

**Date :** March 19, 2019

**CERTIFICATE OF ANALYSIS – GC PROFILING**

**SAMPLE IDENTIFICATION**

**Internal code :** 19C15-HBN04-1-SCC

**Customer identification :** Tobacco Absolute - 11529 - 190228219

**Type :** Absolute

**Source :** *Nicotiana tabacum*

**Customer :** Health & Beauty Natural Oils

**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 :** Sylvain Mercier, M. Sc., Chimiste

**Analysis date :** March 18, 2019

Checked and approved by :



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

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*This report is digitally signed, it is only considered valid if the digital signature is intact.*

*PHYSICOCHEMICAL DATA*

**Physical aspect:** Black viscous liquid

**Refractive index:**  $0.0000 \pm 0.0003$  (20 °C)

*CONCLUSION*

No adulterant or contaminant has been detected using this method.

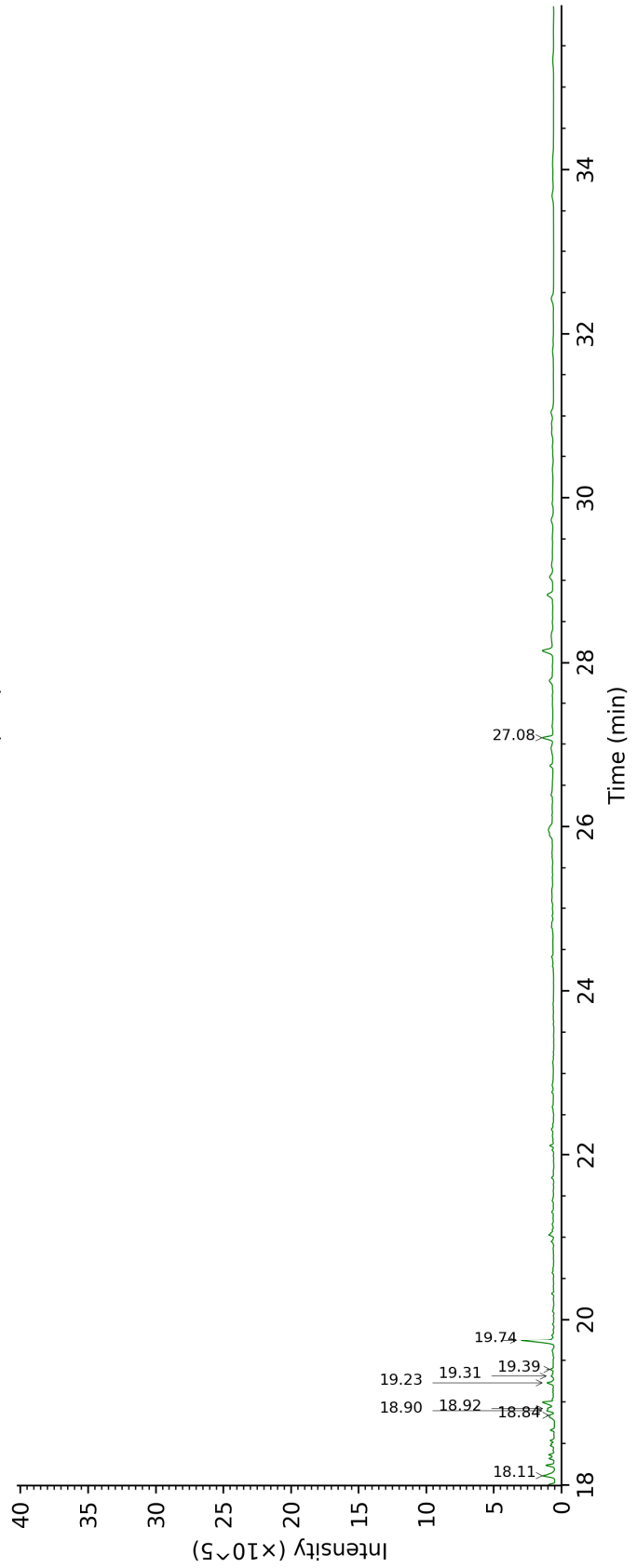
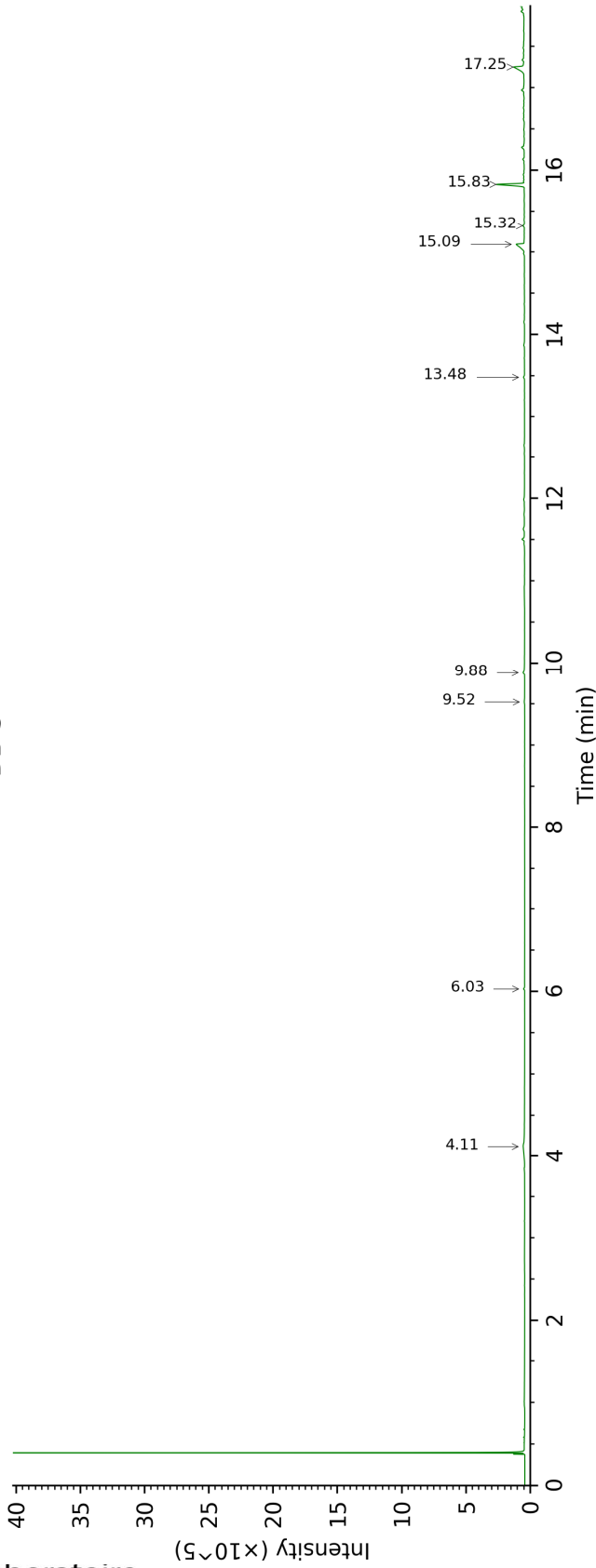
ANALYSIS SUMMARY

