codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

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Agenda Item 4 **CX/PFV 10/25/4**
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JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON PROCESSED FRUITS AND VEGETABLES
25th Session
Bali, Indonesia,
25 – 29 October 2010

PROPOSED DRAFT CODEX STANDARD FOR TABLE OLIVES
(Revision of CODEX STAN 66-1981)
(N02-2009)

(AT STEP 3)

Codex Members and Observers wishing to submit comments on this proposal, including possible economic implications, should do so in conformity with the *Uniform Procedure for the Elaboration of Codex Standards and Related Texts* (Codex Alimentarius Procedural Manual) before **16 July 2010**. Comments should be addressed:	
to: US Codex Office, Food Safety and Inspection Service, US Department of Agriculture, Room 4861 South Building, 1400 Independence Ave., S.W., Washington, D.C. 20250-3700 USA Fax : +1.202.720.3157; E-mail : uscodex@fsis.usda.gov - ***preferred*** -	with copy to: Secretariat, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme, Viale delle Terme di Caracalla, 00153 Rome, Italy Fax : +39 (06) 5705 4593 E-mail : codex@fao.org - ***preferred*** -

BACKGROUND

1. The 24th Session of the Codex Committee on Processed Fruits and Vegetables agreed to initiate new work on the revision of the Codex Standard for Table Olives (CODEX STAN 177-1981). The Committee further agreed to entrust the revision of the Standard to an electronic Working Group chaired by the European Union in order to present a revised Standard for consideration by the next session of the Committee.[1] The 32nd Session of the Commission approved the revision of the Standard as new work for the Committee[2].

2. In revising Standard, the Working Group took as a basis the *Trade Standard applying to Table Olives* (COI/OT/NC no. 1, December 2004) issued by the International Olive Council (IOC), which is an international intergovernmental body with a long-standing cooperation with Codex in the development and revision of Codex texts on olive-related products. Comments were received from Argentina, Australia, Brazil, France, Malaysia, the United States of America and the IOC. Comments from one member of the Working Group arrived late and therefore the eWG could not consider them. These comments are highlighted in Italics.

3. The attention of the Committee is in particular drawn to the following sections and issues where the members of the Working Group had diverging views:

1 ALINORM 09/32/27, para. 109.
2 ALINORM 09/32/REP, para. 114 & App. VI.

3.1.3 **Packing Media (packing brines)**: The need to have the detailed criteria in points 3.1.3.1 and 3.1.3.2.

3.2.1 **Trade categories**: The appropriateness to include the trade categories in the standard.

3.2.4 **Defects and Allowances**: The presentation and the level of detail for defects and allowances indicated in the table.

4. **Food Additives**: Whether the standard should contain specific food additive provisions applicable to table olives or whether a general reference to the Codex General Standard for Food Additives would be sufficient[3].

4. In addition, the 20th Session of the Committee on Methods of Analysis and Sampling advised commodity committees to consider replacing Codex Methods of Analysis and Sampling (CAC/RMs) with more modern methods as appropriate and to replace the CAC/RM numbers with the original literature references, if possible, and when the original reference was not available, the full text of the method should be included.[4] [5] The Committee is invited to consider whether the two methods described in the revised Standard namely total acidity and pH of brine should be replaced by relevant methods developed by recognized international organizations such as those proposed in the table or by any other more appropriate method.

5. The proposed Standard as revised by the Working Group is contained in Annex I. The List of Participants is presented in Annex II.

Request for comments

6. Codex Members and Observers are invited to comment on the ***proposed draft Codex Standard for Table Olives*** *(revision of CODEX STAN 66-1981)* as directed above. In making comments, particular attention should be paid to those provisions identified by the Working Group (see paras. 3 and 4) that may need further discussion by the Committee.

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[3] For the relevant guidance, see the Procedural Manual: Format for Codex Commodity Standards, section "Food Additives".

[4] ALINORM 97/23, para. 52.

[5] ALINORM 97/23A, para. 44.

PROPOSED DRAFT CODEX STANDARD FOR TABLE OLIVES
(Revision of CODEX STAN 66-1981)

1. SCOPE

This Standard applies to the fruit of the cultivated olive tree (*Olea europaea* L.), as defined in Section 2, which has been suitably treated or processed, and which is offered for direct consumption as table olives, including for catering purposes or for repacking if required. It does not apply to the product when indicated as being intended for further processing.

