

Black Currant Absolute

ESSENTIAL OIL ANALYSIS

Laboratoire
PhytoChemia





SAMPLE IDENTIFICATION

Internal code : 17E05-FSE10-1-DM

Customer identification : Black Currant Absolute (50:50 in Alcohol) - Lot #M0916/1

Type : Absolute

Source : *Ribes nigrum*

Customer : Flowers Shining Everywhere Inc.



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

Analysis date : 2017-05-18



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.	
Ethanol	0.35	632	16.89	13.00	812	0.70	Aliphatic alcohol
Acetic acid	0.54*	657	0.09	0.04	1383	6.27	Aliphatic acid
Ethyl acetate	0.54*	657	[0.09]				Aliphatic ester
α -Thujene	3.32*	923	0.01	tr	953	1.14	Monoterpene
3-Hydroxy-2-methylbutyronitrile	3.32*	923	[0.01]				Aliphatic nitrile
α -Pinene	3.42	929	0.02	0.02	942	1.10	Monoterpene
Camphene	3.63	941	0.01	tr	999	1.37	Monoterpene
β -Pinene	4.20	975	0.02	0.02	1038	1.71	Monoterpene
1-Acetyloxy-2-butanone	4.34	984	tr	0.01	1459	7.83	Aliphatic ester
Myrcene	4.47	992	0.03	0.02	1114	2.42	Monoterpene
Octen-3-ol	4.58	998	0.01	0.01	1401	6.57*	Aliphatic alcohol
α -Phellandrene	4.69	1004	tr	tr	1108	2.34	Monoterpene
Δ^3 -Carene	4.75*	1007	0.26	0.19	1080	2.17	Monoterpene
2-(Hydroxymethyl)but-2-enenitrile	4.75*	1007	[0.26]				Aliphatic nitrile
α -Terpinene	4.93	1018	0.02	0.02	1121	2.51	Monoterpene
meta-Cymene	5.06	1025	0.02				Monoterpene
para-Cymene	5.12	1028	0.03	0.02	1205	3.61	Monoterpene
Limonene	5.16	1030	0.06	0.03	1139	2.74	Monoterpene
β -Phellandrene	5.19	1031	0.11	0.09	1145	2.82	Monoterpene
cis- β -Ocimene	5.34	1040	0.10	0.05	1183	3.32	Monoterpene
trans- β -Ocimene	5.52	1050	0.04	0.03	1199	3.53	Monoterpene
γ -Terpinene	5.71	1060	0.04	0.04	1185	3.35	Monoterpene
Benzyl alcohol	5.80	1065	0.02				Simple phenolic
cis-Sabinene hydrate	6.02	1077	0.01	[0.01]	1401	6.57*	Monoterp. alcohol
Isoterpinolene	6.11	1082	0.01	tr	1216	3.76	Monoterpene
Terpinolene	6.19	1086	0.43	0.33	1222	3.83	Monoterpene
trans-Sabinene hydrate	6.38	1097	0.01	0.01	1475	8.20	Monoterp. alcohol
Phenylethyl alcohol	7.04	1122	0.02	0.01	1803	23.53	Simple phenolic
meta-Mentha-4,6-dien-8-ol	7.85	1152	0.05				Monoterp. alcohol
Terpinen-4-ol	8.71	1183	0.05	0.09	1528	9.58*	Monoterp. alcohol
meta-Cymen-8-ol	8.99	1193	0.01				Monoterp. alcohol
para-Cymen-8-ol	9.20	1200	0.07	0.11	1762	20.84	Monoterp. alcohol
Coumaran	9.65	1211	0.04				Phenylpropanoid
Phenylethyl acetate	11.85	1259	0.01	0.01	1727	18.51	Phenolic ester
Bornyl acetate	12.86	1282	0.01	0.01	1498	8.76	Monoterp. ester
Terpinen-4-yl acetate	13.54	1297	0.02				Monoterp. ester
δ -Elemene	15.25	1324	0.01	tr	1418	6.83	Sesquiterpene
α -Copaene	17.71	1361	0.02	0.01	1429	7.11	Sesquiterpene
β -Elemene	18.80	1378	0.03	0.03	1526	9.51	Sesquiterpene

β-Caryophyllene	20.51	1403	0.70	0.56	1519	9.27	Sesquiterpene
Aromadendrene	21.85	1419	0.11	[0.09]	1528	9.58*	Sesquiterpene
γ-Elementene	22.22	1423	0.03	0.01	1564	10.89	Sesquiterpene
α-Humulene	23.25	1436	0.24	0.19	1577	11.38	Sesquiterpene
allo-Aromadendrene	23.50	1439	0.04	0.03	1556	10.63	Sesquiterpene
Tyrosol	25.17	1459	0.34				Simple phenolic
γ-Murolene	25.29	1460	0.04	0.03	1606	12.44	Sesquiterpene
β-Selinene	26.04	1469	0.02	0.02	1625	13.14	Sesquiterpene
Viridiflorene	26.25	1472	0.05	0.05	1611	12.65	Sesquiterpene
γ-Cadinene	28.49	1499	0.06	0.04	1664	15.22	Sesquiterpene
δ-Cadinene	29.14	1508	0.08	0.06	1669	15.50	Sesquiterpene
Selina-3,7(11)-diene	30.21	1523	0.06	0.03	1675	15.82	Sesquiterpene
Selina-4(15),7(11)-diene	30.49	1527	0.05	0.05	1676	15.87	Sesquiterpene
Germacrene B	31.84	1545	0.06	0.04	1717	18.00	Sesquiterpene
Spathulenol	33.68*	1571	0.19	0.09	2017	36.45	Sesquiterp. alcohol
Caryophyllene oxide	33.68*	1571	[0.19]	0.05	1845	26.31	Sesquiterp. ether
Viridiflorol	34.96	1589	0.05	0.03	1976	34.61	Sesquiterp. alcohol
Humulene epoxide II	35.31	1594	0.02	0.02	1897	30.13	Sesquiterp. ether
Tyrosyl acetate	35.58	1597	0.23				Phenylpropanoid ester
Caryophylla-4(12),8(13)-dien-5α-ol	36.82	1626	0.02	0.02	2173	41.35	Sesquiterp. alcohol
Phytone	44.61	1858	0.12				Terpenic ketone
Ethyl palmitate	47.95	1988	0.05				Aliphatic ester
trans-Kolavetol	49.45	2052	0.10				Diterp. alcohol
Ethyl linoleate	51.76	2154	0.06				Aliphatic ester
Ethyl α-linolenate	51.89	2160	0.05				Aliphatic ester
Kolavenol	54.19	2268	0.34				Diterp. alcohol
Kolavenyl acetate?	56.97	2406	0.10				Diterp. ester
Methyl hardwickiate?	58.59	2491	6.63				Diterp. ester
Hardwickic acid	60.17	2576	52.30	56.84	3916	70.99	Diterp. acid
Ethyl hardwickiate?	62.73	2719	5.78				Diterp. ester
Sakuranin?	64.54	2825	3.24				Flavonoid
α-Tocopherol	69.43	3131	0.25				Tocopherol-
Total identified			89.99%	72.36%			

