

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
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Organization

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**JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON FRESH FRUITS AND VEGETABLES**

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**PROPOSAL FOR THE ALIGNMENT WITH THE FFV LAYOUT OF THE STANDARD FOR AVOCADO
AND THE STANDARD FOR ASPARAGUS, PREPARED BY THE CHAIR OF THE EWG, GERMANY**

Germany as Chair of the EWG, has revised the proposal for the alignment with the FFV layout of the Standard for Avocado (CXS 197-1995) and the standard for Asparagus (CXS 225-2001) as contained in Annex I and II below, upon consideration of comments and recommendations received during the plenary.

Annex I

PROPOSAL FOR THE REVISION OF THE STANDARD FOR AVOCADO (CXS 197-1995) FOR ITS ALIGNMENT WITH THE FFV LAYOUT**1. SCOPE**

The purpose of the standard is to define the quality requirements for avocados after preparation and packaging. When it is applied at stages following packaging, products may show in relation to the requirements of the standard:

- a slight lack of freshness and turgidity;
- a slight deterioration due to their development and their tendency to perish.

The holder/seller of products may not display such products or offer them for sale or deliver or market them in any manner other than in conformity with this standard. The holder/seller shall be responsible for observing such conformity.

2. DEFINITION OF PRODUCE

This standard applies to commercial varieties¹ (cultivars) of avocados grown from *Persea americana* Mill.² from the *Lauraceae*¹ family to be supplied fresh to the consumer. Parthenocarpic fruit and avocados for industrial processing are excluded.

3. PROVISIONS CONCERNING QUALITY**3.1 MINIMUM REQUIREMENTS**

In all classes, subject to the special provisions for each class and the tolerances allowed, the avocados must be display the following characteristics, deviations from which shall be observed by the naked eye or corrected 20/20 vision³ when appropriate:

- intact;
- sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded;
- firm;
- clean, practically free of any visible foreign matter;
- practically free from pests⁴;
- free of damage caused by pests affecting the general appearance of the produce;
- free of abnormal external moisture excluding condensation following removal from cold storage;
- free of any foreign smell and/or taste;
- fresh in appearance;
- practically free of damage caused by low and/or high temperature;
- having a stalk not more than 10 mm in length which must be cut off cleanly. However, its absence is not considered a defect provided the place of the stalk attachment is dry and intact.

The development and condition of the avocados must be such as to enable them:

- To withstand transportation and handling; and
- To arrive in satisfactory condition at the place of destination.

3.1.1 Minimum Maturity Requirements

The avocados must have reached an appropriate degree of development and/or maturity in accordance

¹ Varieties suitable for trade

² All information on botanical names is taken from the GRIN database (www.ars-grin.gov) or Mansfeld's World Database of Agricultural and Horticultural Crops (<http://mansfeld.ipk-gatersleben.de/apex/f?p=185:3:0>) or any other suitable database.

³ Loupe, binocular or other magnifying equipment should not be used when assessing defects.

⁴ The provisions for pests applies without prejudice to the applicable plant protection rules applied by governments in line with the International Plant Protection Convention (IPPC).

with criteria proper to the variety, to the time of harvesting, and to the area in which they are grown.

The development and state of maturity of avocados must be such as to enable them to continue their ripening process and to reach the degree of ripeness required in relation to the varietal characteristics and the growing area.

The mature fruit should be free of bitterness.

The fruit should have a minimum dry matter content⁵ at the harvest, according to the variety, to be measured by drying to constant weight:

- 21 % for the variety Hass;
- 20 % for the varieties Torres, Fuerte, Pinkerton, Edranol and Reed.

Other varieties including Antillean/West Indian/Guatemalan may show a lower dry matter content.

3.2 CLASSIFICATION

The avocados are classified into three classes defined below:

3.2.1 “Extra” Class

Avocados in this class must be of superior quality. They must be characteristic of the variety. They must be free from defects, with the exception of very slight superficial defects, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package.

If present, the stalk must be intact.

3.2.2 Class I

Avocados in this class must be of good quality. They must be characteristic of the variety.

The following slight defects, however, may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:

- a slight defect in shape;
- slight defects in colouring;
- slight skin defects (corkiness, healed lenticels) and sunburn; the maximum total area should not exceed 4 cm².

The defects must not, in any case, affect the flesh of the fruit.

The stalk, if present, may be slightly damaged.

