

CODEX ALIMENTARIUS COMMISSION

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Food and Agriculture
Organization of the
United Nations



World Health
Organization

Viale delle Terme di Caracalla, 00153 Rome, Italy - Tel: (+39) 06 57051 - E-mail: codex@fao.org - www.codexalimentarius.org

Agenda Item 4

CX/FO 19/26/4

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FATS AND OILS

Twenty-Sixth Session

Kuala Lumpur, Malaysia, 25 February- 01 March 2019

PROPOSED DRAFT REVISION TO THE *STANDARD FOR OLIVE OILS AND OLIVE POMACE OILS* (CXS 33-1981)

(Prepared by the Electronic Working Group chaired by Spain and co-chaired by Argentina and Canada)

(At Step 3)

Governments and interested international organizations are invited to submit comments on **the proposed draft revision to the standard as presented in Annex I**, at Step 3, by **7 December 2018**.

Comments should be submitted through the Codex online Commenting System (OCS):
<https://ocs.codexalimentarius.org/> as stipulated in [CL 2018/76/OCS – CCFO](#).

Background

1. At the 25th Session of the Codex Committee on Fats and Oils (CCFO25) held in Kuala Lumpur, Malaysia, the delegation of the European Union noted that the *Standard for Olive Oils and Olive Pomace Oils* (CXS 33-1981) had not been reviewed in the past 15 years, despite the fact that there had been considerable technological and scientific innovations, cultivation areas had expanded, and the volumes and value of trade had increased.
2. The Committee agreed to start new work on the revision of Sections 3, 8 and the Appendix of the *Standard for Olive Oils and Olive Pomace Oils* (CXS 33-1981). In considering this work, the Committee clarified that the proposed work would take into account the needs of Codex members, the latest technological knowledge and scientific progress of the sector in order to facilitate trade, promote consumer protection and facilitate the harmonization of national legislation with Codex.
3. The Committee also agreed to establish an eWG, chaired by Spain, co-chaired by Argentina and Canada, and working in English only, to prepare the proposed draft revisions of the *Standard for Olive Oils and Olive Pomace Oils* (CXS 33-1981) for circulation for comments at Step 3 and consideration at CCFO26, subject to CAC40 approval of the new work.
4. In addition, the committee agreed to convene a physical working group (pWG) chaired by Spain and co-chaired by Argentina and Canada, open to all members, which will meet immediately before the 26th Session of the CCFO to consider the eWG report and comments received.

Timeline and Discussions

5. The Electronic Working Group was established on 2017 with invitation from Spain, Argentina and Canada to Codex members and observer organizations interested in participating in this electronic working group. Representatives from 25 Codex member countries including the European Union, and 1 observer organization, expressed interest to participate (Annex II)
6. The eWG worked from September 2017 to September 2018, and started with discussion and agreement on the various regional, national and international standards for consideration. The group then held its discussion over two rounds; the first round included a series of discussion documents with questionnaires, to consult on definitions and terms, quality factors and essential composition. The second round began in July 2018 when discussions were held on the items on which there had been no consensus and on the list of methods of analysis and sampling.

7. The work of this eWG started with a comparative analysis of the following standards:
- Standard for Olive Oils and Olive Pomace Oils. CXS 33-1981. Adopted in 1981. Revised in 1989, 2003, 2015. Amended in 2009, 2013.
 - Código Alimentario Argentino. Capítulo VII. Alimentos Grasos. Aceites Alimenticios. Artículos 535 y 536.
 - United States Standards for Grades of Olive Oil and Olive-Pomace Oil. Effective October 25, 2010.
 - Australian Standard®. Olive Oils and Olive-Pomace Oils.
 - South African National Standard. Olive oils and olive-pomace oils.
 - State of California. Department of Food and Agriculture. Grade and Labeling Standards for Olive Oil, Refined- Olive Oil and Olive-Pomace Oil. Effective September 27, 2016.
 - Ministério da Agricultura, Pecuária e Abastecimento. Gabinete do Ministro. Instrução normativa Nº 1, 30 de Janeiro de 2012;
 - Commission Regulation (EEC) No 2568/91 of 11 July 1991 on the characteristics of olive oil and olive-residue oil and on the relevant methods of analysis.
 - International Olive Council. COI/T.15/NC No 3/Rev. 11. July, 2016.
8. There was consensus on many items, and where majority of the members supported specific changes, these were considered for revision. However, there were also a number of areas where divergent opinions were received, and which will be brought to the 26th session of CCFO for consideration, including: Definition of refined olive oil – members had different opinions on the inclusion of refining methods; Naming of specific oils – there was no consensus on the names to be used for Olive Oil and Olive-Pomace Oil; Fatty acid composition – lower limits for C16:0 and C18:1.

