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AS 5264-2011 Olive oils and olive-pomace oils

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AS 5264—2011

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Australian Standard®

Olive oils and olive-pomace oils

STANDARDS Australia

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This Australian Standard® was prepared by Committee FT-034, Olive Oils. It was approved on behalf of the Council of Standards Australia on 7 July 2011.
This Standard was published on 20 July 2011.

The following are represented on Committee FT-034:

- Australian Customs and Border Security Service
- Australian National Retailers Association
- Australian Olive Association
- Australian Olive Oil Association
- Consumer Federation of Australia
- Department of Agriculture, Fisheries and Forestry
- Food and Grocery Council New Zealand
- Olive oil laboratories represented by Modern Olives
- Olives New Zealand
- NSW Industry and Investment
- Rural Industries Research and Development Corporation

This Standard was issued in draft form for comment as DR AS/NZS 5264.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Australian Standard®

Olive oils and olive-pomace oils

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PREFACE

This Standard was prepared by members of Joint Standards Australia/Standards New Zealand Committee FT-034, Olive Oils.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

This Standard recognizes that olive oil is a natural product and regularly presents variation in its chemical composition. All limits in this Standard have been established to accommodate the most common natural variations, particularly in Australian olive oils, without compromising the ability to detect adulteration.

Compliance with the provisions of this Standard does not override failure to comply with the provisions of the *Australia New Zealand Food Standards Code*, or with applicable Commonwealth, State and Territory laws and regulations.

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STANDARDS AUSTRALIA

Australian Standard
Olive oils and olive-pomace oils

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1 SCOPE

This Standard applies to all olive oils and olive-pomace oils that are traded in Australia.

This Standard—

(a) defines grades of olive oils and olive-pomace oils;

(b) specifies chemical composition and quality parameters for these grades;

(c) establishes requirements for labelling and packing; and

(d) lists acceptable methods of analysis.

2 OBJECTIVE

The purpose of this Standard is to provide all those involved in the olive oil and olive-pomace oil trade, from producers to consumers, with a modern reference document which establishes an objective basis for the trade of these products.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard.

AS

6000 Organic and biodynamic products

MP 100 Procedures for certification of organic and biodynamic products

ISO

660 Animal and vegetable fats and oils—Determination of acid value and acidity

661 Animal and vegetable fats and oils—Preparation of test samples

662 Animal and vegetable fats and oils—Determination of moisture and volatile matter content

663 Animal and vegetable fats and oils—Determination of insoluble impurities content

3656 Animal and vegetable fats and oils—Determination of ultraviolet absorbance expressed as specific UV extinction

3960 Animal and vegetable fats and oils—Determination of peroxide value—Iodometric (visual) endpoint determination

5508 Animal and vegetable fats and oils—Analysis by gas chromatography of methyl esters of fatty acids

5509 Animal and vegetable fats and oils—Preparation of methyl esters of fatty acids

8294 Animal and vegetable fats and oils—Determination of copper, iron and nickel contents—Graphite furnace, atomic absorption method

9936 Animal and vegetable fats and oils—Determination of tocopherol and tocotrienol contents by high-performance liquid chromatography

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ISO

12193 Animal and vegetable fats and oils—Determination of lead by direct graphite furnace atomic absorption spectroscopy

12228 Animal and vegetable fats and oils—Determination of individual and total sterols contents—Gas chromatographic method

15304 Animal and vegetable fats and oils—Determination of the content of trans fatty acid isomers of vegetable fats and oils—Gas chromatographic method

29822 Vegetable fats and oils—Isomeric diacylglycerols—Determination of relative amounts of 1,2- and 1,3- diacylglycerols

29841 Vegetable fats and oils—Determination of the degradation products of chlorophylls a and a′ (pheophytins a, a′ and pyropheophytins)

AOCS (AMERICIAN OIL CHEMISTS SOCIETY)

Ca 2c-25 Moisture and Volatile Matter Air Oven Method

Ca 3a-46 Insoluble Impurities

Ca 5a-40 Free Fatty Acids

Ca 18c-91 Determination of Lead by Direct Graphite Furnace Atomic Absorption Spectrophotometry

Cd 8b-90 Peroxide Value Acetic Acid-Isooctane Method

Cd 12b-92 Oil Stability Index (OSI)

