



DEAS 1060: 2021

ICS nn.nnn.nn

DRAFT EAST AFRICAN STANDARD

Canned vegetables — Specification

EAST AFRICAN COMMUNITY

Copyright notice

This EAC document is copyright-protected by EAC. While the reproduction of this document by participants in the EAC standards development process is permitted without prior permission from EAC, neither this document nor any extract from it may be reproduced, stored or transmitted in any form for any other purpose without prior written permission from EAC.

Requests for permission to reproduce this document for the purpose of selling it should be addressed as shown below or to EAC's member body in the country of the requester:

© East African Community 2021 — All rights reserved
East African Community
P.O. Box 1096,
Arusha
Tanzania
Tel: + 255 27 2162100
Fax: + 255 27 2162190
E-mail: eac@eachq.org
Web: www.eac-quality.net

Reproduction for sales purposes may be subject to royalty payments or a licensing agreement. Violators may be prosecuted.

Contents

Page

Foreword	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Styles	2
5 Requirements	2
5.1 Ingredients	2
5.1.1 Essential ingredient	2
5.1.2 Other permitted ingredients	2
5.1.3 Packing media	2
5.2 General requirements	3
5.2.1 Colour, flavour and texture	3
5.2.2 Defects and allowances	3
5.2.3 Classification of “Defectives”	3
5.2.4 Lot acceptance	3
5.3 Specific requirements	3
6 Food additives	3
7 Contaminants	3
7.1 Pesticide residues	3
7.2 Heavy metal contaminants	4
8 Hygiene	4
9 Packaging	4
10 Labelling	4
10.1 General labeling requirements	4
10.2 Labelling of non-retail containers	5
12 Sampling	5
Annex A (normative) Asparagus	6
A.1 Description	6
A.1.1 Product definition	6
A.1.2 Styles	6
A.1.3 Sizing (optional)	6
A.2 Essential composition and quality factors	7
A.2.1 Quality Criteria	7
A.3 Weights and measures	8
A.3.1 Minimum drained weight	8
A.4 Labelling	9
Annex B (normative) Annex on carrots	10
Annex C (normative) Annex on green beans or wax beans	13
Annex D (normative) Annex on green peas	16
Annex E (normative) Annex on hearts of palm / palmito	19
Annex F (normative) Annex on mature processed ¹ peas	21
Annex G (normative) Annex on sweet corn	22
Annex H (normative) Annex on baby corn or young corn	25

Annex I (normative) Annex on certain mushrooms	28
Bibliography	34

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 025, *Processed fruits, vegetables and tubers*.

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

Canned vegetables — Specification

1 Scope

This Standard applies to canned vegetables, as defined in Section 4 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 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

AOAC 999.10, *Determination of Lead, Cadmium, Zinc, Copper and Iron in foods Atomic absorption spectrometry after microwave digestion*

CODEX STAN 192, *General Standard for food additives*

EAS 38, *Labelling for pre-packaged foods — General requirements*

EAS 39, *Hygiene in the food and drink manufacturing industry — Code of practice*

ISO 2447, *Fruit and vegetable products — Determination of tin*

ISO 4833-2, *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 2: Colony count at 30 degrees C by the surface plating technique*

ISO 6633, *Fruits, vegetables and derived products — Determination of lead content — Flameless atomic absorption spectrometric method*

ISO 16649-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli — Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide*

ISO 21527-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 1: Colony count technique in products with water activity greater than 0,95*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <http://www.iso.org/obp>

**3.1
canned vegetables**
canned vegetables are the products prepared from substantially sound, fresh (barring mature processed peas) or frozen vegetables, having reached appropriate maturity 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 ambient temperature.

**3.2
food grade material**
packaging material that will safeguard the hygienic, safety, nutritional, technological, and organoleptic qualities of the product.

4 Styles

Shall be as prescribed in the corresponding Annexes.

5 Requirements

5.1 Ingredients

5.1.1 Essential ingredient

Vegetables as defined in Section 3 and liquid packing medium appropriate to the product.

5.1.2 Other permitted ingredients

In accordance with the relevant provisions in the corresponding Annexes.

5.1.3 Packing media

5.1.3.1 Basic ingredients

Water, and if necessary salt.

5.1.3.2 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;
- 6) tomato puree.

