	11.23	1766	0.04
δ-Amorphene	11.44	1499	0.27	10.08*	1671	[5.84]
β-Bisabolene	11.51*	1505	0.24	10.39*	1695	[34.74]
10-epi-Italicene ether	11.51*	1505	[0.24]	11.39	1780	0.06
γ-Cadinene	11.57	1509	0.15	10.46*	1702	0.37
7-epi-α-Selinene	11.62*	1513	1.54	10.46*	1702	[0.37]
β-Curcumene	11.62*	1513	[1.54]	10.39*	1695	[34.74]
Sesquicineole	11.70	1519	0.03	10.46*	1702	[0.37]
Zonarene	11.74*	1522	0.94	10.46*	1702	[0.37]
δ-Cadinene	11.74*	1522	[0.94]	10.58	1711	1.14
cis-Calamenene?	11.74*	1522	[0.94]	11.31	1774	0.03
trans-Cadina-1,4-diene	11.78	1526	0.01	10.81*	1731	[2.85]
(E)-γ-Bisabolene	11.83*	1530	0.27	10.46*	1702	[0.37]
Italicene ether	11.83*	1530	[0.27]	11.64	1802	0.10
α-Cadinene	11.90*	1535	0.05	10.93	1741	0.07
Selina-3,7(11)-diene	11.90*	1535	[0.05]	10.72	1724	0.04
(E)-α-Bisabolene	11.95	1539	0.09	10.85	1734	0.11
(E)-Nerolidol	12.29*	1565	0.18	13.84	2002	0.13
Caryophyllenyl alcohol	12.29*	1565	[0.18]	13.76	1994	0.02

Italidione III isomer I	12.40*	1575	0.65	12.85*	1910	[1.18]
Caryophyllene oxide	12.40*	1575	[0.65]	12.85*	1910	[1.18]
Caryophyllene oxide isomer	12.40*	1575	[0.65]	12.77	1902	0.06
Italidione III isomer II	12.46	1579	0.51	12.85*	1910	[1.18]
Italidione III isomer III	12.55	1586	0.20			
Guaiol	12.58	1588	0.17	14.19	2035	0.16
Copaborneol	12.66*	1595	0.12	14.98*	2112	0.25
Eudesm-5-en-11-ol	12.66*	1595	[0.12]	14.44	2059	0.26
Unknown [m/z 43, 81 (97), 135 (71), 95 (62), 204 (61), 71 (59), 207 (56)... 222 (3)]	12.76	1602	0.31	14.58	2072	0.11
Unknown [m/z 179, 161 (66), 119 (44), 95 (38), 105 (35)... 204 (24), 222 (1)]	12.83	1608	0.12	14.68	2082	0.07
Unknown [m/z 182, 109 (58), 69 (50), 41 (42), 43 (40), 139 (31)... 235 (17), 250 (1)...]	12.91	1615	0.14	14.16	2032	0.12
Neryl angelate?	12.98	1621	0.02			
Caryophylladienol I	13.02*	1624	0.08	16.10	2225	0.03
1-epi-Cubenol	13.02*	1624	[0.08]	13.87*	2004	0.03
Caryophylladienol II	13.06*	1628	0.14	16.16	2232	0.01
γ-Eudesmol	13.06*	1628	[0.14]	14.98*	2112	[0.25]
τ-Muurolol	13.19*	1638	0.09	15.11	2125	0.01
τ-Cadinol	13.19*	1638	[0.09]	14.98*	2112	[0.25]
β-Eudesmol	13.27	1645	0.10	15.46	2160	0.04
α-Eudesmol	13.32*	1649	0.24	15.45	2159	0.07
Selin-11-en-4α-ol	13.32*	1649	[0.24]	15.67	2181	0.15
Bulnesol	13.45	1660	0.05	15.38	2152	0.06
β-Bisabolol	13.56	1668	0.11	14.83	2097	0.13
epi-α-Bisabolol	13.68	1678	0.02	15.53	2167	0.02
α-Bisabolol	13.73	1683	0.05	15.49	2163	0.01
Neryl 4-methylvalerate?	13.83	1691	0.05	13.50	1970	0.03
Unknown [m/z 196, 69 (62), 109 (58), 41 (54), 139 (41)... 249 (21)...]	13.88	1695	0.06	14.73	2087	0.04
Geranyl 4-	14.18	1721	0.03	13.87*	2004	[0.03]

methylvalerate? Unknown [m/z 43, 69 (32), 198 (29), 41 (27), 93 (26)... 202 (20)...]	14.30	1731	0.11			
Unknown [m/z 82, 125 (40), 41 (35), 69 (31), 67 (27)... 236? (t)]	14.37	1738	0.02	15.83	2197	0.02
Unknown [m/z 136, 121 (74), 135 (55), 218 (36), 148 (33), 40 (42)... 236? (1)]	14.56	1754	0.05			
Unknown [m/z 109, 138 (71), 82 (42), 123 (41), 127 (38)...]	14.59	1757	0.05			
Unknown [m/z 109, 127 (46), 138 (45), 82 (34), 81 (31)... 236? (t)]	14.62	1760	0.07	19.69	2624	0.06
Unknown [m/z 98, 82 (77), 83 (42), 137 (37), 41 (28)... 238 (1)]	14.87	1781	0.26	19.57	2609	0.13
Unknown [m/z 43, 82 (69), 41 (66), 93 (62), 96 (55), 55 (49), 67 (45), 154 (44)...]	15.15	1805	0.19			
Total identified		95.78%			96.93%	
Total reported		97.32%			97.53%	

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

†: Peaks apexes were resolved, but peaks overlapped and were summed for analysis

tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

R.T.: Retention time (minutes)

R.I.: Retention index