Cd 26-96 Stigmastadienes in Vegetable Oils

Ce 2-66 Preparation of Methyl Esters of Fatty Acids

Ce 5b-89 Triglycerides in Vegetable Oils by HPLC

Ch 2-91 Determination of Fatty Acids in Olive Oils by Capillary GLC

Ch 2a-94 Trans unsaturated Fatty Acids by Capillary Column Gas Chromatography

Ch 5-91 Determination of Specific Extinction of Oils and Fats, Ultraviolet Absorption

Ch 6-91 Determination of the Composition of the Sterol Fraction of Animal and Vegetable Oils and Fats by TLC and Capillary GLC

Ch 8-02 Determination of Wax Content by Capillary Column Gas-Liquid Chromatography

AOAC (Association Of Analytical Communities)

942.17 Colorimetry (Molybdenum blue).Type III. Method for fats and oils. Arsenic

952.13 Colorimetry (diethyldithiocarbamate) Type II method for fats and oils. Arsenic

985.16 Colorimetry. Lead

994.02 Lead in Edible Oils and Fats

IUPAC (INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY)

2.431 Determination of erythrodiol content

IOC (INTERNATIONAL OLIVE COUNCIL)

T.20/Doc. 10. Rev. 1 Determination of sterol composition and total sterol content

T.20/Doc. 11. Rev. 2 Determination of Stigmastadienes in vegetable oils

T.20/Doc. 15. Rev. 2 Organoleptic assessment of virgin olive oil

T.20/Doc. 17. Rev. 1 Determination of trans unsaturated fatty acids by capillary column gas chromatography

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IOC (INTERNATIONAL OLIVE COUNCIL)

T.20/Doc. 18. Rev. 2	Determination of wax content by capillary column-gas liquid chromatography
T.20/Doc. 19. Rev. 2	Spectrophotometric investigation in the ultraviolet
T.20/Doc. 20. Rev. 3	Determination of the difference between actual and theoretical content of triacylglycerols with ECN 42
T.20/Doc. 23	Determination of the percentage of 2-glycerly monopalmitate
T.20/Doc. 24	Determination of the fatty acid composition
T.20/Doc. 30	Determination of wax content

Australia New Zealand Food Standards Code

CODEX ALIMENTARIUS DOCUMENTS
Codex General Standard for the Labelling of Pre-packaged Foods

Codex Recommended International Code of Practice—General Principles of Food Hygiene

LEGISLATION
National Measurements Act 1960 (Cwlth)
Competition and Consumer Act 2010 (Cwlth)

4 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

4.1 Absorbency in ultraviolet

Absorbance (K) of a 1% (m/v) solution of the oil in the specified solvent, with reference to pure solvent in a 1 cm path length cell.

4.2 Apparent β-sitosterol

The sum of the concentrations of β-sitosterol, Δ-5-avenasterol, Δ-5,23-stigmastadienol, Δ-5,24-stigmastadienol, cholesterol and sitostanol.

4.3 Best-before date

Date that signifies the end of the period during which the intact package of oil, if stored in accordance with stated storage conditions, will remain fully marketable and will retain any specific qualities for which express or implied claims have been made.

4.4 Cold extracted

Natural olive oil obtained by separating the oil by any mechanical or other physical means at a temperature that does not lead to significant thermal alterations.

4.5 Cold pressed

Natural olive oil obtained by pressing the crushed olives with a mechanical, hydraulic or centrifugal press at a temperature that does not lead to significant thermal alterations.

4.6 Diacylglycerol (DAG)

A glyceride consisting of two fatty acid chains covalently bonded to a glycerol molecule through ester linkages. In virgin olive oils, DAGs are present in a range of 1% to 3% and they are found as 1,2- and 1,3- isomers.

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4.7 Equivalent carbon number 42 (ECN 42)

Determination of the difference between the theoretical value of triacylglycerols (TAGs) with an equivalent carbon number of 42 (ECN 42theoretical) calculated from the fatty acid composition, and the analytical results (ECN 42HPLC) obtained by determination in the oil by high performance liquid chromatography.

4.8 Erythrodiol and uvaol

Two triterpene dialcohols found in olive oil and olive-pomace oil.

4.9 First extraction

First mechanical process to separate the oil from the olive paste by centrifugation, decantation or pressing. This does not include the second extraction or solvent extraction processes utilized to physically or chemically separate the oil remaining in the pomace.