Conclusion and Recommendation

9. Annex I contains the proposed draft revisions to the standard, including the amendments agreed by the eWG members. The items that are still to be discussed appear in square brackets.

**PROPOSED DRAFT REVISION TO THE STANDARD FOR OLIVE OILS AND OLIVE POMACE OILS
(CXS 33-1981)**

(Step 3)

Notes on Proposed Revisions to Current Standard:

Bold and underlined: amendment agreed to by all/ majority of members of the electronic working group (consensus)

[In square brackets and italics]: proposed amendment but not agreed to by all/majority of members (no consensus)

~~Strikethrough:~~ text agreed to be deleted (with consensus)

~~[Strikethrough in square brackets]:~~ text proposed to be deleted but not agreed to by all/ majority of eWG members

1. SCOPE

This standard applies to olive oils and olive-pomace oils described in Section 2 presented in a state for human consumption.

2. DESCRIPTION

Olive oil is the oil obtained solely from the fruit of the olive tree (*Olea europaea*L.), to the exclusion of oils obtained using solvents or re-esterification processes and of any mixture with oils of other kinds.

Virgin olive oils are the oils obtained from the fruit of the olive tree solely by mechanical or other physical means under conditions, particularly thermal conditions, that do not lead to alterations in the oil, and which have not undergone any treatment other than washing, decanting, centrifuging and filtration.

Olive-pomace oil is the oil obtained by treating olive pomace with solvents other than halogenated solvents or by other physical treatments, to the exclusion of oils obtained by re-esterification processes and of any mixture with oils of other kinds.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

Extra virgin olive oil: virgin olive oil with a free acidity, expressed as oleic acid, of not more than 0.80 grams per 100 grams and whose other physicochemical **and organoleptic** characteristics correspond to those laid down for this category.

Virgin olive oil: virgin olive oil with a free acidity, expressed as oleic acid, of not more than 2.0 grams per 100 grams and whose other characteristics physicochemical **and organoleptic** correspond to those laid down for this category.

~~**Ordinary virgin olive oil:** virgin olive oil with a free acidity, expressed as oleic acid, of not more than 3.3 grams per 100 grams and whose other characteristics correspond to those laid down for this category¹.~~

Refined olive oil: olive oil obtained from virgin olive oils by refining methods which do not lead to alterations in the initial glyceridic structure. It has a free acidity, expressed as oleic acid, of not more than 0.30 grams per 100 grams and its other characteristics correspond to those laid down for this category¹

or

[Refined olive oil: olive oil obtained from virgin olive oils by refining methods *[(including methods aiming to the complete or partial removal of chemical compounds responsible for organoleptic descriptors)]* which do not lead to alterations in the initial glyceridic structure. It has a free acidity, expressed as oleic acid, of not more than 0.30 grams per 100 grams and its other characteristics correspond to those laid down for this category]

¹ This product may only be sold direct to the consumer if permitted in the country of retail sale. *[Pending to remove this note by the CCFO plenary]*

or

[Refined olive oil]: olive oil obtained from virgin olive oils by refining methods, [soft conditions and milder treatments included] [including any combination of heating, reduced pressure and/or filtering with bleaching earth], which do not lead to alterations in the initial glyceridic structure. It has a free acidity, expressed as oleic acid, of not more than 0.3 grams per 100 grams and its other physicochemical [and organoleptic] characteristics correspond to those fixed for this category in this standard].

[~~Olive oil~~] [Olive oil composed of refined olive oil and virgin olive oils]: oil consisting of a blend of refined olive oil and virgin olive oils suitable for human consumption. It has a free acidity, expressed as oleic acid, of not more than 1 gram per 100 grams and its other characteristics [physicochemical and organoleptic characteristics] correspond to those laid down for this category.²

Refined olive-pomace oil: oil obtained from crude olive-pomace oil by refining methods which do not lead to alterations in the initial glyceridic structure. It has a free acidity, expressed as oleic acid, of not more than 0.3 grams per 100 grams and its other characteristics [physicochemical and organoleptic] correspond to those laid down for this category¹.