2. DESCRIPTION

2.1 PRODUCT DEFINITION

"Table olives" is the product:

(a) prepared from the sound fruits of varieties of the cultivated olive tree *(Olea europaea* L.*)* that are chosen for their production of olives whose volume, shape, flesh-to-stone ratio, fine flesh, taste, firmness and ease of detachment from the stone make them particularly suitable for processing;

(b) treated to remove its bitterness and preserved by natural fermentation, or by heat treatment, *or by other means* so as to prevent spoilage and to ensure product stability in normal storage conditions at room temperature, with or without the addition of preservatives;

(c) packed with or without a suitable liquid packing medium in accordance with Section 3.1.3.

2.2 PRODUCT DESIGNATION

Table olives are classified in one of the following olive types, trade treatments and styles:

2.2.1 Types of Olives

Table olives are classified in one of the following types according to the degree of ripeness of the fresh fruits:

(a) **Green olives:** Fruits harvested during the ripening period, prior to colouring and when they have reached normal size.

(b) **Olives turning colour:** Fruits harvested before the stage of complete ripeness is attained, at colour change.

(c) **Black olives:** Fruits harvested when fully ripe or slightly before full ripeness is reached.

2.2.2 Trade Preparations

Olives shall undergo the following trade preparations:

(a) **Treated olives:** Green olives, olives turning colour or black olives that have undergone alkaline treatment, then packed in brine in which they undergo complete or partial fermentation, and preserved or not by the addition of acidifying agents:

(a-1) Treated green olives in brine;

(a-2) Treated olives turning colour in brine;

(a-3) Treated black olives.

(b) **Natural olives:** Green olives, olives turning colour or black olives placed directly in brine in which they undergo complete or partial fermentation, preserved or not by the addition of acidifying agents:

(b-1) Natural green olives;

(b-2) Natural olives turning colour;

(b-3) Natural black olives.

(c) **Dehydrated and/or shrivelled olives:** Green olives, olives turning colour or black olives that have undergone or not mild alkaline treatment, preserved in brine or partially dehydrated in dry salt and/or by heating or by any other technological process:

(c-1) Dehydrated and/or shrivelled green olives;

(c-2) Dehydrated and/or shrivelled olives turning colour;

(c-3) Dehydrated and/or shrivelled black olives.

(d) **Olives darkened by oxidation:** Green olives or olives turning colour preserved in brine, fermented or not, and darkened by oxidation with or without alkaline medium. They shall be a uniform brown to black colour.

Alkaline-darkened olives shall be preserved in hermetically sealed containers and subjected to heat sterilisation. Olives darkened without alkaline treatment shall fulfil the requirements in sections 3.1.3.1 and 3.1.3.2.

(d-1) Black olives.

Green Ripe Olives: *Green olives or olives turning colour, not fermented, not preserved in brine, and not oxidized, but undergo alkaline treatment, preserved in hermetically sealed containers subject to heat sterilization*

(e) **Specialities:** Olives may be prepared by means distinct from, or additional to, those set forth above. Such specialities retain the name "olive" as long as the fruit used complies with the general definitions laid down in this Standard. The names used for these specialities shall be sufficiently explicit to prevent any confusion, in purchasers' or consumers' minds, as to the origin and nature of the products and, in particular, with respect to the designations laid down in this Standard.

2.3 VARIETAL TYPES

Any commercially cultivated variety (cultivar) suitable for canning may be used.

2.4 STYLES

Olives may be offered in one of the following styles:

2.4.1 Whole olives

(a) **Whole olives:** Olives, with or without their stem, which have their natural shape and from which the stone (pit) has not been removed.

(b) **Cracked olives:** Whole olives subjected to a process whereby the flesh is opened without breaking the stone (pit) which remains whole and intact inside the fruit.

(c) **Split olives:** Whole olives that are split lengthwise by cutting into the skin and part of the flesh.

2.4.2 Stoned (pitted) olives

(a) **Stoned (pitted) olives:** Olives from which the stone (pit) has been removed and which basically retain their natural shape.

(b) **Halved olives:** Stoned (pitted) or stuffed olives sliced into two approximately equal parts, perpendicularly to the longitudinal axis of the fruit.

(c) **Quartered olives:** Stoned (pitted) olives split into four approximately equal parts along and perpendicularly to the major axis of the fruit.

(d) **Divided olives:** Stoned (pitted) olives cut lengthwise into more than four approximately equal parts.

(e) **Sliced olives:** Stoned (pitted) or stuffed olives sliced into segments of fairly uniform thickness.

(f) **Chopped or minced olives:** Small pieces of stoned (pitted) olives of no definite shape and practically devoid (no more than 5 per 100 of such units by weight) of identifiable stem-insertion units as well as of slice fragments.

(g) **Broken olives:** Olives broken while being stoned (pitted) or stuffed. They may contain pieces of the stuffing material.