Identification	DB-5 (%)	DB-WAX (%)	Classe
Caproic acid?	1.19	2.38	Aliphatic acid
Phenylethyl alcohol	0.11	0.03	Simple phenolic
Nicotine	0.10	0.09	Alkaloid
Solanone	0.29	0.25	Aliphatic ketone
3-Oxo- $\alpha$ -ionone?	0.16		Ionone or analog
Myristic acid	2.30	3.30	Aliphatic acid
Ethyl myristate	0.19	0.19	Aliphatic ester
Neophytadiene	3.43	3.36	Diterpene
Palmitic acid	2.65	2.37	Aliphatic acid
Unknown	2.59		Unknown
Linoleic acid	1.47	0.48	Aliphatic acid
Oleic acid	2.24	1.48	Aliphatic acid
<i>cis</i> -Vaccenic acid?	[2.24]		Aliphatic acid
Stearic acid	1.55		Aliphatic acid
Duvatrienediol isomer II	0.64		Diterpenic alcohol
Duvatrienediol isomer III	0.67		Diterpenic alcohol
Duvatrienediol isomer I	6.07	4.32	Diterpenic alcohol
$\alpha$ -Tocopherol	2.01		Tocopherol
<b>Total identified</b>	<b>25.08%</b>	<b>18.24%</b>	

