

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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STANDARD FOR CERTAIN CANNED VEGETABLES

CXS 297-2009

Adopted in 2009. Amended in 2011, 2015, 2022, 2023.

2022 Amendments

Following decisions taken at the Forty-fifth Session of the Codex Alimentarius Commission in December 2022, amendments were made in Section 8.3 Labelling of non-retail containers.

2023 Amendments

Following decisions taken at the Forty-sixth Session of the Codex Alimentarius Commission in December 2023, amendments were made in Section 9. Methods of analysis and sampling.

1. SCOPE

This standard supersedes previous standards for certain canned vegetablesⁱ and applies to certain canned vegetables as defined in Section 2 below and in the corresponding annexes and offered for direct consumption, including for catering purposes or for repackaging if required. It does not apply to the product when indicated as being intended for further processing. This standard does not cover vegetables that are lacto-fermented, pickled or preserved in vinegar.

2. DESCRIPTION

2.1 Product definition

Canned vegetables are the products:

- (1) prepared from substantially sound, fresh (barring mature processed peas) or frozen vegetables, as defined in the corresponding annexes, having reached appropriate maturity for processing. None of their essential elements are removed from them but they shall be washed and prepared appropriately, depending on the product to be produced. They undergo operations such as washing, peeling, grading, cutting, etc. depending on the type of product.
- (2)
 - (a) packed with a suitable liquid packing medium in accordance with Section 3.1.3.
 - (b) vacuum packaged with packing media that does not exceed 20 percent of the product's net weight and when the container is sealed in such conditions as to generate an internal pressure in accordance with good manufacturing practices.ⁱⁱ
- (3) processed by heat, in an appropriate manner, before or after being hermetically sealed in a container, so as to prevent spoilage and to ensure product stability in normal storage conditions at room temperature.

2.2 Styles

In addition to the styles defined in the corresponding annexes, any other styles should be permitted as indicated in Section 2.2.1.

2.2.1 Other styles

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

- (1) is sufficiently distinctive from other forms of presentation laid down in the standard;
- (2) 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
- (3) 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

Vegetables as defined in Section 2 and liquid packing medium appropriate to the product.

3.1.2 Other permitted ingredients

In accordance with the relevant provisions in the corresponding annexes.

3.1.3 Packing media

3.1.3.1 Basic ingredients

Water, and if necessary, salt.

ⁱ This standard supersedes individual standards for: *Canned asparagus* (CXS 56-1981); *Canned carrots* (CXS 116-1981); *Canned green peas* (CXS 58-1981); *Canned green beans and wax beans* (CXS 16-1981); *Canned mature processed peas* (CXS 81-1981); *Canned palmito* (CXS 144-1985); *Canned sweet corn* (CXS 18-1981); *Canned mushrooms* (CXS 55-1981).

ⁱⁱ High vacuum products typically have an internal pressure of approximately 300 millibars or more below atmospheric pressure (depending on container size and other relevant factors).

3.1.3.2 Other permitted ingredients

Packing media may contain ingredients subject to labelling requirements of Section 8 and may include, but is not limited to:

- (1) sugars and/or other foodstuffs with sweetening properties such as honey;
- (2) aromatics plants, spices or extracts thereof, seasoning;
- (3) vinegar;
- (4) regular or concentrated fruit juice;
- (5) oil; and
- (6) tomato puree.

3.2 Quality criteria

3.2.1 Colour, flavour and texture

Canned vegetables shall have normal colour, flavour and odour of canned vegetables, corresponding to the type of vegetable and packing medium used and shall possess texture characteristic of the product.

3.2.2 Defects and allowances

Canned vegetables should be substantially free from defects. Certain common defects should not be present in amounts greater than the limitations fixed in the corresponding annexes.

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), 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:

- (1) 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
- (2) 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 and in the corresponding annexes are technologically justified and may be used in products covered by this standard. Within each additive class only those food additives listed below and in the corresponding annexes, or referred to, may be used and only for the functions, and within limits, specified.

4.1 Acidity regulators, colours, colour retention agents and calcium salts of firming agents used in accordance with Table 3 of the *General standard for food additives* (CXS 192-1995)¹ are acceptable for use in foods conforming to this standard.

4.2 Colours

INS No.	Name of the food additive	Maximum level
102	Tartazine	100 mg/kg
133	Brilliant blue FCF	20 mg/kg
143	Fast green FCF	200 mg/kg
150d	Caramel IV – sulfite ammonia caramel	50 000 mg/kg

4.3 Colour retention agents

INS No.	Name of the food additive	Maximum level
385	Calcium disodium ethylenediaminetetraacetate	365 mg/kg (singly or in combination)
386	Disodium ethylenediaminetetraacetate	
512	Stannous chloride	25 mg/kg calculated as tin. Should not be added to foods in uncoated tin cans.

5. CONTAMINANTS

- 5.1** The products covered by this standard shall comply with the maximum levels of the *General standard for contaminants and toxins in food and feed* (CXS 193-1995).²
- 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 products covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the *General principles of food hygiene* (CXC 1-1969),³ *Code of hygienic practice for low and acidified low-acid canned foods* (CXC 23-1979)⁴ and other relevant Codex texts such as codes of hygienic practice and codes of practice.
- 6.2** The products should comply with any microbiological criteria established in accordance with the *Principles and guidelines for the establishment and application of microbiological criteria related to foods* (CXG 21-1997).⁵

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 percent (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. This provision does not apply to vacuum packaged vegetables.