4.10 Flavour

The sensory impression of oil, determined mainly by the senses of taste and smell. Refers to the typical flavour of olive oil produced from olives and the degree of positive or negative attributes as listed in Clauses 4.14 and 4.15.

4.11 Free fatty acid content/free acidity

The content of free fatty acids in grams per 100 grams expressed as percent of free oleic acid.

4.12 Initial glyceridic structure

The pattern of mono-, di- and tri-glycerides present in natural olive oils or crude olive-pomace oils as extracted prior to any refining process.

4.13 Malaxing

Slow mechanical mixing of the olive paste prior to separating the oil with the objective of breaking emulsions and improving oil extraction.

4.14 Median of defects

4.14.1 *General*

A calculation of the median score of a panel of tasters who characterize the olive oil's negative flavour and odour attributes. Negative attributes are any flavour or odour that derives from enzymatic degradation, fermentation, or microbial spoilage of olives prior to processing, fermentation of olive matter following extraction, subsequent excessive oxidation, or any other character that could not be reasonably assigned to the natural flavours derived from the olive. These include, but are not limited to the defects known as fusty, muddy-sediment, musty, rancid and winey-vinegary.

4.14.2 *Median of defects—Fusty*

A flavour defect attributable to poor storage conditions of the olives, usually promoting the bacterial growth of the *Clostridium* and *Pseudomonas* genera.

4.14.3 *Median of defects—Muddy sediment*

A flavour defect caused by storage in contact with oil sediment for long periods.

4.14.4 *Median of defects—Musty*

A flavour defect occurring when low temperatures and high humidity promote mould growth, mainly of the *Aspergillus* and *Penicilium* genera.

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4.14.5 *Median of defects—Rancid*

A flavour defect caused by the oxidation of the oil and subsequent formation of aldehydes during the production process giving the oil an oxidized flavour and odour.

4.14.6 *Median of defects—Winey-vinegary*

A flavour defect caused by storage condition of the olives that causes aerobic fermentation by the growth of yeasts that produce ethanol, acetic acid, and ethyl acetate.

4.15 Median of fruity

A calculation of the median score from a panel of tasters who assess the intensity of the positive fruity characteristics of the olive oils.

4.16 Odour or aroma

An odour or aroma is a volatilized chemical compound, generally at a very low concentration, that is perceived by olfaction.

4.17 Operator

Person or company that runs or is involved in one or more parts of the olive oil and/or olive-pomace oil trading business.

4.18 Organoleptic analysis

Evaluation based on flavour and odour characteristics.

4.19 Peroxide value

A measure of the oxidation of olive oil expressed as milliequivalents of active oxygen per kilogram of oil.

4.20 Pressing

Oil extraction method consisting of pressing the malaxed olive paste utilizing a hydraulic or centrifugal press.

4.21 Pyropheophytin a

Degradation product of Chlorophyll a that results from thermal or age related degradation of the product.

4.22 Oxidative stability index

An indicator of stability and shelf life properties of oils. The determination entails speeding up the oxidation process in the oil under heat and air current and monitoring volatile substances associated with rancidity.

4.23 Sterols (also known as steroid alcohols)

A subgroup of steroids with a hydroxyl group at the 3-position of the A-ring. Sterols comprise one group of many minor constituents of oils that are characteristic indicators of the authenticity of the olive oil.

4.24 Trans fatty acid

All the geometrical isomers of monounsaturated and polyunsaturated fatty acids having one or more non-conjugated carbon-carbon double bond in the trans configuration interrupted by at least one methylene group.

4.25 Triglyceride (TAG)

The major component of oil, an ester of three fatty acids and glycerol, also known as tri-acyl glycerol.

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5 PRODUCT DESCRIPTION

5.1 Olive oil

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

5.2 Olive-pomace oil

Olive-pomace is the product remaining after the mechanical extraction of olive oil. Olive-pomace oil is the oil obtained by treating olive pomace with solvents or other physical treatments, excluding oils obtained by re-esterification processes and any mixture with oils of other kinds with the exception of olive oils.