3.2.3 Class II

This class includes avocados that do not qualify for inclusion in the higher classes but satisfy the minimum requirements specified in Section 3.1 above.

The following defects may be allowed, provided the avocados retain their essential characteristics as regards the quality, the keeping quality and presentation:

- defects in shape;
- defects in colouring;
- skin defects (corkiness, healed lenticels) and sunburn; the maximum total area should not exceed 6 cm².

The defects must not, in any case, affect the flesh of the fruit.

The stalk, if present, may be damaged.

4. PROVISIONS CONCERNING SIZING

Avocados may be sized by count or weight.

(A) When sized by count, size is determined by the number of individual fruit per package.

(B) When sized by weight, size is determined based on the individual weight of each fruit or a weight

⁵ This requirement applies to a fruit lot and not to individual fruits.

range per package in accordance with the following table:

Size Code	Weight (in grams)
2	> 1220
4	781 to 1220
6	576 to 780
8	456 to 576
10	364 to 462
12	300 to 371
14	258 to 313
16	227 to 274
18	203 to 243
20	184 to 217
22	165 to 196
24	151 to 175
26	144 to 157
28	134 to 147
30	123 to 137
32	80 – 123 (only Hass type)

The minimum weight for avocados of Antillean/West Indian/Guatemalan and other not defined varieties shall be 170 g.

To ensure uniformity in size, the range in size between produce in the same package shall not exceed:

- a) For fruit sized by count: the weight of the smallest fruit shall be not less than 75% of the weight of the largest fruit in the same package.

5. PROVISIONS CONCERNING TOLERANCES

At all marketing stages, tolerances in respect of quality and size shall be allowed in each lot for produce not satisfying the requirements of the class indicated. Produce that fail conformity assessment, may be allowed to be resorted and brought into conformity in accordance with the relevant provisions in the *Guidelines for Food Import Control System (CXG 47-2003)*.

5.1 QUALITY TOLERANCES

~~At all marketing stages, tolerances in respect of quality and size shall be allowed in each lot for produce not satisfying the requirements of the class indicated. Produce that fail conformity assessment, may be allowed to be resorted and brought into conformity in accordance with the relevant provisions in the *Guidelines for Food Import Control System (CXG 47-2003)*.~~

5.1.1 “Extra” Class

Five percent, 5.0% by number or weight, of avocados not satisfying the requirements of the class, but meeting those of Class I.

5.1.2 Class I

Ten percent, 10.0% by number or weight, of avocados not satisfying the requirements of the class, but meeting those of Class II. Included therein, is one percent, 1%, tolerance for decay.

5.1.3 Class II

Ten percent, 10.0% by number or weight, of avocados not satisfying the requirements of the class. Included therein, is two percent, 2%, tolerance for decay.

5.2 SIZE TOLERANCES

For all classes: Ten percent, 10.0% by number or weight of avocados not satisfying the requirements as regards to sizing.

6. PROVISIONS CONCERNING PRESENTATION

6.1 UNIFORMITY

The contents of each package must be uniform and contain only avocados of the same origin, variety, quality and size.

The visible part of the contents of the package must be representative of the entire contents.

6.2 PACKAGING

Avocados must be packed in such a way as to protect the produce properly. The materials used inside the package must be of food-grade quality, clean, and of a quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly of paper or stamps bearing trade specifications, is allowed, provided the printing or labelling has been done with non-toxic ink or glue.

Avocados shall be packed in each container in compliance with the *Code of Practice for Packaging and Transport of Fresh Fruits and Vegetables* (CXC 44-1995).

6.2.1 Description of Containers

The container shall meet the quality, hygiene, ventilation and resistance characteristics to ensure suitable handling, shipping and preserving of the avocados.

Packages must be free of all foreign matter and smell.

7. PROVISIONS CONCERNING MARKING OR LABELLING

7.1 CONSUMER PACKAGES

In addition to the requirement of the *General Standard for the Labelling of Pre-packaged Foods* (CXS 1-1985), the following specific provisions apply:

7.1.1 Name of produce

Each package shall be labelled as to the name of the produce and may be labelled as to name of the variety.

7.1.2 Origin of produce

Country of origin⁶ and, optionally, district where grown, or national, regional or local place name.

7.2 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).

In addition, the following specific requirements shall apply:

Each package must bear the following particulars, in letters grouped on the same side, legibly and indelibly marked, and visible from the outside.

