

Date : July 26, 2022

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

SAMPLE IDENTIFICATION

Internal code : 22G12-PTH02

Customer identification : Jojoba ORGANIC - J70115R

Type : Vegetable oil & fats

Source : *Simmondsia chinensis*

Customer : Plant Therapy

ANALYSIS

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

Analyst : Pamela Lavoie, M.Sc., Chimiste

Analysis date : July 26, 2022

Checked and approved by :

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

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PHYSICOCHEMICAL DATA

Physical aspect: Yellow viscous liquid

Refractive index: 1.4663 ± 0.0003 (20 °C; method PC-MAT-016)

INTERNATIONAL JOJOBA EXPORT COUNCIL STANDARD FOR JOJOBA OIL

Compound	Min. %	Max. %	Observed %	Complies?
Palmitic acid		3.0	1.0	Yes
Behenic acid		1.0	0.4	Yes
Nervonic acid		3.0	1.4	Yes
C16:1		1.0	0.4	Yes
C20:1	65.0	80.0	66.6	Yes
C22:1	10.0	20.0	13.2	Yes
C18:1	5.0	15.0	13.6	Yes
Refractive index	1.4500	1.4700	1.4663	Yes

CONCLUSION

The sample features the expected fatty acids composition as described in the International Jojoba Export Council standard.

ANALYSIS DATA

Fatty acids						
Common name	Systematic name	Shorthand formula	R.T	R.I	%	Type
Myristic acid	Tetradecanoic acid	C14:0	9.72	1391	0.07	SFA
Palmitic acid	Hexadecanoic acid	C16:0	12.24	1595	1.05	SFA
Hypogeic acid	(7Z)-Hexadecenoic acid	C16:1 n-9 c	13.07	1648	0.36	MUFA
Palmitoleic acid	(9Z)-Hexadecenoic acid	C16:1 n-7 c	13.24	1658	0.05	MUFA
Margaric acid	Heptadecanoic acid	C17:0	13.85	1692	0.27	SFA
<i>cis</i> -9-Heptadecenoic acid	(9Z)-Heptadecenoic acid	C17:1 n-8 c	15.02	1752	0.08	MUFA
Stearic acid	Octadecanoic acid	C18:0	16.11	1800	0.25	SFA
Oleic acid	(9Z)-Octadecenoic acid	C18:1 n-9 c	17.47	1856	12.60	MUFA
<i>cis</i> -Vaccenic acid	(11Z)-Octadecenoic acid	C18:1 n-7 c	17.66	1864	0.97	MUFA
Octadecenoic acid isomer VII	Octadecenoic acid	C18:1	17.82	1870	0.06	MUFA
Nonadecylic acid	Nonadecanoic acid	C19:0	18.75	1905	0.10	SFA
<i>cis,trans</i> -9,12-Octadecadienoic acid	(9Z,12E)-Octadecadienoic acid	C18:2 n-6 ct	19.14	1920	0.12	PUFA
Linoleic acid	(9Z,12Z)-Octadecadienoic acid	C18:2 n-6 cc	19.97	1949	0.15	PUFA
Arachidic acid	Eicosanoic acid	C20:0	21.74	2009	0.17	SFA
α -Linolenic acid	(9Z,12Z,15Z)-Octadecatrienoic acid	C18:3 n-3 ccc	22.47	2033	0.32	PUFA
Gondoic acid	(11Z)-Eicosenoic acid	C20:1 n-9 c	23.48	2065	66.61	MUFA
Paullinic acid	(13Z)-Eicosenoic acid	C20:1 n-7 c	23.62	2070	0.03	MUFA
Behenic acid	Docosanoic acid	C22:0	27.99	2212	0.36	SFA
Erucic acid	(13Z)-Docosenoic acid	C22:1 n-9 c	29.36	2266	13.22	MUFA
Lignoceric acid	Tetracosanoic acid	C24:0	32.51	2413	0.20	SFA
Nervonic acid	(15Z)-Tetracosenoic acid	C24:1 n-9 c	33.43	2467	1.44	MUFA
Total PUFA: 0.47%			Total identified 98.47%			
Total MUFA: 95.10%						
Total SFA: 2.46%						

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