6 GRADES OF OLIVE AND OLIVE-POMACE OILS

6.1 Natural olive oils

Natural olive oils are olive oils obtained solely by mechanical or other physical means under conditions, including thermal conditions, that do not lead to alterations in the oil, and which have not undergone any treatment other than washing, crushing, malaxing, decantation, pressing, centrifugation, and filtration.

Natural olive oils fit for consumption without further processing include:

(a) *Extra Virgin Olive Oil*

Natural olive oil that has a free acidity, expressed as free oleic acid, of not more than 0.8 grams per 100 grams, a median of defects equal to 0, and the other characteristics of which correspond to those fixed for this grade in this Standard.

(b) *Virgin Olive Oil*

Natural olive oil that has a free acidity, expressed as free oleic acid, of not more than 2.0 grams per 100 grams, a median of defects equal or less than 2.5, and the other characteristics of which correspond to those fixed for this grade in this Standard.

Natural olive oils not fit for consumption without further processing include:

Lampante olive oil

Natural olive oil not fit for consumption without further processing. This oil has a free acidity, expressed as free oleic acid, of more than 2.0 grams per 100 grams and/or a median of defects higher than 2.5 and other characteristics of which correspond to those fixed for this grade in this Standard. It is only intended to be used for refining or for technical use.

6.2 Refined olive oils

Refined olive oils are the olive oils obtained from natural oils by refining methods which do not lead to alterations in the initial glyceridic structure.

Refined olive oils fit for consumption without further processing include:

(a) *Refined Olive Oil*

This is olive oil obtained from natural olive oils by refining methods including deodorization which do not lead to alterations in the initial glyceridic structure. Refined olive oils have a free acidity, expressed as free oleic acid, of not more than 0.3 grams per 100 grams and their other characteristics correspond to those fixed for this grade in this Standard.

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(b) *Olive Oil—Composed of Refined and Virgin [or Extra Virgin] Olive Oils*

This is oil consisting of a blend of refined olive oil and natural olive oils fit for human consumption. It has a free acidity, expressed as free oleic acid, of not more than 1.0 grams per 100 grams, a median of defects equal or less than 2.5, and its other characteristics correspond to those fixed for this grade in this Standard.

6.3 Olive-pomace oils

Olive-pomace oils are the oils obtained by treating olive pomace with solvents or other physical treatments, excluding oils obtained by re-esterification processes and any mixture with oils of other kinds with the exception of olive oils.

Olive-pomace oil grades comprise:

(a) *Crude olive-pomace oil*

This is the olive-pomace oil whose characteristics correspond to those fixed for this grade in this Standard. It is intended for refining for use for human consumption or for technical use.

(b) *Refined Olive-Pomace Oil*

This is the 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 free oleic acid, of not more than 0.3 grams per 100 grams and its other characteristics correspond to those fixed for this grade in this Standard.

(c) *Olive-Pomace Oil—Composed of Refined Olive-Pomace Oils and Virgin [or Extra Virgin] Olive Oils*

This is the oil consisting of a blend of refined olive-pomace oil and natural olive oils fit for human consumption. It has a free acidity, expressed as free oleic acid, of not more than 1.0 grams per 100 grams, a median of defects equal or less than 2.5, and its other characteristics correspond to those fixed for this grade in this Standard.

7 GENERIC CHEMICAL COMPOSITION PARAMETERS

The chemical composition of olive oils and olive-pomace oils shall be as set out in Tables 1 to 4.

The limits established for each criterion take account of the precision values of the respective recommended methods of determination specified in Clause 13.

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TABLE 1

GENERIC CHEMICAL COMPOSITION PARAMETERS

Parameter		Edible natural olive oils	Lampante olive oil	Refined Olive Oil	Olive Oil—Composed of Refined and Virgin [or Extra Virgin] Olive Oils	Crude olive-pomace oil	Refined Olive-Pomace Oil	Olive-Pomace Oil—Composed of Refined Olive-Pomace Oils and Virgin [or Extra Virgin] Olive Oils
Total sterol content (mg/kg)		≥1000	≥1000	≥1000	≥1000	≥2500	≥1800	≥1600
Wax content ($C_{40} + C_{42} + C_{44} + C_{46}$)(mg/kg)		≤250	≤300 (See Note 1)	≤350	≤350	>350 (See Note 2)	>350	>350
Trans fatty acid content (% trans fatty acids)	C18:1 T %	≤0.05	≤0.10	≤0.20	≤0.20	≤0.20	≤0.40	≤0.40
	C18:2 T + C18:3 T %	≤0.05	≤0.10	≤0.30	≤0.30	≤0.10	≤0.35	≤0.35
Maximum difference between the actual and theoretical ECN 42 triacylglycerol content		≤/0.2/	≤/0.3/	≤/0.3/	≤/0.3/	≤/0.6/	≤/0.5/	≤/0.5/
Stigmastadienes content (mg/kg)		≤0.10	≤0.50	N/A	N/A	N/A	N/A	N/A
Content of 2-glyceryl monopalmitate (%)		≤1.5	≤1.5	≤1.8	≤1.8	≤2.2	≤2.2	≤2.2