7.1.2 Classification of “defectives”

A container that fails to meet the requirement for minimum fill of Section 7.1.1 should be considered as a “defective”.

7.1.3 Lot acceptance

A lot should be considered as meeting the requirement of Section 7.1.1 when the number of “defectives”, as defined in Section 7.1.2, does not exceed the acceptance number (c) of the appropriate sampling plan with an AQL of 6.5.

7.1.4 Minimum drained weight

- 7.1.4.1** The drained weight of the product should be not less than the percentages indicated in the corresponding annexes, calculated on the basis of the weight of distilled water at 20 °C which the sealed container will hold when completely filled.ⁱⁱⁱ

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.

ⁱⁱⁱ 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 The products covered by the provisions of this standard shall be labelled in accordance with the *General standard for the labelling of pre-packaged foods* (CXS 1-1985).⁶ In addition, the following specific provisions apply:

8.2 Name of the product

8.2.1 The names of the canned products shall be those defined in the corresponding annexes.

8.2.2 When the vegetables are sized, the size (or sizes when sizes are mixed), as defined in the corresponding annexes, may be declared as part of the name or in close proximity to the name of the product.

8.2.3 The name of the product shall include the indication of the packing medium as set out in Section 2.1.2 (a). For canned vegetables packaged in accordance with Section 2.1.2 (b) the words "vacuum packaged" shall be affixed to the commercial designation of the product or in close proximity.

8.2.4 **Other styles** – if the product is produced in accordance with the other styles provision (Section 2.2.1), 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.

8.2.5 If an added ingredient, as defined in Sections 3.1.2 and 3.1.3, alters the flavour characteristic of the product, the name of the food shall be accompanied by the term "flavoured with X" or "X flavoured" as appropriate.

8.3 Labelling of non-retail containers

The labelling of non-retail containers should be in accordance with the *General standard for the labelling of non-retail containers of foods* (CXS 346-2021).⁷

9. METHODS OF ANALYSIS AND SAMPLING

9.1 METHODS OF ANALYSIS

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended methods of analysis and sampling* (CXS 234-1999)⁸ relevant to the provisions in this standard, shall be used.

9.2 SAMPLING

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

NOTE

¹ FAO and WHO. 1995. *General standard for food additives*. Codex Alimentarius Standard, No. CXS 192-1995. Codex Alimentarius Commission. Rome.

² FAO and WHO. 1995. *General standard for contaminants and toxins in food and feed*. Codex Alimentarius Standard, No. CXS 193-1995. Codex Alimentarius Commission. Rome.

³ FAO and WHO. 1969. *General principles of food hygiene*. Codex Alimentarius Code of Practice, No. CXC 1-1969. Codex Alimentarius Commission. Rome.

⁴ FAO and WHO. 1979. *Code of hygienic practice for low and acidified low-acid canned foods*. Codex Alimentarius Code of Practice, No. CXC 23-1979. Codex Alimentarius Commission. Rome.

⁵ FAO and WHO. 1997. *Principles and guidelines for the establishment and application of microbiological criteria related to foods*. Codex Alimentarius Guideline, No. CXG 21-1997. Codex Alimentarius Commission. Rome.

⁶ FAO and WHO. 1985. *General standard for the labelling of pre-packaged foods*. Codex Alimentarius Standard, No. CXS 1-1985. Codex Alimentarius Commission. Rome.

⁷ FAO and WHO. 2021. *General standard for the labelling of non-retail containers of foods*. Codex Alimentarius Standard, No. CXS 346-2021. Codex Alimentarius Commission. Rome.

⁸ FAO and WHO. 1999. *Recommended methods of analysis and sampling*. Codex Alimentarius Standard, No. CXS 234-1999. Codex Alimentarius Commission. Rome.

ANNEX ON ASPARAGUS

In addition to the general provisions applicable to canned vegetables,
the following specific provisions apply:

1 DESCRIPTION

1.1 Product definition

The name “asparagus” stands for the product prepared from the tender and edible portions of peeled or unpeeled stems of varieties of asparagus complying with the characteristics of *Asparagus officinalis* L.

1.2 Styles

1.2.1 Asparagus comes in the following shapes and sizes:

- (1) **Whole asparagus, asparagus or whole spears:** tip and adjoining part of the spear measuring at most 18 cm and at least 12 cm in length.
- (2) **Short asparagus or short spears:** tip and adjoining part of the spear measuring at most 12 cm and at least 7 cm in length.
- (3) **Asparagus tips/points:** upper extremity (bud) and adjoining part of spears measuring at most 7 cmⁱ and at least 3 cm in length.
- (4) **Cut asparagus:** spears cut widthways into sections measuring at most 7 cm and at least 2 cm in length.
- (5) **Cut asparagus with tips:** the percentage of tips shall be equal to or greater than 15 percent of the drained weight.
- (6) **Cut asparagus without tips:** the occasional presence of tips is allowed.

1.2.2 Asparagus are canned as follows in terms of their colour:

- (1) **White asparagus:** white, cream or yellowish spears; no more than 20 percent in number of spears may have green, light green or yellowish green tips.
- (2) **White asparagus with violet or green tips:** white asparagus may have violet, green, light green or yellowish green tips, and these colours may also apply to the adjoining region, but no more than 25 percent in number of the units may present these colours over more than 50 percent of their length.
- (3) **Green asparagus:** the units are green, light green or yellowish green; no more than 20 percent in number of the units may present a white, cream or yellowish white colour in the lower part of the spear over more than 20 percent to 50 percent of their length in accordance with the legislation of the country of retail sale.
- (4) **Mixed:** mixes of white, cream, yellowish white, violet, green, light green or yellowish green units.