7.2.1 Origin of produce

Country of origin⁶ and, optionally, district where grown, or national, regional or local place name.

7.2.2 Commercial Specifications

- Class;
- Size;
- Net weight (optional).

7.2.3 Official control mark (optional)

⁶ The full or a commonly used name should be indicated.

8. FOOD ADDITIVES

No food additives are permitted in foods conforming to this standard.

9. CONTAMINANTS

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

9.2 The produce 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).

10 HYGIENE

10.1 It is recommended that the produce 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), *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CXC 53-2003), and other relevant Codex texts such as codes of hygienic practice and codes of practice.

10.2 The produce 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).

Annex II

PROPOSAL FOR THE REVISION OF THE STANDARD FOR ASPARAGUS (CXS 225-2001) FOR ITS ALIGNMENT WITH THE FFV LAYOUT**1. SCOPE**

The purpose of the standard is to define the quality requirements for asparagus after preparation and packaging. When it is applied at stages following packaging, products may show in relation to the requirements of the standard:

- a slight lack of freshness and turgidity;
- a slight deterioration due to their development and their tendency to perish.

The holder/seller of products may not display such products or offer them for sale or deliver or market them in any manner other than in conformity with this standard. The holder/seller shall be responsible for observing such conformity.

2. DEFINITION OF PRODUCE

This Standard applies to shoots of commercial varieties¹ of asparagus grown from *Asparagus officinalis*² from the *Liliaceae*¹ family to be supplied fresh to the consumer. Asparagus for industrial processing is excluded.

Asparagus shoots is classified into four groups according to colour:

- white asparagus;
- violet asparagus, having tips of a colour between pink and violet or purple and part of the shoot white;
- violet/green asparagus, part of which is of violet and green colouring;
- green asparagus having tips and most of the shoot green.

This Standard does not apply to green and violet/green asparagus of less than 3 mm diameter and white and violet asparagus of less than 8 mm diameter, packed in uniform bundles or unit packages.

3. PROVISIONS CONCERNING QUALITY**3.1 MINIMUM REQUIREMENTS**

In all classes, subject to the special provisions for each class and the tolerances allowed, the asparagus must display the following characteristics, deviations from which shall be observed by the naked eye or corrected 20/20 vision³ when appropriate:

- Intact;
- sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded;
- firm;
- clean, practically free of any visible foreign matter;
- free from pests affecting the general appearance of the produce⁴;
- practically free of damage caused by pests
- free of abnormal external moisture excluding condensation following removal from cold storage;
- free of any foreign smell and/or taste;
- fresh in appearance and fresh-smelling;
- practically unbruised;

¹ Varieties suitable for trade

² All information on botanical names is taken from the GRIN database (www.ars-grin.gov) or Mansfeld's World Database of Agricultural and Horticultural Crops (<http://mansfeld.ipk-gatersleben.de/apex/f?p=185:3:0>) or any other suitable database.

³ Loupe, binocular or other magnifying equipment should not be used when assessing defects.

⁴ The provisions for pests applies without prejudice to the applicable plant protection rules applied by governments in line with the International Plant Protection Convention (IPPC).

- free of damage caused by unsuitable washing or soaking.

The cut at the base of the shoots must be as clean as possible.

In addition, shoots must be neither hollow, split, peeled nor broken. Small cracks which have appeared after harvesting are, however, allowed, so long as they do not exceed the limits laid down in Section 5.1, Quality Tolerances.

The development and condition of the asparagus must be such as to enable them:

- To withstand transportation and handling; and
- To arrive in satisfactory condition at the place of destination.

3.1.1 Minimum Maturity Requirements

The asparagus must have reached an appropriate degree of development and/or maturity in accordance with criteria proper to the variety, to the time of harvesting/picking/etc., and to the area in which they are grown.

The asparagus must display sufficient development for the intended purpose in accordance with criteria appropriate to the variety and to the area in which they are grown.

3.2 CLASSIFICATION

The asparagus is classified into three classes defined below:

3.2.1 "Extra" Class

Asparagus in this class must be of superior quality. They must be characteristic of the variety. They must be free from defects, with the exception of very slight superficial defects, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package.

They must be very well formed and practically straight. Having regard to the normal characteristics of the group to which they belong, their tips must be very compact.

Only a few very slight traces of rust caused by non-pathogenic agents on the shoot, removable by normal peeling by the consumer, are allowed.

