

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

E-mail: codex@fao.org - www.codexalimentarius.org

STANDARD FOR GRAPEFRUITS

CXS 219-1999

Adopted in 1999. Amended in 2005, 2011.

1. DEFINITION OF PRODUCE

This Standard applies to commercial varieties of grapefruits grown from *Citrus paradisi* Macfad., of the *Rutaceae* family, to be supplied fresh to the consumer, after preparation and packaging. Grapefruits for industrial processing are excluded.

2. PROVISIONS CONCERNING QUALITY

2.1 Minimum Requirements

In all classes, subject to the special provisions for each class and the tolerances allowed, the grapefruits must be:

- whole;
- sound, produce affected by rotting or deterioration such as to make it unfit for consumption is excluded;
- clean, practically free of any visible foreign matter;
- practically free of pests affecting the general appearance of the produce;
- 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;
- firm;
- free of damage caused by low and/or high temperatures or frost;
- practically free of bruising.

2.1.1 The grapefruits must have reached an appropriate degree of development and ripeness in accordance with criteria proper to the variety and/or commercial type and to the area in which they are grown.

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

- to withstand transport and handling; and
- to arrive in satisfactory condition at the place of destination.

2.1.2 Maturity Requirements

The minimum juice content is calculated in relation to the total weight of the fruit.

Minimum Juice Content: 35%.

2.1.3 Colouring¹

Colouring must be typical of the variety. However, fruits of a greenish colour are allowed, provided they comply with the minimum requirements. Red-pulp varieties may have reddish patches on the rind. Grapefruits meeting the minimum requirements as regards ripeness may be "degreened", on condition that this treatment does not modify other organoleptic characteristics.

2.2 Classification

Grapefruits are classified in three classes defined below:

2.2.1 "Extra" Class

Grapefruits in this class must be of superior quality. They must be characteristic of the variety and/or commercial type. They must be free of 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.

¹ Colour refers to the characteristic colour and not to discoloration caused by rust mite, melanose and other blemishes.

2.2.2 Class I

Grapefruits in this class must be of good quality. They must be characteristic of the variety and/or commercial type. 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:

- slight defects in shape;
- slight defects in colouring;
- slight skin defects inherent in the formation of the fruit;
- slight healed skin defects due to mechanical causes, such as impact of hail, rubbing, damage from handling;
- slight skin discolouration due to rust mite, melanoses, and other blemishes not exceeding more than one-fifth of the surface of the fruit.

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

2.2.3 Class II

This class includes grapefruits which do not qualify for inclusion in the higher classes, but satisfy the minimum requirements specified in Section 2.1 above. The following defects, however, may be allowed, provided the grapefruits retain their essential characteristics as regards the quality, the keeping quality and presentation:

- defects in shape;
- defects in colouring;
- defects skin from healed superficial wounds on the skin;
- healed defects due to mechanical causes, such as impact of hail, rubbing, damage from handling;
- slight skin discolouration due to rust mite, melanoses, and other blemishes not exceeding more than two-fifths of the surface of the fruit;
- rough skin.

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

3. PROVISIONS CONCERNING SIZING

Size is determined by the maximum diameter of the equatorial section of the fruit, in accordance with the following table:

Size Code	Diameter (mm)
0	> 139
1	109 - 139
2	100 - 119
3	93 - 110
4	88 - 102
5	84 - 97
6	81 - 93
7	77 - 89
8	73 - 85
9	70 - 80

Grapefruit may be packed by count. In this case, provided the size uniformity required by the standard is retained, the size range in the package may fall outside a single size code, but within two adjacent codes.

Grapefruit of a diameter below 70 mm are excluded.

Uniformity in size is achieved by the above mentioned size scales, except in the case of fruit in bulk bins and fruit in individual non-rigid (nets, bags) packages for direct sale to the consumer, for which the maximum size difference between the smallest and the largest fruit in the same lot or package must not exceed the range obtained by grouping three consecutive sizes in the size scale.

4. PROVISIONS CONCERNING TOLERANCES

Tolerances in respect of quality and size shall be allowed in each package (or in each lot for produce presented in bulk) for produce not satisfying the requirements of the class indicated.