NOTES:

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

2 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 erythrodiol + uvaol content is >3.5% and the total aliphatic alcohol content is >350 mg/kg.

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TABLE 2

FATTY ACID COMPOSITION
(Expressed as % m/m methyl esters)

Myristic acid (C14:0)	≤0.05
Palmitic acid (C16:0)	7.0–20.0
Palmitoleic acid (C16:1)	0.3–3.5
Heptadecanoic acid (C17:0)	≤0.3
Heptadecenoic acid (C17:1)	≤0.4
Stearic acid (C18:0)	0.5–5.0
Oleic acid (C18:1)	53.0–85.0
Linoleic acid (C18:2)	2.5–22.0
Linolenic acid (C18:3)	≤1.5
Arachidic acid (C20:0)	≤0.6
Gadoleic acid (eicosenoic) (C20:1)	≤0.5
Behenic acid (C22:0)	≤0.2 (See Note)
Lignoceric acid (C24:0)	≤0.2

NOTE: ≤0.3 for olive-pomace oils.

TABLE 3

STEROL AND TRITERPENE DIALCOHOLS COMPOSITION
(Expressed as % of total sterols)

Cholesterol	≤0.5
Brassicasterol	≤0.1
Campesterol	≤4.8
Stigmasterol	≤1.9
Delta-7-stigmastenol	≤0.5
Apparent Beta-sitosterol	≥92.5
Erythrodiol + Uvaol (Olive oils)	≤4.5
Erythrodiol + Uvaol (Olive-pomace oils)	>4.5

TABLE 4

TRACE METALS
(Expressed as mg/kg)

Iron (Fe)	≤3.0
Copper (Cu)	≤0.1

8 QUALITY

The different grades of olive oil or pomace oil shall comply with the limits presented in Table 5.

The limits established for each criterion include the precision values of the respective recommended methods of determination specified in Clause 13.

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TABLE 5

QUALITY

Parameter		Extra Virgin Olive Oil	Virgin Olive Oil	Lampante olive oil (See Note)	Refined Olive Oil	Olive oil—Composed of Refined And Virgin [or Extra Virgin] Olive Oils	Crude olive-pomace oil	Refined Olive Pomace Oil	Olive-Pomace Oil—Composed of Refined Olive-Pomace Oils and Virgin [or Extra Virgin] Olive Oils
Free fatty acid content (FFA) (% m/m):		≤0.8	≤2.0	>2.0	≤0.3	≤1.0	N/A	≤0.3	≤1.0
Peroxide value (PV) (meq O_2/kg oil)		≤20.0	≤20.0	>20.0	≤5.0	≤15.0	N/A	≤5.0	≤15.0
Absorbency in ultraviolet	K_{232}	≤2.50	≤2.60	>2.60	N/A	N/A	N/A	N/A	N/A
	K_{270}	≤0.22	≤0.25	>0.25	≤1.10	≤0.90	N/A	≤2.00	≤1.70
	Delta K	≤/0.01/	≤/0.01/	>/0.01/	≤/0.16/	≤/0.15/	N/A	≤/0.20/	≤/0.18/
Moisture and volatile matter (MOI) (% m/m)		≤0.2	≤0.2	≤0.3	≤0.1	≤0.1	≤1.5	≤0.1	≤0.1
Insoluble impurities (INI) (% m/m)		≤0.1	≤0.1	≤0.2	≤0.1	≤0.1	N/A	≤0.1	≤0.1
Pyropheophytin a (PPPs) (%)		≤17	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Diacylglycerols (DAGs) (%)		≥35	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Organoleptic analysis	Median of defects (MeD)	= 0.0	0.0 < MeD ≤2.5	>2.5	≤2.5	≤2.5	N/A	≤2.5	≤2.5
	Median of fruitiness (MeF)	>0.0	>0.0	N/A	N/A	>0.0	N/A	N/A	>0.0

NOTE: These criteria are not required to be concurrent for lampante olive oil, one is sufficient.