For the white asparagus group, the tips and shoots must be white; only a faint pink tint is allowed on the shoots.

Green asparagus must be green for at least 95% of the length.

No traces of woodiness are allowed for the shoots in this class.

The cut at the base of the shoots must be as square as possible. However, to improve presentation when the asparagus is packed in bundles, those on the outside may be slightly bevelled, so long as the bevelling does not exceed 1 cm.

3.2.2 Class I

Asparagus in this class must be of good quality. They must be characteristic of the variety.

They must be well formed. Having regard to the normal characteristics of the group to which they belong, their tips must be compact.

Green asparagus must be green for at least 80% of the length.

The cut at the base of the shoots must be as square as possible.

The following slight defects, however, may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:

- a slight defect in shape, i.e. the shoots may be slightly curved
- a faint pink tint may appear on the tips and the shoots for the white asparagus group;
- slight traces of rust caused by non-pathogenic agents removable by normal peeling by the consumer;

- a trace of woodiness on the lower part is permissible, except of the group of white asparagus, provided this woodiness disappears by normal peeling by the consumer.

3.2.3 Class II

This class includes asparagus that do not qualify for inclusion in the higher classes but satisfy the minimum requirements specified in Section 3.1 above.

Green asparagus must at least be green for 60% of the length.

The tips of white asparagus may have a colouration including a green tint.

The tips of violet asparagus may have a slight green tint.

The cut at the base of the shoots may be slightly oblique.

The following defects may be allowed, provided the asparagus retain their essential characteristics as regards the quality, the keeping quality and presentation:

- defects in shape; i.e. shoots may be less well formed, more curved [than in class I] and having regard to the normal characteristics of the group to which they belong, their tips may be slightly open.
- races of rust caused by non-pathogenic agents, removable by normal peeling by the consumer are allowed;
- slight woodiness.

4. PROVISIONS CONCERNING SIZING

Asparagus may be sized by diameter and length of the shoot.

- (A) When sized by length, size is determined by the length of the longitudinal axis. The length of the shoots must be:
- above 17 cm for long asparagus;
 - 12 to 17 cm for short asparagus;
 - for Class II asparagus arranged, but not bundled in the package:
 - white and violet: 12 to 22 cm,
 - violet/green and green: 12 to 27 cm.
 - under 12 cm for asparagus tips.

The maximum length allowed for white and violet asparagus is 22 cm and for violet/green and green asparagus 27 cm.

The maximum difference in length of shoots packed in firmly bound bundles must not exceed 5 cm.

- (B) When sized by diameter, size is determined by either the maximum diameter of the equatorial section of each fruit or a diameter range per package in accordance with the following table.

The diameter of the shoots shall be measured 2.5 cm from the cut end.

The minimum diameter and sizing shall be:

White and violet:

Class	Minimum diameter	Sizing
Extra	12 mm	Maximum variation of 8 mm between the thinnest and the thickest shoot in the same

		package or the same bundle.
I	10 mm	Maximum variation of 10 mm between the thinnest and the thickest shoot in the same package or the same bundle.
II	8 mm	No provision as to uniformity.

Violet/green and green asparagus:

Class	Minimum diameter	Sizing
Extra and I	3 mm	Maximum variation of 8 mm between the thinnest and the thickest shoot in the same package or the same bundle.
II	3 mm	No provision as to uniformity.

5. PROVISIONS CONCERNING TOLERANCES⁴

At all marketing stages, tolerances in respect of quality and size shall be allowed in each lot for produce not satisfying the requirements of the class indicated. Produce that fail conformity assessment, may be allowed to be resorted and brought into conformity in accordance with the relevant provisions in the *Guidelines for Food Import Control System (CXG 47-2003)*.

5.1 QUALITY TOLERANCES

~~At all marketing stages, tolerances in respect of quality and size shall be allowed in each lot for produce not satisfying the requirements of the class indicated. Produce that fail conformity assessment, may be allowed to be resorted and brought into conformity in accordance with the relevant provisions in the *Guidelines for Food Import Control System (CXG 47-2003)*.~~

5.1.1 "Extra" Class

Five percent 5.0%, by number or weight, of asparagus not satisfying the requirements of the class, but meeting those of Class I. Included therein are slight unscarred cracks appearing after harvesting.

5.1.2 Class I

Ten percent, 10.0% by number or weight, of asparagus not satisfying the requirements of the class, but meeting those of Class II. Included therein are slight unscarred cracks appearing after harvesting.

