INTERNATIONAL
OLIVE
COUNCIL

COI/T.15/NC No 3/Rev. 21
July 2025

ENGLISH
Original: FRENCH

Príncipe de Vergara, 154 – 28002 Madrid – España Telef.: +34 915 903 638 Fax: +34 915 631 263 - e-mail: iooc@internationaloliveoil.org - http://www.internationaloliveoil.org/

TRADE STANDARD APPLYING TO OLIVE OILS AND OLIVE POMACE OILS

1. SCOPE

This standard applies to olive oils and olive pomace oils that are the object of international trade or of concessional or food aid transactions.

2. DESIGNATIONS AND DEFINITIONS

2.1. Olive oils

2.1.1. Virgin olive oils are oils which are obtained from the fruit of the olive tree (*Olea europaea* L.) 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, decantation, centrifugation and filtration. Virgin olive oils shall be classified and designated as follows:

2.1.1.1. Virgin olive oils fit for consumption as they are:

(i) Extra virgin olive oil: virgin olive oil which has a free acidity, expressed as oleic acid, of not more than 0.80 grams per 100 grams and the other physico–chemical and organoleptic characteristics of which correspond to those fixed for this category in this standard.

(ii) Virgin olive oil: virgin olive oil which has a free acidity, expressed as oleic acid, of not more than 2.0 grams per 100 grams and the other physico–chemical and organoleptic characteristics of which correspond to those fixed for this category in this standard.

(iii) Ordinary virgin olive oil: virgin olive oil which has a free acidity, expressed as oleic acid, of not more than 3.3 grams per 100 grams and the other physico–chemical and organoleptic characteristics of which correspond to those fixed for this category in this standard.[1/]

2.1.1.2. Virgin olive oils that must undergo processing prior to consumption:

Lampante virgin olive oil: virgin olive oil which has a free acidity expressed as oleic acid, of more than 3.3 grams per 100 grams and/or the physico–chemical and organoleptic characteristics of which correspond to those fixed for this category in this standard. It is intended for refining or for technical use.

2.1.2. 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 physico–chemical and organoleptic characteristics correspond to those fixed for this category in this standard. [2/]

2.1.3. Olive oil composed of refined olive oil and virgin olive oils: oil consisting of a blend of refined olive oil and virgin olive oils fit for consumption as they are. It has a free acidity, expressed as oleic acid, of not more than 1.00 gram per 100 grams and its other physico–chemical and organoleptic characteristics correspond to those fixed for this category in this standard.

2.2. **Olive pomace oil**[3/] is the oil obtained by treating olive pomace with solvents or other physical treatments, to the exclusion of oils obtained by re-esterification processes and of any mixture with oils of other kinds. It is marketed in accordance with the following designations and definitions:

2.2.1. Crude olive pomace oil: olive pomace oil, the physico–chemical and organoleptic characteristics of which correspond to those fixed for this category in this standard. It is intended for refining for use for human consumption, or it is intended for technical use.

1/ This product may only be sold direct to the consumer if permitted in the country of retail sale. If not permitted, the designation of this product shall comply with the legal provisions of the country concerned.

2/ This product may only be sold direct to the consumer if permitted in the country of retail sale.

3/ Olive pomace oil cannot be sold with the designation or definition “olive oil”.

2.2.2. 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 0.30 grams per 100 grams and its other physico–chemical and organoleptic characteristics correspond to those fixed for this category in this standard.[1/]

2.2.3. 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 fit for consumption as they are. It has a free acidity of not more than 1.00 gram per 100 grams and its other physico–chemical and organoleptic characteristics correspond to those fixed for this category in this standard.[2/] In no case shall this blend be called "olive oil".

3. PURITY CRITERIA

The identity characteristics comprising the purity criteria shall be applicable to olive oils and olive pomace oils.

The limits established for each criterion include the precision values of the attendant recommended method.