1.3 Sizing (optional)

Asparagus may be sized in accordance with the table below.ⁱⁱ The size corresponds to the maximum diameter of the thickest part of the unit measured perpendicularly to the longitudinal axis of the unit.

Size	White peeled asparagus (diameter)	White unpeeled asparagus (diameter)	Green asparagus (diameter)
(1) Small	up to 8 mm	up to 10 mm, inclusive	3 to 6 mm
(2) Medium	over 8 mm and up to 13 mm, inclusive	over 10 mm, and up to 15 mm, inclusive	over 6 mm and up to 8 mm, inclusive
(3) Large	over 13 mm and up to 18 mm, inclusive	over 15 mm, and up to 20 mm, inclusive	over 8 mm and up to 10 mm, inclusive
(4) Very large	over 18 mm and up to 25.4 mm, inclusive	over 20 mm	over 10 mm
(5) Colossal	over 25.4 mm		
(6) Blend of sizes or assorted sizes – a mixture of two or more single sizes			

2 ESSENTIAL COMPOSITION AND QUALITY FACTORS

ⁱ Maximum length should not exceed 9.5 cm in accordance with the legislation of the country of retail sale.

ⁱⁱ The size designations in the table, or other sizing provisions, may be used in accordance with the legislation of the country of retail sale.

2.1 Quality criteria

2.1.1 Uniformity

- (1) **Length:** the specifications required in Section 1.2 regarding the types of presentation of asparagus are met when:
- The predominant length of the units in the sample falls within the designated style classification; and
 - The length of the units is reasonably uniform. By “reasonably uniform”, on the basis of the average of the samples, the following is meant:
 - at least 75 percent of the number of units do not deviate by more than 1 cm from the most frequent length and at least 90 percent of the number of units do not deviate by more than 2 cm from the most frequent length.
- (2) **Diameter:** compliance with respect to the individual size names.
1. When a product is said to be, presented or sold as complying with the names of the individual sizes of Section 1.2, the sample unit should comply with the specified diameter for each individual grade, provided no more than 25 percent in number of all the units contained in the container belong to the group (or groups) of adjacent sizes.
 2. Any container or sample unit, which exceeds the tolerance of 25 percent laid down above, should be considered as a “defective” as far as sizing is concerned.

2.1.2 Definition of defects and allowances

Defects	Definition	Maximum
(1) Asparagus tips and other parts crushed	broken or crushed pieces to the extent that they seriously impair the product aspect and comprising fragments under 1 cm in length.	The product should be reasonably free of such defects.
(2) Extraneous material	such as sand, soil or substances from soil.	The product should be practically free of such defects.
(3) Asparagus with skin (only in the case of asparagus presented peeled)	units comprising unpeeled zones which seriously impair the aspect or the edibility of the product.	10% in number
(4) Hollow and fibrous asparagus	hollow units to the extent that they seriously impair the product aspect and fibrous, tough asparagus but that stay edible.	10% in number
(5) Deformed asparagus	comprising spears or tips that are very curved, or any unit seriously impaired by splitting into two or any other malformation and open tips.	10% in number
(6) Damaged asparagus	a colour defect, a mechanical lesion, a disease, which are not harmful for the consumer.	15% in number
Total of all the defects described in (3), (4), (5), (6), for the following types of presentation:		
Defects and allowances	Maximum	

Defects	Definition	Maximum
(1) Asparagus, whole asparagus, whole spears	15% in number	
(2) Short asparagus or short spears	15% in number	
(3) Asparagus tips	15% in number	
(4) Asparagus cut with tips	20% in number	
(5) Cut asparagus without tips	25% in number	

3 WEIGHTS AND MEASURES

3.1 Minimum drained weight

Styles	Minimum drained weight (%)
(1) White peeled asparagus (whole, short)	59
(2) White unpeeled asparagus	57
(3) Green asparagus	50
(4) Other types of presentation	58

4. LABELLING

For asparagus, colour shall be included into the styles as defined in Section 1.2. For white asparagus, the words "not peeled" and/or "not sized" shall be declared in accordance with legislation of country of retail sale.

ANNEX ON CARROTS

In addition to the general provisions applicable to canned vegetables, the following specific provisions apply:

1 DESCRIPTION

1.1 Product definition

The name “carrots” stands for the product prepared using clean and sound roots of varieties (cultivars) of carrots complying with the characteristics of the species *Daucus carota* L., trimmed of their tops, green extremities and peel.

1.2 Styles

(1) **Whole:**

- (a) **Conical or cylindrical cultivars:** carrots, which, after processing, more or less keep their initial shape. The largest diameter of carrots, measured at right angles to the longitudinal axis, shall not exceed 50 mm. The ratio between the diameters of the biggest and smallest carrots shall not be greater than 3:1.
- (b) **Spherical cultivars:** carrots that have reached full maturity, of rounded shape, whose largest diameter in each direction shall not exceed 45 mm.

(2) **Baby whole carrots:**

- (a) **Conical or cylindrical cultivars:** carrots whose diameter does not exceed 23 mm and whose length does not exceed 100 mm.
- (b) **Spherical cultivars:** whole carrots whose diameter in each direction does not exceed 27 mm.

(3) **Halves:** carrots cut along the longitudinal axis into two roughly equal parts.

