

GC-MS Profiling Analysis Prepared for Jade Bloom, Inc

Date: May 1, 2018
Sample: Pumpkin Seed
Type: Carrier Oil
Source: *Cucurbita pepo*
Batch: 41855685

Method: Simultaneous hydrolysis and methylation of oil sample using a mixture of heptane/methanol/toluene/1,2-dimethoxypropane/sulfuric acid. Injection of the upper phase on GC-FID on a HP-88 column for quantification, with identification of the methyl esters by coinjection of standards.

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Methyl Esters	R.T.	%	Types
Lauric acid	8.18	0.01	Saturated
Myristic acid	10.02	0.10	Saturated
Pentadecylic acid	11.17	0.02	Saturated
Palmitic acid	12.58	11.43	Saturated
Hypogeic acid	13.47	0.01	Monounsaturated
Palmitoleic acid	13.64	0.11	Monounsaturated
Margaric acid	14.30	0.06	Saturated
(9Z)-Heptadecenoic acid	15.53	0.04	Monounsaturated
Stearic acid	16.48	5.80	Saturated
Elaidic acid	17.41	0.49	Monounsaturated
Petroselaicid acid?	17.48	0.34	Monounsaturated
trans-Vaccenic acid?	17.54	0.24	Monounsaturated
Petroselinic acid?	17.68	0.14	Monounsaturated
Oleic acid	17.90	33.94	Monounsaturated
cis-Vaccenic acid	18.10	0.76	Monounsaturated
Linolelaidic acid	19.04	0.10	Polyunsaturated
(9Z,12E)-Octadecadienoic acid	19.62	0.49	Polyunsaturated
(9E,12Z)-Octadecadienoic acid	19.86	0.44	Polyunsaturated
Linoleic acid	20.20	43.70	Polyunsaturated
Arachidic acid	21.95	0.43	Saturated
α -Linolenic acid	23.03	0.13	Polyunsaturated
Gondoic acid	23.60	0.12	Monounsaturated
Heneicosylic acid	25.11	0.06	Saturated
Behenic acid	28.09	0.13	Saturated
Erucic acid	28.92	0.04	Monounsaturated
Total identified		99.51%	Saturated: 18.14% Monounsaturated: 36.24% Polyunsaturated: 44.85%

CONCLUSION

The fatty acids distribution of the sample is within reported natural variability for pumpkin seed oils¹.

REFERENCES

- (1) Murkovic, M.; Hillebrand, A.; Draxl, S.; Pfannhauser, W.; Winkler, J. Distribution of Fatty Acids and Vitamin E Content in Pumpkin Seeds (*Cucurbita Pepo* L.) in Breeding Lines. *Acta Hort.* **1999**, 492 (August 2016), 47–55.