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9 FOOD ADDITIVES

9.1 Natural olive oils and crude olive-pomace oil

Natural olive oils and crude olive-pomace oils shall not contain food additives.

9.2 Refined Olive Oil, Olive Oil-Composed of Refined and Virgin [or Extra Virgin] Olive Oils, Refined Olive-Pomace Oil and Olive-Pomace Oil-Composed of Refined Olive-Pomace Oils and Virgin [or Extra Virgin] Olive Oils

Tocopherols may be added to Refined Olive Oil, Olive Oil-Composed of Refined and Virgin [or Extra Virgin] Olive Oils, Refined Olive-Pomace Oil and Olive-Pomace Oil-Composed of Refined Olive-Pomace Oils and Virgin [or Extra Virgin] Olive Oils to restore natural tocopherols lost in the refining process up to a maximum level of 200 mg/kg of total alpha-tocopherol in the final product.

9.3 Processing aids

Processing aids are allowed to be used during the oil extraction process to the extent allowed by the *Australia New Zealand Food Standards Code*.

10 CONTAMINANTS

10.1 Heavy metals

The products covered by this Standard shall comply with maximum limits established by the *Australia New Zealand Food Standards Code*.

10.2 Pesticide residues

The products covered by this Standard shall comply with those maximum pesticide residue limits established by the *Australia New Zealand Food Standards Code* for these commodities.

11 HYGIENE

Products covered by this Standard that are intended for human consumption shall be prepared and handled in accordance with Chapter 3, Food Safety Standards, of the *Australia New Zealand Food Standards Code*. It is recommended that products covered by the provisions of this Standard are prepared and handled in accordance with the *Codex Recommended International Code of Practice—General Principles of Food Hygiene* (CAC/RP 1), and its Annex on Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its Application.

12 PACKAGING

12.1 General

Edible natural olive oils, refined olive oils and olive-pomace oils intended for trade shall be packed in containers complying with the *General Principles of Food Hygiene* recommended by the Codex Alimentarius Commission (CAC/RCP 1), by the *Australia New Zealand Food Standards Code* (Chapter 3), and other relevant texts such as codes of hygienic practice and codes of practice.

When packaging edible natural olive oils, refined olive oils or refined olive-pomace oils, operators shall—

(a) only use packaging material that is fit for its intended use in order to minimize deterioration of quality and to ensure that the product grade and associated characteristics continue to meet the requirements of this Standard for the duration of the product's stated shelf life;

(b) only use material that is not likely to cause oil contamination; and

(c) ensure that there is no likelihood that the oils may become contaminated during the packaging process.

12.2 Labelling

12.2.1 *General*

Operators are advised that labelling requirements, in addition to those set out in this Standard, may be specified in laws, regulations and Standards.

In addition to sections 2, 3, 7 and 8 of the *Codex General Standard for the Labelling of Pre-packaged Foods* (Codex STAN 1) and the standards applying to food intended for direct sale to consumers in the *Australia New Zealand Food Standards Code*, the provisions of this (Clause 12.2) shall apply to the labelling of containers intended for sale.

12.2.2 *Name of the product*

12.2.2.1 *General*

The labelling on each container shall indicate the specific grade (see Clause 12.2.2.2) of the product as specified and determined by this Standard. Operators shall ensure that the designation and an additional description of the product complies with the *Australian New Zealand Food Standards Code*.

Indications shown on the labelling shall not mislead the purchaser, particularly as to the characteristics of the oil concerned, or by attributing to it properties which it does not possess, or by suggesting that it possesses special characteristics where those characteristics are common to most oils.

12.2.2.2 *Grades of edible natural olive oils, refined olive oils and olive-pomace oils*

The following are the permitted designations for labelling the different grades of edible natural olive oils, refined olive oils and olive-pomace, oils as defined in Clause 6 of this Standard:

(a) Extra Virgin Olive Oil.

(b) Virgin Olive Oil.