4.1 Quality Tolerances

4.1.1 "Extra" Class

Five percent by number or weight of grapefruits not satisfying the requirements of the class, but meeting those of Class I or, exceptionally, coming within the tolerances of that class.

4.1.2 Class I

Ten percent by number or weight of grapefruits not satisfying the requirements of the class, but meeting those of Class II or, exceptionally, coming within the tolerances of that class.

4.1.3 Class II

Ten percent by number or weight of grapefruits satisfying neither the requirements of the class nor the minimum requirements, with the exception of produce affected by rotting or any other deterioration rendering it unfit for consumption.

Within this tolerance, a maximum of 5% is allowed of fruit showing slight superficial unhealed damage, dry cuts or soft and shrivelled fruit.

4.2 Size Tolerances

For all classes, 10% by number or weight of grapefruits corresponding to the size immediately above or below that indicated on the package.

In the case of bulk consignment, the 10% tolerance only applies to fruit with a diameter of not less than 70 mm.

5. PROVISIONS CONCERNING PRESENTATION

5.1 Uniformity

The contents of each package (or lot for produce presented in bulk) must be uniform and contain only grapefruits of the same origin, variety and/or commercial type, quality, size and colour. The visible part of the contents of the package (or lot for produce presented in bulk) must be representative of the entire contents.

5.2 Packaging

Grapefruits must be packed in such a way as to protect the produce properly. The materials used inside the package must be new², 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.

Grapefruits 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).

5.2.1 Description of Containers

The containers shall meet the quality, hygiene, ventilation and resistance characteristics to ensure suitable handling, shipping and preserving of the grapefruits. Packages must be free of all foreign matter and smell.

² For the purposes of this Standard, this includes recycled material of food-grade quality.

5.3 Presentation

The grapefruits shall be presented under one of the following forms:

- (a) Aligned in regular layers, according to size ranges, in closed or open packaging. This form of presentation is mandatory for the "Extra" Class and optional for Classes I and II.
- (b) Non-aligned in closed or open packaging according to size ranges. In bulk in one means of transport or one transport compartment, with a maximum difference in size between the fruits of the sum of three consecutive sizes in the size ranges. These types of presentation are only allowed for Classes I and II.
- (c) In bulk, by one means of transport or in one transport compartment, without further requirement than that of minimum size. This form of presentation is only allowed for Class II.
- (d) In individual packages for direct consumer sale with a maximum weight of 5 kg.
 - 1) When these containers are made up by number of grapefruits, the size scales are mandatory for all classes;
 - 2) When these containers are made up by weight, the size scales are not compulsory but the maximum difference between the grapefruits must not exceed the sum of three consecutive sizes in the size scales.

6. MARKING OR LABELLING

6.1 Consumer Packages

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

6.1.1 Nature of Produce

If the produce is not visible from the outside, each package should be labelled as to the name of the produce and may be labelled as to name of the variety and/or commercial type.

6.2 Non-retail Containers

Each package must bear the following particulars, in letters grouped on the same side, legibly and indelibly marked, and visible from the outside, or in the documents accompanying the shipment. For produce transported in bulk these particulars must appear on a document accompanying the goods.

6.2.1 Identification

Name and address of exporter, packer and/or dispatcher. Identification code (optional)³.

6.2.2 Nature of Produce

Name of the produce if the contents are not visible from the outside. Name of the variety or commercial type (optional). The indication "pink" or "red" where appropriate.

6.2.3 Origin of Produce

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

6.2.4 Commercial Identification

- Class;
- Size (size code or minimum and maximum diameter in millimetres);
- Net weight (optional);
- Size code (or, when fruit packed by count fall under two adjacent codes, size codes or minimum and maximum diameter in mm) and number of fruit, in the case of fruit arranged in layers in the package.

6.2.5 Official Inspection Mark (optional)

³ The national legislation of a number of countries requires the explicit declaration of the name and address. However, in the case where a code mark is used, the reference "packer and/or dispatcher (or equivalent abbreviations)" has to be indicated in close connection with the code mark.

7. CONTAMINANTS

- 7.1** 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).
- 7.2** The produce covered by this Standard shall comply with the maximum residue limits for pesticides established by the Codex Alimentarius Commission.

8. HYGIENE

- 8.1** 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.
- 8.2** 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).