Supplementary Material

Monitoring virgin olive oil shelf-life by fluorescence spectroscopy and sensory characteristics. A multidimensional study carried out under simulated market conditions.

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Table S1. Sensory assessment results (medians of the fruity attribute and defect) during the storage experiment for each VOO.

Months of storage	Median of the fruity attribute (M_f)				Median of defect (M_d)			
	VOO1	VOO2	VOO3	VOO4	VOO1	VOO2	VOO3	VOO4
0	4.7	3.5	3.8	3.0	0.0	0.0	0.0	2.0
1	4.7	3.5	3.8	3.0	0.0	0.0	0.0	2.0
2	4.7	3.0	3.8	3.0	0.0	0.0	0.0	2.0
3	4.5	2.5	3.8	3.0	0.0	0.0	0.0	2.0
4	4.0	2.0	3.8	3.0	0.0	0.0	0.0	2.0
5	4.0	2.0	3.8	3.0	0.0	1.0	0.0	2.0
6	4.0	1.9	3.8	3.0	0.0	1.0	0.0	2.0
7	3.8	1.9	2.0	3.0	0.0	1.9	0.0	2.0
8	3.8	1.9	2.0	3.0	0.0	1.9	0.0	2.0
9	3.8	1.8	2.0	2.8	0.0	1.9	2.6	2.0
10	3.6	1.5	2.0	2.8	0.0	2.0	2.5	2.0
11	3.6	1.5	2.0	2.8	0.0	2.0	2.5	2.0
12	3.1	1.5	2.0	2.8	0.0	2.0	2.5	2.0
13	3.1	1.5	2.0	2.8	0.0	2.0	2.5	2.0
14	3.0	1.5	1.8	2.8	0.0	2.0	2.0	2.0
15	2.0	1.5	1.8	2.8	2.5	2.0	2.0	2.0
16	2.0	1.5	1.8	2.5	2.5	2.0	2.0	2.0
17	1.8	1.5	1.8	2.5	2.5	2.0	2.0	2.0
18	1.6	1.5	1.8	2.0	2.9	2.0	2.0	3.5
19	1.6	1.5	1.8	0.0	3.0	2.0	2.0	3.5
20	1.6	1.5	1.8	0.0	3.0	2.0	2.0	3.5
21	1.5	1.5	1.8	0.0	3.0	2.0	2.0	4.0

Note: According to European commission regulation (see [15] *in the main publication): Extra virgin olive oil, $M_f > 0$ and $M_d = 0$; Virgin olive oil, $M_f > 0$ and $M_d \leq 3.5$; Lampante olive oil, $M_d > 3.5$.*

Table S2. Phenolic compounds identified in the VOO samples subjected to storage at moderate conditions. The compounds are grouped according to the excitation wavelength chromatogram where they were registered.

Compound	Code
Identified at λ_{ex} = 280 nm	
Hydroxytyrosol	1
Tyrosol	2
p-hydroxyphenylacetic acid (internal standard)	3
Vanillic acid	4
Vanillin	5
p-coumaric acid	6
Hydroxytyrosol acetate	7
o-coumaric acid (internal standard)	11
Dialdehydic form of elenolic acid linked to hydroxytyrosol (3,4-DHPEA-EDA)	12
Dialdehydic form of decarboxymethyl elenolic acid liked to *p*-HPEA (*p*-HPEA-EDA)	14
Pinoresinol	15
Cinamic acid	16
Acetoxypinoresinol	17
Aldehydic form of elenolic acid linked to hydroxytyrosol (3,4-DHPEA-EA)	20
Aldehydic form of elenolic acid linked to tyrosol (*p*-HPEA-EA)	22
Identified at λ_{ex} = 235 nm	
Elenoic acid	A
Identified at λ_{ex} = 335 nm	
Luteolin	19
Apigenin	21