(c) Refined Olive Oil.

(d) Olive Oil—Composed of Refined and Virgin [or Extra Virgin] Olive Oils.

(e) Refined Olive-Pomace Oil.

(f) Olive-Pomace Oil—Composed of Refined Olive-Pomace Oils and Virgin [or Extra Virgin] Olive Oils.

The designations shall be prominent and clearly legible in full in the principal display panel of the label.

Any other designations (e.g. Olive Oil, Pure Olive Oil, Light or Lite Olive Oil, Extra Light or Lite Olive Oil) shall not be used.

No adjective of any kind (e.g. Premium, Super, Light, Lite, Pure) shall be used together with the approved designation of oils by presenting them on the same line as, or having equal or greater prominence than, the designation.

Words describing country or region of origin (e.g. Australian, Tuscan, Spanish, etc.); oil character (e.g. mellow, fruity, robust, etc.); and/or processing method (e.g. cold pressed, first extraction, etc.) shall only be used where the information can be substantiated and does not mislead consumers.

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12.2.2.3 *Edible natural olive oils, refined olive oils and olive-pomace oils as ingredients or components*

The declaration of the different designations of edible natural olive oils, refined olive oils and olive-pomace oils as ingredients or components of food shall comply with the *Australia New Zealand Food Standards Code*.

When edible natural olive oils, refined olive oils or olive-pomace oils are used as a principal ingredient of food, the labelling of the food product shall specify the grade of the oil used in accordance with Clause 12.2.2.2.

12.2.3 *Net contents*

Compliance with the *National Measurements Act 1960* and subordinate regulations is mandatory for all packaged foods.

12.2.4 *Name and address*

The name and address of the manufacturer, packer, distributor, importer, exporter or seller shall be declared in accordance with the *Australia New Zealand Food Standards Code*.

12.2.5 *Country of origin*

The use of the country or countries of origin on the label shall comply with the Australia *New Zealand Food Standards Code* requirements and the *Competition and Consumer Act 2010*.

12.2.6 *Lot identification*

Each container shall be embossed or otherwise permanently marked in code or in clear writing to identify the producing factory and the lot in accordance with the *Australia New Zealand Food Standards Code*.

12.2.7 *Best-before date*

12.2.7.1 *General*

The best-before date shall be declared in accordance with the *Australia New Zealand Food Standards Code*. Edible natural olive oils, refined olive oils and olive-pomace oils shall not display a best-before date greater than two years from the date of packaging. Harvest date may also be included on the label.

12.2.7.2 *Determination of best-before date*

The best-before date shall be supported by technical evidence. Methods used to determine oil durability may include:

(a) Oil oxidative stability index in accordance with Clause 13.20.

(b) Fatty acid profile in accordance with Clause 13.3 and antioxidant content in accordance with Clause 13.18.

12.2.8 *Optional indications*

12.2.8.1 *General*

Optional indications listed in Clauses 12.2.8.2, 12.2.8.3 and 12.2.8.4 may appear on the label of olive oils.

12.2.8.2 *Organic and biodynamic*

The words ‘organic’ and/or ‘biodynamic’ shall only be used to describe the oil where the oil complies with the requirements of AS 6000.

NOTE: Standards Australia Miscellaneous Publication MP 100 specifies procedures for the certification of organic and biodynamic products that conform to AS 6000. Appendix C of AS 6000 details the process and requirements for determining additional systems of conformity assessment that may be acceptable. A table of acceptable conformity assessment systems, competent authorities and accreditation bodies is located at: www.jas-anz.org/MP100

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12.2.8.3 *First cold pressing*

The indication 'first cold pressing', 'cold pressing', or similar, may appear only for virgin or extra virgin olive oils obtained from a first mechanical pressing of the olive paste by using a mechanical, hydraulic or centrifugal press at a temperature that does not lead to significant thermal alterations.

12.2.8.4 *Cold extraction*

The indication 'cold extraction' or 'cold crushed', or similar, may appear only for virgin or extra virgin olive oils obtained by any mechanical or other physical means at a temperature that does not lead to significant thermal alterations.

12.2.9 *Storage instructions*

The label shall include specific storage conditions (e.g. dark conditions and cool temperatures) necessary to ensure the validity of the best-before date declared on the label. The statement of those conditions shall be of equal or greater prominence as the best-before date.