[~~Olive-pomace oil~~] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils]: oil consisting of a blend of refined olive-pomace oil and virgin olive oils. It has a free acidity, expressed as oleic acid, of not more than 1 gram per 100 grams and its other characteristics [physicochemical and organoleptic] correspond to those laid down for this category.²

3.1 Organoleptic characteristics (odour and taste) of virgin olive oils

	Median of the defect	Median of the fruity attribute
Extra virgin olive oil	Me = <u>0.0</u>	Me > ≥ <u>0.0</u>
Virgin olive oil	0 < Me ≤ 2.5 ≤ <u>3.5</u>	Me > ≥ <u>0.0</u>
[Ordinary virgin olive oil]	[2.5 < Me ≤ 6.0*]	

[* or when the median of the defect is less than or equal to 2.5 and the median of the fruity attribute is equal to 0.]

Fatty acid composition as determined by gas chromatography (% total fatty acids)

Fatty acid	Virgin olive oils	[Olive oil] [Olive oil composed of refined olive oil and virgin olive oils] Refined olive oil	[Olive-pomace oil] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils] Refined olive-pomace oil
	C14:0	0.0 – 0.05 <u>0.03</u>	0.0 – 0.05 <u>0.03</u>
C16:0	[7.0] 7.5 – 20.0	[7.0] 7.5 – 20.0	[7.0] 7.5 – 20.0
C16:1	0.3 – 3.5	0.3 – 3.5	0.3 – 3.5
C17:0	0.0 – 0. <u>30.4</u>	0.0 – 0. <u>30.4</u>	0.0 – 0. <u>30.4</u>
C17:1	0.0 – 0. <u>30.6</u>	0.0 – 0. <u>30.6</u>	0.0 – 0. <u>30.6</u>
C18:0	0.5 -5.0	0.5 - 5.0	0.5 – 5.0
C18:1	[53.0] 55.0 – 83.0	[53.0] 55.0 – 83.0	[53.0] 55.0 – 83.0
C18:2	<u>2.53.5</u> – 21.0	<u>2.53.5</u> – 21.0	<u>2.53.5</u> – 21.0
C18:3 ³			
C20:0	0.0 – 0.6	0.0 – 0.6	0.0 – 0.6
C20:1	0.0 – 0. <u>40.6</u>	0.0 – 0. <u>40.6</u>	0.0 – 0. <u>40.6</u>
C22:0	0.0 – 0.2	0.0 – 0.2	0.0 – 0.3
C24:0	0.0 – 0.2	0.0 – 0.2	0.0 – 0.2
Trans fatty acid			

²The country of retail sale may require a more specific designation.

³ Pending the results of IOC (International Olive Council) survey and further considerations by the Committee on Fats and Oils. National limits may remain in place.

C18:1 T	0.0 – 0.05	0.0 – 0.20	0,0 - 0,40
C18:2 T + C18:3 T	0.0 – 0.05	0.0 – 0.30	0,0 - 0,35

Content of 2-glycerol monopalmitate (%)

Virgin olive oils	C16:0 ≤ 14.0 %; 2P ≤ 0.9 %
[Olive oil] [Olive oil composed of refined olive oil and virgin olive oils]	C16:0 > 14.0 %, 2P ≤ 1.0 %
Refined olive oil	C16:0 ≤ 14.0 %; 2P ≤ 0.9 %
Refined olive-pomace oil	≤ 1.4 %
[Olive-pomace oil] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils]	≤ 1.2 %

Sterol and triterpene dialcohol composition

Desmethylsterol composition (% total sterols)

Cholesterol	≤ 0.5
Brassicasterol	≤ 0.1 for other grades <u>for olive oils</u> ≤ 0.2 for olive-pomace oils
Campesterol	≤ 4.0 ^(a)
Stigmasterol	< campesterol
Δ7-stigmastenol	≤ 0.5 ^(b)
Apparent β-sitosterol^(c) Beta-sitosterol + delta-5-avenasterol + delta-5-23-stigmastadienol + clerosterol + sitostanol + delta-5-24-stigmastadienol	≥ 93.0

^(a) When an authentic oil naturally has a campesterol level >4.0% and ≤ 4.5%, it is considered virgin or extra virgin olive oil if the stigmasterol level is ≤ 1.4% and the delta-7-stigmastenol level is ≤ 0.3% and stigmastadienes is ≤ 0.05 mg/kg. The other parameters shall meet the limits set out in the standard.

^(b) If the value is >0,5 y ≤0,8%, campesterol must be ≤3,3, stigmasterol ≤1,4 and ΔECN₄₂ ≤|0,1|.

^(c) Chromatographic peak composed by: Δ5,23-estigmastadienol+clerosterol+β-sitosterol+sitostanol+Δ5-avenasterol+Δ5,24-estigmastadienol.