2.4.3 **Stuffed olives:** Stoned (pitted) olives stuffed either with one or more suitable products (pimiento, onion, almond, celery, anchovy, olive, orange or lemon peel, hazelnut, capers, etc.) or with natural pastes prepared therefrom.

2.4.4 **Salad olives:** Whole broken or broken-and-stoned (pitted) olives with or without capers, plus stuffing material, where the olives are the most numerous compared with the entire product marketed in this style.

2.4.5 **Olives with capers:** Whole or stoned (pitted) olives, usually small in size, with capers and with or without stuffing, where the olives are the most numerous compared with the entire product marketed in this style.

2.4.6 **Olive paste:** Exclusively olive flesh, finely crushed.

2.5 **OTHER STYLES**

Any other presentation of the product should be permitted provided that the product:

(a) is sufficiently distinctive from other forms of presentation laid down in the Standard;

(b) meets all relevant requirements of the Standard, including requirements relating to limitations on defects, drained weight, and any other requirements which are applicable to that style which most closely resembles the style or styles intended to be provided for under this provision; and

(c) is adequately described on the label to avoid confusing or misleading the consumer.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 COMPOSITION

3.1.1 Basic Ingredients

Olives as defined in Sections 1 and 2, with or without liquid packing medium.

3.1.2 Other Permitted Ingredients

Other ingredients may be used such as:

(a) Water;

(b) Food-grade salts;

(c) Vinegar;

(d) Olive oil;

(e) Sugars and/or other foodstuffs with sweetening properties such as honey;

(f) Any single or combination of edible material used as an accompaniment or stuffing such as, for example, pimiento, onion, almond, celery, anchovy, capers, or pastes thereof;

(g) Spices and aromatic herbs or natural extracts thereof.

3.1.3 **Packing Media (packing brines)**

This term applies to solutions of food grade salts as defined in *Codex Standard for Food Grade Salt (CODEX STAN 150-1985)* dissolved in potable water, with or without the addition of all or some of the ingredients listed under Section 3.1.2.

Brine shall be clean, free from unauthorised foreign matter and shall comply with the hygiene rules laid down in Section 6.

3.1.3.1 Physico–chemical characteristics of the packing brine or of the juice after osmotic balance:

Preparation	Minimum sodium chloride content %			Maximum pH limit			Minimum lactic acidity % lactic acid		
	SCC, MAT	PR, R	P, S	SCC, MAT	PR, R	P, S	SCC, MAT	PR, R	P, S
Treated olives	5	4	GMP	4.0	4.0	4.3	0.5	0.4	GMP
Natural olives	6	6	GMP	4.3	4.3	4.3	0.3	0.3	GMP
Dehydrated and/or shrivelled olives	10	10	GMP	GMP	GMP	GMP	GMP	GMP	GMP
Olives darkened by oxidation with alkaline treatment	GMP	GMP	GMP	GMP	GMP	GMP	GMP	GMP	GMP

SCC: Specific chemical characteristics

MAT: Modified atmosphere

PR: Addition of preservatives

R: Refrigeration

P: Pasteurisation

S: Sterilisation

GMP: Good manufacturing practice

Note 1: Trade preparations of table olives not complying with the above physico–chemical characteristics may only be marketed if they are made according to traditional methods the food safety of which is guaranteed by an official body which authorises their distribution and sale.

Note 2: The presence of propionic acid and its salts may be observed in table olive trade preparations that have undergone fermentation in conformity with good manufacturing practice.

3.1.3.2 Characteristics of the thermal pasteurisation and sterilisation treatment applied to table olives, as evaluated in the packing brine or flesh:

Preparation	Minimum microbially lethal units	
	$PU^{5.25}_{62.4^{o}C}$	$F_{o}{}^{10}_{121^{o}C}$
	P	S
Treated olives	15	-
Natural olives	15	-
Dehydrated and/or shrivelled olives	15	-
Olives darkened by oxidation with alkaline treatment	-	15

P: Pasteurisation

S: Sterilisation

PU^{z}_{rt}: Pasteurisation units, defined as the cumulative lethal rate during heat processes performed at temperatures below 100ºC. Propionic bacteria shall be considered the reference microorganisms for table olives, for which the equation of the thermal death time is defined by a reference temperature equal to 62.4ºC and a z curve of 5.25.

Rt: The reference temperature is the temperature corresponding to a decimal reduction time which, together with the z curve, defines the logarithmic representation of the T.D.T. curve of a given microorganism.

z: Curve that plots the logarithmic representation of the thermal death times according to temperature (T.D.T.); it is equivalent to the number of degrees for the curve to traverse one log cycle.

