

Supplementary Materials: Simultaneous Determination of Nine Phthalates in Vegetable Oil by Atmospheric Pressure Gas Chromatography with Tandem Mass Spectrometry (APGC-MS/MS)

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Vegetable oil used in food consists of complex mixtures of triacylglycerols (TAGs, typically > 95%) with some small amounts of diacylglycerols (typically < 5%). Other minor components are tocopherols/tocotrienols (up to 900 mg kg⁻¹) and phytosterol esters/phytosterols (up to 1%) [1]. For different vegetable oil, the main components (TAGs) differ greatly in fatty acid composition (Table S1). They can be classified as short-chain (C6–8), medium-chain (C10–12), and long-chain (C14–18). The vegetable oil may be saturated (fully hydrogenated) or have one, two, or three double bonds [2].

Table S1. Vegetable oil and their typical fatty acid composition (%).

| Oil | 6:0 | 8:0 | 10:0 | 12:0 | 14:0 | 16:0 | 16:1 | 18:0 | 18:1 | 18:2 | 18:3 | 20:1 | 20:4 | 22:1 |
|------------|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| Palm oil | | | | 0.1 | 1.0 | 43.5 | 0.3 | 4.3 | 36.6 | 9.1 | 0.2 | 0.1 | | |
| Coconut | 0.6 | 7.5 | 6.0 | 44.6 | 16.8 | 8.2 | | 2.8 | 5.8 | 1.8 | | | | |
| Soybean | | | | | 0.1 | 10.3 | 0.2 | 3.8 | 22.8 | 51.0 | 6.8 | 0.2 | | |
| Corn | | | | | | 10.9 | | 1.8 | 24.2 | 58.0 | 0.7 | | | |
| Olive | | | | | | 11.0 | 0.8 | 2.2 | 72.5 | 7.9 | 0.6 | 0.3 | | |
| Canola oil | | | | | | 4 | | 2 | 55 | 26 | 10 | | | 2 |

References:

1. Hammond, E.W. VEGETABLE OILS/Types and Properties, in *Encyclopedia of Food Sciences and Nutrition* (Second Edition), 2003, 5899-5904. <https://doi.org/10.1016/B0-12-227055-X/01225-6>.
2. Dupont, J. VEGETABLE OILS/Dietary Importance, in *Encyclopedia of Food Sciences and Nutrition* (Second Edition), 2003, 5921-5925. <https://doi.org/10.1016/B0-12-227055-X/01229-3>.