Minimum Value for total sterols

Virgin olive oils	
Refined olive oil	1,000 mg/kg
Olive oil	
Refined olive-pomace oil	1,800 mg/kg
Olive-pomace oil	1,600 mg/kg
Virgin olive oils	≥ 1,000 mg/kg
[Olive oil] [Olive oil composed of refined olive oil and virgin olive oils]	≥ 1,600 mg/kg
Refined olive oil	
[Olive-pomace oil] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils]	≥ 1,800 mg/kg
Refined olive-pomace oil	

Maximum Erythrodiol and uvaol content (% total sterols)

Virgin olive oils [Olive oil] [<i>Olive oil composed of refined olive oil and virgin olive oils</i>] Refined olive oil	≤ 4.5
[Olive-pomace oil] [<i>Olive-pomace oil composed of refined olive pomace oil and virgin olive oils</i>] Refined olive-pomace oil	> 4.5

Waxes content

Virgin olive oils	≤250 mg/kg ≤ 150 mg/kg ^(d)
[Olive oil] [<i>Olive oil composed of refined olive oil and virgin olive oils</i>] Refined olive oil	≤ 350 mg/kg
[Olive-pomace oil] [<i>Olive-pomace oil composed of refined olive pomace oil and virgin olive oils</i>] Refined olive-pomace oil	> 350 mg/kg

^(d) **Sum of C₄₂+C₄₄+C₄₆****ΔECN₄₂ - Maximum difference between the actual and theoretical ECN 42 triglyceride content**

Virgin olive oils	0.2
[Olive oil] [<i>Olive oil composed of refined olive oil and virgin olive oils</i>] Refined olive oil	0.3
[Olive-pomace oil] [<i>Olive-pomace oil composed of refined olive pomace oil and virgin olive oils</i>] Refined olive-pomace oil	0.5

Maximum stigmastadienes content

Virgin olive oils	0.15 ≤ 0.05 mg/kg
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Peroxide value (milliequivalents of active oxygen/kg oil)

Virgin olive oils	≤ 20.0
Refined olive oil	≤ 5.0
[Olive oil] [<i>Olive oil composed of refined olive oil and virgin olive oils</i>] Refined olive-pomace oil	≤ 15.0
[Olive-pomace oil] [<i>Olive-pomace oil composed of refined olive pomace oil and virgin olive oils</i>] Refined olive-pomace oil	≤ 5.0
[Olive-pomace oil] [<i>Olive-pomace oil composed of refined olive pomace oil and virgin olive oils</i>] Refined olive-pomace oil	≤ 15.0

Absorbency in ultra-violet K270the ultraviolet region ($K_{1cm}^{\%}$)

	Absorbency in ultra-violet at 270 nm 270nm/268nm	Delta-K $\Delta K^{(5)}$
Extra virgin olive oil	≤ 0.22	≤ 0.01
Virgin olive oil	≤ 0.25	≤ 0.01
[Ordinary virgin olive oil]	[≤ 0.30*]	[≤ 0.01]
Refined olive oil	≤ 1.10 1.25	≤ 0.16
[Olive oil] [Olive oil composed of refined olive oil and virgin olive oils]	≤ 0.90 1.15	≤ 0.15
Refined olive-pomace oil	≤ 2.00	≤ 0.20
[Olive-pomace oil] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils]	≤ 1.70	≤ 0.18

[* After passage of the sample through activated alumina, absorbency at 270 nm shall be equal to or less than 0.11.]

(5)

$$\Delta K_{270} = K_{270} - \frac{(K_{266} + K_{274})^2}{2}$$

$$\Delta K_{268} = K_{268} - \frac{(K_{264} + K_{272})^2}{2}$$

Others

Fatty acid ethyl esters – FAEE (mg/kg)	≤ 35
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4. FOOD ADDITIVES**4.1 Virgin olive oils**

No additives are permitted in these products.

4.2 Refined olive oil, olive oil, refined olive-pomace oil and olive-pomace oil

The addition of alpha-tocopherols (d-alpha tocopherol (INS 307a); mixed tocopherol concentrate (INS 307b); dl-alpha-tocopherol (INS 307c)) to the above products is permitted to restore natural tocopherol lost in the refining process. The concentration of alpha-tocopherol in the final product shall not exceed 200 mg/kg.

5. CONTAMINANTS

5.1 The **products** covered by this Standard shall comply with the Maximum Levels of the *General Standard for Contaminants and Toxins in Food and Feed* (CXS 193-1995).