$F_{o}{}^{z}_{rt}$: Cumulative sterility value: integral, or sum of the partially lethal rates, obtained during sterilisation and expressed as exposure time at a reference temperature. When the reference temperature Rt is fixed at 121ºC and the z curve at 10ºC, the F_o value applicable to olives darkened by oxidation is obtained.

Decimal reduction time: heating time, in minutes, required to reduce the active population of a bacterial suspension by one tenth.

Thermal death time: heating time, at a specific temperature and in specific conditions, required to reduce the initial microbial population by a factor of 10^{12}.

Lethal rate: reciprocal of the number of minutes of heat exposure required to destruct a given microorganism at a specific temperature.

3.2 QUALITY FACTORS

Table olives should have normal colour, flavour, odour and texture characteristic of the finished product.

3.2.1 Trade Categories

Table olives are classified in one of the following three trade categories according to their quality:

3.2.1.1 ***"Extra" or "Fancy"***

The high quality olives endowed to the maximum extent with the characteristics specific to the variety and trade preparation are considered as belonging to this category. Notwithstanding, and providing this does not affect the overall favourable aspect or organoleptic characteristics of each fruit, they may have very slight colour, shape, flesh-firmness or skin defects.

Whole, split, stoned (pitted) and stuffed olives of appropriate varieties may be classified in this category.

3.2.1.2 ***"First", "1st", "Choice" or "Select"***

This category covers good quality olives with a suitable degree of ripeness and endowed with the characteristics specific to the variety and trade preparation. Providing this does not affect the overall favourable aspect or individual organoleptic characteristics of each fruit, they may have slight colour, shape, skin or flesh-firmness defects.

All the types, preparations and styles of table olives may be classified in this category, except for chopped or broken olives and olive pastes.

3.2.1.3 ***"Second", "2nd" or "Standard"***

This category includes good quality olives which, although they cannot be classified in the two previous categories, comply with the general conditions defined for table olives under this section.

3.2.2 **Uniformity of Size**

Table olives shall be uniform in size. If they are size-graded the following scale may be applied.

The size scale, in one kilogramme, is as follows:

60/70	101/110	161/180	261/290
71/80	111/120	181/200	291/320
81/90	121/140	201/230	321/350
91/100	141/160	231/260	351/380
			381/410*

***** Above 410, the interval is 50 fruits.

Different scales may nevertheless be applied according to agreements between the parties concerned.

Solely where stuffed olives are concerned, as from size 201/220 the interval is 20 fruits up to size 401/420.

Size-grading may be applied for olives in the whole, stoned (pitted) and stuffed styles.

In the case of stoned (pitted) olives or stuffed olives (after removing the stuffing), the size shown shall be the one corresponding to the original whole olive. *For the purpose of checking, the number of stoned (pitted) olives in one kilogramme shall be multiplied by a coefficient set by each producing country.*

Within each size as defined above, it is stipulated that after having removed from a sample of 100 olives, the olive having the largest horizontal diameter and the olive having the smallest horizontal diameter, the difference between the horizontal diameters of the remaining olives may not exceed 4 mm. *Alternatively, the maximum permitted tolerance shall be:*

- 10% for sizes with a 10-fruit interval;

- 5% for sizes with a 20-fruit interval;

- 2% for sizes with a 30 or more fruit interval.

3.2.3 **Definitions of Defects**

(a) **Harmless extraneous material:** Any vegetable matter not injurious to health, nor aesthetically undesirable, for example leaves, separated stems, but not including substances the addition of which has been authorised in the Standard.

(b) **Blemished fruit**: Olives with marks on the skin that are more than 9 mm^2 in surface area and that may or may not penetrate through to the flesh *es which singly or in the aggregate, materially affect the appearance or eating quality of the olives.*

(c) **Mutilated fruit**: Olives damaged by tearing the epicarp to such an extent that a portion of the mesocarp becomes visible.

(d) **Broken fruit**: Olives damaged to such an extent as to affect their normal structure.

(e) **Shrivelled fruit:** Olives that are so abnormally wrinkled as to affect their appearance. The slight superficial wrinkles displayed by certain trade preparations shall not be considered a defect.

(f) **Abnormal texture:** Olives which are excessively or abnormally flabby or tough in comparison with the trade preparation in question and with the average of a representative sample of the lot.

(g) **Abnormal colour:** Olives the colour of which is distinctly different from the characteristic colour of the trade preparation in question and from the average of a representative sample of the lot.

(h) **Stems:** Stems attached to the olives and which measure more than 3 mm in length when measured from the shoulder of the olive. Not considered a defect in whole olives presented with stem attached.