5.2 General requirements

5.2.1 Colour, flavour and texture

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

5.2.2 Defects and allowances

Canned vegetables should be practically free from defects. Certain common defects should not be present in amounts greater than the limitations fixed in the corresponding Annexes. (Annex A to I).

5.2.3 Classification of “Defectives”

A container that fails to meet one or more of the applicable quality requirements, as set out in 5.2 (except those based on sample averages), should be considered as a “defective”.

5.2.4 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.

5.3 Specific requirements

Canned vegetables shall comply with the specific requirements in Table 2 when tested in accordance with the methods specified therein

Table 1 — Specific requirements for canned vegetables

Characteristic	Requirement	Test method
pH	<4.6	ISO 1842
Acid insoluble ash, %, max.	0.02	ISO 763

6 Food additives

Food additives when used in processed canned vegetables shall be in accordance with CODEX STAN 192.

7 Contaminants

7.1 Pesticide residues

Canned vegetables shall comply with the pesticide residue limits prescribed by the Codex Alimentarius Commission of the respective commodity.

7.2 Heavy metal contaminants

Canned vegetables shall not contain heavy metal contaminants in excess of the limits specified in Table 4 when tested in accordance with the methods specified therein.

Table 4 – Heavy metal contaminants limits in canned vegetables

Heavy metals	Maximum limit mg/kg	Test method
Lead (Pb)	0.1	ISO 6633
Cadmium (Cd)	0.05	AOAC 999.10
Tin	250	ISO 2447

8 Hygiene

8.1 Canned vegetables shall be produced and handled under hygienic conditions in accordance with EAS 39.

8.2 Canned vegetables shall comply with microbiological limits given in Table 5 when tested in accordance with the methods specified therein.

Table 5 – Microbiological limits for canned vegetables

Microorganism cfu/g	Maximum limit	Test method
Total plate count,	50	ISO 4833-2
<i>Escherichia coli</i>	Absent	ISO 16649-2
Yeasts and moulds	30	ISO 21527-1
<i>Clostridium botulinum</i>	Absent	ISO/TS 17919

9 Packaging

Canned vegetables shall be packaged in food grade material that ensures the integrity and safety of the product.

10 Labelling

10.1 General labeling requirements

In addition to the requirements of EAS 38, EAS 803, EAS 804 and EAS 805, the following specific labelling requirements shall apply and shall be legibly and indelibly marked on the container:

- a) Name of the product
 - i) The names of the canned products shall be those defined in the corresponding Annexes.

- ii) 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.
 - iii) The name of the product shall include the indication of the packing medium as set out in Section
 - iv) 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.
 - v) 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.
 - vi) 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
- b) date of manufacture;
 - c) expiry date;
 - d) brand /trade name;
 - e) list of ingredients;
 - f) net contents;
 - g) instructions for use;
 - h) storage conditions;
 - i) name and address of the manufacturer; and
 - j) country of origin
 - k) lot identification/batch

10.2 Labelling of non-retail containers

Information for non-retail containers not destined to final consumers shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, net contents and the name and address of the manufacturer, packer, distributor or importer, as well as storage instructions, shall appear on the container, except that for tankers the information may appear exclusively in the accompanying documents.

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. For non-retail containers, the information required 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 or packer shall appear on the container.

12 Sampling

Sampling shall be done in accordance with corresponding Annex.

Annex A (normative)

Asparagus

A.1 Description

A.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.

A.1.2 Styles

A.1.2.1 Asparagus comes in the following shapes and sizes:

- a) 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.
- b) Short asparagus or short spears: tip and adjoining part of the spear measuring at most 12 cm and at least 7 cm in length.
- c) Asparagus tips/points: upper extremity (bud) and adjoining part of spears measuring at most 7 cm¹ and at least 3 cm in length.
- d) Cut asparagus: spears cut width ways into sections measuring at most 7 cm and at least 2 cm in length.
- e) Cut asparagus with tips: the percentage of tips shall be equal to or greater than 15 % of the drained weight.
- f) Cut asparagus without tips: the occasional presence of tips is allowed.

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

- a) White asparagus: white, cream or yellowish spears; no more than 20 % in number of spears may have green, light green or yellowish green tips.
- b) 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% in number of the units may present these colours over more than 50 % of their length.
- c) Green asparagus: the units are green, light green or yellowish green; no more than 20 % 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 to 50 % of their length in accordance with the legislation of the country of retail sale.
- d) Mixed: mixes of white, cream, yellowish white, violet, green, light green or yellowish green units

A.1.3 Sizing (optional)

Asparagus may be sized in accordance with the Table below.² 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			

¹ Maximum length should not exceed 9.5 cm in accordance with the legislation of the country of retail sale.