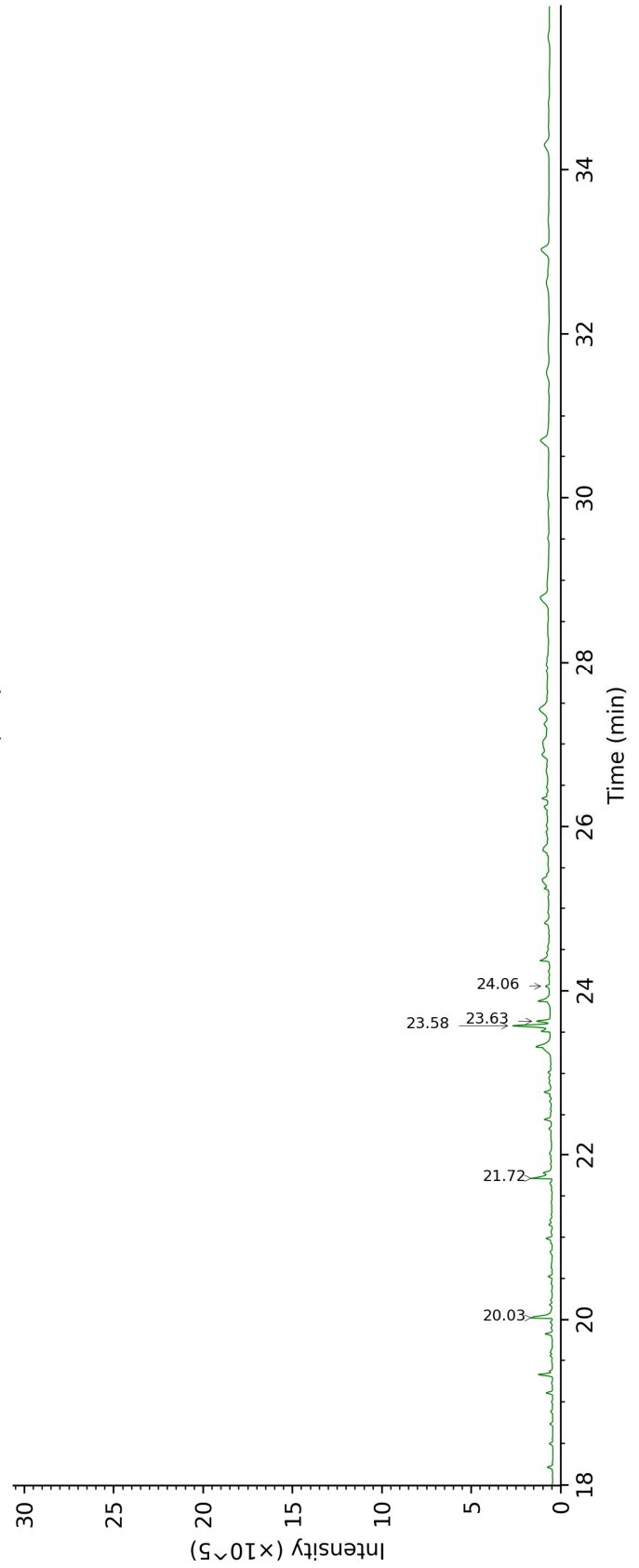
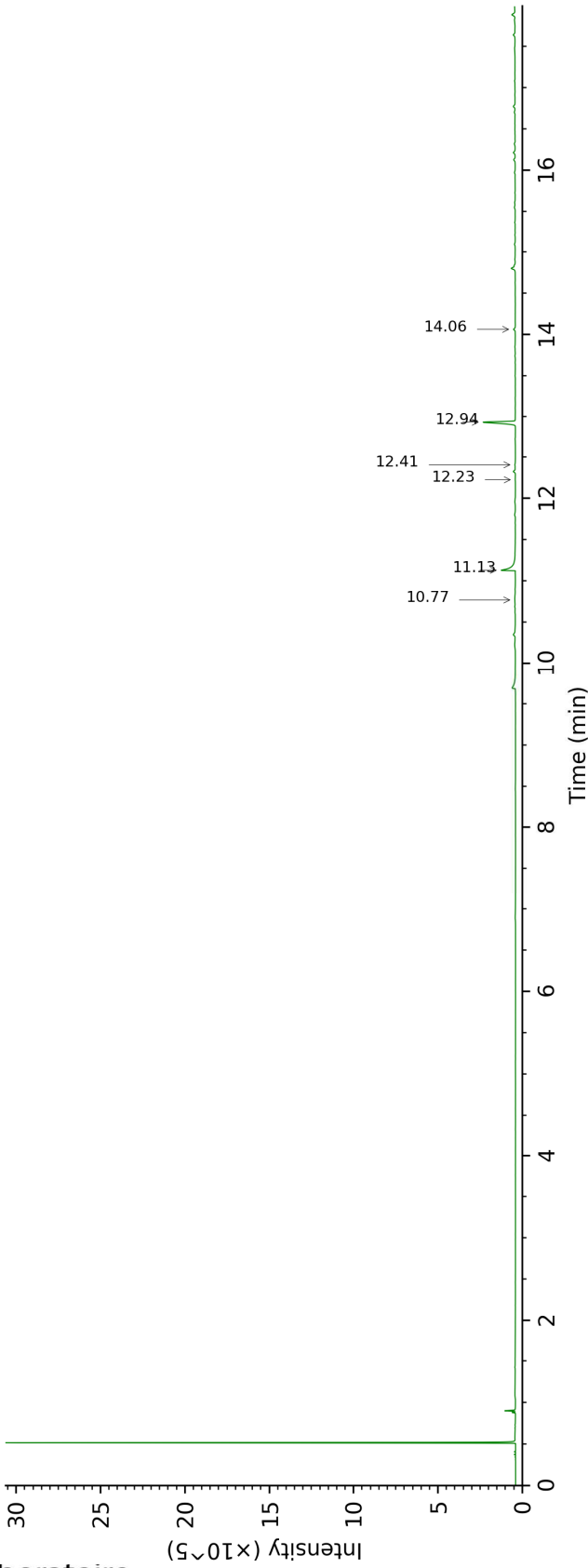
Note: no correction factor was applied