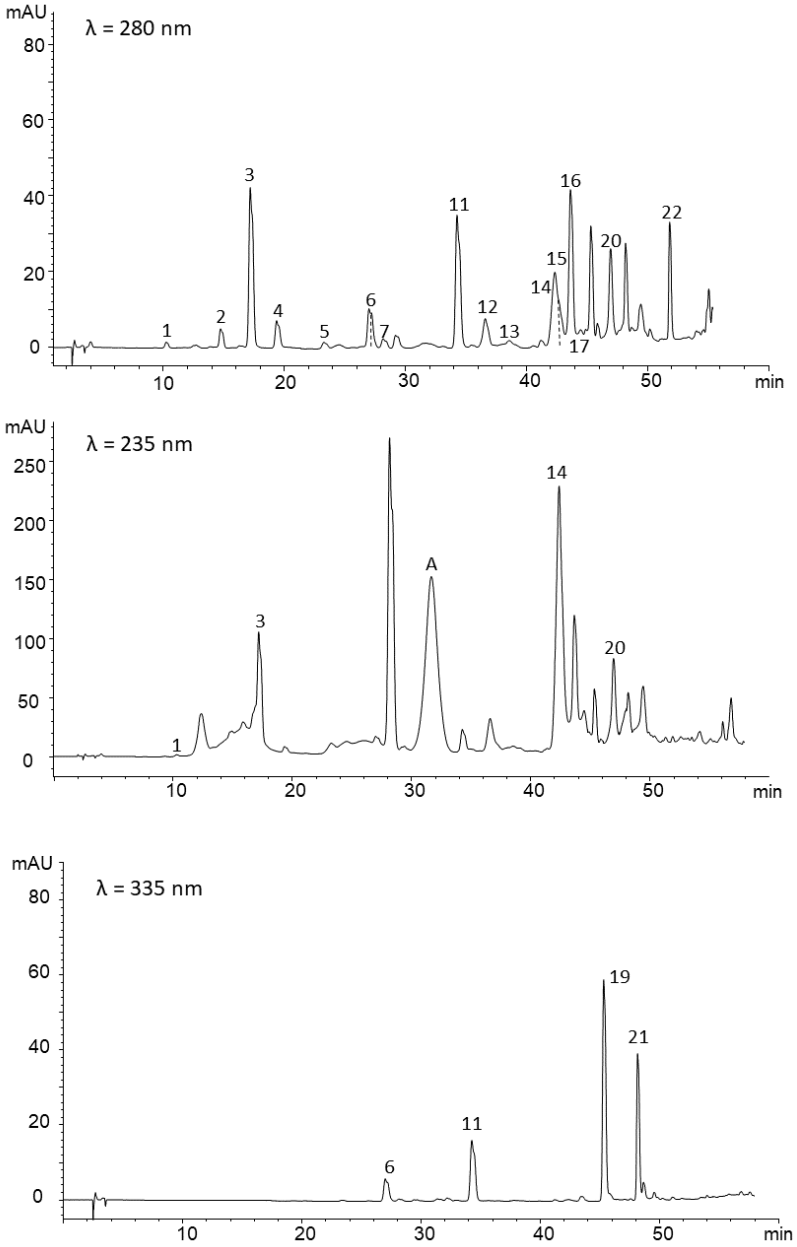

Figure S1. An example of chromatogram obtained from the phenol analysis. The chromatograms correspond to VOO1 (fresh oil). The codes are shown in **Table S2**.

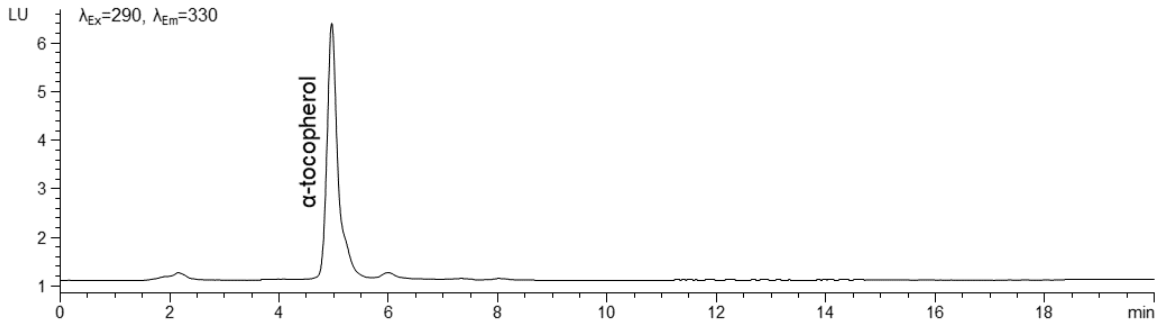

Figure S2. An example of chromatogram obtained from the α-tocopherol analysis. The chromatogram corresponds to VOO1 (fresh oil).