5.1.3 Class II

Ten percent, 10.0% by number or weight, of asparagus not satisfying the requirements of the class with the exception of produce affected by rotting or any other deterioration rendering it unfit for consumption.

In addition to the above, 10% by number or weight can be allowed for hollow shoots or shoots showing very slight cracks due to washing. In no case can there be more than 15% hollow shoots in each package or bundle.

SIZE TOLERANCES

For all classes : Ten percent, 10.0%, by number or weight of asparagus not satisfying the requirements as regards to sizing and deviating from the specified limits with a maximum deviation of 1 cm in length.

For all classes, 10% by number or weight of shoots not corresponding to the size indicated and deviating from the specified limits with a maximum deviation of 2 mm in diameter. In no case shall the diameter be less than 3 mm.

6. PROVISIONS CONCERNING PRESENTATION

6.1 UNIFORMITY

The contents of each package must be uniform and contain only asparagus of the same origin, quality, colour group and size (if sized).

Nevertheless, with respect to colour, shoots of a different colour group may be allowed within the following limits:

- White asparagus: 10% by number or weight of violet asparagus in Classes Extra and I and 15% in Class II;
- violet, violet/green and green asparagus: 10% by number or weight of asparagus of another colour group.

However, in class II a mixture of white and violet asparagus of distinctly different colours may be packed together in a package, provided they are uniform in quality and, for each colour concerned, in origin.

The visible part of the contents of the package, unit package or bundle must be representative of the entire contents.

6.2 PACKAGING

Asparagus must be packed in such a way as to protect the produce properly. The materials used inside the package must be of food-grade quality, clean, and of a quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly of paper or stamps bearing trade specifications, is allowed, provided the printing or labelling has been done with non-toxic ink or glue.

Asparagus shall be packed in each container in compliance with the Code of Practice for Packaging and Transport of Fresh Fruits and Vegetables (CXC 44-1995).

6.2.1 Description of Containers

The container shall meet the quality, hygiene, ventilation and resistance characteristics to ensure suitable handling, shipping and preserving of the asparagus.

Packages must be free of all foreign matter and smell.

6.2.2 Presentation

The asparagus may be presented under one of the following forms:

- In bundles firmly bound.
Shoots on the outside of each bundle must correspond in appearance and diameter with the average of the whole bundle.
In "Extra" Class, asparagus shoots packed in bundles must be of the same length. Bundles must be arranged evenly in the package, each bundle may be protected by paper. In any one package, bundles must be of the same weight.
- Arranged, but not bundled in the package.
- In prepackaged units placed in another package.

7. PROVISIONS CONCERNING MARKING OR LABELLING

7.1 CONSUMER PACKAGES

In addition to the requirement of the General Standard for the Labelling of Pre-packaged Foods (CXS 1-1985), the following specific provisions apply:

7.1.1 Name of Produce

Each package shall be labelled as to the name of the produce and may be labelled as to name of the variety.

7.1.2 Origin of Produce

Country of origin⁵ and, optionally, district where grown, or national, regional or local place name.

7.2 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).

In addition, the following specific requirements shall apply:

Each package must bear the following particulars, in letters grouped on the same side, legibly and indelibly marked, and visible from the outside.

7.2.1 Nature of produce

Asparagus" followed by the indication "white", "violet", "violet/green" or "green" if the contents of the package are not visible from the outside and, where appropriate, the indication "short" or "tips" or "mixture white and violet".

7.2.2 Origin of produce

Country of origin⁴ and, optionally, district where grown, or national, regional or local place name.

7.2.3 Commercial Specifications

- Class;
- Size, expressed:
 - for asparagus subject to the uniformity rules as minimum and maximum diameters,
 - for asparagus not subject to the uniformity rules, as minimum diameter followed by maximum diameter or the words "and over".
- Number of bundles or number of unit packages, for asparagus packed in bundles or unit packages.

7.2.4 Official control mark (optional)

8. FOOD ADDITIVES

No food additives are permitted in foods conforming to this standard.

9. CONTAMINANTS

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

9.2 The produce 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).

10 HYGIENE

10.1 It is recommended that the produce 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), *Code of Hygienic Practice for Fresh Fruits and Vegetables* (CXC 53-2003), and other relevant Codex texts such as codes of hygienic practice and codes of practice.

10.2 The produce 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 The full or a commonly used name should be indicated.