(4) **Quarters:** carrots cut into four roughly equal parts by slicing in two points perpendicularly to the longitudinal axis.

(5) **Lengthways portions:** carrots sliced lengthways, in a straight or wavy manner, into four or more pieces of roughly equal dimensions of approximately 20 mm long and not less than 5 mm in width measured at maximum width.

(6) **Rounds or sliced:** carrots cut, in a straight or wavy manner, perpendicularly to the longitudinal axis, in rounds with a maximum thickness of approximately 10 mm and a maximum diameter of approximately 50 mm.

(7) **Diced:** carrots cut into cubes with an approximately 15 mm sides at most.

(8) **Strips, julienne, French style, or shoestring:** carrots cut lengthways, in a straight or wavy manner, into sticks. The section of the sticks should not exceed 5 mm (measured at the longest edges of the section).

(9) **Chunks or pieces:** whole carrots cut into sections whose shape or grade may be irregular.

2 ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Quality criteria

2.1.1 Uniformity

- (1) **Length:** for carrots defined in Sections 1.2 (1) and (2) at least 75 percent by number shall not deviate by more than 5 mm from the average carrot length, and at least 90 percent by number shall not deviate by more than 10 mm from the average carrot length.
- (2) **Diameter and other measurements:** there is a 15 percent tolerance with respect to the maximum dimension.
- (3) Any container or sample unit that exceeds the tolerances set forth in points (1) and (2) above should be considered as a “defective”.

2.1.2 Definition of defects and allowances

Whole carrots and baby whole carrots, carrots in halves, in quarters, strips.

Defects	Definition	Tolerances as a percentage of the drained product weight (m/m)
(1) Blemished carrots	blemished or faded zones with a diameter above 5 mm.	20
(2) Mechanical damage	carrots that are crushed or grazed during canning.	10
(3) Malformations	deformations or fissures that appeared during growth.	20
(4) Unpeeled parts	30% or more of the surface is unpeeled.	20
(5) Fibrous	carrots that are hard or woody owing to their fibrousness.	10
(6) Black or dark green collar	collar with a ring that is one millimetre thick over more than half its circumference.	20
(7) Extraneous plant material	vegetal substance from the carrot or any other innocuous vegetal matter.	1 piece per 1 000 g of total content in the container

The total amount of defects from (1) to (6) shall not exceed 25 percent of the drained product weight.

Defects (3), (4) and (6) do not apply to diced, rounds, strips; for these presentations the total amount of defects (1), (2) and (5) shall not exceed 25 percent of the drained product weight.

3 WEIGHTS AND MEASURES

3.1 Minimum drained weight

Styles	Minimum drained weight (%)
(1) Whole carrots	57.0
(2) Halves, baby whole carrots	62.5
(3) Lengthways portions	52.0
(4) Diced	62.5
(5) Strips	56.5
(6) Quarters, pieces, rounds	56.5
(7) Chunk or pieces	56.5

ANNEX ON GREEN BEANS OR WAX BEANS

In addition to the general provisions applicable to canned vegetables,
the following specific provisions apply:

1 DESCRIPTION

1.1 Product definition

The names “green beans” or “wax beans” stand for the products prepared from the pods (or runners), incompletely ripe and with cut off ends from varieties in accordance with the characteristics of the species *Phaseolus vulgaris* L., *Phaseolus coccineus* L., or *Phaseolus multiflorus* LMK. Beans of distinct varietal groups with respect to shape may be designated as:

- (1) **Round:** beans having a width not greater than 1 ½ times the thickness of the bean.
- (2) **Flat:** beans having a width greater than 1 ½ times the thickness of the bean.

1.2 Styles

Green beans and wax beans come in the following shapes and sizes:

- (1) **Whole:** whole pods of any length.
- (2) **Cut/Broken:** approximately uniform pods cut or broken widthways with respect to the longitudinal axis; no less than 20 mm long.
- (3) **Short cuts:** pods cut widthways of which 75 percent, by count, or more are less than 20 mm long.
- (4) **Shoestring, Sliced lengthwise, French style:** pods in strips, of a thickness under 6.5 mm, of which the majority is cut slantwise or lengthways.
- (5) **Diagonal cut:** approximately 45 degrees to the longitudinal axis.

1.3 Sizing (optional)

Green beans and wax beans as defined in Section 1.2 (1) may be graded.ⁱ If that is the case, they are graded in accordance with the table below. The grade is determined by measuring the diameter on the main axis at the widest point from one suture to the other.

Grading requirements for round and flat beans (green or wax beans)

Size			Grading criterion (maximum diameter – mm) ⁱⁱ		Maximum percentage (m/m of non-conforming beans)
			Rounds	Flats	
(1)	Extra small	1	5.8 - 6.5	-	10%
(2)	Very small	2	7.3 - 8.0	5.8	10%
(3)	Small	3	8.3 - 9.0	7.3	15%
(4)	Medium	4	9.5 - 10.5	8.3	25%
(5)	Large	5	10.5 - 10.7	9.5	
(6)	Extra large	6	more than 10.7	more than 9.5	
(7)	Not screened		Not screened (*)		Natural breakdown of the size beans (*)

(*) **Not screened:** beans in the natural proportion of size after cleaning, without the removal or addition of screened beans.

ⁱ The size designations in the table, or other sizing provisions, may be used in accordance with the legislation of the country of retail sale.

ⁱⁱ The maximum diameters indicated in the column « round » are not equivalent to a range; they mean for example for a size “extra small” or “1” that the maximum diameter would be 5.8, or 5.9 or 6.5.