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DB-5



DB-WAX



FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
Caproic acid?	4.11	989	1.19	11.13	1752	2.38
Phenylethyl alcohol	6.03	1111	0.11	12.23	1847	0.03
Nicotine	9.52	1340	0.10	12.41	1863	0.09
Solanone	9.88	1366	0.29	10.77	1722	0.25
3-Oxo- $\alpha$ -ionone?	13.48	1642	0.16			
Myristic acid	15.09	1778	2.30	20.03	2654	3.30
Ethyl myristate	15.32	1798	0.19	14.06	2015	0.19
Neophytadiene	15.83	1844	3.43	12.94	1910	3.36
Palmitic acid	17.25	1977	2.65	21.72	2865	2.37
Unknown [m/z 107, 43 (82), 81 (62), 79 (55), 71 (54), 93 (36)...]	18.11	2061	2.59			
Linoleic acid	18.84	2134	1.47	24.06	3181	0.48
Oleic acid	18.90†	2140	2.24	23.63	3122	1.48
<i>cis</i> -Vaccenic acid?	18.92†	2143	[2.24]			
Stearic acid	19.23	2175	1.55			
Duvatrienediol isomer II	19.31	2183	0.64			
Duvatrienediol isomer III	19.39	2191	0.67			
Duvatrienediol isomer I	19.74	2229	6.07	23.58	3114	4.32
$\alpha$ -Tocopherol	27.08	3122	2.01			
<b>Total identified</b>		<b>25.08%</b>			<b>18.24%</b>	
<b>Total reported</b>		<b>27.67%</b>			<b>18.24%</b>	

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

Note: no correction factor was applied  
R.T.: Retention time (minutes)  
R.I.: Retention index