(i) **Defective stuffing:** Olives presented in the stuffed olive style which are totally or partly empty in comparison with the trade preparation in question and with the average of a representative sample of the lot.

(j) **Stone (pit) or stone (pit) fragments (except for whole olives):** Whole stones (pits), or stone (pit) fragments measuring more than 2 mm along their longest axis.

(k) ***"Soft"*** *– Units lacking the firmness that is characteristic for a particular variety.*

(l) *"**Excessively Soft"** – Units shall be considered excessively soft when the olives appear to be spongy or watery. Units that have the apparent shape of whole units, but appear to have disintegrated flesh and water texture shall be considered excessively soft. In addition, a unit shall be considered excessively soft if the pit can be felt when applying moderate pressure.*

3.2.4 **Defects and Allowances**

The maximum defect tolerances for each trade category, for each type of olives and for olives darkened by oxidation are as follows:

- **Whole, stoned (pitted) or stuffed olives**:

	Extra category			*First category*			Second category		
	Green olives	*Olives darkened by oxidation*	*Olives turning colour and black olives*	*Green olives*	*Olives darkened by oxidation*	*Olives turning colour and black olives*	Green olives	Olives darkened by oxidation	Olives turning colour and black olives
Stoned (pitted) or stuffed olives									
Maximum tolerances as % of fruit:									
Stones (pits) and/or stone (pit) fragments	*1*	*1*	*2*	*1*	*1*	*2*	1	1	2
Broken fruit	*3*	*3*	*3*	*5*	*5*	*5*	7	7	7
Defective stuffing									
– *place-packed*	*1*	*1*	*1*	*2*	*2*	*2*	-	-	-
– *random-packed*	*3*	*3*	*3*	*5*	*5*	*5*	7	7	7
Whole olives, stoned (pitted) or stuffed									
Maximum tolerance as % of fruit:									
Blemished fruit	*4*	*4*	*6*	*6*	*6*	*8*	10	6	12
Mutilated fruit	*2*	*2*	*3*	*4*	*4*	*6*	8	8	10
Shrivelled fruit	*2*	*2*	*4*	*3*	*3*	*6*	6	6	10
Abnormal texture	*4*	*4*	*6*	*6*	*6*	*8*	10	10	12
Abnormal colour	*4*	*4*	*6*	*6*	*6*	*8*	10	10	12
Stems	*3*	*3*	*3*	*5*	*5*	*5*	6	6	6
Cumulative maximum of tolerances for these defects	*12*	*12*	*12*	*17*	*17*	*17*	22	22	22
Maximum tolerance as units per kg or fraction:									
Harmless extraneous material	*1*	*1*	*1*	*1*	*1*	*1*	1	1	1

The tolerances shall be assessed in a minimum sample of 200 olives taken in accordance with the appropriate sampling plan with an AQL of 6.5.

- **Olives presented in the halved, quartered, divided, sliced, chopped or minced, broken, salad olive (except when prepared with whole olives) and olive paste styles**: The presence of a stone (pit) or stone (pit) fragment shall be tolerated in every 300 g of net drained content of olive flesh.

3.3 CLASSIFICATION OF "DEFECTIVES"

A container that fails to meet one or more of the applicable quality requirements, as set out in Section 3.2 (except those based on sample averages)[1], should be considered as a "defective".

3.4 LOT ACCEPTANCE

A lot should be considered as meeting the applicable quality requirements referred to in Section 3.2 when:

(a) for those requirements which are not based on averages, the number of "defectives", as defined in Section 3.3, does not exceed the acceptance number (c) of the appropriate sampling plan with an AQL of 6.5; and

(b) the requirements of Section 3.2, which are based on sample averages, are complied with.

4. FOOD ADDITIVES

Only those food additive classes listed below are technologically justified and may be used in products covered by this Standard. Within each additive class only those food additives listed below, or referred to, may be used and only for the functions, and within limits, specified.

4.1 ACIDITY REGULATORS

INS No.	Name of the Food Additive	Maximum Level (expressed as m/m weight of flesh)
260	Acetic acid (glacial)	Limited by GMP
270	Lactic acid (L-, D-, and DL-)	Limited by GMP
330	Citric acid	Limited by GMP
334	Tartaric acid (L(+)-)	1500 mg/kg

4.2 ANTIOXIDANTS

INS No.	Name of the Food Additive	Maximum Level (expressed as m/m weight of flesh)
300	Ascorbic acid (L-)	Limited by GMP
220, 221, 222, 223, 224, 225, 227, 228, 539	Sulphites	100 mg/kg weight of flesh

[1] These acceptance criteria do not apply to non-retail containers.