13 METHODS OF ANALYSIS

13.1 General

The methods set out in this Clause (13), or alternative methods providing equivalent results, shall be used to determine the characteristics for natural olive oils, refined olive oils or olive-pomace oils. At all times, the most recently published version of the stated methods shall be used.

13.2 Preparation of the test sample

Test samples shall be prepared in accordance with ISO 661.

13.3 Determination of the fatty acid composition

Preparation of methyl esters shall be in accordance with AOCS Ce 2-66 or ISO 5509 or IOC/T.20/Doc.24. Methyl esters of fatty acids shall be analysed by gas chromatography in accordance with ISO 5508 or AOCS Ch 2-91.

13.4 Determination of the trans fatty acid content

Trans fatty acid content shall be determined in accordance with ISO 15304 or AOCS Ch 2a-94 (Rev. 2002) or IOC/T.20/Doc. 17.Rev.1.

13.5 Determination of the sterol composition and total sterol content

Sterol composition and total sterol content shall be determined in accordance with ISO 12228 or IOC/T.20/ Doc. 10.Rev.1 or AOCS Ch 6-91.

13.6 Determination of the content of erythrodiol + uvaol

Erythrodiol + uvaol content shall be determined in accordance with IUPAC no. 2.431. Capillary columns are recommended or IOC/T.20/Doc. 30.

13.7 Determination of the wax content

Wax content shall be determined in accordance with AOCS Ch 8-02 (Rev.2007) or IOC/T.20/Doc. 18.Rev.2.

13.8 Determination of stigmastadienes content

Stigmastadienes shall be determined in accordance with AOCS Cd 26-96 or IOC/T.20/Doc. 11.Rev.2.

13.9 Determination of the content of 2-glyceryl monopalmitate

2-glyceryl monopalmitate content shall be determined in accordance with IOC/T.20/Doc. 23.

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13.10 Determination of the difference between the actual and theoretical ECN 42 triglyceride content

The difference between the actual and theoretical ECN 42 triglyceride content shall be determined in accordance with AOCS Ce 5b-89 or IOC/T.20/Doc. 20. Rev.3.

13.11 Determination of organoleptic characteristics

Organoleptic characteristics shall be determined in accordance with COI/T.20/Doc. 15. Rev.2.

13.12 Determination of free fatty acid content

Free fatty acid content shall be determined in accordance with ISO 660 or AOCS Ca 5a-40.

13.13 Determination of the peroxide value

Peroxide value shall be determined in accordance with AOCS Cd 8b-90 or ISO 3960.

13.14 Determination of absorbency in ultraviolet

Absorbency in ultraviolet shall be determined in accordance with ISO 3656 or AOCS Ch 5-91 or IOC/T.20/Doc.19. Rev.2.

13.15 Determination of moisture and volatile matter

Moisture and volatile matter shall be determined in accordance with ISO 662 or AOCS Ca 2c-25.

13.16 Determination of insoluble impurities in light petroleum

Insoluble impurities in light petroleum shall be determined in accordance with ISO 663, or AOCS Ca 3a-46.

13.17 Determination of trace metals

Determination of copper and iron by direct graphite furnace atomic absorption spectrometry shall be in accordance with ISO 8294.

13.18 Determination of alpha-tocopherol

Tocopherols and tocotrienols contents, using high-performance liquid chromatography, shall be determined in accordance with ISO 9936.

13.19 Determination of traces of heavy metals

13.19.1 *Determination of traces of heavy metals—Lead*

Traces of lead shall be determined in accordance with ISO 12193 or AOCS Ca 18c-91 or AOAC 994.02.

13.19.2 *Determination of traces of heavy metals—Arsenic*

Traces of arsenic shall be determined in accordance with AOAC 952.13 or AOAC 942.17 or AOAC 985.16.

13.20 Determination of oxidative stability index

Oxidative stability index shall be determined in accordance with AOCS Cd 12b-92.

13.21 Determination of pyropheophytins

The degradation products of chlorophylls a and a' (pheophytins a, a' and pyropheophytins) shall be determined in accordance with ISO 29841.

13.22 Determination of 1,2-Diacylglycerol content

Relative amounts of 1,2- and 1,3-diacylglycerols shall be determined in accordance with ISO 29822.

NOTES

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