3.1. Fatty acid composition as determined by gas chromatography (% m/m methyl esters):

- Myristic acid	≤ 0.03
- Palmitic acid	7.00 - 20.00
- Palmitoleic acid	0.30 - 3.50
- Heptadecanoic acid	≤ 0.40
- Heptadecenoic acid	≤ 0.60
- Stearic acid	0.50 - 5.00
- Oleic acid	55.00 - 85.00
- Linoleic acid	2.50 - 21.00
- Linolenic acid	≤ 1.00 [3]
- Arachidic acid	≤ 0.60
- Gadoleic acid (eicosenoic)	≤ 0.50
- Behenic acid	≤ 0.20*
- Lignoceric acid	≤ 0.20

_____

[1/] This product may only be sold direct to the consumer if permitted in the country of retail sale.

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

[3/] When an edible virgin olive oil exhibits 1.00<linolenic acid%≤1.40, then this oil is authentic, provided that App. β-sito/Campe content ≥ 24 and all other purity criteria lie within the official limit

* Limit raised to ≤ 0.30 for olive pomace oils

3.2. *Trans* fatty acid content (% *trans* fatty acids)

	C18:1 T %	C18:2 T + C18:3T %
- Edible virgin olive oils	≤ 0.05	≤ 0.05
- Lampante virgin olive oil	≤ 0.10	≤ 0.10
- Refined olive oil	≤ 0.20	≤ 0.30
- Olive oil (ROO+VOOs)[1]	≤ 0.20	≤ 0.30
- Crude olive-pomace oil	≤ 0.20	≤ 0.10
- Refined olive-pomace oil	≤ 0.40	≤ 0.35
- Olive pomace oil (ROPO+VOOs)[2]	≤ 0.40	≤ 0.35

3.3. Sterol and triterpene dialcohol composition

3.3.1. Desmethylsterol composition (% total sterols)

- Cholesterol	≤ 0.5
- Brassicasterol	≤ 0.1*
- Campesterol	≤ 4.0**
- Stigmasterol	< campesterol in edible oils
- Delta-7-stigmastenol	≤ 0.5***
- Apparent beta-sitosterol: beta-sitosterol + delta-5-avenasterol + delta-5-23-stigmastadienol + clerosterol + sitostanol + delta 5-24-stigmastadienol	≥ 93.0

[1] Blend of refined olive oil and virgin olive oils

[2] Blend of refined olive pomace oil and virgin olive oils

* Limit raised to ≤ 0.2 for olive pomace oils.

** An extra virgin or virgin olive oil that exhibits 4.0< campesterol % ≤4.5 is authentic provided that stigmasterol ≤1.4%, Δ7-stigmastenol ≤0.3% and all other parameters lie within the limits fixed in this standard.

***An olive oil or olive-pomace oil that exhibits 0.5< Δ7-stigmastenol % ≤0.8 is authentic provided that:

a) app. β-sitosterol/campesterol≥28, ΔECN42 ≤ |0.10| (for extra virgin or virgin olive oil)

b) app. β-sitosterol/campesterol≥28, ΔECN42 ≤ |0.15|, stigmastadiene≤0.30 (for lampante virgin olive oil)

c) app. β-sitosterol/campesterol≥28, ΔECN42≤ |0.15| (for refined olive oil or olive oil (ROO+VOOs))

d) Stigmasterol ≤1.4%, ΔECN42 ≤|0.40|, in case of crude olive-pomace oil or refined olive-pomace oil or olive pomace oil (ROPO+VOOs).

In all the above cases, all other parameters lie within the limits fixed in the Standard.

3.3.2. Total sterol content (mg/kg)

- Virgin olive oils - Refined olive oil - Olive oil (ROO+VOOs)	≥ 1000*
- Crude olive pomace oil	≥ 2500
- Refined olive pomace oil	≥ 1800
- Olive pomace oil (ROPO+VOOs)	≥ 1600

3.3.3. Erythrodiol and uvaol content (% total sterols)

- Edible virgin olive oils	≤ 4.5
- Lampante virgin olive oil	≤ 4.5[1/]
- Refined olive oil	≤ 4.5[2/]
- Olive oil (ROO + VOOs)	≤ 4.5
- Crude olive pomace oil	> 4.5[3/]
- Refined olive pomace oil	> 4.5
Olive pomace oil (ROPO+VOOs)	> 4.5

