

Date : August 11, 2022

CERTIFICATE OF ANALYSIS – TOTAL FATTY ACIDS METHYL ESTERS (FAMES)

SAMPLE IDENTIFICATION

Internal code : 22G25-PTH01

Customer identification : Tamanu Organic - TN0115R

Type : Vegetable oil & fats

Source : *Calophyllum inophyllum*

Customer : Plant Therapy

ANALYSIS

Method: PC-MAT-010 - Fatty acids profiling of a vegetable oil or a plant by hydrolysis and derivatisation (FAMES).

Analyst : Sylvain Mercier, M. Sc., Chimiste 2014-005

Analysis date : August 02, 2022

Checked and approved by :

Sylvain Mercier, M. Sc., Chimiste 2014-005

Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia. This report is digitally signed, it is only considered valid if the digital signature is intact. The results only describe the samples that were submitted to the assays.

This report is an update of the version first issued on August 08, 2022 to correct a mistake in the lot number.

PHYSICOCHEMICAL DATA

Physical aspect: Dark green viscous liquid

Refractive index: 1.4844 ± 0.0003 (20 °C; method PC-MAT-016)

CONCLUSION

The oil corresponds to the expected profile for tamanu oil¹.

REFERENCE

- (1) Matthaus, B.; Vosmann, K.; Pham, L. Q.; Aitzetmüller, K. FA and Tocopherol Composition of Vietnamese Oilseeds. *J. Am. Oil Chem. Soc.* **2003**, *80* (10), 1013–1020.

ANALYSIS DATA

Fatty acids		Shorthand formula	R.T	R.I	%	Type
Common name	Systematic name					
Lauric acid	Dodecanoic acid	C12:0	7.91	1188	0.01	SFA
Myristic acid	Tetradecanoic acid	C14:0	9.72	1392	0.02	SFA
Palmitic acid	Hexadecanoic acid	C16:0	12.27	1597	13.72	SFA
Hypogeic acid	(7Z)-Hexadecenoic acid	C16:1 n-9 c	13.08	1649	0.03	MUFA
Palmitoleic acid	(9Z)-Hexadecenoic acid	C16:1 n-7 c	13.25	1658	0.21	MUFA
<i>cis</i> -Palmitvaccenic acid	(11Z)-Hexadecenoic acid	C16:1 n-5 c	13.48	1672	0.01	MUFA
Margaric acid	Heptadecanoic acid	C17:0	13.95	1698	0.10	SFA
<i>cis</i> -9-Heptadecenoic acid	(9Z)-Heptadecenoic acid	C17:1 n-8 c	15.10	1756	0.05	MUFA
Stearic acid	Octadecanoic acid	C18:0	16.18	1804	14.82	SFA
Octadecenoic acid isomer II	Octadecenoic acid	C18:1	17.01	1839	0.03	MUFA
Octadecenoic acid isomer IV	Octadecenoic acid	C18:1	17.10	1842	0.01	MUFA
Oleic acid	(9Z)-Octadecenoic acid	C18:1 n-9 c	17.55	1859	38.56	MUFA
<i>cis</i> -Vaccenic acid	(11Z)-Octadecenoic acid	C18:1 n-7 c	17.70	1865	0.66	MUFA
Nonadecylic acid	Nonadecanoic acid	C19:0	18.75	1905	0.01	SFA
<i>cis,trans</i> -9,12-Octadecadienoic acid	(9Z,12E)-Octadecadienoic acid	C18:2 n-6 ct	19.18	1921	0.05	PUFA
<i>trans,cis</i> -9,12-Octadecadienoic acid	(9E,12Z)-Octadecadienoic acid	C18:2 n-6 tc	19.42	1930	0.01	PUFA
Linoleic acid	(9Z,12Z)-Octadecadienoic acid	C18:2 n-6 cc	19.76	1942	30.00	PUFA
Arachidic acid	Eicosanoic acid	C20:0	21.66	2006	0.78	SFA
α -Linolenic acid	(9Z,12Z,15Z)-Octadecatrienoic acid	C18:3 n-3 ccc	22.48	2033	0.21	PUFA
Gondoic acid	(11Z)-Eicosenoic acid	C20:1 n-9 c	23.21	2057	0.17	MUFA
Heneicosylic acid	Heneicosanoic acid	C21:0	24.80	2108	0.03	SFA
Behenic acid	Docosanoic acid	C22:0	27.94	2211	0.22	SFA
Total PUFA: 30.22%						
Total MUFA: 39.68%						
Total SFA: 29.72%						
			Total identified 99.71%			

Note: no correction factor was applied
R.T.: Retention time (minutes)
R.I.: Retention index
PUFA: Polyunsaturated fatty acid
MUFA: Monounsaturated fatty acid
SFA: Saturated fatty acid