*: 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



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Plus que des analyses... des conseils

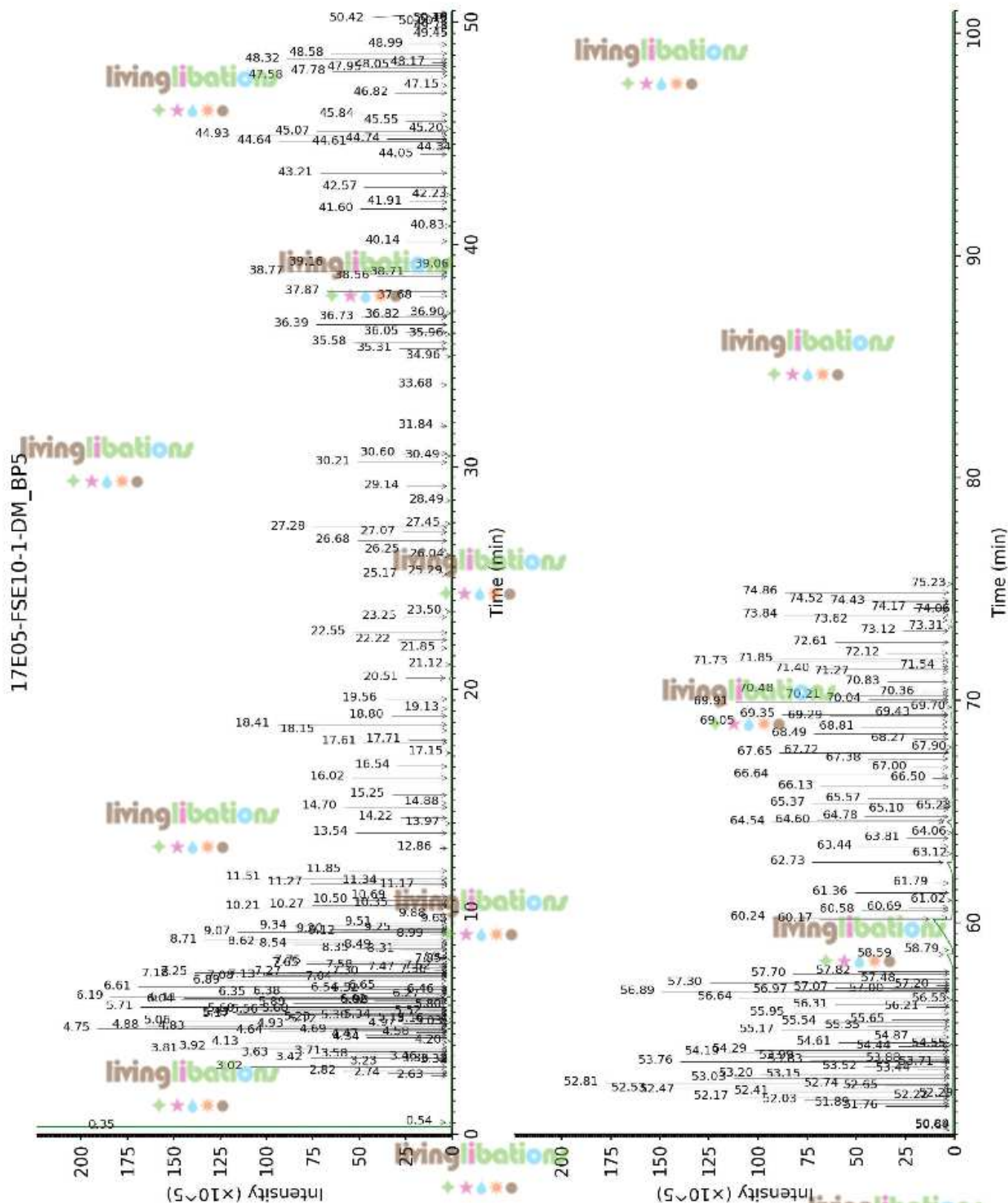
OTHER DATA

Physical aspect: Dark brown liquid**Refractive index:** N/A (too dark)

CONCLUSION

No adulterant, contaminant or diluent were detected using this method. The composition observed is in line with literature, including the high content of hardwickic acid which is characteristic of black currant absolute.





17E05-FSE10-1-DM_WAX