3.4. Wax content (mg/kg)

C42 + C44 + C46 (mg/kg)	
- Extra virgin olive oil and virgin olive oil	≤ 150
C40 + C42 + C44 + C46 (mg/kg)	
- Ordinary virgin olive oil	≤ 250
- Lampante virgin olive oil	≤ 300[1/]
- Refined olive oil	≤350
- Olive oil (ROO+VOOs)	≤ 350
- Crude olive pomace oil	> 350 [3/]
- Refined olive pomace oil	> 350
-Olive pomace oil (ROPO+VOOs)	> 350

***** Pending further scientific studies, for monovarietal extra virgin olive oils produced from either the Koroneiki or Nocellara del Belice varieties, the limit for total sterols content is set at ≥800 mg/kg.

1/ When the oil has a wax content between 300 mg/kg and 350 mg/kg it is considered a lampante virgin olive oil if the total aliphatic alcohol content is ≤ 350 mg/kg or the erythrodiol + uvaol content is ≤ 3.5%.

2/ When the oil has an erythrodiol + uvaol content of between 4.5 and 6 %, the erythrodiol content must be ≤ 75 mg/kg.

3/ When the oil has a wax content between 300 mg/kg and 350 mg/kg it is considered a crude olive pomace oil if the total aliphatic alcohol content is > 350 mg/kg and the erythrodiol + uvaol content is > 3.5%.

3.5. Maximum difference between the actual and theoretical ECN 42 triacylglycerol content (%)

- Edible virgin olive oils	$\leq \lvert 0.20 \rvert$
- Lampante virgin olive oil	$\leq \lvert 0.30 \rvert$
- Refined olive oil	$\leq \lvert 0.30 \rvert$
- Olive oil (ROO+VOOs)	$\leq \lvert 0.30 \rvert$
- Crude olive pomace oil	$\leq \lvert 0.60 \rvert$
- Refined olive pomace oil	$\leq \lvert 0.50 \rvert$
- Olive pomace oil (ROPO+VOOs)	$\leq \lvert 0.50 \rvert$

3.6. Stigmastadiene content (mg/kg)

- Extra virgin olive oil and virgin olive oil	$\leq$ 0.05
- Ordinary virgin olive oil	$\leq$ 0.10
- Lampante virgin olive oil	$\leq$ 0.50

3.7. Content of 2-glyceryl monopalmitate (%)

- Edible virgin olive oils and olive oil (ROO+VOOs):

  C16:0 $\leq$ 14.00%; 2P $\leq$ 0.9%
  C16:0 > 14.00%, 2P $\leq$ 1.0%

- Non-edible virgin olive oils and refined olive oils:

  C16:0 $\leq$ 14.00%; 2P $\leq$ 0.9%
  C16:0 > 14.00%, 2P $\leq$ 1.1%

- Olive pomace oil (ROPO+VOOs) $\leq$ 1.2%

- Crude and refined olive pomace oils $\leq$ 1.4%

3.8. Unsaponifiable matter (g/kg)

- Olive oils	$\leq$ 15
- Olive pomace oils	$\leq$ 30

4. QUALITY CRITERIA

The limits established for each criterion and designation include the precision values of the attendant recommended method

	Extra virgin olive oil	Virgin olive oil	Ordinary virgin olive oil	Lampante virgin olive oil *	Refined olive oil	Olive Oil (ROO+VOOs)	Crude olive pomace oil	Refined olive pomace oil	Olive pomace oil (ROPO+VOOs)
4.1 Organoleptic characteristics									
- odour and taste					acceptable	good		acceptable	good
-									
. median of defect	Me = 0.0	0.0 < Me ≤ 3.5	3.5 <Me ≤ 6.0**	Me > 6.0					
. median of the fruity attribute	Me > 0.0	Me > 0.0							
- colour					light yellow	light, yellow to green		light, yellow to brownish yellow	light, yellow to green
- aspect at 20°C for 24 hours					limpid	limpid		limpid	limpid
4.2. Free acidity % m/m expressed in oleic acid	≤ 0.80	≤ 2.0	≤ 3.3	> 3.3	≤ 0.30	≤ 1.00	no limit	≤ 0.30	≤ 1.00
4.3. Peroxide value in milleq. peroxide oxygen per kg/oil	≤ 20.0	≤ 20.0	≤ 20.0	no limit	≤ 5.0	≤ 15.0	no limit	≤ 5.0	≤ 15.0

* It is not obligatory for the criteria in 4.1, 4.2 and 4.3 to be concurrent; one is sufficient.