5.2 Pesticide residues

The products covered by the provisions of this standard shall comply with those maximum residue limits established by the Codex Alimentarius Commission for these commodities.

5.3 Halogenated solvents

Maximum content of each halogenated solvent: 0.1 mg/kg

Maximum content of the sum of all halogenated solvents: 0.2 mg/kg

6. HYGIENE

It is recommended that the products covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the *General Principles of Food Hygiene* (CXC 1-1969), and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

The products should comply with any microbiological criteria established in accordance with the *Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Foods* (CXG 21-1997).

7. LABELLING

The products shall be labelled in accordance with the *General Standard for the Labelling of Prepackaged Foods* (CXS 1-1985).

7.1 Name of the food

The name of the product shall be consistent with the descriptions as shown in Section 3 of this standard. In no case shall the designation 'olive oil' be used to refer to olive-pomace oils.

7.2 Labelling of Non-Retail Containers

Information on the above labelling requirements shall be given either on the container or in accompanying documents, except that the name of the food, lot identification and the name and address of the manufacturer or packer shall appear on the container.

However, lot identification and the name and address of the manufacturer or packer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

8. METHODS OF ANALYSIS AND SAMPLING

All the methods referenced in this appendix must be applied in its last revision

Sampling

According to ~~ISO 664:1989~~ or ISO 5555

Sample preparation

According to ISO 661

Determination of organoleptic characteristics

According to COI/T.20/Doc. n° 15.

Determination of free acidity

According to ISO 660 or AOCS Cd 3d-63 (03) or COI/T.20/Doc.n°34.

Determination of peroxide value

According to ISO 3960 or AOCS Cd 8b-90 (03) or COI/T.20/Doc.n°35.

Determination of absorbency in the ultraviolet region

According to COI/T.20/Doc. n° 19 or ISO 3656 or AOCS Ch 5-91 (01).

Fatty acid ethyl esters - FAEE

According to COI/T.20/Doc. N° 28

Determination of fatty acid composition and its *trans* isomers

According to COI/T.20/Doc. n° ~~2433~~ or ~~ISO 5508:1990~~ or AOCS Ch2-91 (02) or AOCS Ce 1f-96(02) or ISO 12966-2 or ISO 12966-4

~~Sample preparation ISO 5509:2000 or AOCS Ce 2-66(97)~~

Determination of *trans* fatty acid content

According to COI/T.20/Doc.n°17 or ISO 15304:2002 or AOCS Ce 1f-96(02)

Determination of sterol composition and content and erythrodiol and uvaol

According to COI/T.20/Doc. n° ~~4030~~ or ISO 12228-2 or AOCS Ch 6-91 (97).

Determination of waxes content

According to COI/T.20/Doc. n° ~~48~~**28** or AOCS Ch 8-02 (02)

Determination of stigmastadienes

According to COI/T.20/Doc. n° 11 or ISO 15788-1 or ISO 15788-2 or AOCS Cd 26-96 (03).

Calculation of the difference between the actual and theoretical ECN 42 triglyceride content

According to COI/T.20/Doc. n° 20 or AOCS Ce 5b-89 (97).

Determination of 2-glyceryl monopalmitate content

According to COI/T.20/Doc. N°23

Determination of alpha-tocopherol

According to ISO 9936

Detection of traces of halogenated solvents

According to ~~COI/T.20/Doc. N° 8~~**ISO 16035**

OTHER QUALITY AND COMPOSITION FACTORS

These quality and composition factors are supplementary information to the essential composition and quality factors of the standard. A product, which meets the essential quality and composition factors but does not meet these supplementary factors, may still conform to the standard.

1. QUALITY CHARACTERISTICS

Moisture and volatile matter

Maximum level

Virgin olive oils	≤ 0.2 %
Refined olive oil	≤ 0.1 %
[Olive oil] [Olive oil composed of refined olive oil and virgin olive oils]	≤ 0.1 %
Refined olive-pomace oil	≤ 0.1 %
[Olive-pomace oil] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils]	≤ 0.1 %

Insoluble impurities:

Virgin olive oils	≤ 0.1 %
Refined olive oil	≤ 0.05 %
[Olive oil] [Olive oil composed of refined olive oil and virgin olive oils]	≤ 0.05 %
Refined olive-pomace oil	≤ 0.05 %
[Olive-pomace oil] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils]	≤ 0.05 %

Trace metals:

Iron (Fe)	≤ 3.0 mg/kg
Copper (Cu)	≤ 0.1 mg/kg

Organoleptic characteristics:

Virgin olive oils: See Section 3 of Standard.