2 ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Quality criteria

2.1.1 Definition of defects

- (1) **Stringy pods:** a stringy pod corresponds to a bean where one of strings surrounding the pod resist traction.
- (2) **Pods without ends removed:** Beans whose attachment is still present (beans where only the protuberance remains where the peduncle was attached are not considered as pods without ends removed).
- (3) **Damaged pods:** Beans are deemed to be damaged if they have pods presenting rust, blemishes greater than 5 mm in diameter, spots, or — upon organoleptic examination — whose skin has grown thick, thereby diminishing the food value.
- (4) **Bean pieces:** Pieces of beans whose length is lower than 20 mm (for cans of whole beans).
- (5) **Harmless plant material:** Parts of the plant (bean) and innocuous foreign vegetal matter are considered as vegetal debris.

2.1.2 Defects and allowances

The following limitations of defects are expressed in percentages and related to the drained weight of the product.

When tested in accordance with the appropriate sampling plan with an AQL of 6.5, canned beans shall be free of defects to the extent indicated below:

Defects		Tolerances (% m/m)
(1)	Stringy pods	3
(2)	Pods without ends removed	3
(3)	Damaged pods	10
(4)	Bean pieces	4
(5)	Harmless plant material	4
AGGREGATE DEFECTS		15

3 WEIGHTS AND MEASURES

3.1 Minimum drained weight

Styles	Minimum drained weight (%)
(1) Whole	50
(2) Other presentations, except shoestring, sliced lengthwise, French style	52
(3) Shoestring, sliced lengthwise, French style	50

ANNEX ON GREEN PEAS

In addition to the general provisions applicable to canned vegetables,
the following specific provisions apply:

1 DESCRIPTION

1.1 Product definition

The name "green peas" stands for the product prepared from immature (green) seeds of *Pisum sativum* L. peas, of the smooth, wrinkled varieties, or other types (crosses or hybrids of the wrinkled or round seeded varieties) but excluding the subspecies *macrocarpum*.

When the peas are of sweet green wrinkled varieties or hybrids having similar characteristics, the name is "sweet green peas".

1.2 Sizing (optional)

Green peas may be sized in accordance with the table below.ⁱ

Size designation	Diameter in circular sieve openings (in millimetres)	
	Will not pass through	Will pass through
Smooth green peas		
1) Extra small		7.5
2) Very small	7.5	8.2
3) Small	8.2	8.75
4) Medium	8.75	9.3
5) Large	9.3	
Wrinkled sweet green peas		
1) Extra small		7.5
2) Very small	7.5	8.2
3) Small	8.2	9.3
4) Medium	9.3	10.2
5) Large	10.2	

2 ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Quality criteria

2.1.1 Definition of defects and allowances

Canned peas may contain a slight amount of sediment and shall be reasonably free from defects within the limits set forth as follows:

Defects	Definition	Maximum limits (based on the weight of drained peas)
(1) Blemished peas	consisting of peas which are slightly stained or spotted.	5% m/m

ⁱ The size designations in the table, or other sizing provisions, may be used in accordance with the legislation of the country of retail sale.

Defects	Definition	Maximum limits (based on the weight of drained peas)
(2) Seriously blemished peas	consisting of peas which are spotted, discoloured or otherwise blemished (including worm-eaten peas) to the extent that the appearance or eating quality is seriously affected.	1% m/m
(3) Pea fragments	consisting of portions of peas; separated or individual cotyledons; crushed, partial, or broken cotyledons; and loose skins; but not including entire intact peas with skins detached.	10% m/m
(4) Yellow peas	entire pea is substantially yellow and is not a so-called "blond" pea which is very pale in colour.	2% m/m
(5) Extraneous plant material	consisting of any vine or leaf or pod material from the pea plant, or other harmless plant material not purposely added as an ingredient.	0.5% m/m
TOTAL of the foregoing defects (1), (2), (3), (4), (5)		12% m/m

3 WEIGHTS AND MEASURES

3.1 Minimum drained weight

Sizes	Minimum drained weight (%)
(1) Extra small	66
(2) Very small	
(3) Small	
(4) Medium	62.5
(5) Large	
(6) Not graded	59

4 LABELLING

4.1 When green peas are not graded the label may contain in close proximity to the name of the product the words "not graded".

4.2 The name of the product may be "Peas", "Green Peas", "Garden Peas", "Green Garden Peas", "Early Peas", "Sweet Peas", "Petit Pois", or the equivalent description used in the country of retail sale.

ANNEX ON HEARTS OF PALM/PALMITO

In addition to the general provisions applicable to canned vegetables,
the following specific provisions apply:

1 DESCRIPTION

1.1 Product definition

The name “hearts of palm/palmito” stands for the product prepared from the terminal buds of palms (upper and inferior meristems), where young stems rise, trimmed of fibrous and non-edible parts. The product has a heterogeneous structure and has the characteristics of species of palms fit for human consumption.

1.2 Styles

(1) Palms are presented as below:

- (a) “**Hearts of palm**” correspond to the terminal bud of the palm, cut perpendicularly to the axis into pieces having a minimum length of 40 mm and a maximum length depending on the size of the container, with a variable shape between conical and cylindrical.
- (b) “**Pieces of palms**” correspond to cuts from both upper and lower portion of the terminal part of meristematic pieces, regularly or irregularly cut with a minimum length of 5 mm and a maximum length of 39 mm.
- (c) “**Rounds**” or “**slices**” of “**hearts of palm**” correspond to the product obtained from the upper portion of the terminal part of meristematic pieces, cut widthways into pieces having a minimum thickness of 15 mm and a maximum thickness of 40 mm.
- (d) “**Medallions**” correspond to pieces regularly cut in circular or oval formats from the lower portion of the terminal part of meristematic pieces of the palm with a minimum diameter of 20 mm and a thickness of 3 to 10 mm.