** Or when the median of the defect is less than or equal to 3.5 and the median of the fruity attribute is equal to 0.0.

4. QUALITY CRITERIA (contd.)

	Extra virgin olive oil	Virgin olive oil	Ordinary virgin olive oil	Lampante virgin olive oil	Refined olive oil	Olive Oil (ROO+VOOs)	Crude olive pomace oil	Refined olive pomace oil	Olive pomace oil (ROPO+VOOs)
4.4. Absorbency in ultra-violet ($K^{1\%}_{1cm}$)									
- 270 nm (cyclohexane) / 268 nm (iso-octane)	≤ 0.22	≤ 0.25	≤ 0.30		≤ 1.25	≤ 1.15		≤ 2.00	≤ 1.70
- Δ K	≤ 0.01	≤ 0.01	≤ 0.01		≤ 0.16	≤ 0.15		≤ 0.20	≤ 0.18
- 232 nm*	≤ 2.50**	≤ 2.60**							
4.5. Moisture and volatile matter (% m/m)	≤ 0.2	≤ 0.2	≤ 0.2	≤ 0.3	≤ 0.1	≤ 0.1	≤ 1.5	≤ 0.1	≤ 0.1
4.6. Insoluble impurities in light petroleum % m/m	≤ 0.10	≤ 0.10	≤ 0.10	≤ 0.20	≤ 0.05	≤ 0.05		≤ 0.05	≤ 0.05
4.7. Flash point	-	-	-	-	-	-	≥ 120 °C	-	-
4.8. Trace metals mg/kg									
Iron	≤ 3.0	≤ 3.0	≤ 3.0	≤ 3.0	≤ 3.0	≤ 3.0		≤ 3.0	≤ 3.0
Copper	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.1		≤ 0.1	≤ 0.1
4.9. Fatty acid ethyl esters (FAEEs)	≤ 35 mg/kg								
4.10. Phenols content	See section 11.21								

* This determination is solely for application by commercial partners on an optional basis.

** Commercial partners in the country of retail sale may require compliance with these limits when the oil is made available to the end consumer.

5. FOOD ADDITIVES

5.1. Virgin olive oils and crude olive pomace oil:

none permitted

5.2. Refined olive oil, olive oil (ROO+VOOs), refined olive pomace oil and olive pomace oil (ROPO+VOOs): alpha-tocopherol permitted to restore natural tocopherol lost in the refining process.

Maximum level: According to the Good Manufacturing Practices (GMP)

6. CONTAMINANTS

6.1. Heavy metals

The products covered by this standard shall comply with the maximum levels of the General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193-1995).

6.2. Pesticide residues

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

7. HYGIENE

7.1. It is recommended that the products intended for human consumption covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the General Principles of Food Hygiene (CAC/RP 1-1969), and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

7.2. The products intended for human consumption should comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria (CAC/GL 21-1997).

8. PACKING

Olive oils and olive pomace oils intended for international trade shall be packed in containers complying with the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (CAC/RCP 1 - 1969), and other relevant texts such as Codes of Hygienic Practice and Codes of Practice.

The containers used may be:

8.1. tanks, containers, vats, which permit the transportation in bulk of olive oils and olive pomace oils;

8.2. metal drums, in good condition, hermetically-sealed, which should be internally covered with a suitable varnish;

8.3. metal tins and cans, lithographed, new, hermetically-sealed, which should be internally covered with a suitable varnish;

8.4. demi-johns, glass bottles or bottles made of suitable macromolecular material.