² The size designations in the table, or other sizing provisions, may be used in accordance with the legislation of the country of retail sale.

A.2 Essential composition and quality factors

A.2.1 Quality Criteria

A.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 % of the number of units do not deviate by more than 1 cm from the most frequent length and at least 90 % 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.

- i) 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 % in number of all the units contained in the container belong to the group (or groups) of adjacent sizes.
- ii) Any container or sample unit, which exceeds the tolerance of 25 % laid down above, should be considered as a “defective” as far as sizing is concerned.

A.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

Defects	Definition	Maximum
Total of all the defects described in (3), (4), (5), (6), for the following types of presentation:		
Defects and Allowances	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	

A.3 Weights and measures

A.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

A.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 B (normative) Annex on carrots

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

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% by number shall not deviate by more than 5 mm from the average carrot length, and at least 90% by number shall not deviate by more than 10 mm from the average carrot length.
- (2) **Diameter and other measurements:** there is a 15% 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 1000 g of total content in the container

The total amount of defects from (1) to (6) shall not exceed 25% 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% 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 C (normative) 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 coccineas* 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%, 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.¹ 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) ²		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.

1 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 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.

CODEX STAN 297-2009

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 D (normative) 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 of 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.¹

Size designation	Diameter in circular sieve openings (in millimeters)	
	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

1 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)
(1) Blemished peas	consisting of peas which are slightly stained or spotted.	5% m/m
(2) Seriously blemished peas	consisting of peas which are spotted, discoloured or other-wise 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	
(5) Large	62.5
(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”.

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 E (normative) 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 to 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 Drained (m/m)	Limits/ Weight
(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, which seriously impair product appearance.	10	
(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 F (normative) Annex on mature processed¹ 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 sub-species.

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% 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).

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

Annex G (normative) 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;
- (2) For the sweet corn: pieces of green or red peppers mixed or not or other vegetables in a total proportion under 15% 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
	COB and HUSK	1 cm ³ /400 g and 7 cm ² /400 g ¹	1 cm ³ /600 g and 7 cm ² /600 g ¹

(1) Extraneous plant material	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 ¹	
(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 "defective".

3 WEIGHTS AND MEASURES

1 or equivalent percentage (m/m)

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	
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	GMP
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 H (normative) 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.¹

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%

1 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% for the small packaging (under 20 Oz or 500 ml) and 50% for the others.

Annex I (normative) 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)¹ 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% 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% 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% 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, the following packing media may apply:

2.1.2.1 Juice exuding from the mushrooms.

2.1.2.2 Butter or butter sauce.

1 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%, 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* (CODEX STAN 192-1995) 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* (CODEX STAN 192-1995) 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% 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% 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.

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

5.1.1.1 Cream sauce.

5.1.1.2 Sauce other than a butter or cream sauce.

5.1.1.3 Vinegar.

5.1.1.4 Oil.

5.1.1.5 Wine.

5.2 Quality Criteria

5.2.1 Colour

2.2.1.3 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.

2.2.1.4 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.

5.2.2 Texture

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

5.2.3 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
--	---	---------------

5.2.4 Uniformity

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

6. FOOD ADDITIVES

6.1 Thickeners, emulsifiers and stabilizers used in accordance with Table 3 of the *General Standard for Food Additives* (CODEX STAN 192-1995) for Food Category 04.2.2.4 are acceptable for use in canned mushrooms in sauce only.

CODEX STAN 297-2009 28

6.2 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

6.3 Flavour enhancers used in accordance with Table 3 of the *General Standard for Food Additives* (CODEX STAN 192-1995) for Food Category 04.2.2.4 are acceptable for use in canned mushrooms.

7. WEIGHTS AND MEASURES

7.1 Minimum Drained Weight

7.1.1 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% of the weight of distilled water at 20°C which the sealed container will hold when completely filled.

7.1.2 Canned mushrooms in sauce packs

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

8. LABELLING

8.1 Name of the Product

- 8.1.1** 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.
- 8.1.2** 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 f

Bibliography

- [1] ISO #####-#, *General title — Part #: Title of part*
- [2] ISO #####-##:20##, *General title — Part ##: Title of part*