IT WILL BE DISCUSSED IF THIS TABLE IS MOVED TO SECTION 3 OF THE MAIN BODY OF THE STANDARD

	Odour	Taste	Colour
Refined olive oil	acceptable ^(*)	acceptable ^(*)	light yellow
[Olive oil] [Olive oil composed of refined oliveoil and virgin olive oils]	good ^(**)	good ^(**)	light yellow to green
Refined olive-pomace oil	acceptable ^(*)	acceptable ^(*)	light yellow to brownish yellow
[Olive-pomace oil] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils]	acceptable good ^(**)	acceptable good ^(**)	light yellow to green

^(*)Acceptable: with no rancidity symptoms] Pending on a more precise definition

^(**)Good: fruity and with no rancidity symptoms] Pending on a more precise definition

Appearance at 20°C for 24 hours:

Refined olive oil, olive oil,

Refined olive-pomace oil, olive-pomace oil Limpid**2. COMPOSITION CHARACTERISTICS CHEMICAL AND PHYSICAL CHARACTERISTICS****Saturated fatty acid at the 2-position in the triglyceride (sum of palmitic & stearic acids):**

	Maximum level
Virgin olive oils	1.5%
Refined olive oils	1.8%
[Olive oil] [Olive oil composed of refined olive oil and virgin olive oils]	1.8%
Refined olive-pomace oil	2.2%
[Olive-pomace oil] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils]	2.2%

3. CHEMICAL AND PHYSICAL CHARACTERISTICS

Relative density (20°C/water at 20 °C)	0.910-0.916
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Refractive index (n_D^{20})

Virgin olive oils Refined olive oil [Olive oil] [Olive oil composed of refined olive oil and virgin olive oils]	1.4677-1.4705
Refined olive-pomace oil [Olive-pomace oil] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils]	1.4680-1.4707

Saponification value (mg KOH/g oil):

Virgin olive oils Refined olive oils [Olive oil] [Olive oil composed of refined olive oil and virgin olive oils]	184-196
Refined olive-pomace oil [Olive-pomace oil] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils]	182-193

Iodine value (Wijs method)

Virgin olive oils Refined olive oils [Olive oil] [Olive oil composed of refined olive oil and virgin olive oils]	75-94
Refined olive-pomace oil [Olive-pomace oil] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils]	75-92

Unsaponifiable matter:

Virgin olive oils Refined olive oil [Olive oil] [Olive oil composed of refined olive oil and virgin olive oils]	≤ 15 g/kg
Refined olive-pomace oil [Olive-pomace oil] [Olive-pomace oil composed of refined olive pomace oil and virgin olive oils]	≤ 30 g/kg

Absorbency in ultra-violet K232

Extra virgin olive oil	$\leq 2.50^4$
Virgin olive oil	$\leq 2.60^4$

4. METHODS OF ANALYSIS AND SAMPLING

All the methods referenced in this appendix must be applied in its last revision

Determination of moisture and volatile matter

According to ISO 662:~~1998~~

Determination of insoluble impurities in light petroleum

According to ISO 663 :~~2000~~

Detection of trace metals (iron, copper)

According to ISO 8294 (**graphite furnace**)~~or AOAC 990:05~~ or **ISO 21033 (Inductively coupled plasma optical emission spectroscopy)**

Determination of relative density

According to IUPAC 2.101, with the appropriate conversion factor **ISO 6883 o AOCS Cc 10c-95**

Determination of refractive index

According to ISO 6320:~~2000~~ or AOCS Cc 7-25 (02).

Determination of saponification value

According to ISO 3657:~~2002~~ or AOCS Cd 3-25 (03).

Determination of iodine value

According to ISO 3961:~~1996~~ or AOAC 993.20 or AOCS Cd 1d-92 (97).

Determination of unsaponifiable matter

According to ISO 3596 or ISO 18609 or AOCS Ca 6b-53 (01).

~~Determination of the fatty acids in the 2-position of the triglycerides~~

According to ISO 6800:~~1997~~ or AOCS Ch 3-91 (97).

Determination of the organoleptic characteristics

According to COI/T.20/Doc. n° 15.

Determination of the absorbency in ultra-violet – K₂₃₂

According to COI/T.20/Doc. n° 19 or ISO 3656 or AOCS Ch 5-91 (01).

Sampling

According to ISO 661: 1989 y ISO 5555: 2001.