2 ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Quality criteria

2.1.1 Uniformity

- (1) The specifications laid down in Section 1.2 concerning the styles of palm are met when: the length, the diameter and/or the thickness of the sample units, in accordance with the style are reasonably uniform. The words “reasonably uniform” on the basis of the average of samples means, compliance with the provisions of Section 1.2 that:
 - (a) the gap between the length of all the units and the predominant length does not exceed approximately ± 10 mm;
 - (b) the gap between the thickness of all the units and the predominant thickness does not exceed ± 10 mm;
 - (c) the gap between the diameter of all the units and the predominant diameter does not exceed ± 10 mm.

2.1.2 Definition of defects and allowances

Defects	Definition	Maximum limits/ Drained weight (m/m)
(1) Defective texture	hard or fibrous and/or excessively soft texture, which seriously impairs product edibility.	10
(2) Mineral impurities	such as sand, gravel or other soil elements.	0.1
(3) Damaged units	units presenting scars and grazes, abrasions and other imperfections of the same type which seriously impair product appearance.	15
(4) Mechanical damage	broken or split units, fragments or detached pieces,	10

Defects	Definition	Maximum limits/ Drained weight (m/m)
	which seriously impair product appearance.	
(5) Abnormal colour	colour considerably different from the typical colour of the product.	10
(6) Physiological defects	units with palm tree stem apical meristems for "hearts of palm" and "rounds" or "slices" of "hearts of palm".	10
TOTAL percentage of defects for palm hearts		20
TOTAL percentage of defects for other styles		25

3 WEIGHTS AND MEASURES

3.1 Minimum drained weight

Styles	Minimum drained weight (%)
(1) Hearts of palm	50
(2) Other styles	52

4 LABELLING

The name "hearts of palm/palmito" may be complemented by the common name of the palm used.

ANNEX ON MATURE PROCESSEDⁱ PEAS

In addition to the general provisions applicable to canned vegetables,
the following specific provisions apply:

1 DESCRIPTION

1.1 Product definition

The name “mature processed peas” stands for the product prepared using clean, sound, whole, threshed, and dried grains of the species *Pisum sativum* L., which has undergone soaking, but excluding the macrocarpum subspecies.

1.2 Definition of defects and allowances

Defects	Definition	Maximum limits in drained weight (%)
(1) Blemished peas	peas with slight stains or spots.	10 m/m
(2) Seriously blemished peas	peas with spots and colour defects or otherwise blemished to the extent that their aspect or edibility are seriously affected; worm-eaten peas come under this category.	2 m/m
(3) Pea fragments	fractions of peas such as separated or detached cotyledons, crushed cotyledons partially or totally broken, and detached skins.	10 m/m
(4) Extraneous plant material	any fragment of tendril, peduncle, leaf or pod and any other plant material.	0.5 m/m

The total of the defects (1), (2), (3) and (4) should not exceed 15 percent m/m by weight.

2 LABELLING

When colour of mature processed peas is not green, colour of peas should be declared (for example: brown peas or yellow peas).

ⁱ Also known in certain countries as “canned dry peas” or “processed dry peas”.

ANNEX ON SWEET CORN

In addition to the general provisions applicable to canned vegetables,
the following specific provisions apply:

1 DESCRIPTION

1.1 Product definition

The name “sweet corn” stands for the product prepared from clean and sound grains of sweet corn, of white or yellow colour, complying with the characteristics of *Zea mays saccharata* L.

Whole grains packaged with or without a liquid packing media.

Creamed corn: whole or partially whole cut kernels packed in a creamy component from the corn kernels, and other liquid or other ingredients, in accordance with the Section 2.1, so as to form a product of creamy consistency.

2 ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Composition

2.1.1 Other permitted ingredients

- (1) native starch for creamed corn; and
- (2) for sweet corn: pieces of green or red peppers mixed or not or other vegetables in a total proportion under 15 percent m/m of the net weight of the product.

2.2 Quality criteria

2.2.1 Colour, flavour and texture

Creamed corn should present a fine but not excessively fluid consistency, or which may be dense and thick but not excessively dry or pasty, so that after two minutes a moderate but not excessive separation of free liquid can be seen.

2.2.2 Definition of defects and allowances

Sweet corn grains should have a reasonably tender texture, offering some resistance to chewing.

The finished product shall be practically free of fragments of cobs, silks, shucks, grains with an abnormal colour or a malformation, extraneous plant material and other defects not expressly mentioned, within the limits set forth as follows:

Defects	Definition	Tolerances Sweet corn/drained weight	Tolerances creamed corn/ total weight
(1) Extraneous plant material	Cob and Husk	1 cm ³ /400 g and 7 cm ² /400 g ⁱ	1 cm ³ /600 g and 7 cm ² /600 g Error! Unknown switch argument.
	Silks	180 mm in 28 g	150 mm in 28 g
(2) Blemished grains	Grains affected by a lesion due to insects or diseases, or presenting an abnormal colour.	7 kernels or pieces that are damaged and seriously damaged but not more than 5 may be seriously damaged per 400 g Error! Unknown switch argument.	–
(3) Torn grains	Grains keeping a piece of cob or hard matter adhering to them.	2% m/m	–
(4) Split grains or empty skins	Entirely open grains.	20% m/m	–

Any unit where the proportion of defects exceeds the tolerances laid down above shall be considered as

ⁱ or equivalent percentage (m/m).