9. CONTAINER FILLING TOLERANCE

The volume occupied by the contents shall under no circumstances be less than 90% of the capacity of the container, except in the case of tin containers with a capacity of, or less than, 1 L in which the volume occupied shall under no circumstances be less than 80% of the capacity of the container; this capacity is equal to the volume of distilled water at 20 ºC which the container can hold when full.

10. LABELLING

In addition to the appropriate sections of the Codex General Standard for the Labelling of Pre-packaged Foods (CODEX STAN 1-1985) and the guidelines applying to food not intended for direct sale to consumers, the specific provisions providing the following information shall be applied:

10.1. On containers intended for direct sale to consumers

10.1.1. Name of the product

The labelling on each container shall indicate the specific designation of the product contained, complying in every way with the relevant provisions of this standard.

10.1.1.1. Designations of olive oils:

- Extra virgin olive oil
- Virgin olive oil
- Ordinary virgin olive oil[1/]
- Refined olive oil[1/]
- Olive oil (ROO+VOOs)[2/]

10.1.1.2. Designations of olive pomace oils:

- Refined olive pomace oil[1/]
- Olive pomace oil (ROPO+VOOs)[2/]

10.1.2. Net contents

The net contents shall be declared by volume in the metric system ("Système International" units).

10.1.3. Name and address

The name and address of the manufacturer, packer, distributor, importer, exporter or seller shall be declared.

[1/] This product may only be sold direct to the consumer if permitted in the country of retail sale.

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

10.1.4. Country of origin

The name of the country of origin shall be declared. When the product undergoes substantial processing in a second country, the country in which such processing is carried out shall be considered as the country of origin for labelling purposes.

10.1.5. Geographical indications and designations of origin

10.1.5.1. Geographical indications

The labels of virgin olive oils may state their geographical indication (country, region or locality) when they have been empowered to do so by their country of origin and when such virgin olive oils have been produced, packed and originate exclusively in the country, region or locality mentioned.

10.1.5.2. Designations of origin

The labels of extra virgin olive oils may indicate their designation of origin (country, region or locality) when they have been awarded such a designation, in accordance with the terms provided under the regulations of their country of origin and when such extra virgin olive oil has been produced, packed and originates exclusively in the country, region or locality mentioned.

10.1.6. Lot identification

Each container shall be embossed or otherwise permanently marked in code or in clear to identify the producing factory and the lot.

10.1.7. Date marking and storage conditions

10.1.7.1. Date of minimum durability

In the case of pre-packaged products intended for the end consumer, the date of minimum durability (preceded by the words "best before end") shall be declared by the month and year in uncoded numerical sequence. The month may be indicated by letters in those countries where such use will not confuse the consumer; if the shelf life of the product is valid to December, the expression "end (stated year)" may be used as an alternative.

10.1.7.2. Storage instructions

Any special conditions for storage shall be declared on the label if the validity of the date of minimum durability depends thereon.

10.2. On forwarding packs of oils intended for human consumption

In addition to the details noted under section 10.1., the following inscription shall appear:

- number and type of containers held in pack.

10.3. On containers allowing the transportation in bulk of olive oils and olive pomace oils

The labelling on each container shall include:

10.3.1. Name of the product

The name shall indicate the specific designation of the product contained, complying in every way with the provisions of this standard.

10.3.2. Net contents

The net contents shall be declared by weight or volume in the metric system ("Système International" units).

10.3.3. Name and address

The name and address of the manufacturer, distributor or exporter shall be declared.

10.3.4. Country of origin

The name of the exporting country shall be declared.

11. METHODS OF ANALYSIS AND SAMPLING

The methods of analysis and sampling given below are international referee methods. The latest version of these methods should be used.

11.1. Sampling

According to ISO 5555, "Animal and vegetable fats and oils - Sampling".

11.2. Preparation of the test sample

According to ISO 661, "Animal and vegetable fats and oils - Preparation of the test sample".