⁴ The country of retail sale may require compliance with these limits when the oil is made available to the end consumer.

LIST OF MEMBERS OF THE ELECTRONIC WORKING GROUP**EWG CHAIR AND CO-CHAIRS****SPAIN****Dr. Juan Ramón Izquierdo**

Laboratorio Arbitral Agroalimentario
Dirección General de la Industria Alimentaria
Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente.

ARGENTINA**Ms. María Alejandra Larre**

Codex Contact Point Advisor
State Secretariat of Agro-industry
Ministry of Production and Labor

CANADA**Ms. Grace Ramos**

Senior Program Officer
Consumer Protection and Market Fairness Division
Canadian Food Inspection Agency

ARGENTINA**Ms. Gabriela Catalani:**

Codex Contact Point
State Secretariat of Agro-industry
Ministry of Production and Labor
Email: codex@magyp.gob.ar

AUSTRALIA**Ms. Veronica Lee**

Department of Agriculture and Water Resources
Email: codex.contact@agriculture.gov.au or veronica.lee@agriculture.gov.au

BRAZIL**Ms. Ana Paula de R. Peretti Giometti:**

Health Regulation Specialist
Organization: Brazilian Health Regulatory Agency – ANVISA.
Email: ana.peretti@anvisa.gov.br

CANADA**Ms. Mariola Rabski:**

Chemist , Ottawa Laboratory (Carling) - Food Chemistry
Canadian Food Inspection Agency.
Email: Mariola.Rabski@inspection.gc.ca

Mr. David Zagroladd:

Policy and Program Specialist, Consumer Protection and Market Fairness Division
Food Import Export and Consumer Protection Directorate
Canadian Food Inspection Agency.
Email: David.Zagroladd@inspection.gc.ca

CROATIA**Ms. Marina Lukić:**

Food Technology and Biotechnology Laboratory, Department of Food and Agriculture. Institute of Agriculture and Tourism.
Email: marina@iptpo.hr

ECUADOR

Mr. Miguel Alejandro Ortiz Armas:

Ministerio de Salud Pública - Dirección Nacional de Control Sanitario

Email: miguel.ortiz@msp.gob.ec

Ms. Aleyda Dolores Alegría Coronel:

Agencia Nacional de Regulación control y Vigilancia Sanitaria - ARCSA

Email: aleyda.alegría@controlsanitario.gob.ec

EGYPT**Ms. Reda Mohammed Sayed:**

Food Standards Specialist,

Egyptian Organization for Standardization & Quality (EOS)

Ministry of Trade and Industry.

Email: reda.mohamedsayed@yahoo.com

EUROPEAN UNION**Ms. Caroline Jeandin:**

Mr. Miguel Garcia Navarro: miguel.garcia-navarro@ec.europa.eu;

Mr. RistoHolma: risto.holma@ec.europa.eu;

Email: sante-codex@ec.europa.eu or caroline.jeandin@ec.europa.eu;

FRANCE**Dr. Brigitte Pouyet:**

Directorate for competition policy, consumer affairs and fraud control

Ministry on economy and financial affairs.

Email: brigitte.pouyet@dgccrf.finances.gouv.fr

GERMANY**Dr. Ina Willenberg:**

Federal Research Institute of Nutrition and Food

Department of Safety and Quality of Cereals

Lipid research working group

Email: ina.willenberg@mri.bund.de

GREECE**Ms. Tzakosta Amalia**

Agronomist, Ministry of Rural Development & Food, Olive Oil & Table Olives Sector;

Email: atzakosta@minagric.gr

Ms. LychnaraDimitra

Agronomist, Ministry of Rural Development & Food, Olive Oil & Table Olives Sector;

Email: codex@efet.gr; dlychnara@minagric.gr

KOREA**Dr. Saetbyoel Jung**

Codex Researcher

Ministry of Food and Drug Safety

Email: Codexkorea@korea.kr; bjung@korea.kr

INDIA**Dr. KD Yadav:**

Chairman, Technical Committee, Vanaspati Manufacturers Association;

Email: dr.k.d.yadav@aakkamani.com

Dr. RBN Prasad:

Chairman of the Scientific Panel on Oils and Fats (Retired Chief Scientist), Indian Institute of Chemical Technology, Hyderabad;

Email: rbnprasad@gmail.com, rbnprasad@iict.res.in

Mr. Akshay Modi:

Director, Modi Naturals Limited, New Delhi.
Email: codex-india@nic.in or akshaymodi@modinaturals.com