4.3 **FIRMING AGENTS**

INS No.	Name of the Food Additive	Maximum Level (expressed as m/m weight of flesh)
327	Calcium lactate	Limited by GMP
333 (iii)	Tricalcium citrate	
509	Calcium chloride	

4.4 **FLAVOUR ENHANCERS**

INS No.	Name of the Food Additive	Maximum Level (expressed as m/m weight of flesh)
621	Monosodium glutamate	500 mg/kg

4.5 **FLAVOURING AGENTS**

Natural flavours as defined by the *Codex Guidelines for the Use of Flavourings* (CAC/GL 66-2008).	Limited by GMP

4.6 **PRESERVATIVES**

INS No.	Name of the Food Additive	Maximum Level (expressed as m/m weight of flesh)
200, 201, 202	Sorbic acid and its sodium and potassium salts	500 mg/kg (expressed as sorbic acid)
210, 211, 212	Benzoic acid and its sodium and potassium salts	1000 mg/kg (expressed as benzoic acid)
220, 221, 222, 223, 224, 225, 227, 228, 539	Sulphites	100 mg/kg weight of flesh

4.7 **COLOUR RETENTION AGENTS** (to maintain the colour of olives darkened by oxidation)

INS No.	Name of the Food Additive	Maximum Level (expressed as m/m weight of flesh)
579	Ferrous gluconate	150 mg/kg (as total Fe)
585	Ferrous lactate	150 mg /kg (as total Fe)

4.8 **THICKENERS** (solely for pastes intended for stuffing)

Thickeners used in accordance with Table 3 of the *Codex General Standard for Food Additives (CODEX STAN 192-1995)* are acceptable for use in foods conforming to this Standard.

4.9 **PROCESSING AIDS** (maximum level limited by Good Manufacturing Practices)

Function	Substance
Fermentation control	1.1 Cultures of lactic microorganisms
Prevention of the presence of O_2	1.2 Nitrogen
Prevention of the presence of O_2 and preservation	1.3 Carbon dioxide
Homogenization and improvement of colour development	1.4 Manganese lactate
	1.5 Manganese gluconate
Debittering and darkening (ripe olives)	1.6 Sodium or potassium hydroxide
Control of pH	1.7 Hydrochloric acid

5. CONTAMINANTS

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

5.2 The products covered by this Standard shall comply with the maximum residue limits for pesticides established by the Codex Alimentarius Commission.

6. HYGIENE

6.1 It is recommended that the product covered by this Standard be prepared and handled in accordance with the appropriate sections of the *Recommended International Code of Practice – General Principles of Food Hygiene* (*CAC/RCP 1- 1969*), the *Recommended Code of Hygienic Practice for Low-Acid and Acidified Low-Acid Canned Foods* (*CAC/RCP 23-1979*), *Code of Hygienic Practice for Canned Fruit and Vegetable Products* (*CAC/RCP 2-1969*), and other relevant Codex texts such as codes of hygienic practice and codes of practice.

6.2 The product should comply with any microbiological criteria established in accordance with the *Principles for the Establishment and Application of Microbiological Criteria for Foods* (CAC/GL 21-1997)[2].

6.3 The olives and brine shall be devoid of any microbiological deterioration and extraneous taste and smell caused by anomalous fermentation.

6.4 Fermented olives held in a packing medium may contain micro-organisms used for fermentation, notably lactic bacteria and yeasts. The number of such micro-organisms (lactic bacteria and/or yeasts) in a selective culture medium may, for each one, be up to 10^9 colony-forming units/ml of brine or per g of flesh depending on the level of fermentation.

6.5 Olives preserved by heat sterilisation (such as olives darkened by alkaline oxidation) shall have received a processing treatment sufficient both in time and temperature to destroy spores of *Clostridium botulinum*.

[2] For products that are rendered commercially sterile in accordance with the *Recommended International Code of Hygienic Practice for Low-Acid and Acidified Low-Acid Canned Foods* (CAC/RCP 23-1979), microbiological criteria are not recommended as they do not offer benefit in providing the consumer with a food that is safe and suitable for consumption.

7. WEIGHTS AND MEASURES

7.1 FILL OF CONTAINER

7.1.1 Minimum Fill

The container should be well filled with the product (including packing medium) which should occupy not less than 90% (minus any necessary head space according to good manufacturing practices) of the water capacity of the container. The water capacity of the container is the volume of distilled water at 20°C which the sealed container will hold when completely filled.