11.3. Determination of the fatty acid composition and *trans* fatty acid content

According to COI/T.20/Doc. No 33/Rev.1, “Determination of fatty acid methyl esters by gas-chromatography”

11.4. Determination of the sterol composition and content and alcoholic compounds

According to COI/T.20/Doc. No 26/Rev. 5, “Determination of the composition and content of sterols, triterpenic dialcohols and aliphatic alcohols by capillary column gas chromatography”.

11.5. Determination of the difference between the actual and theoretical ECN 42 triacylglycerol content

According to COI/T.20/Doc. No 20/Rev. 4, "Determination of the difference between actual and theoretical content of triacylglycerols with ECN 42", or AOCS 5b-89.

11.6. Determination of the stigmastadiene content

According to COI/T.20/Doc. No 11/Rev.4, "Determination of stigmastadienes in vegetable oils", or COI/T.20/Doc. no. 16/Rev.2, "Determination of sterenes in refined vegetable oils", or ISO 15788-1 or AOCS Cd 26-96.

11.7. Determination of the content of 2-glyceryl monopalmitate

According to COI/T.20/Doc. No 23/Rev.1, "Determination of the percentage of 2-glyceryl monopalmitate" or to ISO 12872.

11.8. Determination of the unsaponifiable matter

According to ISO 3596, “Determination of the unsaponifiable matter – Method using diethyl ether extraction”, or AOCS Ca 6b-53 or ISO 18609.

The results should be expressed in g/unsaponifiable matter per kg/oil.

11.9. Determination of the organoleptic characteristics

According to COI/T.20/Doc. No 15/Rev.11, "Organoleptic assessment of virgin olive oil".

11.10. Determination of the free acidity

According to COI/T.20/Doc. No 34/Rev.1, “Determination of free fatty acids, cold method”.

11.11. Determination of the peroxide value

According to COI/T.20/Doc. No 35/Rev.1, “Determination of the peroxide value”, ISO 3960, or AOCS Cd 8b-90.

11.12. Determination of the absorbency in ultra-violet

According to COI/T.20/Doc. No 19/Rev.5, "Spectrophotometric investigation in the ultraviolet", or ISO 3656 or AOCS Ch 5-91.

11.13. Determination of the moisture and volatile matter

According to ISO 662, "Determination of the moisture and volatile matter".

11.14. Determination of the insoluble impurities in light petroleum

According to ISO 663, "Determination of the insoluble impurities".

11.15. Determination of the flash point

According to the FOSFA International method.

11.16. Detection of trace metals

According to ISO 8294, "Determination of copper, iron and nickel by direct graphite furnace atomic absorption spectrometry".

11.17. Determination of the alpha-tocopherol

According to ISO 9936, “Determination of tocopherols and tocotrienols contents – Method using high-performance liquid chromatography”.

11.18. Determination of traces of heavy metals

- Determination of lead: according to ISO 12193 or AOCS Ca 18c-91 or AOAC 994.02.

- Determination of arsenic: according to AOAC 952.13 or AOAC 942.17 or AOAC 985.16.

11.19. Determination of the content of waxes and alkyl esters

According to COI/T.20/Doc. No 28/Rev.4, "Determination of the content of waxes, fatty acid methyl esters and fatty acid ethyl esters by capillary gas chromatography".

11.20. Determination of phenolic compounds

According to COI/T.20/Doc. No 29/Rev.2, "Document to declare the use of IOC methods for phenolic compounds determination"

11.21. Determination of the coherence of TAG composition with the fatty acid composition: Screening method (not legal in nature and cannot downgrade an oil)

According to COI/T.20/Doc. No 25/Rev.2, "Method for the evaluation of the coherence of TAG composition with the fatty acid composition".

11.22. Determination of the methanol and ethanol content in virgin olive oils.
According to COI/T.20/Doc. No 36, "Method of determination of ethanol and methanol content on virgin olive oils".

11.23. Determination of the **TRIACYLGLYCEROLS and DI-ACYLGLYCEROLS**

According to COI/T.20/Doc. No 32, "Method of determination of composition of triacylglycerols and composition and content of di-acylglycerols by capillary gas chromatography, in vegetable oils".