“defective”.

3 WEIGHTS AND MEASURES

3.1 Minimum drained weight (for canned sweet corn only)

Whole grains	Minimum drained weight (%)
(1) with a liquid packing medium	61
(2) vacuum packaged or without a liquid packing medium	67

4 FOOD ADDITIVES

4.1 Thickeners (for creamed corn only)

INS No.	Name of the food additive	Maximum level
1400	Dextrins, roasted starch	GMP
1401	Acid-treated starch	
1402	Alkaline treated starch	
1403	Bleached starch	
1404	Oxidized starch	
1405	Starches, enzyme treated	
1410	Monostarch phosphate	
1412	Distarch phosphate	
1413	Phosphated distarch phosphate	
1414	Acetylated distarch phosphate	
1420	Starch acetate	
1422	Acetylated distarch adipate	
1440	Hydroxypropyl starch	
1442	Hydroxypropyl distarch phosphate	
1450	Starch sodium octenyl succinate	
1451	Acetylated oxidized starch	

5 LABELLING

- 5.1** For sweet corn, the word “white” shall be declared as part of the name of the product when white variety is used.
- 5.2** When green or red peppers or other vegetables are added (Section 2.1.1 b) a mention is declared in close proximity to the name.

ANNEX ON BABY CORN OR YOUNG CORN

In addition to the general provisions applicable to canned vegetables, the following specific provisions apply:

1 DESCRIPTION

1.1 Product definition

The name “baby corn” or “young corn” stands for the product prepared from selected young corn cob fresh or canned, without pollination of commercial varieties conforming to the characteristics of *Zea mays* L., from which silk and husk are removed.

1.2 Styles

Baby corn comes in the following styles:

- (1) **Whole:** whole cob of baby corn from which silk, husk and shank are removed.
- (2) **Cut corn:** baby corn with diameter not more than 25 mm cut crosswise into section having a length between 1.5 and 4 cm.

1.3 Sizing (optional)

Canned-baby corn in whole style may be sized in accordance with the table below.ⁱ

	Cob size	Length (cm)	Diameter (cm)
(1)	Extra large	10 – 13	1.8 – 2.5
(2)	Large	8 – 10	1.0 – 2.0
(3)	Medium	6 – 9	1.0 – 1.8
(4)	Small	4 – 7	< 1.5

2 ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Quality criteria

2.1.1 Uniformity

For every size of whole baby corn, the length of the longest cob should not be more than 3 cm longer than the length of the shortest cob in each container.

Any container or sample unit that exceeds the tolerances laid down in paragraph (1) should be considered as a “defective”.

2.1.2 Definition of defects and allowances

2.1.2.1 Cut baby corn

Defects	Maximum limits by number in drained weight (sample size 1 kg)
(1) Over/Under size	5%
(2) Discolour	5%
(3) Peel	5%
(4) Silk	20 cm of broken silks put together
(5) TOTAL DEFECTS without (4)	15%

ⁱ The size designations in the table, or other sizing provisions, may be used in accordance with the legislation of the country of retail sale.

2.1.2.2 Whole baby corn

Defects	Definition	Maximum limits by number in drained weight (sample size 1 kg)
(1) Discolour		5%
(2) Irregular shape		5%
(3) Young husk and shank		10%
(4) Silk broken from the cob		20 cm of broken silks put together
(5) Brown tip		5%
(6) Broken tip with the diameter larger than 5 mm	broken tip means tips of the cobs that are broken after packing. When these pieces are put together, the cob shape will be formed.	5%
(7) Damage resulting from cutting		10%
(8) Broken pieces	broken pieces means the portions of broken pieces that cannot be put together to form the cob shape.	2%
TOTAL DEFECTS without (4)		25%

3 WEIGHTS AND MEASURES**3.1 Minimum drained weight**

The minimum drained weight of whole baby corn and cut baby corn should not be less than 40 percent for the small packaging (under 20 oz or 500 ml) and 50 percent for the others.

ANNEX ON CERTAIN MUSHROOMS

In addition to the general provisions applicable to canned vegetables, the following specific provisions apply:

1. DESCRIPTION

1.1 Product definition

Mushroom (*Agaricus* spp)ⁱ stands for the product prepared from mushrooms conforming with the characteristics of any suitable cultivated varieties (cultivars) of the genus *Agaricus* (*Psalliota*), which mushrooms shall be in good condition and after cleaning and trimming shall be sound.

1.2 Colour type

1.2.1 White or cream.

1.2.2 Brown.

1.3 Styles

1.3.1 **Buttons** – whole mushrooms, with attached stems not exceeding 5 mm in length, measured from the bottom of the veil.

1.3.2 **Sliced buttons** – buttons cut into slices 2 mm or 6 mm thick, of which not less than 50 percent are cut parallel to the axis of the mushroom.

1.3.3 **Whole** – whole mushrooms, with attached stems cut to a length not exceeding the diameter of the cap, measured from the bottom of the veil.

1.3.4 **Sliced or sliced whole** – mushrooms cut into slices 2 mm or greater mm thick, of which not less than 50 percent are cut with regular thickness, parallel to the axis of the mushroom.