7.1.2 Classification of "Defectives"

A container that fails to meet the requirements for minimum fill of Section 7.1.1 should be considered a "defective".

7.1.3 Lot Acceptance

A lot will be considered as meeting the requirements of Section 7.1 when the number of "defectives" as defined in Section 7.1.1 does not exceed the acceptance number (c) of the appropriate sampling plan with an AQL of 6.5.

7.1.4 Minimum Net Drained Weight

7.1.4.1 The net drained weight of the product should be not less than the following percentages, calculated on the basis of the weight of distilled water at 20°C which the sealed container will hold when completely filled.[3]

Style	Minimum net drained weight
Whole olives	50 %
Stoned (pitted) or stuffed olives	40 %

The tolerance concerning the net drained weight mentioned on the container shall not exceed the following percentage scale, providing the sample's mean net drained weight is equal to, or in excess of, said declared weight:

(a) Containers with drained weight less than 200 g	5%
(b) Containers with drained weight between 200 and 500 g	4%
(c) Containers with drained weight between 500 and 1,500 g	3%
(d) Containers with drained weight in excess of 1,500 g	2%

7.1.4.2 ***Lot Acceptance***

The requirements for minimum drained weight should be deemed to be complied with when the average drained weight of all containers examined is not less than the minimum required, provided that there is no unreasonable shortage in individual containers.

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[3] For non-metallic rigid containers such as glass jars, the basis for the determination should be calculated on the weight of distilled water at 20°C which the sealed container will hold when completely filled less 20 ml.

8. LABELLING

8.1 LABELLING OF RETAIL CONTAINERS

The products covered by the provisions of this Standard shall be labelled in accordance with the *Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985)*. In addition, the following specific provisions apply:

8.1.1 Name of the Product

8.1.1.1 The name of the product shall be “olives” or “table olives”.

8.1.1.2 The following shall be included as part of the name of the product or shall appear in close proximity thereto:

8.1.1.2.1 The type of olive as described in Section 2.2.1. This may be replaced by the terms in use in the country of retail sale. This declaration shall not be compulsory on transparent packs.

8.1.1.2.2 The trade preparation as described in Section 2.2.2. This may be replaced by the trade preparation in use in the country of retail sale.

8.1.1.2.3 The style as described in Section 2.4. This declaration may be limited to the declarations in use in the country of retail sale; it may be omitted on glass jars and plastic sachets. In the case of stuffed olives the style of stuffing shall be specified:

- “olives stuffed with …” (single or combination of single ingredients);
- “olives stuffed with … paste” (single or combination of ingredients).

8.1.1.2.4 If the olives are presented in accordance with the provisions on other styles (Section 2.5), the label should contain in close proximity to the name of the product such additional words or phrases that will avoid misleading or confusing the consumer.

8.1.1.2.5 The size of “whole”, “stoned (pitted)”, “stuffed” and “halved” olives. The size may be declared according to existing practice in the country of retail sale; this declaration shall not be compulsory on transparent packs.

8.1.1.2.6 The trade category. *Optional*

8.2 LABELLING OF NON-RETAIL CONTAINERS

Information for non-retail containers shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, and the name and address of the manufacturer, packer, distributor or importer, as well as storage instructions, shall appear on the container. However, lot identification, and the name and address of the manufacturer, packer, distributor or importer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

9. **METHODS OF ANALYSIS AND SAMPLING**

Provision	Method	Principle	Type
Acidity of brine	As described below	Titrimetry	IV
	AOAC 942.15*	Titrimetry	IV
Drained weight	AOAC 968.30 (Codex General Method for processed fruits and vegetables)	Sieving Gravimetry	I
Fill of containers	CAC/RM 46-1972 (Codex General Method for processed fruits and vegetables)	Weighing	I
Lead	AOAC 972.25 (Codex General Method)	AAS (Flame absorption)	III
pH of brine	As described below	Potentiometry	IV
	ISO 1842:1991 (Codex General Method for processed fruits and vegetables)		IV
	AOAC 981.12 (Codex General Method for processed fruits and vegetables)		III
	NMKL 179:2005 (Codex General Method for processed fruits and vegetables)		II
Salt in brine	ISO 3634 :1979** "chloride expressed as sodium chloride" (Codex General Method for processed fruits and vegetables)	Potentiometry	III
	AOAC 971.27*** (Codex General Method)		II
Tin	AOAC 980.19 (Codex General Method)	AAS	II

* CODEX STAN 234-1999 (Pickled cucumbers, total acidity).

** ALINORM 03/23, Appendix VI-H (Processed fruits and vegetables, sodium chloride)

*** CODEX STAN 234-1999 (Table olives, salt in brine)

DETERMINATION OF WATER CAPACITY OF CONTAINERS (CAC/RM 46-1972)

1 SCOPE

This method applies to glass containers[4].