IRAN

Dr. Zahra Piravivanak:

Assistant Professor
Standard Research Institute-ISIRI Faculty of Food Industries and Agriculture;
Email: zpiravi@gmail.com

Dr. Sodeif Azadmard-Damirchi:

Professor in Food Chemistry and Analysis,
Department of Food Science and Technology, University of Tabriz.
Email: sodeifazadmard@yahoo.com

ITALY

Mr. Mauro Quadri:

Ministry of Agricultural Food and Forestry Policies
Email: m.quadri@politicheagricole.it

Mr. Angelo Faberi:

Ministry of Agricultural Food and Forestry Policies;
Email: a.faberi@politicheagricole.it

Mr. Ciro Impagnatiello:

Ministry of Agricultural Food and Forestry Policies.
Email: c.impagnatiello@politicheagricole.it

MALAYSIA

Ms. Norshafawati Rosli:

Assistant Director
Food Safety and Quality Division
Ministry of Health Malaysia. norshafawati@moh.gov.my; ccp_malaysia@moh.gov.my

MEXICO

Mr. Daniel González Sesmas:

Deputy Director of Standards at Ministry of Economy of Mexico
Email: codexmex@economia.gob.mx

MOROCCO

Mme. Maata Nadia:

Chef de division Recherche & Développement
Laboratoire Officiel d'Analyses et de Recherches Chimiques;
Email: maata.loarc@gmail.com

Mme. Kadiri Khadija:

Office National de Sécurité Sanitaire des Produits Alimentaires;
Email: kadirik7@gmail.com

Mme. Arif Khadija:

Office National de Sécurité Sanitaire des Produits Alimentaires;
Email: arif.khadija14@gmail.com

Mr. Mouho Hassan:

Responsable laboratoire à l'Établissement Autonome de Contrôle et de Coordination des Exportations;
Email: mouho@eacce.org.ma

Mr. El-Antari Abderraouf

Institut National de Recherche Agronomique.
Email: a_elantari@yahoo.fr

NEW ZEALAND**Ms. Elaine D'Sa**

Senior adviser
Ministry for Primary Industries;
Email: Elaine.D'Sa@mpi.govt.nz

Mr. Phil Fawcett:

Office of Competent Authority
Principal Adviser International Standards
Ministry for Primary Industries.
Email: phil.fawcett@mpi.govt.nz

POLAND**Ms. Urszula Wieteska:**

Agricultural and Food Quality Inspection
Marketing Quality Control Department
Email: kodeks@ijhars.gov.pl or uwieteska@ijhars.gov.pl

SPAIN**Ms. Ana Díaz Pérez:**

Consejera Técnica.
SG Control y Laboratorios Alimentarios.
Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente.
Email: bn-codexaceites@mapama.es

TUNISIA**Mr. M. Kamel Ben Ammar:**

Directeur de Normalisation
Office National de l'Huile.
Email: kbammar.onh@gmail.com

TURKEY**Ms. Hatice Uslu**

Food Engineer
The Ministry of Food, Agriculture and Livestock
General Directorate of Food and Control
Food Establishments and Codex Department
Food Codex Division.
Email: hatice.uslu@tarim.gov.tr

UK**Dr. Kieron Stanley**

Head of Social Research, Food Chain Analysis Team
Department for Environment, Food and Rural Affairs UK.
Email: Kieron.Stanley@defra.gsi.gov.uk

USA**Dr. Paul South**

U.S. Delegate to CCFO
Division of Plant Products and Beverages
Center for Food Safety and Applied Nutrition
Office of Food Safety
U.S. Food and Drug Administration;
Email: Paul.South@fda.hhs.gov

Dr. Robert Moreau

U.S. Alternate Delegate to CCFO
Research Chemist
Eastern Regional Research Center
Agricultural Research Service
U.S. Department of Agriculture;
Email: robert.moreau@ars.usda.gov

Ms. Marie Maratos

International Issues Analyst
U.S. Codex Office
Food Safety and Inspection Service
U.S. Department of Agriculture.
Email: Marie.Maratos@fsis.usda.gov

IOC (Observer)

Mr. Abdellatif Ghedira:

Director Ejecutivo;
Email: a.ghedira@internationaloliveoil.org

Mr. Jaime Lillo:

Director Adjunto;
Email: j.lillo@internationaloliveoil.org

Ms. Mercedes Fernández Albaladejo:

Jefa de la Unidad de Química Oleícola y Elaboración de Normas.
Email: m.fernandez@internationaloliveoil.org