1.3.5 **Random sliced** – mushrooms cut into slices of varying thickness and in which the slices may deviate materially from cuts approximately parallel to the axis of the mushroom.

1.3.6 **Quarters** – mushrooms cut into four approximately even parts.

1.3.7 **Stems and pieces (Cut)** – pieces of caps and stems of irregular sizes and shapes.

1.3.8 **Grilling** – selected open-veiled mushrooms not exceeding 40 mm in diameter, with attached stems not exceeding the diameter of the cap, measured from the bottom of the veil scar.

2. ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Composition

2.1.1 Other permitted ingredients

As appropriate for the respective packing media.

2.1.1.1 Juice exuding from the mushrooms.

2.1.1.2 Water, salt, spices, seasonings, soyabean sauce, vinegar, wine.

2.1.1.3 Sucrose, invert sugar syrup, dextrose, glucose syrup, dried glucose syrup.

2.1.1.4 Butter or other edible animal or vegetable fats or oils, including olive oil; milk, milk powder, or cream. If butter is added, it must amount to not less than 3 percent m/m of the final product.

2.1.1.5 Starches – natural (native), physically or enzymatically modified – only when butter or other edible animal or vegetable fats or oils are ingredients.

2.1.1.6 Wheat or corn flour.

2.1.2 Packing media

In addition to the provisions for packing media in Section 3.1.3 of the *Codex standard for certain canned vegetables* (CXS 297-2009), the following packing media may apply:

2.1.2.1 Juice exuding from the mushrooms.

2.1.2.2 Butter or butter sauce.

ⁱ The mushrooms (*Agaricus* spp) in this standard are commonly known as “white mushroom” or “Paris mushroom” or “button mushroom”.

2.1.2.3 Cream sauce.

2.1.2.4 Sauce other than a butter or cream sauce.

2.1.2.5 Vinegar.

2.1.2.6 Oil.

2.1.2.7 Wine.

2.2 Quality criteria

2.2.1 Colour

2.2.1.1 The mushroom portion of the product shall have normal colour characteristics of the variety of the canned mushrooms. Canned mushrooms of special types and containing special permitted ingredients shall be considered of characteristic colour when there is no abnormal discolouration for the respective ingredients used.

2.2.1.2 The liquid medium in water, brine and/or juice exuding from the mushrooms shall be either clear or slightly turbid and yellow to light brown in colour.

2.2.2 Texture

The mushrooms in water, brine, and/or juice exuding from the mushrooms shall be firm and substantially intact.

2.2.3 Defects and allowances

Defects	Definition	Tolerances
(a) Spotted mushrooms	a mushroom is spotted when it presents a dark brown to brown spot diameter upper to 3 mm or when it is very speckled (more than 10 spots).	5% by weight
(b) Traces of casing material	mushroom or piece of mushroom on which remains a part of root and/or soil and/or grit, or any other extraneous matter, whether of mineral or organic origin, of more than 2 mm in diameter attached or not to the mushroom.	5% by weight of affected product
(c) Open mushroom for "buttons" and "whole mushrooms":	a mushroom is opened if small strips are visible on at least half of the circumference and if the distance between the cap and the stem is up to 4 mm.	10% by count
(d) Broken mushroom or pieces of mushroom or mushrooms with detached caps or stems for "buttons", "whole mushrooms" and "grilling mushrooms"	mushroom which is missing at least the quarter of the cap, caps and only stems.	10% by weight

2.2.4 Uniformity

For styles in general, 10 percent, by count, of the units for the respective style may exceed the specified stem length or size.

3. FOOD ADDITIVES

3.1 Thickeners, emulsifiers and stabilizers used in accordance with Table 3 of the *General standard for food additives* (CXS 192-1995)¹ for Food Category 04.2.2.4 are acceptable for use in canned mushrooms in sauce only.

3.2 Only the colour listed below is permitted for use in canned mushroom in sauce.

INS No.	Name of the food additive	Maximum level
150a	Caramel I – plain caramel	GMP
150c	Caramel III – ammonia caramel	50 000 mg/kg
150d	Caramel IV – sulfite ammonia caramel	50 000 mg/kg

3.3 Flavour enhancers used in accordance with Table 3 of the *General standard for food additives* (CXS 192-1995)¹ for Food Category 04.2.2.4 are acceptable for use in canned mushrooms.

4. WEIGHTS AND MEASURES

4.1 Minimum drained weight

4.1.1 Canned mushrooms in water; brine, and/or exuded juices; vinegar; wine and oil packs.

The drained weight of the product shall be not less than 53 percent of the weight of distilled water at 20 °C which the sealed container will hold when completely filled.

4.1.2 Canned mushrooms in sauce packs

The drained mushroom portion, after washing off the sauce or liquid, shall be not less than 27.5 percent of the total product weight.

5. LABELLING

5.1 Name of the product

5.1.1 The following styles shall be included as part of the name or in close proximity to the name: “Buttons”, “Sliced Buttons”, “Whole”, “Sliced” or “Sliced Whole”, “Random Sliced”, “Quarters”, “Stems and Pieces (Cut)”, “Grilling”, as appropriate.

5.1.2 A declaration of any special sauce which characterizes the product, e.g. “With X” or “In X” when appropriate. If the declaration is “With (or “In”) Butter Sauce”, the fat used shall only be butter fat.

NOTES

¹ FAO and WHO. 1995. *General standard for food additives*. Codex Alimentarius Standard, No. CXS 192-1995. Codex Alimentarius Commission. Rome.