2 DEFINITION

The water capacity of a container is the volume of distilled water at 20°C which the sealed container will hold when completely filled.

3 PROCEDURE

3.1 Select a container which is undamaged in all respects.

3.2 Wash, dry and weigh the empty container.

3.3 Fill the container with distilled water at 20°C to the level of the top thereof, and weigh the container thus filled.

4 CALCULATION AND EXPRESSION OF RESULTS

Subtract the weight found in 3.2 from the weight found in 3.3. The difference shall be considered to be the weight of water required to fill the container. Results are expressed as ml of water.

DETERMINATION OF ACIDITY[5]

Transfer 25 ml of the brine by pipette to a 150 ml conical flask and add a few drops of phenolphtalein indicator. Titrate the solution with 0.1N sodium hydroxide solution until a permanent pink colour persists on shaking. The sodium hydroxide solution may be standardized against dried A.R. grade potassium hydrogen phthalate, and any necessary factor applied.

1 ml 0.1N NaOH = 0.0090 g lactic acid.

DETERMINATION OF pH[5]

Set up and adjust a pH meter and the glass and calomel electrodes according to the manufacturer's operating instructions for use at 20°C. Calibrate the instrument with a recognized buffer solution of pH 4.0 at 20°C. Rinse the electrodes free from buffer solution with copious amounts of distilled water. Dip the electrode into the sample contained in a beaker and justed to 20°C. Read the pH to the nearest 0.05 units.

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4 For determination of water capacity in metal containers the reference method is ISO 90.1:1986.

5 The presence of acidic food additives affects the interpretation of the results.

Sampling Plans

The appropriate inspection level is selected as follows:

Inspection level I - Normal Sampling

Inspection level II - Disputes, (Codex referee purposes sample size), enforcement or need for better lot estimate

SAMPLING PLAN 1
(Inspection Level I, AQL = 6.5)

NET WEIGHT IS EQUAL TO OR LESS THAN 1 KG (2.2 LB)		
Lot Size (N)	**Sample Size (n)**	**Acceptance Number (c)**
4,800 or less	6	1
4,801 - 24,000	13	2
24,001 - 48,000	21	3
48,001 - 84,000	29	4
84,001 - 144,000	38	5
144,001 - 240,000	48	6
more than 240,000	60	7
NET WEIGHT IS GREATER THAN 1 KG (2.2 LB) BUT NOT MORE THAN 4.5 KG (10 LB)		
Lot Size (N)	**Sample Size (n)**	**Acceptance Number (c)**
2,400 or less	6	1
2,401 - 15,000	13	2
15,001 - 24,000	21	3
24,001 - 42,000	29	4
42,001 - 72,000	38	5
72,001 - 120,000	48	6
more than 120,000	60	7
NET WEIGHT GREATER THAN 4.5 KG (10 LB)		
Lot Size (N)	**Sample Size (n)**	**Acceptance Number (c)**
600 or less	6	1
601 - 2,000	13	2
2,001 - 7,200	21	3
7,201 - 15,000	29	4
15,001 - 24,000	38	5
24,001 - 42,000	48	6
more than 42,000	60	7

SAMPLING PLAN 2
(Inspection Level II, AQL = 6.5)

NET WEIGHT IS EQUAL TO OR LESS THAN 1 KG (2.2 LB)		
Lot Size (N)	**Sample Size (n)**	**Acceptance Number (c)**
4,800 or less	13	2
4,801 - 24,000	21	3
24,001 - 48,000	29	4
48,001 - 84,000	38	5
84,001 - 144,000	48	6
144,001 - 240,000	60	7
more than 240,000	72	8
NET WEIGHT IS GREATER THAN 1 KG (2.2 LB) BUT NOT MORE THAN 4.5 KG (10 LB)		
Lot Size (N)	**Sample Size (n)**	**Acceptance Number (c)**
2,400 or less	13	2
2,401 - 15,000	21	3
15,001 - 24,000	29	4
24,001 - 42,000	38	5
42,001 - 72,000	48	6
72,001 - 120,000	60	7
more than 120,000	72	8
NET WEIGHT GREATER THAN 4.5 KG (10 LB)		
Lot Size (N)	**Sample Size (n)**	**Acceptance Number (c)**
600 or less	13	2
601 - 2,000	21	3
2,001 - 7,200	29	4
7,201 - 15,000	38	5
15,001 - 24,000	48	6
24,001 - 42,000	60	7
more than 42,000	72	8

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