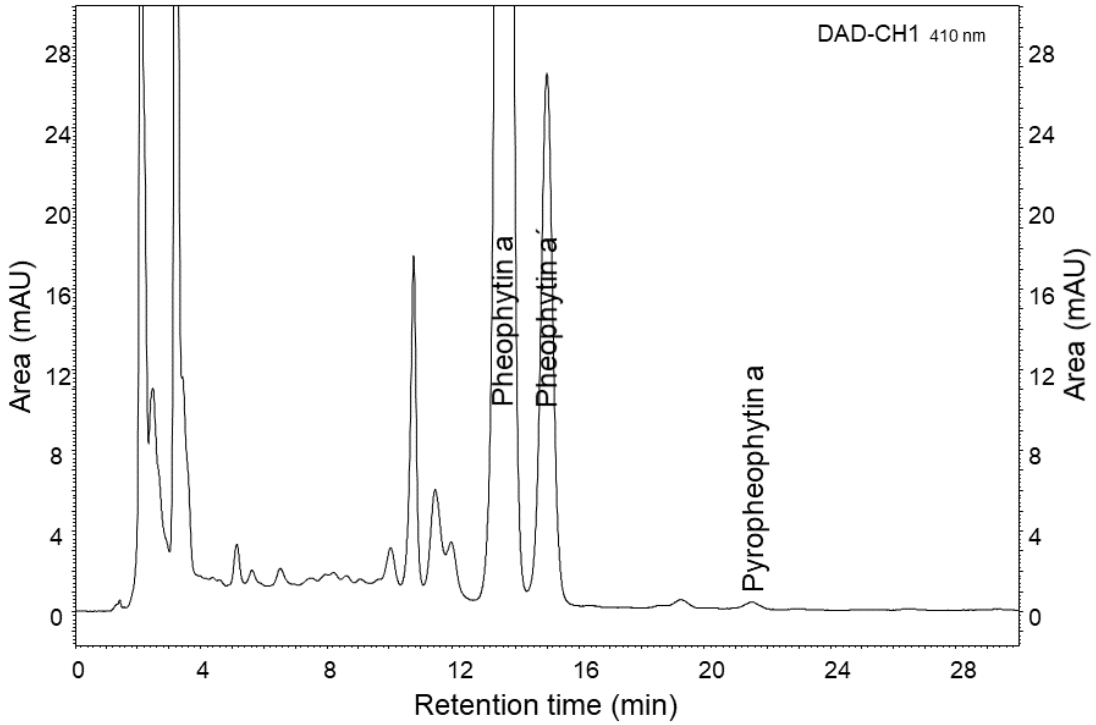

Figure S3. An example of chromatogram of the degradation products of chlorophyll a obtained in the analysis. The chromatogram corresponds to VOO3 (fresh oil).

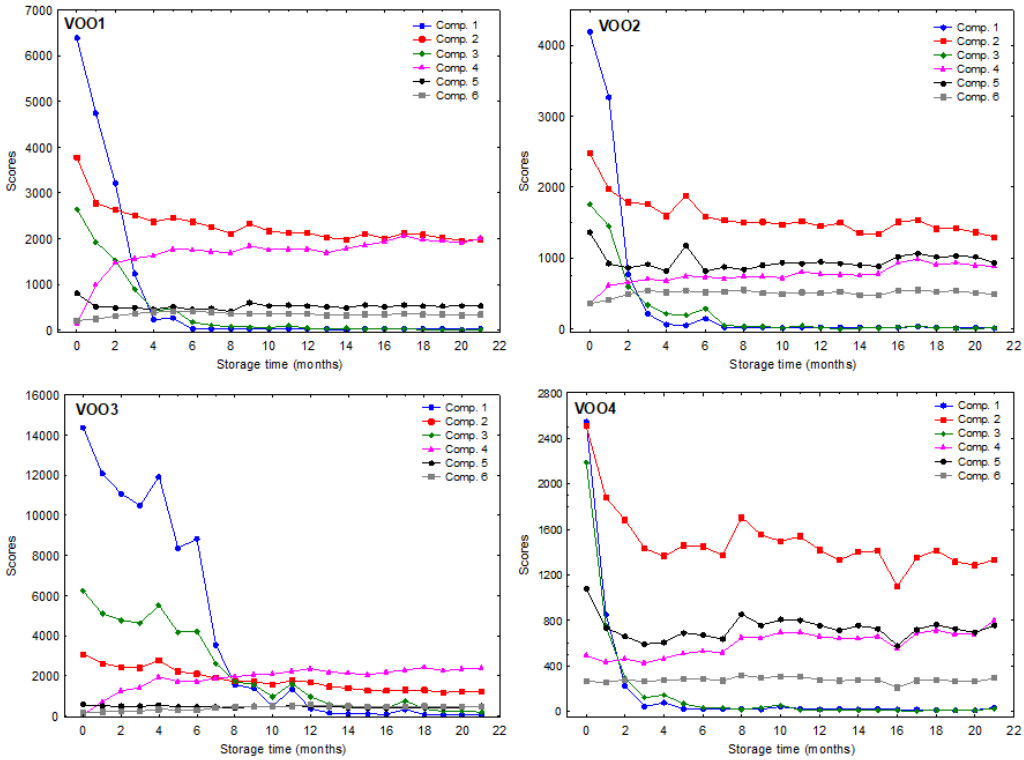

Figure S4. PARAFAC scores of the sample set (different monovarietal samples during the storage at moderate conditions). Component 1 ($\lambda_{ex}/\lambda_{em}$ 408/678 nm), component 2 ($\lambda_{ex}/\lambda_{em}$ 293/322 nm), component 3 ($\lambda_{ex}/\lambda_{em}$ 408/668 nm), component 4 ($\lambda_{ex}/\lambda_{em}$ 300/418 nm), component 5 ($\lambda_{ex}/\lambda_{em}$ 280/314 nm), and component 6 ($\lambda_{ex}/\lambda_{em}$ 340/450 nm).